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Psychobiology Section Annual Meeting

Annual Meeting of the Psychobiology Section. Old Dungeon Ghyll, Langdale, The Lake District, 11–13 September 2002.

A direct comparison of alcohol consumption and extended waking on driving performance and subjective awareness

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Objectives: This investigation set out to directly compare the associated levels of impairment on driving performance and subjective state resulting from alcohol consumption in comparison to extended waking and night driving.

Design: A quasi-naturalistic design was employed where participants completed both alcohol and extended waking conditions in a crossover design.

Methods: 12 participants (19–33; mean 27 years) with full driving licences, and who were not blind to treatments, undertook a 20 minute simulated driving task (DASS: Stowood Scientific Instruments), subjective sleepiness, and mood assessments to evaluate the effects of mid-day alcohol (0.1 per cent BAC) against mid-day and 10.00 p.m. baselines, as well as extended waking tested at 12.00 p.m., 2.00 a.m. and 4.00 a.m., after rising at 8.00 a.m.

Results: Comparisons between the mid-day and 10.00 p.m. baselines were not significant, whilst steering errors, response times and omission errors for a peripheral number identification task were significantly impaired after alcohol and after extended waking when compared with baselines. Subjective sleepiness also increased after alcohol and extended waking; though subjects were significantly more sleepy and subjectively less alert, clear headed, well co-ordinated and quick witted at 2.00 and 4.00 a.m. than after alcohol. Mid-day alcohol showed impaired performance in contrast to 12.00 p.m. testing although sleepiness and mood were better after alcohol for 3/5 subjective measures. Alcohol produced equivalent decrements to 2.00 a.m. testing though 4.00 a.m. performance was worse.

Conclusions: Results highlight the greater impairing effect of night-time and 20 hours waking on driving. Subjectively, drivers were at least as aware of the effects of sleep loss as of alcohol.

The comparative effects of caffeine and sleep restriction alone and in combination, on subjective state, task performance, and P300 brain event related potentials

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Objectives: This study compared the effects of sleep restriction and caffeine, as well as their combined effects, on performance mood and event related (P300) potentials.

Design: A repeated measures (2 x 2), placebo controlled design was used to investigate effects of sleep restriction (four hours) compared to a normal night (seven to nine hours), and facilitating effects of caffeine (200mg) compared to placebo.

Methods: 14 participants (19 to 35, mean 26 years) received placebo following overnight caffeine withdrawal, both after normal and restricted sleep. After completion of experimental tasks caffeine was administered, and tasks were completed again. Assessments included subjective visual analogue scales (VAS), performance on immediate and delayed word recall, critical flicker fusion (CFF), Stroop colour-word and number cancellation tasks. The effects of sleep and caffeine were looked at individually and in combination. In addition visual event related potentials (ERP's) P3a, P3b were recorded using an 'oddball' paradigm.

Results: Significant impairments ($p < 0.05$) were found in CFF, VAS, number cancellation, Stroop, P3a latency, and P3b amplitude and latency for restricted vs. normal sleep. Significant improvements ($p < 0.05$) were seen in CFF, VAS, number cancellation, and Stroop, but only P3b amplitude for ERP's, with caffeine vs. placebo. Significant interactions ($p < 0.05$), due to caffeine's superior effects in low arousal, were found in Stroop, and VAS (clear headed/muzzy).

Conclusions: A wide range of impairments including subjective state, performance and a direct measure of frontal (P3a) and parietal (P3b) attentional processing were seen as a result of sleep restriction. Caffeine had a greater effect in reversing decrements after restricted sleep.

Running out of time: Ageing and the biological clock

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Purpose: To provide a review of how circadian clock function changes with age.

Background: Daily patterns in physiological, behavioural and cognitive processes are gated by an internal timekeeping mechanism. This pacemaker allows an organism to synchronise itself with respect to the environment and also to anticipate cyclical changes. While light is the primary signal acting to entrain, behavioural signals can act to modulate this input.

Methods: We have investigated ageing and clock function on a number of levels from the activity patterns of rodents, to the input pathways of environmental synchronising stimuli, to the actual cells that make up the clock. Using behavioural, electrophysiological and immunocytochemical experiments to monitor the clock both in-vivo and in-vitro, we have found several age-related changes in circadian clock function.

Conclusions: Our data indicates several changes occur with the circadian system of aged animals. These include a shortening of the internal frequency, a lack of consolidation of the activity rest cycle, an advanced angle of entrainment and changes in the response of the clock to entraining stimuli. These alterations in the timing system over time result in disruption of synchronisation. Difficulty sleeping is one of the main reasons why people over the age of 65 visit their GP. The internal body clock contributes to the control of sleep duration, timing, and value. It is hoped that our work will lead to improved recommendations to improve circadian clock function in the aged.

Kynurenine metabolic pathway activity in male chronic alcoholics

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Objectives: To investigate the hypothesis that dietary manipulation would influence kynurenine pathway metabolite production in a cohort of chemically dependent male alcoholics

(N = 18).

Design: The study used a counterbalanced repeated measures design in which high carbohydrate (CAR), high protein (PRO) and nutritionally balanced (CONTROL) breakfasts were supplied to participants on three separate days. Blood and urine samples were collected before breakfast and again two-and-a-half hours following each breakfast (08.30 and 11.30 hours). The dependent variables were serum levels of kynurenine pathway metabolites.

Methods: The blood samples were collected via 9ml Vacutainers and serum separated by centrifugation. Shimadzu High Performance Liquid Chromatography (HPLC) equipment was used to determine the concentrations of kynurenine metabolites.

Results: Statistical analysis was conducted using one-way ANOVA. No significant differences were found in kynurenine pathway activity as a result of dietary manipulation.

Conclusions: The use of dietary manipulation to ameliorate serotonergic-mediated aspects of psychological distress such as depression would not appear to be contra indicated since there is no evidence of an increase in neurotoxicity via a relative increase in kynurenine metabolite production.

The measurement of appetite and cognitive performance across the menstrual cycle

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Objectives: To assess changes in appetite, mood, and cognitive function across the menstrual cycle using a hand-held computer

Design: A within-subjects design collecting data over a one-month period of in each individual.

Methods: 26 females aged 18.2–53.9 years, mean age 23.9 years took part, of whom 11 were taking the contraceptive pill. Body temperature and Visual Analogue Scale (VAS) ratings of mood were assessed daily. Cognitive assessments (Maze, Flanker Task, Word Recognition Memory, Visual Search), body weight, and a sub-set of the Stunkard-Messick Eating Questionnaire (SMEQ) adapted for repeated use were assessed every three days. Onset of menstruation was recorded. All assessments were set up on the Apple Newton Message Pad MP2000.

Results: Compliance was good for daily entries (> 85 per cent) and for cognitive assessments and SMEQ (> 90 per cent) but poor for body weight (about 50 per cent). Body temperature data was not sufficiently consistent, and phases were determined from menstrual onset. VAS scores were higher in the late luteal and menstrual phases for breast tenderness, body swollen and period pain for both pill and non-pill takers (within subjects ANOVA: $p < 0.001$), and for irritability in the non-pill group ($p < 0.05$). Neither cognitive test performance nor the SMEQ showed significant differences between phases for either group.

Conclusions: These data show that recording data on a hand-held computer is a practicable and acceptable method of collecting data on changes during the menstrual cycle. The method allows frequent data sampling, and automatic time-stamping of entries allows trustworthy data to be collected in the person's home.

Cognitive and mood effects of acute administration of a Melissa Officialis with cholinergic receptor binding properties in human CNS tissue

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Background: Melissa officinalis (Lemon Balm) is a herbal medicine that has traditionally been attributed with memory enhancing properties, but

which is currently more widely used as a mild sedative and sleep aid. In a previous study it was demonstrated that a commercial Melissa extract led to dose-specific increases in calmness, and dose-dependent decrements in timed memory task performance. However, the extract utilised did not exhibit the expected in-vitro cholinergic receptor binding properties.

Objectives: The current study comprised an initial screening of a number of samples of Melissa for receptor binding properties, with the cognitive effects of single doses of the most promising dried leaf then being assessed.

Methods: In this randomised, placebo-controlled, double-blind, balanced cross-over study, 20 healthy, young participants received single doses of 600mg, 1000mg and 1600mg of encapsulated dried leaf, or a matching placebo, at seven-day intervals. Cognitive performance and mood were assessed pre-dose and at one, three and six hours post-dose using the CDR computerised assessment battery and Bond-Lader visual analogue scales.

Results: The in-vitro analysis established IC50 concentrations of 0.18mg/ml and 3.47mg/ml respectively for the displacement of [3H]-(N)-nicotine and [3H]-(N)-scopolamine from nicotinic and muscarinic receptors in human occipital cortex tissue. The most notable cognitive and mood effects were improved secondary memory performance and increased 'calmness' at all post-dose time points for the highest (1600mg) dose. However, whilst the profile of results was overwhelmingly favourable for the highest dose, decrements in the speed of timed memory task performance and on a Rapid Visual Information Processing task increased with decreasing dose. **Conclusions:** These results suggest that doses of Melissa Officialis at or above the maximum employed here may well be efficacious in the treatment of cognitive deficits and agitation associated with Alzheimer's disease.

Detection of psychological distress during complications of pregnancy

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Objectives: The GHQ-12 has been recommended as a reliable screening instrument for psychological distress in all clinical groups. The reliability of the GHQ-12 was investigated in pregnant women experiencing clinical complications (Pre-labour Rupture Of Membranes: PROM) in their pregnancy at term.

Design: The study used a one between-subjects, one within-subjects design. The GHQ-12 was administered to two groups of pregnant women presenting with term PROM over three observation points (on admission to hospital, at labour/prior to induction, 28 days post-delivery).

Methods: Women participating in the study had their membrane rupture confirmed by the use of speculum examination and subsequent 'fern test'; a diagnostic test to confirm membrane rupture. No vaginal examination was performed to reduce the risk factors for infection; a baseline high vaginal swab (HVS) was obtained at the time of speculum examination. Electronic fetal monitoring by cardiotocograph was performed to exclude fetal compromise. Maternity unit and research midwives administered the GHQ-12 to women.

Results: The type of scoring method used had a significant impact on both interpretation of data and the relative prevalence of 'cases' in this study cohort.

Conclusions: The use of the GHQ-12 as a screening instrument to determine psychological distress in women with PROM at term cannot currently be recommended using the standard scoring methods. A further psychometric investigation to determine the optimal threshold score for the GHQ-12 in this clinical population is required.

Therapy type and neurocognitive function in Type 1 Diabetes Mellitus

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Objectives: Continuous subcutaneous insulin infusion pump therapy compared to basal bolus insulin administration was investigated to determine if therapy type had an impact on neurocognitive performance at three different blood glucose levels in insulin-dependent patients with Type 1 diabetes.

Design: The study used a 2 (group type) x 3 (blood glucose level) mixed group design with repeated measures on the second factor (blood glucose level). The between-subjects independent variable (IV) was group type, pump or injection. The within-subjects IV was projected blood glucose level (2–3.5mmols/L – hypoglycaemic, 4–7mmols/L – euglycaemic, 10–15mmols/L – hyperglycaemic). The dependent variables are scores obtained on the Bexley-Maudsley Automated Psychological Screening (BMAPS) neurocognitive test instrument.

Methods: This pilot study (N = 30) is currently being conducted in a district hospital diabetes centre. Each participant is tested at one pre-selected blood glucose range at each testing session. There is a minimum of a two-week break between each testing session. A Freestyle blood glucose sensor is used to obtain a real-time readout of blood glucose levels for the duration of the test.

Results: The research is currently in progress and preliminary data will be presented at the psychobiology section research meeting.

Conclusions: The clinical implications for Type 1 patients with diabetes of the study and the direction of future research in this area will be discussed at the psychobiology section annual meeting.

Testing the somatic marker hypothesis

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Objectives: Damasio has proposed an influential model of human decision making – the Somatic Marker Hypothesis (SMH), where he argues that somatic feedback to the brain influences decision making in man. It is proposed that when choosing between options that differ in relative risk, a somatic marker (e.g. a 'gut feeling') feeds back to the brain and influences cognitive appraisal. In the present study we tested the hypothesis that the noradrenergic system may play a role in this afferent feedback process.

Design: Between-subjects design.

Methods: 30 healthy young adults were randomly allocated to receive placebo, 4mg or 8mg reboxetine (a new selective noradrenergic reuptake inhibitor which acts to enhance central noradrenergic activity). We hypothesised that enhancement of central noradrenergic activity may amplify the effect of afferent feedback, and lead to altered decision making. All subjects completed the Iowa Gambling Task (IGT), a computerised card playing game where the player is instructed to try and win as much money as possible over 100 selections from one of four decks.

Results: There were no significant differences between the three groups in gambling task performance.

Conclusion: This result suggests that central noradrenergic activity may not be critically involved in the afferent feedback mechanism that is central to the somatic marker hypothesis.

Tolerance to recreational MDMA (3,4-methylenedioxy-methamphetamine) or Ecstasy

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Purpose: To critically examine the empirical evidence on tolerance to MDMA (3,4- methylenedioxyamphetamine) or Ecstasy in humans.

Background & Methods: Tolerance to MDMA cannot be researched in the laboratory because of its neurotoxic properties. However recreational users can provide indirect information of relevance to the topic. In particular, the empirical data on dosage escalation, bingeing, and reduced subjective efficacy, will be reviewed.

Results: On their very first occasion most users take a half or single tablet. Novice users often take 1 to 2 tablets/occasion, while the more experienced taking 3 to 6 tablets/occasion. Bingeing is also reported, with some of the heaviest users occasionally taking 10 to 25 tablets on a single occasion. Reduced levels of subjective efficacy are typically described, despite using these higher doses. Acute tolerance or tachyphylaxis, and behavioural tolerance, will also be briefly mentioned, although the empirical evidence on these topics is sparse. **Conclusions:** There is extensive although indirect evidence for chronic pharmacodynamic tolerance to recreational Ecstasy/MDMA. Three mechanisms for tolerance are generally described: metabolic, neurochemical, and behavioural. However it will be proposed that MDMA displays a form of chronic tolerance largely unique to the ring substituted amphetamine derivatives, namely that due to distal 5-HT axonal loss, or serotonin neurotoxicity.

Development of a theory of discrimination learning

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Purpose: To review the development of our theoretical understanding of discrimination learning by reference to selected experimental findings.

Background: Most theories assume that if animals must discriminate between different patterns of stimulation, then associations will develop between each element of a pattern and the event it signals. The findings from studies that have examined the influence of similarity on discrimination learning challenge this assumption. Their results can, instead, be explained by assuming discrimination learning depends upon the growth of configural associations in which the entire pattern of stimulation on a trial enters into a single association with the trial outcome. It is possible to develop a formal theory based on this assumption in the form of a relatively simple connectionist network.

Key Points: Such a configural theory has, in turn, been challenged by the ability of animals to solve structural discriminations in which reward and nonreward are signalled by patterns comprising the same features. A red circle to the left of a yellow circle might signal food, whereas the opposite relation might signal the absence of food. Nearly all connectionist networks are sensitive to the presence and absence of features, but not to information about how the features relate to each other and they thus predict this discrimination will not be solved.

Conclusions: Even though there has been an improvement in our understanding of discrimination learning, the ability of animals to solve structural discriminations poses problems for even the more recent theories.

Event-related brain potentials reveal three loci of repetition priming for written names

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Objectives: We assessed immediate repetition priming effects for famous names on reaction times (RTs) and event-related brain potentials (ERPs).

Design: The task required speeded familiarity judgements to target names (famous and unfamiliar).

Methods: In Experiment 1, famous target names could be preceded either by the same name or by the same name in a different font, or by a different famous name (unprimed). In Experiment 2, cross-domain priming of famous names was investigated, comparing names preceded by their corresponding face to names preceded by the face of a different celebrity.

Results: We observed three topographically different ERP modulations of priming, in separate time ranges after target name onset. Between 180–220ms, an 'N200' modulation was seen over posterior sites for font-specific name repetitions only. A left temporal negativity ('N250r') was seen between 220–300ms for both same-font and different-font repetitions. Between 300 and 400ms, a reduced central-parietal negativity ('N400') was seen for primed names. In Experiment 2, the N400 priming effect was preserved, but no N200 or N250r effects were seen.

Conclusions: This suggests that the N200, N250r, and N400 effects revealed in this study reflect facilitation at the levels of font-specific encoding, lexical entries for names, and semantic integration, respectively. Our findings show how ERP analysis can be an efficient tool for isolating separable processes involved in repetition priming.

Emotion recognition and social perception in patients one year after undergoing a surgical intervention for chronic refractory depression

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Objectives: The primary aim of the study was to establish if anterior cingulotomy patients would exhibit the same pattern of impairment of emotion recognition and social perception as patients with frontal lobe damage. The second aim of the study was to establish if patients, who had recovered post-surgery from their depressive episode, differed in their performance from patients who remained depressed.

Design: Four individuals (one male, three females) were assessed on the Awareness of Social Inference Test (TASIT) 12 months after undergoing an anterior cingulotomy. Two patients (both females) were recovered from their depressive episode and two were still depressed. The patients' performance was compared to that of 12 brain-injured patients and 12 healthy controls. TASIT involves the participants making judgments about, and interpretations of, a series of videotaped interpersonal interactions.

Results: The brain-injured and surgery patients identified fewer emotional displays correctly than did the controls. The surgery patients made fewer correct interpretations of the sarcastic interactions than did the controls, although they made more correct responses than did the braininjured patients. This finding held even when participants were given additional information to help guide the interpretations. The surgery patients (most strikingly the depressed) also made fewer correct interpretations of sincere interactions compared to the other participants (brain injured and controls).

Conclusions: Anterior cingulotomy does appear to be associated with impairment of emotion recognition and social perception. It would also appear that there is a different pattern of impairment for surgery patients who have recovered and those that are still depressed.

Psychobiological problems and polydrug use reported by novice, moderate and heavy users of Ecstasy

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Rationale: The recreational use of Ecstasy is associated with many psychobiological problems, but there is a paucity of data on how these

problems relate to patterns of use and how polydrug consumption patterns change with greater experience of Ecstasy.

Objectives: To assess the incidence of Ecstasy-related problems reported by users and to compare the polydrug usage patterns reported by non-Ecstasy users and Ecstasy users.

Methods: In an internet study of 763 volunteers, 481 were Ecstasy naive and 282 were users. The Ecstasy users comprised 109 novice users, 136 moderate users and 36 heavy users.

Responses were recorded covering problems experienced when drug-free, which were attributed to Ecstasy use. Each participant also reported use of other psychoactive drugs.

Results: A variety of problems were associated with Ecstasy use. Ecstasy users reported significantly greater psychoactive drug usage than non-Ecstasy users and novice, moderate, and heavy Ecstasy users differed from each other in the use of other drugs.

Conclusions: The incidence of problems attributed to Ecstasy use, is directly related to the number of occasions it has been used. These results are discussed in the context of crosstolerance and drug predisposition/preference.

Investigating the potential psychobiological mediators involved in the retrograde enhancement of memory by alcohol phenomenon

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Objectives: There are several reports that administration of low levels of alcohol results in retrograde enhancement of memory. It has been suggested that this phenomenon may involve the liberation of glucose, reinforcing 'euphorogenic' mood changes, and/or arousal systems. Here two experiments are described which aimed at addressing these possibilities.

Design: Both studies employed a parallel groups, double-blind, placebo-controlled design.

Methods: In the first experiment participants consumed a drink containing either alcohol (0.38g/kg), glucose (25g), or a placebo immediately following the learning phase of a kinaesthetic (maze reorientation) memory paradigm. As well as memory performance, mood effects were assessed using the Profile of Mood States and blood glucose levels were monitored. In Experiment 2 the impact of alcohol was compared to placebo using an emotional memory paradigm involving recognition and recall of neutral and emotional words. Heart rates were monitored throughout.

Results: In Experiment 1 both alcohol and glucose significantly enhanced kinaesthetic memory. Only glucose ingestion resulted in significantly elevated blood glucose. There was no effect of treatment on mood. In Experiment 2 alcohol improved recall and this was more marked for emotional than neutral words. There were differential effects of treatment and material emotionality on word recognition indices. Heart rates were relatively decreased following placebo and increased following alcohol.

Conclusions: The data weakly support the notion that the alcohol enhancement of memory phenomenon may be mediated via autonomic mechanisms. However low dose alcohol consumption does not result in the release of glucose nor does it significantly change any aspect of mood.

A cross-cultural comparison of health, eating behaviour and body image among black South African and white British university students

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Objectives: Recent research has shown an increase in the prevalence of eating disorders such as Anorexia and Bulimia Nervosa among black female students living in urban areas of South Africa. The aim of the present study was to provide a profile of mental and physical health, eating behaviour and body image among black female students living in a highly rural province of the country.

Design & Methods: 40 black female students from the University of Zululand, South Africa and, for purposes of comparison, 40 white female students from the University of Northumbria, UK, participated in the study. Testing and assessments were carried out locally and with the aid of a Zulu interpreter where appropriate. Dependent measures fell into three categories: morphological (body mass index, waist-hip ratio, percentage body fat), physiological (resting heart rate, blood pressure, haemoglobin, glucose, cholesterol) and psychological (anxiety, depression, attitudes and behaviours indicative of eating disorder). A body image assessment was also carried out.

Results: No between group differences were identified in terms of physical health, although the African participants were significantly larger, with 42.5 per cent of the sample being overweight or obese. However, African participants were significantly more depressed and symptomatic on the eating disorder measures. Both groups showed high levels of body dissatisfaction.

Conclusions: Overall, results suggest that black female students living in rural areas of South Africa may presently constitute a high-risk group for eating disorders. As such, it is proposed that these findings be taken as a *prima facie* case for psychoeducational intervention in such areas.

The effects of caffeine and caffeine withdrawal on cognitive performance

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Purpose: To provide an overview of research investigating the effects of caffeine and caffeine withdrawal on cognitive performance.

Background: There has been extensive research on the behavioural effects of caffeine. A protracted process of replication and extension has led to a general consensus about the more robust effects of caffeine: increases in alertness, improved sustained attention, increased speed of encoding of new information, faster simple and choice reaction time. Smith (2002) has suggested that effects of caffeine observed in low alertness situations reflect changes in noradrenergic function. Other effects of caffeine are observed even when alertness is not reduced and these may be due to changes in the cholinergic system. An alternative view of the effects of caffeine has been suggested by James (1994). He argues that caffeine has no beneficial effects per se but merely removes negative effects produced by caffeine withdrawal.

Methods: The review of the area will cover the published literature and recent new studies. Topics covered will include: evidence for effects of caffeine withdrawal on cognitive performance; effects of caffeine in animals; effects in non-consumers; effects in non-withdrawn consumers; and effects after caffeine 'wash out'.

Conclusions: Consideration of studies of all the above topics show that caffeine does more than merely remove the negative effects of withdrawal. Indeed, it is suggested that there are distinct

behavioural effects of caffeine that can be linked to specific neurotransmitter systems and underlying level of arousal.

Acute effects of a novel herbal extract (ONP-22) on mood and cognition in healthy elderly volunteers

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Background: European plants have been utilised in medical herbalism for memory enhancement for millennia. Recent research has demonstrated possible neural mechanisms which may be involved, including anticholinesterase, anti-inflammatory, antioxidant and cholinergic receptor binding activity.

Objectives: Here we assess the effects of a novel herbal extract (ONP-22) on mood and cognition in a cohort of healthy elderly individuals.

Design: This study utilised a placebocontrolled, double-blind, balanced, crossover design.

Methods: 20 participants (mean age 72.85 years, range 65 to 90) received 167, 333, 666 and 1332mg ONP-22 or a placebo. Doses were separated by a seven-day wash-out period using a pseudo-random treatment order. Cognitive assessment was undertaken using the Cognitive Drug Research (CDR) computerised test battery, subjective mood ratings were measured using Bond-Lader visual analogue scales. Assessment took place prior to treatment and 1 hour, 2.5 hour, 4 hour and 6 hour thereafter. The primary outcome measures were four aspects of cognitive performance derived by factor analysis of CDR subtests and three mood dimensions.

Results: There were a number of significant effects on cognition associated with the two lowest doses of ONP-22. A consistent, dose-specific enhancement of memory, specific to quality of secondary memory, was evident following administration the 333mg dose and a less pronounced improvement for the 167mg dose at all but the 6 hour time-point. Furthermore the 333mg dose also improved 'Accuracy of Attention' at all but the 2.5 hour assessment.

Conclusions: These data suggest that ONP-22 may be a safe and effective cognition enhancer and should be assessed in populations whose memories are fragile.

The mamillary bodies and memory

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Objectives: Delay and Brion proposed that pathology in a circuit from the hippocampus – mamillary bodies – anterior thalamic nuclei is sufficient to induce anterograde amnesia. The study sought to test the importance of this circuit for spatial memory by lesioning the mamillothalamic tract. This tract is the only brain region confined to this circuit.

Design: Group comparisons were made between rats with radiofrequency lesions of the mamillothalamic tract (MTTx) and neurotoxic lesions of the mamillary bodies (MBx). Spatial memory was examined as previous studies have highlighted the importance of both the mamillary bodies and the anterior thalamic nuclei for this class of memory.

Methods: The study involved 8 MTTx, 10MBx and 10 surgical control rats. Animals were tested on working memory tasks in the T-maze, radial-arm maze, and Morris water maze. The rats were also trained on a conditioning task that assessed the ability to distinguish different contexts.

Results: Both the MTTx and MBx lesions impaired performance of the working memory tasks. The deficits were often, but not always, of comparable magnitude. Neither lesion affected the contextual task.

Conclusions: The outputs from the mamillary bodies to the anterior thalamic nuclei are vital for mamillary body function. The pattern of MTTx

working memory deficits was similar to that associated with anterior thalamic and hippocampal damage, but was appreciably milder. This suggests that the original circuit described by Delay and Brion is an oversimplification, and that other routes between the hippocampus and anterior thalamic nuclei have an important contribution.

The effects of a combination of Ginseng, vitamins and minerals on cognitive and physical fatigue induced by night-work in nurses

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Objectives: The present study was designed to evaluate whether a product containing ginseng, vitamins and minerals would be able to counteract the cognitive and physical fatigue induced by shift work.

Design: A model was developed in which nurses working night-shifts were subjected to an extensive set of tests both prior to and immediately following a three night shift. This was demonstrated to produce cognitive and physical fatigue. The effects of 12 weeks of dosing were then evaluated upon cognitive function and measures of fatigue using a double-blind, placebo controlled, parallel group design.

Methods: 30 healthy nurses participated in the study. Following screening the nurses were subjected to cognitive function evaluation using a selection of tests from the Cognitive Drug Research computerised assessment system in conjunction with EEG recordings. Self-ratings were also obtained. Subjects were tested prior to the shift and immediately afterwards at 8.00 a.m., 10.00 a.m., 12.00 p.m. and 2.00 p.m. Following this baseline shift period, the nurses were randomised to receive either the combination product (Pharmaton® caplets containing 40mg of standardised Panax ginseng extract G115 and a variety of minerals and vitamins) or matched placebo for a 12-week period. The daily dose was one capsule. The shift work evaluations were repeated at six and 12 weeks.

Results: The combination was found to help reduce the various impairments over the shift period, the clearest effect on cognitive function being seen for the ability to store and retrieve information in long-term memory.

Conclusions: The results are supportive of previous studies, which have demonstrated beneficial effects of ginseng on cognitive function.

Tranquillising emotional memories: Acute effects of metoprolol, diazepam and placebo in healthy volunteers

A. ZANGARA & V. CURRAN, Cognitive Drug Research Ltd., Reading.

Objectives: Episodic memory is generally superior for emotionally valenced information than for neutral information. Cahill *et al.* (1994) demonstrated that the β blocker propranolol blocks this emotional superiority effect in healthy volunteers and concluded from this and a parallel study that adrenergic activation and the amygdala participate in the formation of long-term memory for emotional events. The present study compared a β blocker, metoprolol (50mg), with the benzodiazepine diazepam (15mg) and a placebo on the Cahill' paradigm.

Design: An independent group design was used. A double blind, double dummy procedure was followed such that each participant received two capsules: first metoprolol or placebo, and 50 minutes later diazepam or placebo. Testing began 40 minutes after ingestion of the second capsule.

Methods: 48 healthy volunteers took part in a parallel group design. Even slides were displayed with an emotionally arousing narrative, and then rated for emotionality. On day 0, volunteers completed also a Mood Rating Scale, Bodily Symptoms Scale and word recall tasks. One week later, subjects returned for a surprise memory task.

Results: Placebo subjects showed superior

Scottish Branch Annual Conference

Scottish Branch Annual Conference. *Developing Human Potential. Salutation Hotel, Perth, 22–24 November 2002.*

INVITED SPEAKERS

Making a difference: Reducing reoffending

R. HALL, Scottish Prison Service.

The development of a constructive approach to addressing individual needs associated with offending behaviour is flourishing despite the competing demands for public safety and political concern about 'dangerous' individuals. Using examples taken from the Scottish Prison Service, it will be shown how psychology can be applied to provide opportunities for prisoners to develop their potential to lead crime free lives on release and to assess the risks which will have to be managed on their return to the community. Psychologists have been instrumental in developing and implementing the assessments and interventions involved in managing prisoners' sentences. These include mental health and addictions, as well as personal change programmes for cognitive skills, anger, violence and inappropriate sexual behaviour and the new risk management systems. Evaluation studies are being carried out, with some promising initial results. The psychologists also support the development of an organisational culture in which care, personal change and inclusion are seen to be as important as security issues. In addition to the assessment and interventions they provide staff training and work on multidisciplinary teams and specialist units as well as engaging in individual work.

Why do we worry?

G.C.L. DAVEY, University of Sussex.

This presentation will discuss how research into the causes of pathological and chronic worrying has developed over the last 10 years. Prior to 1990 there was only a handful of research papers on worry – even though it is an activity that almost everyone indulges in at some time in their lives, and which has now become the cardinal diagnostic feature of Generalised Anxiety Disorder (GAD). I will describe how our research on this topic at the University of Sussex has developed since that time, describe some of the cognitive mechanisms that we have identified as playing a role in perseverative worrying, and the mechanisms that we have most recently identified as underlying chronic and pathological worrying.

PAPERS

The measurement of quality of life in children and adolescents with chronic health conditions: An introduction to the European DISABKIDS project

C. ATHERTON, P. HOARE, K. PHILLIPS & THE DISABKIDS GROUP, University of Edinburgh.

Quality of Life (QOL) in children with chronic health conditions is typically assessed using adapted adult measures. However, recent research suggests that adult measures may fail to tap into the specific aspects of QOL that are of particular importance to the child (Eiser & Morse, 2001). Funded by the European Commission, the DISABKIDS project is a cross-national effort centring around the development of a set of cross-culturally standardised instruments for the assessment of child and adolescent QOL. The DISABKIDS project aims to give children, adolescents and their families a major role in the development of a set of disease specific instruments to assess QOL from the patient's perspective. This paper will focus upon three areas. First, the DISABKIDS project will be introduced and the results of recently completed

pilot work, in which both children and parents completed the measures, will be discussed. Second, the DISABKIDS measures that have been constructed through focus group work, item reduction techniques, standardised translation procedures and cognitive interviewing will be presented. Third, two principal issues shall be discussed with specific reference to the condition asthma: (1) the importance of the development of age appropriate measures of quality of life; and (2) the appropriateness of proxy measurements of quality of life.

Children living with an affectively ill parent: What are their coping strategies, self perceptions, experiences and needs?

N. COGAN, G. MAYES & S. RIDDELL, University of Glasgow.

Children of affectively ill parents have been reported to be 'at risk' of diagnosable psychopathology, as well as for impairment in cognitive, social and school functioning. This study builds on earlier work documenting the mechanisms of risk and identification of protective factors which increase children's resilience towards adversity. Children (aged 12–17 years) of affectively ill parents were compared with children of 'well' parents. The Frydenberg (1993) Coping Scale and the Harter (1983) Self Perception Scale were used to compare the coping strategies and self perceptions of parent-child dyads for the two groups, in order to examine possible differences in the coping strategies and self perceptions used by families and to investigate the possible familial associations between such concepts. The experiences and needs of parents and their children were also explored using semi-structured interview schedules. Analysis revealed that affectively ill parent-child dyads adopted more non-productive coping strategies and were found to have lower self perception scores than 'well' parent-child dyads. Correlational analysis revealed a familial association between coping and self perception, whereby non-productive coping strategies were significantly associated with lower self perception scores. Affectively ill parent-child dyads were found to be less likely to seek external support to help them cope with their family situation, largely as a consequence of fear of losing their custodial rights. The impacts of supporting children and their families in respect of these findings are developed. Recommendations and possible future directions for researchers, service providers and policy makers, based on the stated experiences of children, are postulated of which the common goal is to develop the human potential of children 'at risk'.

WORKSHOP

Mentoring: A model for intervention against Disadvantage

B. HOWIESON, University of East London.

As a system of personal and/or professional support, mentoring is used in a number of occupational and educational contexts in the UK. Mentoring is becoming increasingly relevant to the operation of a range of institutions including schools and universities and is an attempt to formalise relationships, which have the potential to affect the lives of (predominantly) young people. Mentoring schemes have been used to address issues of underachievement and personal performance in a range of contexts and are commonly associated with the processes and practices of confidence and image building amongst mentees. Research suggests that mentored young people do obtain positive outcomes from their relational experiences and that these include personal, educational and career benefits. In turn, enacting the role of the 'mentor' may be regarded as a professional development opportunity. This paper will offer a Mentoring Model that can be used in a wide variety of situations to develop human potential. The model is based on the relationship between

three institutions: a central Mentor Unit; a University/College of Further Education (mentee provision); and Employing Organisations (mentor provision). The overall effectiveness of the model depends on each of the three participants adopting a systematic, structured approach to their particular roles.

PAPERS

The psychometrics of gender aptitudes and interests: The military sanction

S. IRVINE & P. KYLLONEN, Plymouth University.

As part of a research program sponsored by the US National Research Council (NRC), US Air Force recruits at Lackland Air Force Base were tested in their sixth (final) week of basic training. A battery of psychometric measures (The Millennium Tests[®]) was designed for, and administered by, computer using a Windows-platform mouse interface. The test battery embraced five different measurement domains. From these tests and inventories, measures of information-processing capacity, motivation, vocational interests, health-related quality of life and circadian (morning-evening) propensity were obtained. Comprehensive subject profiles included item-response, accuracy and latency scores. Additionally, records yielded the US Armed Service Vocational Aptitude Battery (ASVAB) scores used to select the recruits. A number of studies were carried out; and two of those are reported. First, in the knowledge that correct vocational placement will do much to reduce training dropout, we undertook to define individual work motivation 'landscapes' consistent with gender. We were able to predict gender specific occupational roles with 91 per cent accuracy. Second, we attempted to assess the probability of attrition of female and male recruits by measuring the strength of commitment to a service career after initial basic training and to define service commitment in terms of health-related quality of life and personality measures. Multiple correlations with service career commitment based on 1500 subjects were close to 0.8.

Can leadership be taught – and how?

H. KAHN & W.B. HOWIESON, Heriot-Watt University.

This paper will examine a number of the key aspects surrounding the debate about whether leadership can be taught. It will present the views of current researchers on, first, what leadership is considered to be; second, how leadership can be developed; third, what leaders need to learn; and fourth, the different methods by which leadership can be taught.

The paper will also highlight the fact that most of the research into leadership has been conducted from a Western perspective and is based on Western values. These theories and learning practices may not be transferable to other cultures. As societies become more multicultural, it is essential for leaders and the learning that is aimed at developing leaders to take this into account. In addition, leadership has tended to be examined from a masculine point of view. As more women attain leadership roles within organisations, there has been an increase in research comparing the similarities and differences between men and women in leadership roles. The current view is that women are as effective as men in leadership positions, and have the same potential to develop as leaders. Their success in certain situations may be due to their possessing more Emotional Intelligence than their male counterparts. The paper will conclude by suggesting that research indicates that leadership can be developed, provided the potential is there in the individual, in a variety of ways and using a number of techniques.

Driving diaries for elderly drivers: Developing self-awareness and enhancing self-protective driving behaviours

E. KARAGIANNIDOU & H. FOOT,
University of Strathclyde.

Objectives: The increasing number of elderly drivers and the link between driving cessation and depressive symptoms reflects the importance of mobility for the elderly. In addition, the rise in their accident involvement and fatality rates is related to the fact that ageing is associated with functional limitations, which may impair driving performance. The need for limiting their driving (avoid driving at night, or in complex traffic environments) and/or quitting driving completely may not be recognised by some elderly drivers, for example, those not aware or willing to admit their cognitive, perceptual, or motor deterioration. Practical reasons (a car being a 'lifeline', especially in the absence of alternative transportation) may also make them reluctant to quit. On the other hand, other psychological factors (reduced confidence) may lead to quitting prematurely. In the present study, the factors that contribute to becoming psychologically ready to engage into different levels of self-protective behaviours were investigated, by keeping a Driving Diary.

Method: 221 drivers over 60 years of age completed the Driving Experiences Questionnaire, 61 of whom kept the driving diary. Shifts in self-reported driving behaviours were assessed by a post-diary questionnaire.

Results: After keeping the Diary, drivers reported less avoidance of driving at rush hours, at night, at complicated junctions, or when feeling sleepy or tired, and when parking on busy roads/in narrow spaces. However, more stress was reported when: manoeuvring, finding unfamiliar traffic signs, driving in a hurry, while having conversations/eating, or when drivers in front of them brake suddenly. Furthermore, drivers saw themselves as more skilful than their peers, and, generally, described themselves as more aware of the changes in their driving skills.

Conclusions: The role of self-monitoring one's driving behaviours as a way of increasing self-awareness is discussed.

Psychological influences on the referral of cancer patients to oncologists and on their uptake of post-surgical treatment

S. LINDSAY & K. SIMMONS, Institute of Psychiatry, London.

Background: Certain psychosocial characteristics of patients are said, often with little explanation, to help them survive cancer. However, many fail to complete therapy aimed at survival. Therefore, this study sought to determine if those characteristics could influence referral for, and completion of treatment.

Methods: 330 consecutive patients with breast cancer or colorectal, urological or cancers of the upper gastrointestinal tract (pancreas, oesophagus, stomach), were divided at random into two groups to complete published questionnaires about their psychological and social characteristics or their attitudes to their clinical consultations and to cancer. Demographic and clinical data were available for all. Shortly after surgery and before the patients' histological data were known, they completed the questionnaires. Then, independent of the questionnaires but according to histology, the patients were identified by their surgeon (of whom there were eight) for referral to oncologists.

Findings: According to multivariable logistic regression analyses, patients were most likely (between 0.010 and 0.000) to be recommended for referral if they did not have gastrointestinal cancer, were young, well-educated, depressed, dissatisfied, had advanced cancer and believed that their health was others' responsibility. They were most likely to persevere with post-surgical chemotherapy or radiotherapy if they had breast cancer or had been referred to the local hospital.

Conclusions: Consistent with research on clinical consultation, a higher education and belief that others have responsibility for one's health may

prompt patients to seek or be referred for treatment. Breast cancer patients could be more encouraged than others to complete because of media publicity or less demanding treatment. Better communication may help to reduce such inequalities. Depression is a cause for concern in cancer patients and that, with their dissatisfaction, may have commended patients for further treatment.

False teeth and false hopes: An intervention to improve tolerance of dental prostheses and reduce associated psychological distress

L. McGUIRE & K. MILLAR, Dept. of Psychological Medicine, University of Glasgow.

Patients who undergo full dental clearances are commonly provided with dentures – more commonly known as false teeth. Although the prostheses may be technically perfect, many patients report dissatisfaction with their dentures and suffer significant symptoms including anxiety and social avoidance. The paper reports an information-based intervention to improve acceptance and reduce distress, and to establish factors that are predictive of denture dissatisfaction. Forty-four patients having dental clearances were assessed before the procedure, and then at two and six weeks after fitting of dentures, on measures of personality (EPQ-R), social anxiety and affective state (Hospital Anxiety and Depression Scale; Symptom Checklist-90; Satisfaction with Life Scale), locus of control and satisfaction with denture function. After the clearance, they were randomly allocated either to an information group which was shown a video explaining the process of adaptation to dentures and their inherent limitations (the 'video group'), or to a control group which received the dental service's 'treatment as usual' (minimal information conveyed verbally).

The two groups were equivalent on psychological measures prior to dental clearance. After fitting of dentures, the video group showed significantly greater levels of denture satisfaction and significantly lower levels of anxiety and depression, general distress and social anxiety at both follow-up assessments. The video group's dissatisfaction with dentures was partly predicted, at both follow-ups, by their pre-denture Satisfaction with Life scores. The no-video group's denture dissatisfaction, reported at the two-week follow-up, could be partly predicted by their pre-denture expectations towards dentures and the type of denture they had fitted and at six-weeks by their pre-denture social anxiety ratings. It was concluded that the video intervention reduced patients' expectations towards dentures resulting in more denture satisfaction and less psychological distress following the fitting of dentures. Pre-denture personality and Locus of Control were not found to significantly predict denture dissatisfaction. Results are discussed in reference to future research and in the context of past results and clinical implications.

Individual variation in long-term distress after surgery for breast cancer

K. MILLAR, A. PURUSHOTHAM, D. GEORGE, G. MURRAY & E. McLATCHIE, University of Glasgow.

The study was funded by Chief Scientist Office grant OPR/2/2/D309.

Studies of psychological morbidity after surgery for breast cancer show that both the average distress and proportion of 'cases' reduce over time, leading to the conclusion that most women achieve emotional adjustment. The conclusion is not valid, however, because summary statistics (e.g. means and percentage 'caseness') neglect and mask the factor of individual variation in distress. The paper presents an analysis of individual variation in distress after breast cancer and the factors that predict it.

Three-hundred-and-twenty-five women having surgery for primary breast cancer were followed up over 12 months and assessed on routine clinical measures, personality, GHQ-28, Mental Adjustment to Cancer scale and Illness Perception Questionnaire (IPQ).

Conventional analysis showed a significant ($p < 0.001$) reduction over 12-months in mean GHQ distress and in percentage 'caseness'. However, closer analysis showed that the individual experience of distress differed according to whether a patient had been designated as a case or non-case at the first post-operative assessment. Sixty-eight per cent of those who were cases in the immediate post-operative period were subsequently recorded as cases at least once during 12-month follow up, compared to only 27 per cent of those who were not cases at the post-operative assessment ($p < 0.001$). More notably, of those who were cases at the post-operative assessment, 25 per cent continued as cases throughout the 12-month follow-up in contrast to only one per cent of those who were initially non-cases ($p < 0.001$). Thus, a simple mean-based or caseness-based analysis fails to highlight the plight of a considerable proportion of patients who remained distressed throughout. Women who suffer high levels of distress at the time of cancer diagnosis and surgery are much more likely to suffer continuing distress than those who respond initially with lower levels of distress. GHQ distress was consistently predicted by IPQ Identity (i.e. symptom number), neuroticism, general health status and pain (accounting for between forty and 52 per cent of variance at each follow-up). Increasing age was associated with lower distress. Distress did not vary as a function of mastectomy versus local excision, nor adjuvant radiotherapy or chemotherapy. Misleading conclusions may be drawn from analyses that fail to account for individual variation in distress after mastectomy. The fact that many women maintain high levels of distress, and are often characterised by high levels of neuroticism and symptom awareness, may have implications for the timing and nature of psychological interventions that might be offered to help them.

The benefits of the model are significant: Mentees (improved personal and professional development); Mentors (increased understanding of EO and diversity issues and management and developmental opportunities); Mentor Unit (opportunity to contribute to the local community especially with social inclusion issues; establishing links with particular minority communities; and improved profile in the local area).

Predictors of quality of life for individuals with chronic pain

J.M. O'NEIL, Dept. of Child & Family Psychiatry, Bridgeton, Glasgow.

Chronic pain in the UK is a sizeable problem for the health service. Chronic pain is known to impact negatively on quality of life and has high personal and interpersonal costs in terms of pain related disability.

Psychological management of chronic pain involves increasing individuals' levels of functional activity, thereby reducing pain related disability. The first aim of this study, therefore, was to establish if overall quality of life for people with chronic pain was predicted by level of functional activity. The second aim of the study was to identify specific predictors of functional activity. Possible predictors were hypothesised to include mood, employment status, and quality of social support, but not severity or intensity of reported pain.

Fifty consecutive adult subjects with chronic pain attending their first appointment at a pain clinic were assessed by self report questionnaire on measures of quality of life, functional status, mood, social support and pain. A control group of forty-five subjects with chronic diabetes attending a follow-up appointment at a diabetes clinic were also assessed by self report questionnaire on all measures except pain.

Results showed firstly that quality of life was significantly lower for individuals with chronic pain when compared with individuals with chronic diabetes. Forty-one per cent of the variance in overall quality of life for both groups was explained by perception of physical health. Therefore, the difference between the groups could not be explained by the chronic nature of

both conditions.

Individuals with chronic pain reported significantly lower levels of physical functioning, and greater levels of anxiety and depression, than individuals with chronic diabetes. There was no difference between the groups in terms of quality of social support.

A step-wise multiple regression analysis of possible predictors of functional status for individuals with chronic pain, showed that depression was the largest predictor of physical functioning (19 per cent of the variance), followed by employment status (7 per cent of the variance). Quality of social support and severity and intensity of pain, were not predictors of functional status.

Results are discussed in terms of current treatment regimes for chronic pain, as well as the challenges to finding suitable employment and the barriers lined to social security benefit status.

Quality of life in children and adolescents: Introduction to the European KIDSCREEN project and results of the UK pilot study

K. PHILLIPS, M. POWER, C. ATHERTON and the KIDSCREEN Group, University of Edinburgh.

Quality of life measures have rarely been used in surveys of child and adolescent health. Surveys that have looked at quality of life have typically used proxy measures and thus the perceptions of the children and adolescents themselves have not been taken into account. For the health of children and adolescents in Europe to be adequately measured there is a need for a child-centred, cross-cultural measure of child and adolescent quality of life to be developed. Funded by the European Commission, the KIDSCREEN project is a cross-national effort centring round the development of a cross-culturally standardised instrument for the assessment of child and adolescent health-related quality of life. This paper will focus on the construction of the pilot KIDSCREEN measure in seven European countries through focus group work, item reduction techniques, standardised translation procedures and cognitive interviewing. In the UK a total of 427 children and adolescents took part in the pilot of this measure. The results of this pilot test will be discussed and the final KIDSCREEN measure will be presented.

An examination of the academic self-concept of secondary school students with specific and general reading difficulties

P. RALSTON & J. BOYLE, University of Strathclyde.

This study investigated the relationship between the academic self-concept of secondary school students and reading difficulties. The participants were 85 secondary school students from three schools, aged between 13 and 16 years (mean 14 years 10 months). Participants were assigned to one of three groups: Group 1 ($N=13$), with specific reading difficulties (SpRD), where reading attainment measured using the British Ability Scale - II Word Reading Scale (Elliot *et al.*, 1997) was discrepant with verbal ability measured using the British Picture Vocabulary Scale - II (Dunn *et al.*, 1997); Group 2 ($N=34$), with general reading difficulties (GRD), where reading attainment was consistent with verbal ability; and Group 3 ($N=39$), a control group with average reading attainments. The 'Myself-As-A-Learner-Scale' (M.A.L.S. Burden, 1998) was utilised as a measure of academic self-concept. The results revealed between-group differences on the M.A.L.S. ($p < 0.05$). Bonferroni t-test planned comparisons indicated that while both Groups 1 and 2 had significantly lower self-concept scores on the M.A.L.S. than students in Group 3 ($p < 0.05$), there was no significant difference between Groups 1 and 2. Further post hoc analyses confirmed the same pattern of results in four of the five key areas identified by Burden (1998) as contributing to an individual's academic self-concept. For the remaining element, 'careful learning style' the only significant difference was between Groups 2 and 3 ($p < 0.05$). The

implications for discrepancy-based definitions of dyslexia and for teachers and other professionals working with pupils with reading difficulties in secondary schools are discussed.

Development and piloting of a CD-ROM package in adolescent medicine: The recognition and treatment of depression (funded by the Innovation Fund for Children's Services Scotland)

C. RICHARDS, N. CANNON & E. SCOTT, Royal Edinburgh Hospital.

This project has been funded to develop, pilot and evaluate a CD-ROM package and website about depression in adolescence. Depression in adolescence often lasts up to a year, disrupting development and sometimes auring a lifelong vulnerability to depression. Early recognition and treatment are recognised as important factors in diminishing complications and improving outcome.

The aim of the resource is to assist young people to develop an understanding of depression and enable them to make effective use of self-help and mental health services by introducing information in an accessible medium.

A generic multimedia package has been developed in collaboration with Picardy Media Group and the clinical research team. This design is fully compatible with being converted to a web-based format and may potentially be used for the development of further health education packages. A pilot study has been undertaken with groups of S3-S4 pupils across 5 schools in the city of Edinburgh utilising both qualitative and quantitative feedback ($N=89$). Additional evaluation of the package was obtained from those services users at the Young People's Unit ($N=10$) and from professionals working with adolescents ($N=10$). The results of this pilot have further informed the design, content and use of the CD-ROM and associated website.

The influence of childhood mental ability and social factors on smoking behaviour and lung function in adulthood: Linking the Scottish Mental Survey 1932 and the Midspan studies

M.D. TAYLOR, I.J. DEARY, C.L. HART, G. DAVEY SMITH, J.M. STARR, D.J. HOLE, L.J. WHALLEY & V. WILSON, University of Edinburgh.

Objective: To investigate the influence of childhood IQ and social factors on smoking behaviour and FEV1 at mid-life in a cohort of people born in 1921.

Methods: Participants were from two of the Midspan prospective studies conducted on adults in the 1970s – the Collaborative study, located in 27 workplaces in the West of Scotland, and the Renfrew/Paisley general population study. The sample consisted of 938 Midspan participants who were successfully matched with their results on the Scottish Mental Survey 1932 in which almost all 1921-born people attending Scottish schools on 1 June 1932 ($N=87,498$) took a cognitive ability test.

Results: Childhood IQ was not associated with starting smoking but was associated with giving up smoking in adulthood. After adjusting for sex, social class and deprivation there remained a 19 per cent advantage in stopping smoking associated with a one standard deviation higher IQ. Structural equation models were formulated to test the hypothesis that the influence of childhood IQ on smoking and FEV1 may be mediated by social and lifestyle factors. In men, childhood IQ had an indirect effect on the number of cigarettes smoked per day via occupational social class, and childhood IQ was directly associated with FEV1 in adulthood. In women, the influence of childhood IQ on cigarette consumption and FEV1 was mediated via the age at starting smoking.

Conclusion: Higher mental ability in childhood is associated with stopping smoking in adulthood. Childhood mental ability is associated with social and lifestyle factors that influence smoking and

health outcomes in adulthood.

Realising the potential of autistic children through learning-based assessments

L. VIGENTINI & M. CHALMERS, University of Edinburgh.

Research carried out recently at the laboratory for Cognitive neuroscience has applied new sequential learning techniques and in-depth assays of performance developed independently in the lab (McGonigle & Chalmers, 1996) to the study of cognitive functioning in autism. Based on non-verbal computer games (the CAST programs designed by Vigentini, 2001), which assess competences in sequential memory and executive control, the techniques yield a detailed insight into the strengths and weaknesses of both high and low functioning autistic children (Chalmers & Vigentini, 2002). In addition, however, surprising insights have been gained for both sub-types regarding improvements in performance under carefully selected training conditions.

In the case of high functioning children, these consist of conditions that reduce reliance on stereotyped solutions, and that were found to increase spontaneous organisation in memory. In the case of low functioning children, the CAST games have successfully reduced the pervasive effects of preservative (repetitive) touching revealing a more accurate picture of the learning abilities of severely impaired children than could be gained from more blunt methods. With this group, also, transfer to new tasks revealed hidden potential. For at least some of the 'low functioning' individuals, much more successful learning, coupled in some cases with 'normal' strategies for solution, was found when the executive memory demands of the task were reduced. Taken together, the results suggest that there may be more flexibility within autistic cognition than is assumed from classic assessments.

POSTERS

Postnatal depression and puerperal psychosis: A SIGN national clinical guideline for Scotland

B. ALDER, R. CANTWELL & J. TOPALIAN, Napier University, Edinburgh.

Postnatal depression has been acknowledged as an important source of concern and an important health problem for women and their families. In June 2002 the Scottish Intercollegiate Guidelines Network (SIGN) guidelines were published for the detection, diagnosis and management of postnatal depression and puerperal psychosis, and for the prescription of psychotropic medication during pregnancy and breastfeeding (sign.ac.uk).

Methods: Using methodology established by SIGN, comprehensive literature searches on pre-determined questions were followed by expert independent reviews of evidence. This led to the development of evidence-based recommendations graded according to strength of evidence.

Results: We found enough evidence to recommend the routine antenatal screening of all women for risk factors for puerperal psychosis, and postnatal screening for depression using the Edinburgh Postnatal Depression Scale. There was evidence in favour of the use of antidepressants and psychosocial interventions for treatment of postnatal depression, and that it recommended that suitable facilities should be available to admit all women with their babies where necessary. Lastly, the guideline makes specific recommendations regarding the use of psychotropics in pregnancy and breastfeeding, seeking to achieve a balance between the need for effective treatment of significant maternal illness and the importance of minimising risk to the foetus or infant.

The level of care for women at risk of, or suffering from, perinatal mental illness is very varied. These guidelines provide specific recommendations that ensure minimum standards of care at a national level but which

can be adapted to local needs.

An RCT and economic evaluation of direct versus indirect and individual versus group modes of speech and language therapy for children with primary language impairment

J. BOYLE, E. McCARTNEY, A. O'HARE, J. FORBES & P. BEIRNE, Strathclyde University.

Many children attending mainstream schools have some form of speech and language difficulty which can influence educational and social attainment. This three-year prospective study funded by the HTA aims to identify the most effective way to intervene with children (age 6–11 years) who have primary language difficulties attending mainstream schools in Glasgow and Edinburgh.

An RCT with a 2 x 2 factorial design is being used to examine how intensive therapy (3 x 40 min. sessions per week for 15 weeks) delivered directly by a Speech and Language Therapist compares with that delivered directly by a Speech and Language Therapy Assistant. Intervention delivered individually is also compared with therapy delivered in a small group situation.

A comparison group of children will continue to receive their current level of speech and language therapy, which will be delivered by local therapy services. Participants are required to meet the following eligibility criteria: <-1.25 SD on a standardised measure of receptive and/or expressive language; non-verbal IQ >75; non-significant problems with articulation, phonology or fluency. The children's progress will be assessed at the conclusion of the therapy programme and also after one year. The outcomes may have implications for the delivery of services to support pupils with language

Inclusion of all pupils into mainstream education

C. CRUICKSHANK, L.A. CURRIE & K. RITCHIE, Psychological Service, St. Aloysius Primary, Chapelhall.

Inclusion has been described as the 'process involved in making mainstream schools accessible to all young people in terms of curriculum and teaching, organisation, management, the physical environment, ethos and culture' (Swain & Cook, 2001). Arguments for inclusive schooling stem from two sources: legislation and pragmatic sources.

The presumption of mainstreaming from a legislative point of view relates to human rights issues illustrated, for example, by the UN Convention on the Rights of the Child (1989) and The Children's (Scotland) Act 1995. Pragmatic sources of evidence show that inclusive practice within education demonstrates positive gains for all children and young people (e.g. Salend & Duhaney, 1999; Gains, 1994; Wilson, 1993). North Lanarkshire Council is committed to inclusive schooling, both in terms of the placement of all children into mainstream schools and the way in which services work together in addressing children's rights. Educational policy such as the Authority's *Achievement For All* (1998) and *Looking Forward* (2000) have laid the foundations for inclusive practices.

The main aim of this study for North Lanarkshire Council was to explore the views of pupils, teachers and school support staff on the topic of inclusion. The study examined: staff knowledge and attitudes towards inclusion, the differentiation of materials and the support for learning and referral processes, as well as pupil attitudes towards school. This study will be used as a baseline assessment of knowledge and attitudes which will be followed up in 2003.

Five North Lanarkshire schools participated in the study, collectively returning over 800 completed questionnaires. (Information was analysed using SPSS).

It was encouraging to find that the majority of pupils were happy at school and that attitudes towards both mainstream pupils and pupils with a Record of Need/Individualised Education Program were positive. Both the whole school approach and the individual approach of staff were positively

geared towards successful inclusion. It is hoped that the 2003 follow-up study will show an even greater positive response towards inclusion.

Constructions of 'experts' and 'expert knowledge' on childcare: The case of September 11

R. DOLEV, Dept. of Psychology, University of Dundee.

This paper provides a detailed examination of parenting advice published on the internet in response to the events of September 11 in the US. The authors are medical and psychological professionals in child development, and their advice was published in mainstream websites. Drawing on the analytic concept of 'interpretive repertoires', the analysis explores the authors' constructions of the role of 'experts' and 'expert knowledge' in achieving 'good' parenting in difficult times. The analysis reveals two contradicting repertoires employed by the authors: the 'experts as advisors' repertoire becomes apparent when examining the experts' explicit statement to their parent readers. They stress that their role as experts is merely to offer suggestions, ideas, and tips that parents might find helpful, and come across as friendly, non-authoritative, and humble. However, when examining the details of their advice, the 'experts as authority repertoire' becomes apparent, characterised by an authoritative and patronising tone and choice of wording. This predominant repertoire conveys to parents that 'experts know best', and that parents must follow their advice or else their children will suffer the consequences. It is argued that the use of the latter repertoire reinforces and reinstates the power that experts have over parents and thus carries the danger of undermining parents' confidence and ability to cope effectively with this difficult situation.

Coping in the workplace: Developing (or preserving) potential in adults with a progressive disorder

J. EDSOND, P. BANKS, R. PETTY & S. RIDDELL, University of Glasgow.

Although muscular dystrophies are relatively rare estimates suggest that up to 900 adults in Scotland may be affected. Until recently the impact of such disorders was assessed in terms of prevalence or physical consequences. However, attention has turned to the broader issues of disability and the economic and psychological consequences.

Aim: To examine the current situation for people with muscular dystrophy (PwMD) in Scotland in terms of: (a) access to, and satisfaction with information and services received; (b) their ability to participate in the labour market, or other 'gainful' activities; and (c) financial satisfaction.

Method: 85 PwMD completed a questionnaire which included the SF36 health survey; 30 took part in one-to-one interviews.

Results: Scores derived from the SF36 were analysed using cluster analysis. A three-cluster solution classified respondents into groups which were labelled: (1) Physically satisfactory/socially and emotionally satisfactory ($N=32$); (2) Physically poor/socially and emotionally satisfactory ($N=21$); and (3) Physically poor/socially and emotionally poor ($N=32$). Analysis revealed no difference between the three groups associated with age, gender, time since diagnosis, access to and satisfaction with information or health professionals. Although approximately 70 per cent of respondents in all three groups reported that their MD had caused difficulty at work, half the respondents in Groups 1 and 2 were in employment or education compared to a quarter of Group 3. Two-thirds of Group 1, and more than half of Group 2, were satisfied with their current financial situation, compared to a quarter of Group 3.

Discussion: Major policy documents and initiatives link participation in employment with social inclusion and better health and quality of life. However, while some studies have shown that people benefit from employment, others show that work-place stress has a detrimental effect. This paper draws on material from the

interviews in order to illustrate the complex relationship between employment and mental well-being.

Hopelessness and self-regulation in parasuicide

L. GRAY & R.C. O'CONNOR, Suicidal Behaviour Research Group, University of Strathclyde.

Background: The purpose of this study was to examine the utility of a social cognitive model, Self-Regulation Model (SRM; Leventhal, Nerenz & Steele, 1984), for investigating suicidal behaviour. SRM is a model of health behaviour which conceptualises the individual as an active problem-solver whose behaviour is largely dependent on their cognitive and emotional representations, their coping strategies and their mechanisms for appraising these coping strategies. In essence, how one represents a threat (i.e. cognitive representations) predicts coping which, in turn, predicts behaviour (i.e. suicidal behaviour). To our knowledge, this is the first study to test self-regulatory theory as an explanatory framework for suicidal behaviour.

Methods: 50 parasuicide patients recruited from the acute receiving wards of a West of Scotland hospital were assessed on the day following a parasuicide episode. They completed measures of hopelessness, depression, representations of 'ill-health', coping strategies, psychosocial adjustment and past suicidal history.

Results: A series of hierarchical multiple regressions were conducted with hopelessness as the initial outcome variable, this yielded a dual-pathway model of hopelessness. The first pathway suggested an indirect effect of perceptions of control and identity and the presence of past suicidal behaviour on less adaptive coping and subsequent hopelessness. The second pathway was direct, more chronic levels of time/duration of perceived suicidality/ill-health was associated with higher levels of hopelessness.

Conclusions: The results provide support for the conceptualisation of suicidal behaviour within a self-regulatory framework – as a failure of self-regulation. Moreover, it is noteworthy that psychological constructs (control, identity, timeline and coping) have their effect even when past suicidal behaviour is taken into consideration. These findings have implications for mental health professionals and ought to be tested within a prospective design.

The effect of lengthening post-question pauses on students' response

J. McKECHNIE, Glasgow Caledonian University.

Objective: To ascertain whether increasing waiting time following a question will increase students' response.

Design: A between subjects experimental design was utilised with the independent variable being length of post-question pause, and dependent variable the amount of student response.

Methods: A lecturer and two groups of students ($N=28$ and 27) participated. Two teaching sessions were tape recorded and transcribed. The first session was conducted as normal. In the second, the lecturer was asked to increase the waiting time after asking a question by counting slowly to six.

Results: Overall, there was a slight non-significant increase in the duration of student response when all pauses were considered. However, there was a significant positive correlation between pause time and students' response ($p = 0.03$) for pauses over three seconds duration. The number of responses increased from 66 in session 1 to 111 in session 2 which averages out at a response every 27.7 seconds and 17.7 seconds respectively.

Conclusions: Allowing students more time to think about the question seems to increase the amount of response on some occasions. When students were able to answer quickly after being asked a question there was no difference in amount of response. However, when students needed to consider the question (this was

ascertained by the fact that they had not responded within three seconds) allowing them a longer time to think without using a prompt lead to a longer response.

Making new forays into the health domain: Teaching toddlers to brush their teeth

M. McLAREN, S. AINSLEY, F. SMITH, S. ZEEDYK & C. LONGBOTTOM, University of Dundee.

The application of psychology to health concerns has expanded rapidly in the past decade. There is still a considerable void, however, when it comes to health matters concerning children. The present study attempted to begin to address that gap by analysing the toothbrushing interactions between toddlers and their parents. This is an important area of study, because dental associations have developed guidelines for parents in regard to recommended toothbrushing practices, but there are virtually no data available to help in evaluating the extent to which parents follow those guidelines. The standard methodological practice, within developmental psychology, of videoing interactions and coding behaviours of interest, has the potential to provide very useful insights in this regard. The study reported here was designed to investigate the effectiveness of this approach and to derive preliminary findings that could inform the direction for future research on this issue.

A total of 280 families were invited to participate, via postal letters, with 18 families responding to the invitation and eventually providing data. Children were 27 months of age at the time of participation, and the sample contained nine boys and nine girls. Families participated by filming all toothbrushing sessions that took place in their home during a set 24-hour period. The videos were then coded for five key behaviours, all of which were chosen because they revealed the patterns and effectiveness of home-based toothbrushing sessions. Parents were asked to provide feedback about the filmed sessions, by rating the sessions for typicality, perceived effectiveness, and difficulty in managing behaviour. The findings showed that for the majority of the children, tooth brushing was carried out twice a day and that each session, on average, lasted for 142 seconds. This contrasts with the recommended practice of three to four minutes of active brushing per session, three times per day. The concerns generated by this outcome are exacerbated by the finding that the brush was usually in a child's mouth for only 56 seconds of a session, with parents tending to carry out the brushing for merely 20 seconds of that time. These results suggest that although parents believe their brushing techniques are achieving clean teeth (as supported by the feedback ratings they supplied), their actual practice falls far short of the standards set by dental associations. These findings thus offer a unique insight into the health behaviours of parents and children, and they provide a promising basis for further work in this area.

Is suicidal behaviour a 'cry of pain'? Test of a model

R.C. O'CONNOR, Suicidal Behaviour Research Group, University of Strathclyde.

Background: A new model of suicidal behaviour has recently been proposed (Williams & Pollock, 2000; 2001). The proponents of this model view suicidal behaviour as a 'cry of pain'. Specifically, they argue that suicidal behaviour is reactive, a response to a negative situation that has three components: defeat, no escape and no rescue. When these three components are present they activate a biological process known as the 'helplessness script' which triggers the feelings of giving up thereby rendering the individual vulnerable to suicide. This study, for the first time, aimed to test this model directly by comparing a group of hospital parasuicides with matched hospital controls. **Methods:** Two groups of participants were tested: Group 1 – parasuicide patients ($N=30$) recruited from the acute receiving wards of a West of Scotland hospital were assessed on the day following the parasuicide

episode. The second group were matched hospital controls ($N=30$) and recruited from the same acute receiving wards as the parasuicides. All participants completed measures of anxiety, depression, hopelessness and a modified version of the Impact of Events Scale. On completion of the impact of events scale each participant was asked to rate up to three stressful events, on Likert-type scales: (i) in terms of how stressful the event was; (ii) the degree to which it led to feelings of defeat/rejection/loss, etc.; (iii) how escapable they perceived the stressor to be; and, (iv) the perceived rescue factors. Qualitative responses were also recorded.

Results: Both quantitative and qualitative analyses supported Williams and Pollock's model of suicidal behaviour. In short, by comparison with matched hospital controls, the parasuicides scored significantly higher on defeat/rejection, lower on escape and lower on rescue. In addition, they scored significantly more highly on measures of depression, hopelessness and life events. **Conclusions:** These findings have considerable theoretical and practical significance. First, they provide a framework which should be tested within a longitudinal experimental design. Second, they afford a foundation for the development of potential interventions which could help address the problem of suicidal behaviour.

Anger management drop-in sessions: Follow-up for people with mild intellectual disability who have had anger management training

C.J. PARRY & R. ALLAN, Clinical Psychology Dept., Tayside Primary Care NHS Trust.

Background: The high requirement for Anger Management for people with intellectual disabilities lends support to observations that their typical lifestyle includes deficits in socialisation, social skills, anger management and impulse control. Many patients who complete anger management programmes are often re-referred at a later stage. This study addresses the problem of maintenance by reporting on the value of a monthly drop-in service providing anger management support for patients who have previously received input but who do not necessarily require structured weekly input.

Method: Anger Management Training – Weekly anger management training following a format consistent with Novaco's (1975) Stress Inoculation Model. The three stage treatment process aims to build coping skills by providing education about anger, fostering development of cognitive coping skills and rehearsing these skills once acquired. Following treatment, patients were invited to attend drop-in sessions. **Drop-In Sessions –** Monthly sessions aimed at practising skills learned and providing encouragement to maintain motivation for controlling anger. Patients attend on a voluntary basis and the open format allows flexibility for discussion of issues pertinent to their recent experiences.

Results: Attendance at drop-in sessions was good indicating the motivation to maintain control of anger and the need for support in achieving this. The content of the drop-in sessions focused mainly on practise of cognitive distraction and relaxation skills indicating an essential role for care staff in encouraging and supporting patients to practise skills learned in treatment. Data will be reported on critical incidents, problematic areas and patient evaluation of sessions.

Autobiographical memory and hopelessness: The role of perfectionism

S. RASMUSSEN & R.C. O'CONNOR, University of Strathclyde, Glasgow.

Background: Recent research suggests that certain perfectionistic traits are implicated in increased hopelessness and subsequent suicidal behaviour. However, the mechanism by which they have their effect remains unclear. It is recognised that suicidal individuals experience difficulties in retrieving specific memories, and it has been established that perfectionism

dimensions, especially socially prescribed perfectionism (i.e. driven by the fear of failure) are important predictors of suicide ideation. However, little research has investigated the interaction between these two factors. This study, for the first time, aimed to investigate the effect of levels of perfectionism on the ability to recall autobiographical memories at two points in time (separated by four weeks).

Methods: 60 participants completed the Autobiographical Memory Test (AMT; Williams & Broadbent, 1986), self-report measures of perfectionism (Time 1 only), hopelessness, general health, optimism (Time 1 only), stress, and depression twice (at baseline and four weeks later).

Results: The results indicated: (i) a negative correlation between mean recall latencies for positive words and socially prescribed perfectionism; and (ii) a positive correlation between mean recall latencies for negative words and socially prescribed perfectionism. Furthermore, hopelessness was positively correlated with recall of positive words and depression, whereas depression was also found to be positively correlated with recall of negative words and socially prescribed perfectionism. Finally, higher levels of social perfectionism predicted higher levels of hopelessness and longer autobiographical latencies at Time 2. **Conclusions:** This study yields evidence to support the interaction of perfectionism and the recall of both positive and negative autobiographical memories in the prediction of hopelessness. Implications for suicide prevention are discussed.

Personal development planning for psychology undergraduates: Is it really necessary?

A ROSS, Glasgow Caledonian University.

In this paper I argue that the task of undertaking a degree in psychology requires a journey of self-discovery as well as a formal education and that psychology lecturers in Higher Education should deliberately try to facilitate this process. Furthermore I suggest that the introduction of personal development planning, and of progress files provides an excellent opportunity to begin to do so.

Practising as a professional psychologist requires personal awareness and requires that we know the psychological literature and where we stand relative to it. Although only a minority of students become professional psychologists many of them aim to and do enter people-related helping professions such as social-work, teaching, human resource management and psychiatric nursing. In these careers they will be facilitating other people's self-discovery. In order to do so they must know and understand themselves well and have the ability to continue to develop their personal and professional lives.

In addition, I suggest that thinking about psychology is necessarily intimately bound up with our feelings and personal experiences. The task of mastering psychology to honours degree level requires:

1. Deep, strategic learning and reflection.
2. The skilful co-ordination of theory and evidence.
3. Both of these in the context of all aspects of human experience and behaviour. Each of these requires self-awareness. I draw on my own and my students' experience of personal development planning exercises undertaken in the context of a first level undergraduate module in Learning and Cognition to support my argument.

Development of a coping scale for use with chronic illnesses, especially multiple sclerosis – A pilot study

I. SINNAK-ARUPPAN (Rani Sinnak), Douglas Grant Rehabilitation Centre, Ayrshire Central Hospital.

Multiple Sclerosis (MS) is a chronic disease and a significant source of stress. The onset is in young adulthood. Treatment is limited and ineffective. The disease is characterised by unpredictable

periods of remission and exacerbation of symptoms resulting in poor coping and impaired quality of life. Coping is an important component in the management of this disease. Perception plays a major role in coping. A literature search showed no evidence of measures on perception of coping with chronic illnesses. The aim of this research was to devise an appropriate measure of perception of coping in MS patients.

The study is divided into two parts; part one is the devising of the scale, and part two is to establish reliability and validity of the scale. The latter was attempted by using the Hospital Anxiety and Depression Scale, the General Health Questionnaire (28) and the COPE Scale. The results showed that the developed scale is reliable, but failed to validate with the above scales. In failing to validate with the above scales, it can be stated that the newly-developed scale is not intending to measure the extent of anxiety, depression, psychiatric caseness, or coping abilities. Further research is required to establish validity using other scales and a larger sample size. This work is currently being undertaken.

Patients with neurological disorders enter rehabilitation with varying degrees of disability and handicap. The questions were raised as to why some individuals with extensive degrees of disability and handicap cope better than perhaps others with lesser problems. Patients who enter therapy enter with differing levels of control and perceptions, hence a scale such as this may enable therapists to identify this concept, and tailor the course and style of therapy. The scale might also provide a useful index of progress in therapy since perception of coping should change during therapy.

Head injury and family carers: An innovative community-based training programme for family carers and patients – A pilot study

I. SINNAK-ARUPPAN (Rani Sinnak), Douglas Grant Rehabilitation Centre, Ayrshire Central Hospital.

Head injury presents an increasing problem, affecting a significant proportion of younger age groups resulting in family members undertaking the lifelong care. This pilot study will evaluate the impact of an educational training programme for family carers and their head-injured relatives. The objective is to reduce carer's psychological distress and improve their ability to cope with and adjust to their head-injured relative. The study will comprise two groups of 20 subjects: the experimental and the control group. The carers and their head-injured relatives will be assessed using a variety of measures to determine the value of training. The head-injured will also be screened for cognitive problems. The experimental group will be assessed before and after training, and then after a further three months. The control group will be assessed at the same time intervals as the experimental group. Success will be evaluated in terms of improved self-esteem, reduction in anxiety and depression, and improved coping skills. The results will determine whether a full-scale study is justified and, if so, what factors should be considered in its formulation.

This research proposal was submitted to the CSO for funding on 20 August 2001. This has now been granted. The majority of this finance was used to employ a Research Assistant in February 2002. Participants have now been recruited from the out-patient register at the Douglas Grant Rehabilitation Centre and the project is currently nearing its mid-point.

Changing perceived coping in chronic pain patients using a newly-developed scale – A pilot study

I. SINNAK-ARUPPAN (Rani Sinnak), Douglas Grant Rehabilitation Centre, Ayrshire Central Hospital.

This project reports a pilot study involving the implementation of a multi-disciplinary cognitive behaviour therapy (MDCBT) group programme aimed at modifying the functional coping perceptions in chronic pain patients as assessed by a newly-developed Perceived Coping Scale (PCS). The usefulness of the newly developed scale and the efficacy of the multi-disciplinary programme were examined using a waiting time, pre-test and post-test design. Four groups of chronic pain patients, comprising of 28 subjects, completed a 10-week MDCBT. The results indicated that significant positive changes can be achieved in patients coping perception using a multi-disciplinary approach. A scale such as the Perceived Coping Scale is a useful tool in rehabilitation programmes.

Patients with chronic pain enter rehabilitation with varying degrees of disability and handicap. The questions were raised as to why some individuals with chronic pain cope better than perhaps others. Patients who enter therapy enter with differing levels of control and perceptions, hence a measure such as the PCS may enable therapists to identify his/her perception, and tailor the course and style of therapy accordingly. The PCS might also provide a useful index of progress in therapy since perception of coping should change during intervention.

The 2003 Annual Conference

The 2003 Annual Conference in parallel with the Division of Clinical Psychology Conference and the Student Members Group Conference, Bournemouth International Centre, 13–15 March 2003.

The following abstracts were accidentally omitted from the August 2003 issue of *Proceedings*.

Money ethic: The impact of job status and personality

R. COUSINS & R. RALLEY, Centre for Studies in the Social Sciences, Edge Hill, Ormskirk.

Objectives: To investigate the importance of job status and personality in money ethic and attitudes to money. It was hypothesised that people who had not yet entered the workplace and full-time workers would differ in work ethic.

Design: The Money Ethic Scale and measures including work ethic, attitude to earnings, life orientation, and personality ('Big 5') were completed by people not yet in work ($N=664$) and full-time workers ($N=607$). Selection was by opportunity sample.

Results: Workers and non-workers differed significantly in money ethic: workers budget more and are more concerned with pay equity, while money is more of a symbol of success and a motivator for non-workers. Workers esteem hard work more than the non-workers. With the exception of equity, these differences disappear when age is entered as a covariate. Additionally, personality-related variables contributed to money ethic. Specifically, conscientiousness explained a fifth of the variance in factor budget. Factor and reliability analyses confirm that the Money Ethic Scale is reliable and factors (e.g. Budget, Evil, Motivator and Success) measure independent constructs.

Conclusions: Personality makes an important contribution to money ethic and attitude to money resembles a product of more global experience than work status alone. Contrasting with the view that attitudes to money are established early in life, the results suggest that a maturational view of money ethic is required. The Money Ethic

Scale is confirmed as reliable for UK data.

Evaluation of the effectiveness of the Henderson Outreach Service Training Module for professionals working with people with severe personality disorder

U. DRESCHER, Henderson Outreach Service Team (H.O.S.T.), F. WARREN & K. NORTON, Henderson Hospital & D. MENZIES, Henderson Outreach Service Team (H.O.S.T.).

Objectives: It is widely acknowledged that patients with personality disorder (PD) are difficult to manage and that many professionals feel they are lacking in knowledge and skills regarding this client group. This paper describes the evaluation of a training course for multidisciplinary professionals working with people with severe PD. Its objectives were that participants: (1) better understand PD; (2) increase their ability to reflect on their practice; and (3) develop practical action plans to aid their clinical work.

Design: A pre-post intervention design was chosen using mixed methods to assess the effectiveness of the course at three of Kirkpatrick's training impact levels: reaction to the training course, knowledge and skills, and job performance.

Methods: Consenting participants ($N=20$) completed questionnaires assessing knowledge of PD and attitudes on working with PD clients. These and the Maslach Burnout Inventory and the Occupational Stress Indicator were administered before, immediately after and six months after the training. Participants also created action-plans during the course. An evaluation form was administered at the end of the training course to assess response to content, structure and delivery. Semi-structured interviews ($N=34$) were conducted six months after the course to establish long term outcomes of the training.

Conclusions: Conclusions regarding stress, burnout and training need in this group will be drawn, the impact of this course on these, and

implications for the future of such training courses will be discussed.

Measuring mental toughness: The validity and reliability of the Psychological Performance Inventory (PPI)

J. GOLBY, M. SHEARD, & A. VAN WERSCH, University of Teesside.

In spite of the identified need for a robust measure of mental toughness in sport, to date, little research has been published on the norms, validity and reliability of the Psychological Performance Inventory (PPI) (Loehr, 1986).

Objectives: As a preliminary stage of ascertaining the psychometric properties of the PPI, this study was designed to test, first, the concurrent validity of the questionnaire against Maddi and Khoshaba's (2001) Personal Views Survey III-R, which assesses psychological hardness, a construct similar to mental toughness. The second objective was to test the internal consistency of the PPI on mental toughness related to sports performance.

Design: The PPI is a 42-item scale, that yields an overall mental toughness score, as well as scores for the seven six-item sub-scales: self-confidence, negative energy control, attention control, visualisation and imagery control, motivation, positive energy, attitude control. Scores were recorded on a five-point Likert scale anchored by 'almost always' and 'almost never'. The responses to this questionnaire allowed the subscales to be tested.

Methods: A sample of 231 competitors completed the PPI and PVSIII-R.

Results: Concurrent validity was found to be satisfactory: $r = 0.32$; $p < 0.01$. The internal consistencies of six of the subscales were good, ranging from 0.79 to 0.89. Negative energy control showed less satisfactory internal consistency (0.62).

Conclusions: The results of this study support the potential value of the PPI, subject to further confirmatory testing.

History and Philosophy of Psychology Section Annual Conference

*History and Philosophy of Psychology Section
Annual Conference. York St. John College, York,
April 2003.*

If Sigmund Freud Was a Great Man, So What?

J. BURNHAM, University of
Cambridge/Ohio State University, USA.
Psychologists have long found Freud
problematical for psychology. This paper argues
that it may help them to conceptualise Freud as a
classic Great Man who had substantial historical
impact. His basic contribution was intellectual
synthesis, and the power of his intellect,
regardless of whether one agreed or disagreed
with him, was his greatness. The historical
pattern of the way in which psychologists learned
about Freud's teachings was that, as
intellectuals, they of course heard about those
teachings. When necessary, they therefore
subsequently could incorporate Freud into the
world of psychology. In the process, viewing
Freud as a Great Man may free one from
commitment to any particular part of his
teachings.

Joint action and pre-reflective action

T. BUTT, Centre for Constructions and
Identities, University of Huddersfield.
In this paper, I consider one of the issues
remaining at the centre of debates in personality
theory: 'situation versus person variables' in the
determination of behaviour. Drawing on both the
existential phenomenology of Merleau-Ponty and
the pragmatism of Mead, I will argue that this
issue nicely illustrates psychology's misplaced
emphasis on firstly, a problematic separation of
the person and their social world, and secondly,
on a fruitless search for causal explanation.
Embedded as they were in very different
philosophical traditions, both Mead and Merleau-
Ponty emphasised the person's immersion in
social action. This primarily pre-reflective
engagement in a conversation of gestures
outruns our deliberation and conscious reflection.
Nevertheless, our participation in the human
order results in an emergence of reflective
consciousness that acts back on the flow of joint
action in which we are immersed. From this
perspective, it is impossible to trace simple
causal explanations of action. The task of
personality theory is instead to understand
people in terms of both their intentions and the
social context in which they find themselves.

In the name of ground projects

E. CHEUNG, Nottingham University.
In *Moral Luck* and other writings, Bernard
Williams uses several arguments to argue
against the Kantian version of impartial morality.
This paper will discuss one of his arguments, the
'Ground Project Thesis' as illustrated in his
Gauguin story, and my critique of it. Williams
argues that it would be unreasonable to demand
an agent to give up her ground projects for some
moral demand because those projects provide
her a reason to go on living. Although Williams
has exposed some of the flaws of impartial
morality, I argue that those flaws are not fatal.
I also discuss the individualistic motive behind his
arguments and explore whether Williams'
individualistic world is feasible and appealing by
considering the test cases of sex change and
adultery. Williams' world and the Kantian world
are compared to see which one is more stable
and appealing.

Philosophical views on human nature during the latter half of China's ancient period

M. CHEUNG CHUNG, University of
Plymouth.

There are four main periods of Chinese
philosophy: the ancient (until 221 BC), the middle
(221 BC–AD960), the modern (960–1912) and
the contemporary (from 1912). One of the main
themes of philosophical thought within these
periods was pertinent to the notion of human
nature. The aim of this paper is to describe some
of the philosophical thoughts on the notion of
human nature during the second half of the
ancient period. It will begin with the philosophical
thoughts of the first opponent of Confucius, Mo
Tzu. Attention will then be shifted to the three
main phases of Taoism which are represented by
the thinkers Yang Chu, Lao-tzu and Chuang-tzu.
To close the paper, the Yin-Yang school and the
Legalist school will be mentioned.

Does Jung have a bad press? *The Undergraduate Textbook as an introduction to the personality theory of C.G. Jung*

C. CRELLIN, West Sussex Health and
Social Care NHS Trust.

The textbook is the main source of comparative
evaluations of personality theorists. These texts
have an enormously influential role in defining
which theories are important in the field and in
establishing what is accepted as central to an
area of study. Psychology textbooks have been
shown to differ from general science textbooks in
being less concerned with 'fact making' than with
evaluating methods, and research results (Smith,
2001). They aim to instruct the student in the
process of building an evidence base.
Consequently, many personality textbooks pay as
much attention to outlining their criteria for
comparison as to the results of the comparison
itself. Maddi (1996) classifies introductory
textbooks as either 'benevolent eclectic' or
'partisan zealotry'. However, textbook
descriptions of Jung rarely fall within the
'benevolent eclectic' categorisation. This may be
because their authors' preference for scientific
approaches to personality is rather strained when
it comes to Jung's highly idiosyncratic balance of
nomothetic and idiopathic approaches with its
mixed science and humanities methods and
Jung's philosophical thinking-style. I have
examined more than thirty English-language
undergraduate textbooks of personality. Some
have run into many editions and have been in
use for one or two decades. Together, they
represent half a century of undergraduate
courses. Though varying in their coverage of
Jung, they do not appear to be the original
sources of Jung's 'bad press'. Instead, those that
are critical tend to repeat biographical details and
critiques made by hostile biographers and by
other personality theorists, often without quoting
the sources of these remarks. Thus some texts
may perpetuate myths by becoming the channel
through which they are communicated.

Imitation: Some practical and conceptual problems

D. FABER, University of Liverpool.

In the 19th century the term 'imitation' was used
to describe the observation of similar symptoms
in more than one disorder – usually neurological.
At this time the foremost disorder to which the
power of imitation was attributed was hysteria.
This protean pathology spawned various terms
and some colourful language to describe the
imitation of neurological disorders, and these are
analysed. These terms, however, provided only
hypothetical explanations and tended to mask the
conceptual problems for practical diagnosis and
nosology. The theory of degeneracy and

diathesis went some way to explaining imitation
or pseudo-neurological infirmities. Even Charcot
(1825–1893), the famous French neurologist,
concerned with diagnosis did not solve the
problem of imitation. However, his observation of
hysterics' imitation of neurological disorders
allowed him to use the phenomenon of
spontaneous remission to give a medical
explanation of what believers saw as the
'Lourdes effect'.

The 'Shame of Science'?: On the rehabilitation of 'subjectivity' in the human sciences

J. GOOD, University of Durham.

In a 1978 paper, William Stephenson reflects
upon a distinction drawn by the philosopher and
historian, Alexander Koyre, between two worlds –
the world of science, the real world, estranged
and utterly divorced from a second world, the
world of life – a world which science has been
unable to explain or even explain away by calling
it 'subjective'. Science, Koyre noted, had solved
the riddle of the universe but had left behind
another riddle – 'the tragedy of modern mind, the
riddle of mind itself. In his paper, Stephenson
wonders why modern science is not ashamed of
its dogmatism with respect to subjectivity, of an
ideology of objectivity that has run rampant
among scientists. The ultimate shame of science,
Stephenson argues, is the assertion that
objectivity belongs only to the outer world. In this
talk I outline Stephenson's proposed solution to
this riddle of mind and consider whether, during
the past quarter of a century, developments in the
human sciences such as the 'discursive turn' and
the 'second cognitive revolution' have been such
as to remedy this allegedly shameful state of
affairs.

Hermeneutic phenomenology: A possible framework for a 'new' social psychology?

D. LANGDRIDGE, University of
Huddersfield.

In recent years we have seen increasing interest
in phenomenological approaches to social
psychology. However, whilst this move is to be
welcomed these approaches have been criticised
for their overly simplistic understanding of
language (use). In this paper I outline an
alternative for social psychology, which enables
one to draw on principles from both existential
phenomenology and structuralism. The approach
at the centre of this exegesis is not new in itself
but it is new to social psychology. The position
outlined herein will principally draw on the work of
Paul Ricoeur (1913–). I shall concentrate
attention on Ricoeur's later work on discourse
that forms the basis of his hermeneutic
phenomenology. This will include Ricoeur's
notion of an hermeneutic arc and need for both
structural explanation and existential
understanding in a theory of interpretation. I will
outline Ricoeur's arguments for both elements in
an analysis of text, and explore some of the
possibilities of applying these ideas to social
psychology in a way that builds on the strengths
of current discursive and phenomenological
perspectives.

Possible worlds and counterfactual reasoning

S. LOVIE, University of Liverpool.

The purpose of my paper is to link the work of
the philosopher David Kellogg Lewis on 'modal
realism', with recent empirical research on 'but
what if' reasoning in people. In particular, I want
to see the extent to which Lewis's attachment to,
and views of, the notion of an infinite number of
parallel worlds chimes with experimental findings
on counterfactual reasoning. The justification for
this comparison is that Lewis did not take his

thesis to be a mere pragmatic tool designed to solve a range of philosophical problems, but a statement of what he knew to be the case and one, moreover, which he claimed everyone else also knew to be true. Consequently, the recent programme of research into one of the means for exploring possible worlds, that is, counterfactual reasoning, should provide evidence for what people think they know about the existence and nature of such parallel universes.

A critical review of the use of empirical social psychology in debates in moral philosophy

P. LUNT, University College London.

There has been a recent, sudden and welcome interest amongst moral philosophers in experimental social psychology (Doris, 1998; Harman, 1999; Sreenivasan, 2002; Goldie, 2000). These developments are welcome partly because connections between academic philosophy and psychology have been dominated by exchanges between philosophy of Mind and cognitive or cognitive neuro-psychologists. But also welcome from a social psychological perspective because the debates within the philosophy of mind are rather remote from our interests and concerns and maybe moral philosophy has more purchase on our interests. This paper offers a critical review of this emerging literature, outlining the background in debates over character and virtue ethics in recent moral philosophy and offering a commentary on the way that research findings in social psychology are interpreted and used in philosophical argument. The paper ends with some reflections on the idea that social psychological research can be understood as motivated by providing thought provoking demonstrations of moral dilemmas.

Beyond *The Varieties*: Towards a standpoint for addressing the relationship between psychology and religion

G. RICHARDS, BPS History of Psychology Centre, London/Staffordshire University.

Taking William James's *Varieties of Religious Experience* as a canonical point of departure, this paper will consider how the issue of the nature of the relationship between Psychology and religion now looks, a century after its publication. It will be argued that while James was writing in a context still dominated by ultimately 'religious' modes of subjectivity, and while himself a representative or agent of a new 'psychological' mode, this still 'religious' mode still set the parameters for his own thinking. We are now in a radically different situation where a historical understanding of the Psychology-Religion relationship demands a suspension of identification with either in an effort to move beyond the polarity. This is as much a personal challenge as an intellectual one. The paper is thus partly in the nature of a 'progress report' on the author's efforts to establish a satisfactory position from which to analyse and comprehend the issue, which is ultimately one of the profoundest we face in our quest to understand ourselves.

The prisoner's dreams: The new BPS History of Psychology Centre – an outline of resources and some thoughts

G. RICHARDS, BPS History of Psychology Centre, London/Staffordshire University.

The establishment of the BPS History of Psychology Centre marks a major development both for British History of Psychology and for the BPS itself. The Society archives will be made easily available to scholars and researchers for the first time alongside (in due course) a library collection. The archives have also been greatly enlarged recently by the transfer of material from the main Leicester office. This paper will offer an overview of the kinds of material currently held at the Centre, and offer some thoughts on how it might be used and its potential for further development. The reason for the title will be revealed on the day!

Politics, personality and the long view of authoritarianism

M. ROISER, Thames Valley University.

Several recent papers have commented on the 50th anniversary of *The Authoritarian Personality*. They represent a larger body of research and debate that dates back to its original publication in 1950. The critics see the research as based on an initial mis-understanding of political categories, which failed to distinguish left-wing and right-wing varieties of authoritarianism. They go on to doubt the continuing relevance of authoritarianism in post-modern times. The defenders see a longer history and a continuing task for research. They date its origins to the beginnings of social and psychological research, if not further. They find precursors in Fromm's study of Weimar workers, Levenstein's *Die Arbeiterfrage*, and Marx's *Enquete Ouvriere*. Horkheimer hinted at 'the bigot of an earlier kind' as if to include medieval prejudice in this analysis. The critics describe a 'post-modern', 'post-industrial' world where the differences between left and right have merged into a moderate centre following the end of the Cold War, and where changes in the modes of production have made old divisions irrelevant. The defenders point to continuing authoritarianism in the world at the levels of attitude, personality and politics.

The mentality of apes: A filmed replication of Kohler's study

D. STEVENS, Thames Valley University.

Between 1913 and 1917 Wolfgang Kohler carried out a series of studies on problem solving among chimpanzees living on the island of Tenerife in a colony originally established by the Prussian Academy of Sciences. The key concept of these studies was that of 'insight', but the German word 'umwege' more literally means 'roundabout'. Kohler's studies dealt with making and use of implements such as sticks and boxes, the negotiation of detours, and issues of chance. Kohler was critical of Thorndike's contemporary work in the same area, but felt that Yerkes' study of ideational behaviour in an orang-utan showed an approach similar to his own. Michael Chance, with the 'group for cross-species comparisons', ran a series of studies of problem solving among chimpanzees at the Birmingham Zoological Gardens in the 1960s. These studies followed closely the pattern of some of Kohler's original work, using similar apparatus. They have been recorded on film and offer an insight into these studies.

British pioneer women psychologists

E. VALENTINE, Royal Holloway, University of London.

The life and work of seven early British women psychologists (Sophie Bryant, Mary Collins, Beatrice Edgell, Victoria Hazlitt, Susan Isaacs, Mary Smith and May Smith) is briefly reviewed and the following conclusions drawn: (1) The formative influences on their pursuit of psychology as a career varied from personal motives to accidental contingencies. (2) Although all were trained by and/or engaged in (sometimes significant) collaborations with male psychologists, they achieved substantial independent work (and received credit for it). (3) For them motherhood, if not marriage, proved incompatible with maintaining a professional career. (4) In general, their work cannot be considered 'feminine' but spanned the whole range of psychology. At least four were 'hard' psychologists; only one was strictly 'soft'. Possible inter-relations amongst these issues are intimated.

Hayek – the psychologist

N. WETHERICK, Edinburgh.

Friedrich Hayek (d.1992) is known as a major contributor to modern economic and social theory but early in his life (c.1920) he spent some time in Von Monakow's laboratory of brain anatomy and his work there inspired ideas in theoretical psychology which were far in advance of their time. His subsequent career led in a different direction but in 1948 he returned to the subject, publishing *The Sensory Order* in 1952. This book had no influence at the time and was widely criticised for ignoring the work of contemporaries in the field. With hindsight he may be forgiven, since, as it now appears, not much was lost. He always insisted that his psychology underlay all his other theoretical work. He regarded mental events as 'a particular order of physical events that relate the subsystem that we call an organism ... with the whole system, so as to enable the organism to survive.' Edelman (among others) has recognised his importance, as one of the first to relate brain activity to evolutionary theory. Steele (2002) draws attention to the contemporary relevance of Hayek's ideas and to the fact that some of them have not yet been recognised at their true worth. This paper will endeavour to extend and refine Steele's analysis.

Archetype and Psychodynamic Process in the Lord of the Rings Saga

P. ZIOLO, University of Liverpool.

The Lord Of The Rings has been voted 'the greatest book ever written'. At the same time, many prominent members of the 'literary establishment' declare that they openly detest the work. Why? While there can probably be no doubt that *The Lord of the Rings* is destined to be accounted a literary 'classic', what makes a 'classic' a 'classic'? In this presentation I propose to examine the genesis and 'fractal expansion' of archetypal images and the psychodynamic processes through which they interact and evolve, from *The Hobbit*, through *The Lord of the Rings* to *The Silmarillion* – all from the perspective of a simple Hobbit. I will conclude by discussing why these particular works should have had a major, if controversial impact at this moment in historical time.

Northern Ireland Branch in conjunction with the Scottish and Welsh Branches Annual Conference

Northern Ireland Branch in conjunction with the Scottish and Welsh Branches Annual Conference. Portrush, Co Antrim, 25–27 April 2003.

INDIVIDUAL PAPERS

Postnatal depression – can it be prevented?

E.M. ALDER, Napier University, Edinburgh.

Background: Postnatal depression is an important health problem for women and their families. The Scottish Intercollegiate Guidelines Network (SIGN) published guidelines in June 2002.

Aim & Methods: Can risk factors be identified, and can anything be done? A comprehensive expert review of evidence was carried out using SIGN's methods.

Main Contribution: Three systematic reviews identified the following as having moderate to strong associations with postnatal depression: past history of psychopathology and psychological disturbance during pregnancy, low social support, poor marital relationship, recent life events and 'baby blues'. The evidence for effective interventions to prevent postnatal in high risk groups is conflicting. No effect has been shown for antenatal preparation, provision of home workers, midwife-managed care and postnatal check-up at six weeks. There is some suggestion that debriefing by midwives, interpersonal therapy or weekly visits by a child health nurse may be effective. The current research base for preventive interventions in low risk women is extremely limited.

Changing relationships: The impact of stroke on younger stroke survivors and their families

P. BANKS & C. PEARSON, Strathclyde Centre for Disability Research, University of Glasgow.

Background: In Scotland during 2000–2001, 1100 adults aged 18–49 were admitted to hospital following a stroke. People who have a stroke experience a sudden onset of disability; about half are left with physical and/or mental impairment. Stroke impacts on both the patient and their families, and carers have been found to experience a high burden of care and emotional problems.

Aims: To investigate the experiences of younger stroke survivors (YSS) and their carers in order to identify barriers that may hinder a smooth return to independent living.

Method: 50 YSS/carer dyads took part in the study. Data were collected using interviews based on the Lifegrid method three to six months, and 12 to 15 months post-discharge from hospital. Participants also completed the SF36. Between interviews participants kept diaries.

Results: The stroke event and admission to hospital signified the beginning of a period during which the experiences of the YSS and their carers were affected by the same events, but moved in parallel some distance apart. Several carers spoke of changed relationships including marital problems.

Conclusions: Discussion focuses on the need for family support and counselling.

Towards a paradigmatic shift in workaholism theory

M.A. BREEN, Dublin City University Business School.

Background: A shift towards two new paradigms in workaholism theory is proposed. The majority of workaholism researchers endorse either the addiction or trait paradigms. This article demonstrates that conceptual and methodological flaws limit both approaches. Thus, pathologising

or individualising workaholism is the wrong avenue of research to pursue.

Aims: This paper advocates the relocation of workaholism, traditionally assumed to be the result of hidden mental processes, to the outward communicative activities occurring between individuals, in the manner prefigured by Bakhtin. Learning theory is also posited as a new workaholism paradigm, as it emphasises the impact of environmental variables.

Main Contribution: These new schemas will extend the parameters of workaholism research and overcome blind spots created by the realist trait and addiction paradigms.

Conclusions: The proposed innovative approach is essential for the continued development of workaholism theory.

Comparing the effectiveness of filmed demonstrations and point light displays in facilitating motor learning

G. BRESLIN, W. CURRAN & D. SCULLY, Queen's University Belfast.

Background: Although film footage of skilful movements is an effective tool for teaching novices new skills, this technique does not lend itself to all motor tasks. While little is known about what makes filmed demonstrations effective, it has been suggested that relative motion plays a critical role.

Aims: To determine the effectiveness of filmed demonstrations in learning a novel task, and to establish whether relative motion contains the information needed to acquire the correct coordination.

Method: Participants were randomly assigned to one of three groups, a filmed demonstration group, a point light display group and a control group (no demonstration). The task was a novel dart-throw. The novices were given the goal of approximating the model's movement.

Results: The results of this study will be discussed in relation to filmed demonstration effectiveness and motor skill acquisition.

Conclusions: If relative motion provides the information necessary to learn the task, then we anticipate that novices using the point light display will acquire the skill at least as quickly as the film demonstration group.

A multivariate analysis of the influences and profiles of treated drug misuse in Ireland

P. CAHILL & B. BUNTING, Measurement Evaluation and Modelling Research Unit, School of Psychology, University of Ulster Magee, Derry.

Background: Drug dependence has important public health implications for all communities throughout Ireland. Any attempt aimed at tackling this issue requires scientific support and direction.

Aims: This research project will utilise the epidemiological database, the National Drug Treatment Reporting System to further our understanding of the influences and profiles of all individuals who received treatment for problem drug use in 2001 ($N > 8000$).

Method: This paper presents an analytical description of the various statistical models, including logistical regression, latent class models and structural equation modelling, that could be used to give a better understanding of the underlying characteristics of drug misuse.

Conclusions: Stemming from a better understanding of these influences and profiles of drug misusers, intervention strategies both reactive (health care policies) and proactive (social and educational initiatives) may be re-evaluated. The models resulting from this study will serve as templates allowing longitudinal trends to be examined and cross-cultural comparisons to be made.

Social identification and outgroup attitudes in Northern Ireland

A. CAMPBELL, E. CAIRNS, M. HEWSTONE, U. NIENS, C.A. LEWIS & R. WILSON, University of Ulster and University of Oxford.

Background: Despite decades of intensive conflict between the two main religious communities in Northern Ireland, the majority of research in this area has tended to suggest that prejudice is not an especially prevalent characteristic of Northern Irish society.

Aims: We propose to investigate how this finding may be more a reflection of the methods employed to measure this phenomenon rather than an accurate portrayal of the situation.

Main Contribution: Specifically, we argue the need for a more precise conceptualisation of identification and out-group attitudes in assessing the prominence of prejudice in Northern Ireland.

To this end, we also consider the advantages of utilising more implicit measures of in-group bias.

Conclusions: Greater conceptual precision is both necessary and informative for an in-depth understanding of the psychological processes involved in intergroup conflict. Only then, can we draw any definite conclusion with regard to the nature of prejudice in Northern Ireland.

Promoting exercise amongst adults with mental illness: An integration of the transtheoretical model and the Theory of Planned Behaviour

P. CAMPBELL, D. MacAULEY & J.C. LESLIE, University of Ulster.

Background: The effects of physical activity and exercise on physical health are well documented and general practitioners have realised the clinical advantage of advocating exercise amongst their patients. There is also growing evidence of a beneficial effect of exercise on psychological well-being and mental health, however mental health practitioners do not seem to be advising their clients to exercise in order to achieve these benefits. The Theory of Planned Behaviour (TPB) may be a useful tool for investigating possible reasons for this.

Aims: To investigate the attitudes held towards exercise by mental health practitioners and how these attitudes influence both their exercise behaviour and whether or not they advocate exercise to their clients.

Method: A survey of mental health professionals was carried out to measure TPB variables as well as exercise and exercise advocacy behaviours.

Results: Preliminary results show that attitudes to exercise are correlated with both exercise behaviour and exercise advocacy behaviour in mental health professionals.

Conclusions: Results are discussed with reference to the TPB and the Transtheoretical Model of Behaviour Change.

The development of flag recognition in children, emblematic of their national identity

J.E. CANDY & K. TREW, Queen's University Belfast.

Background: The age at which children become aware of cultural symbols has been highlighted in the debate arising from the renewed interest in socio-political development of children.

Aims: This experiment examines the age at which children are able to classify flags that are emblematic of their identity. Hypothesised that working class children will develop the ability to recognise flags earlier than middle class children.

Method: 280 Protestant children aged between five to 10 were tested. The sample was drawn equally from working class and middle class backgrounds. Each child was presented with six flags (Northern Irish, British, Irish, French, American, and European) and was asked to

select the following flags: 'theirs', the Northern Irish, the British, and the European.

Results: Findings suggest that the youngest children have only a rudimentary knowledge, and the oldest have not fully grasped the significance of flags.

Conclusions: This study demonstrates some of the complexities involved in establishing children's understanding of cultural symbols.

Countercontrol in schools: How often does it happen and what factors are associated with its occurrence?

T.A. CAREY, Dept. of Clinical Psychology, NHS, Fife.

Background: Children with disorders like Conduct Disorder resist attempts to have their behaviour controlled. If some of these children are engaging in countercontrol then current methods of control could be compounding rather than solving the problem. To begin to consider problems of control from a countercontrol perspective, information needs to be gathered regarding the prevalence of countercontrol and the conditions that either promote or prevent it.

Aims: To investigate the extent to which countercontrol occurs in schools and the variables associated with it.

Method: Questionnaires were administered to over 1300 students and approximately 70 teachers from Australia, New Zealand, and Singapore.

Results: Approximately 10 per cent of students countercontrolled frequently. Teacher characteristics were unrelated to students' self-report of countercontrol.

Conclusions: Countercontrol is an explanation for some problems related to disobedience, noncompliance, and disruption. To address the issue of countercontrol, existing methods of control need to be reviewed and new methods need to be investigated.

Autism: A parental evaluation of Applied Behaviour Analysis

K. DILLENBURGER, S. GALLAGHER & M. KEENAN, QUB; PEAT; UUC.

Background: There is overwhelming evidence that Applied Behaviour Analysis (ABA) offers the most effective form of intervention for children with autistic spectrum disorder (ASD).

Aims: To provide evidence about how parents perceive and evaluate ABA programmes.

Methods: A parental programme evaluation was undertaken.

Results: Parents reported a positive impact of ABA on the lives of their children, their family life, and themselves. They reported an immediate positive impact on child and family functioning and parental self-esteem and the achievement of complex goals with their children.

Conclusions: Discussion centres on the context of anti-discriminatory and evidence-based practice.

Does dissociative identity disorder exist in the Northern Irish psychiatric population? A blind diagnostic-structured interview assessment

M.J. DORAHY, H. MILLS, C. TAGGART, M. O'KANE & C. MULHOLLAND, Queen's University Belfast & The Mater Hospital, Belfast.

Background: Since its inclusion as a discrete diagnostic entity in the Diagnostic and Statistical Manual of Mental Disorders in 1980 (DSM-III), interest in dissociative identity disorder (DID); formerly multiple personality disorder) has increased to a level not seen since the turn of the 20th century. Despite a considerable literature now existing on the prevalence, phenomenology and treatment of DID, it still remains a controversial diagnosis, especially among British mental health professionals. The literature suggests that DID is a complex trauma-induced psychopathology characterised by a broad range of psychological and somatic symptoms which is

treatment-resistant if the dissociative pathology is not identified and treated directly. In addition, individuals with DID spend between six and eight years in the mental health system before they are accurately diagnosed.

Aims: The aim of the current study is to report the initial findings of a larger, ongoing study which seeks to assess psychiatric patients for misdiagnosed or undiagnosed DID.

Method: Participants were referred to the study by their treating psychiatrist if they met two of the following three inclusion criteria: (1) The existence of at least two different psychiatric diagnoses in medical history; (2) Individuals who remain 'diagnostic anomalies'. That is, they do not seem to 'fit' one single psychiatric disorder, but present symptoms which are consistent with several diagnostic categories; and (3) Individuals who are 'treatment-resistant' despite various interventions. Thus far 20 participants have been blindly assessed; once by a psychiatrist in a diagnostic interview and once by a psychologist in a structured interview. Instruments utilised in the structured interview were the Dissociative Disorders Interview Schedule (Ross *et al.*, 1989), the Dissociative Experiences Scale (Carlson & Putnam, 1993) and the Somatoform Dissociation Questionnaire (Nijenhuis, 1999).

Results: Initial results indicate the existence of DID in 'complex' psychiatric presentations in Northern Ireland.

Conclusions: Implications for mental health assessment and treatment are considered.

Accuracy and contextual control in non-sexually abused children

K. DUFFY, M. KEENAN & K. DILLENBURGER, University of Ulster at Coleraine & Queen's University Belfast.

Background: With increased reporting in the last decade of child sex abuse (CSA) has come heightened involvement by the justice system. One consequence of this is the renewed debate concerning the credibility of children's testimony.

Aims: This paper explores the role that contextual cues play in accurate and inaccurate sorting behaviours and verbal recall of non-abused children.

Method: 13 children (ages six to seven) were trained to respond differentially to two arbitrary stimuli and then exposed to verifiable social experience. In Phase 1 subjects were randomly allocated to one of two groups, the fluent group or the non-fluent. Two arbitrary stimuli were then established as contextual cues, *Did happen or Did not happen*, using differential reinforcement. In Phase 2 subjects were exposed to a role-play in which each child dressed up. In Phase 3, using the arbitrary stimuli as contextual cues, children were tested for accurate and inaccurate sorting accounts of events that were depicting usual and unusual activities in the role-play. In Phase 4, each child was asked to verbally report events that occurred in the role-play in the presence of the contextual cues.

Results: The findings revealed that a distinctive pattern of responding emerged for the respective groups: the fluent groups were more accurate and exhibited less variability on both the sorting and verbal recall task than the non-fluent group.

Conclusions: It is argued that if stimulus control over sorting and free recall could be effectively established then there would be enormous implications for the development of screening procedures in CSA.

Aggression after head injury: Preliminary findings using the revised Aggression Questionnaire

K. DYER, R. BELL & R. RAUCH, Queen's University Belfast.

Background: Aggression is a common sequela of head injury. Unfortunately, previous research into this area has been mired by methodological confounds. The Buss-Perry Aggression Questionnaire (BPAQ) has been used frequently to assess head-injured individuals and has been recently revised.

Aims: To control for a number of confounds previously present in the literature. Although the research is not yet complete, this paper gives

some of the preliminary findings on aggression, as measured by the BPAQ and its revised form.

Method: A number of psychological variables were measured, including aggression and social desirability. Assessment was conducted on a head injury group, a spinal injury group, and a non-injury group.

Results: Early analysis using ANCOVA to eliminate social desirability revealed there was a significant difference between the three groups on both the BPAQ and revised BPAQ.

Conclusions: The results support the view that people with head injury are more aggressive than other patient groups and clinically 'normal' controls.

Exploring the implications of new perspectives on stress and well-being, including the potency of laughter for reducing psychosocial stress

R. EVISON, Change Strategies, Pitlochry.

Background: There is phylogenetic, neurophysiological, and psychosocial evidence for emotions in-built by evolution forming our basic operating system for interacting with our environment. The Integrative Theory of Emotional Responses (Evison, 2001) suggests we have three distinct emotional operating modes. **Aims:** To show how a fully functional theory of emotions can explain the development of stress phenomena, provide criteria for developing and evaluating stress management strategies, and suggest conditions for promoting wellbeing. To review the evidence that laughing is the most potent of the strategies for reducing psychosocial stress.

Main Contribution: Pleasurable emotions motivate and organise mind/body resources for functional processes of learning and development that form our ongoing mode. Painful emotions motivate and organise mind/body resources for functional emergency responses to threats to our physical and social wellbeing. Dysfunctional emotional responses develop when negative emotions—aroused in response to threats—are not switched off when the threat ceases operating. Such responses represent locked up resources of body and mind, forming the building blocks of stress effects. This overall functional perspective will be used to derive the mechanism of stress effects; to show how stress effects may be prevented, or reversed, at any stage; to produce a taxonomy of strategies effective for transmuting dysfunctional emotional responses into functional ones; and to review the evidence for laughter being the most potent of the strategies for reducing stress. The perspective will also be applied to considering the conditions that promote well-being, separately from those which decrease stress.

Conclusions: Identifying the distinctions between functional and dysfunctional emotional responses results in testable hypotheses around stress, stress management, and well-being; and provides new possibilities for tackling the increasing burdens of stress on individuals and organisations.

Handling hard-to-manage behaviours in pre-school provision

H. FOOT, L. WOOLFSON, M. TERRAS & C. NORFOLK, University of Strathclyde, University of Paisley & University of Edinburgh.

Background: Expanding numbers of children attending pre-school provisions across the UK places additional strain on pre-school staff. This expansion also increases the prevalence of children perceived by staff as presenting hard-to-manage (HTM) behaviours.

Aims: The paper outlines a study (supported by the Nuffield Foundation) designed to explore staff perceptions of HTM behaviour, the strategies they use to manage it and their communication with parents over behaviour management issues.

Method: A series of semi-structured interviews were conducted in a variety of Local Authority and private nurseries and playgroups across the central belt of Scotland with 32 pre-school staff.

Results: Results showed that aggression,

inability to share or play with others and refusal were the most common forms of HTM, for which parents were blamed more than any other source. Six main management strategies were found for coping with such behaviour, including exclusion, explanation, distraction and removal of items causing the dispute. Most pre-school centres also reported strategies for encouraging positive behaviour. Private nurseries reported being most consistent in their use of particular strategies but also appeared less flexible. **Conclusions:** Results are discussed in the context of a systems model which addresses the mechanisms used by staff to ensure a smooth-running pre-school setting within a wider social system which includes the children's home.

The importance of semantic information in the measurement of icon complexity

A. FORSYTHE & N. SHEEHY, School of Psychology, Queen's University Belfast.

Background: Complexity, or the amount of detail or intricacy is one of three important characteristics that designers can use to assess the usability of icons (McDougall *et al.*, 1999). Measuring icon characteristics relies heavily however, on population sampling. This is a costly and slow process and an automated system capable of replicating what users 'see' as complex could reduce development costs and time. Forsythe *et al.* (in press) report that automated measures of edge information and structural variability may have future use in the measurement of icon complexity. **Aims:** This study considers the extent to which any automated system could completely replace the judgements of human raters.

Method: Correlation.

Results: Results suggest that there is a large familiarity effect in how human raters 'see' a complex icon ($r_s = -0.31$, $p < 0.001$).

Conclusions: Automated measures of visual complexity are unaffected by the semantic analyses that human observers cannot suppress when judging icon complexity.

Needs assessment in older people: The reliability of information gained from informants

G. HANCOCK, T. REYNOLDS & M. ORRELL, Dept. of Psychiatry and Behavioural Sciences, University College London & Our Lady's Hospital, Ennis.

Background: Assessment of needs has been recognised as the most appropriate way to allocate limited resources. Assessments are frequently made using proxies acting as advocates for users. Little is known about how these proxy measures compare to individuals' perception of their needs.

Aims: To measure and compare ratings of need according to the older person, nominated carer, and staff member.

Method: 101 older people from various mental health services participated, 87 users, 57 carers, and 95 staff were interviewed using the Camberwell Assessment of Need for the Elderly (CANE).

Results: Groups differed in their ratings; users identified less unmet needs (1.4) than staff (42.6) or carers (2.5). Users identified fewer psychological or social needs such as, daytime activities or company than staff or carers.

Conclusions: User perspectives should be sought and given high priority. User based assessment will assist in prioritising needs, taking into account what the user considers to be most remediable, and beneficial.

Stockpeople's attitudes and milk yield

D. HANNA, I. SNEDDON & V. BEATTIE, Queen's University Belfast.

Background: There has been wide recognition of the importance of stockpersonship with regard to animal welfare and production. It would therefore be very useful to predict this influence in an applied setting.

Aims: These studies attempted to determine the main attitude factors relating to dairy farmers and relate these measures to milk yield.

Method: Attitude questions relating to dairy cow were distributed to agricultural students through out the UK. The 201 returned valid questionnaires were factor analysed to create new attitude scales and then posted to Northern Ireland dairy farmers ($N = 270$).

Results: The factor analysis extracted 4 factors arbitrarily labelled: empathy, negative beliefs about cows, enjoying working with cows and patience. Milk yield was found to significantly correlate with three of the factors.

Conclusions: This study illustrates the importance of the stockperson's attitudes in relation to milk yield.

A functionalist approach to the motivation, satisfaction and retention of volunteer befrienders

T.R. HOLLWAY¹, S. MAWHINNEY² & M. DEMPSTER², Praxis Care Group¹ & Queen's University Belfast².

Background: Research based on functionalist theorising suggests that individuals engage in voluntary activity to satisfy important personal and social goals, and that volunteer satisfaction and retention depends on matching these goals to volunteering opportunities.

Aims: Using the functionalist paradigm, motivational factors associated with volunteer befriending were examined to: determine motivations for befriending; examine whether befrienders whose motivations were met were more satisfied, and expressed intentions to continue volunteering, than those whose needs were not met.

Method: 115 befrienders completed the Volunteer Functions Inventory, a questionnaire to measure motivations for volunteering.

Results: A five-factor model for befriending motivation emerged (Values; Understanding; Protective; Social; Career). The regression model explained 41 per cent of the variance. Analyses identified Values as the main motivation.

Conclusions: Volunteers motivated by Values and Understanding, and whose needs were met, were more likely to report higher satisfaction. Findings will inform befriending recruitment and retention strategies.

The costs of caring: Social network analysis applied to carers of infants with Type 1 diabetes

J. INNES, B. BUNTING & V. COATES, University of Ulster.

Background: A significant increase in the prevalence of Type 1 diabetes in the last 20 years is of serious concern. Failure to manage the condition is believed to be a result of poor psychosocial adjustment and lack of social support.

Aims: To identify and address inadequacies in the provision of support experienced by parents of diabetic children.

Main Contribution: Developing the use of social network analysis to enhance the provision of support for families.

Conclusions: Social network analysis provides both a visual and mathematical analysis of human relationships. Its application to this group will identify areas for targeting resources by statutory and voluntary bodies.

Caregiver strain and coping strategies in parents of children with learning disabilities in the Republic of Ireland

K. KENNY & S. MCGILLOWAY, National University of Ireland at Maynooth.

Background: Despite recurring concerns about the role and appropriate support of informal carers, we know comparatively little about the experience of caring for children with learning disabilities living in Ireland.

Aims: This study provides an in-depth description and analysis of the nature and consequences of care for 32 (mainly female)

parents of children (<18) with a wide range of learning disabilities living in the Greater Dublin area.

Method: Participants completed a Parental Questionnaire incorporating a Profile Form, the Caregiver Strain Questionnaire (Brannan *et al.*, 1997) and a series of Likert rating scales and open-ended questions about: care tasks and behavioural difficulties; coping strategies (based on Burr & Klein's (1994) conceptual framework); positive and negative aspects of caregiving; and service provision.

Results: Preliminary findings indicate that participants showed high levels of subjective and objective caregiver strain and that most were not receiving adequate support. However, parents employed a range of strategies to help them cope more effectively with their role.

Conclusions: The findings, to date, highlight the difficulties (and potential rewards) of caregiving for children with learning disabilities as well as reinforcing the importance of appropriate service provision. Further analysis will provide insights into more detailed aspects of caregiving including carers' own views.

Indicators of risk following sharps injuries

W.V. LOSTY, C.M. HUGHES & E.A. CAMPBELL, Dept. of Clinical Psychology, Royal Group of Hospitals Trust, Belfast & Dept. of Psychological Medicine, University of Glasgow.

Background: Sharps injuries are common amongst Health Workers (HWs), resulting in risk of transmission of blood borne viruses.

A cognitive model of anxiety predicts that perceptions of personal risk, awfulness, support and coping will influence psychological outcome.

Aims: Establish factors that predict psychological outcome.

Method: 108 HWs with sharps injuries were followed up at one week, one month and four months. Measures of anxiety, depression and trauma were administered.

Results: Source of injury, perceived awfulness, perceived support, employer attitude to wellbeing, management response and traumatic cognitions were predictive of anxiety and trauma.

Conclusions: The findings lend support the cognitive model however, multi-variate analyses are required at completion of data collection

The effectiveness and acceptability of a computer-based treatment for anxiety and depression

D. MAIRS, L. KILDAY, B. McCRUM & M. GALLAGHER, Dept. of Clinical Psychology, Homefirst Community Trust.

Background: The effectiveness of Cognitive Behaviour Therapy (CBT) in the treatment of many psychological problems is well supported by evidence from randomised controlled trials.

NICE (2002) considered evidence from studies using computer based CBT, concluding it 'supported the potential value' but that more research was needed.

Aim: To explore the effectiveness and acceptability of cognitive behavioural therapy provided by a computer based intervention.

Method: Opportunity sampling -participants were selected from psychology waiting lists and from referrals by mental health professionals, based on responses to a structured interview, standardised inventories and questionnaires and assessment of life and work functioning.

Results: Pre- and post-treatment scores indicate a significant improvement in depressed mood, in anxiety, and across all subscales to the Clinical Outcome Routine Evaluation.

Conclusion: Early results indicate the value of the Beating the Blues computer-based therapy.

Crossing the line: Learning disability day services in three cross-border areas of Ireland

S. Mawhinney¹ & O. Johnston², Praxis Care Group¹ & University of Southampton²

Background: DHSS identified few learning disability day services in three cross-border areas

of Ireland and long traveling times for clients to and from centers.

Aims: This research aimed to assess the potential for cross-border integration of day services in these areas.

Method: This involved mapping current services, generating client and carer profiles; interviewing key stakeholders to elicit their views on cross-border integration.

Results: There is an imbalance of services North and South of the border. Carers were optimistic about sharing services with clients from across the border, but were ambivalent about the client they cared for attending services over the border. Managers were mindful of the benefits of cross border co-operation and were keen to develop integration.

Conclusion: The research concludes that service development should not be restricted by buildings or borders and that initiatives aimed at 'crossing the line' between north and south, would receive support from stakeholders.

Correlates of performance anxiety in practical music exams

K. McCAMBRIDGE & G. RAE, University of Ulster, Coleraine.

Background: Performance anxiety has been a recognised problem for musicians.

Aims: The focus of this study was to test the psychometric properties of the Perceived Performance Anxiety scale (PPAS) and to examine the effect of personality factors and gender on performance anxiety.

Method: 120 musicians (36 males and 84 females) aged 15 to 18 years ($M = 16.5$, $SD = 0.97$) completed the EPQ-R short scale and the PPAS, a self-report measure of performance anxiety in practical music exams.

Results: Principal components analysis indicated that the PPAS scores were best represented by a single component with an internal consistency reliability of 0.88. Females had significantly higher scores on the PPAS. A significant negative correlation between PPAS scores and psychotacticism, and a significant positive correlation between PPAS scores and neuroticism scores was obtained. The correlation between PPAS and extraversion was negative but not significant.

Conclusions: The relevance of these findings for music teachers is considered.

Irritable Bowel Syndrome and psychological well-being: The mediating effects of anxiety, self-esteem and locus of control

C.A. McCLENAHAN, University of Ulster, Magee Campus.

Background: Psychosocial factors do not define Irritable Bowel Syndrome (IBS) and are not required for diagnosis but they do modulate patients' behaviours, can effect clinical outcomes, and, can cause psychological distress. While it is estimated that eight to 23 per cent of adults in the Western world have IBS symptoms up to 70 per cent of sufferers may not seek medical treatment for these symptoms. Therefore, most research on IBS has focused on those who do not seek health care.

Aims: To investigate the extent to which gender, anxiety, self-esteem and locus of control mediate the link between IBS symptoms and psychological well-being among IBS 'patients' and IBS 'non-patients'.

Method: A questionnaire based on the Rome II criteria for IBS symptoms, and, including measures of anxiety, self-esteem, locus of control and psychological well-being, was administered to undergraduate students.

Results: The results are presented and discussed in terms of future research and in relation to psychological treatment/intervention to reduce IBS symptoms.

Using prenatal habituation to predict postnatal cognition

N.K. McCORRY¹ & P.G. HEPPEL², Wellcome Trust Fetal Behaviour Centre¹ & School of Psychology, Queen's University Belfast².

Background: The continuity of mental development from the neonatal period to later life has been demonstrated by numerous authors who have reported correlations between infant habituation performance and later intelligence. The extension of this continuum to the fetal period provides an exciting opportunity to predict later cognitive performance from the very earliest stages of life.

Aims: The present study seeks to evaluate the use of habituation as a tool for predicting postnatal brain function.

Method: The habituation ability of 120 fetuses was assessed at 31 and 35 weeks gestation. Postnatal tests included the Brazelton neonatal assessment scales and a visual habituation paradigm.

Results: Fetuses who habituated faster demonstrated longer looking times in the postnatal habituation paradigm.

Conclusions: Faster habituation reflects superior cognitive performance and appears to be related to more efficient information processing postnatally. These results support the use of fetal habituation techniques as a means of predicting postnatal cognition.

The impact of schizophrenia on caregiver's quality of life

N. McCULLOUGH & A.G. GALLAGHER, School of Psychology, Queen's University Belfast.

Background: Caring for a relative with schizophrenia may have a negative impact on the caregiver's quality of life. The majority of research has investigated this by applying the concept of burden. However, this approach may be seen to overlook the subjective nature of care giving.

Aims: One alternative is to measure individual quality of life, which allows for caregivers to indicate their experience of care giving.

Method: 37 participants (36 female, 1 male, mean age 56 years) caring for relatives with schizophrenia completed the Schedule for the Evaluation of Individual Quality of Life (SEIQoL).

Results: This measure identified areas of greatest concern to those caring for a relative with schizophrenia. Whilst there was overlap with traditional burden measures, the relative importance attached to each area varied among caregivers.

Conclusions: The areas identified are discussed along with the implications of these findings for those caring for relatives affected by schizophrenia.

Test self estimates of traditional and non-traditional students: Can self-efficacy be a determinant in 'trying to teach an old dog new tricks'?

C.J. McDAID & C.A. LEWIS, School of Psychology, University of Ulster, Magee Campus.

Background: With student enrolment increasing within universities, none more so than within the non-traditional student population, it becomes more relevant for researchers to ascertain whether significant differences exist between these distinct student cohorts. One key area would be in the realms of self-efficacy.

Aims: To determine if any difference in self-efficacy exists between traditional and non-traditional students in university.

Method: An opportunity sample of university students ($N = 248$) from within social work and psychology degree disciplines were asked to estimate their test score before and immediately after completing a multiple choice test. A number of participants ($N = 6$) also were interviewed in respect to their response to the estimate of test performance.

Results: The participants were compared on

their 'before test estimate', 'after test estimate', and 'actual test score', no differences between the groups were found. The interviews were analysed thematically to highlight key words/phrases common across all participants. Important emergent differences between the groups included, 'Don't seem to have enough time to study/read' (traditional student) and 'Seem to be spending less time with wife and children' (non-traditional student).

Conclusions: Results suggest that no significant difference exists between traditional and non-traditional students in respect to their self-efficacy on test ability, although some differences in test preparation and learning styles were evidenced in the interview responses.

Child neglect-assessment and prevention

B. McDANIEL & K. DILLENBURGER, School of Social Work, Queen's University Belfast.

Background: Child neglect continues to be the most prevalent form of child maltreatment, yet it has received less research attention than other forms of maltreatment. Neglect has immediate and long term detrimental effects on children's physical, psychological and emotional development and wellbeing. Neglect differs from other forms of abuse because it is not always intentional or deliberate and may occur because of the parent's lack of knowledge or skills.

Aims: To look at the application of behavioural assessment and intervention methods with a group of six young mothers whose children were at risk of neglect.

Methods: Instruments used in this study measure if mothers had the basic skills to carry out bathing and feeding their children.

Results: Mothers were able to score highly on each checklist, some mothers, however were unable to do this consistently and repetitively due to competing external contingencies. Although intervention was only successful in improving bathing skills, the assessment of feeding was able to identify difficulties arising during feeding, and indicate where further work needs to be undertaken.

The (mis)measurement of school bullying: The concurrent validity of bullying behaviours within Northern Ireland

C. McGUCKIN & C.A. LEWIS, University of Ulster, Magee Campus.

Background: Bullying in schools is a worldwide problem (Smith, Morita, Junger-Tas, Olweus, Catalano & Slee (1999)). However, international comparison rates are potentially flawed and misleading due to different conceptualisation and operationalisations of bullying behaviours. Little is in fact known of the concurrent relationship between established measures of bullying.

Aims: To assess the concurrent validity of the most commonly used measures of bullying behaviours.

Method: Data is reported from a sample of almost 9000 pupils in Northern Ireland. The five most widely used measures in international research were administered concurrently.

Results: The data clearly demonstrate that although the measures employed were significantly associated with each other, prevalence rates differed markedly with respect to the four categories of actor in the bullying phenomena: bully, victim, bully/victim, and bystander.

Conclusions: On this evidence, the validity of international prevalence rates of bullying behaviours are challenged. It is proposed that future research should address the confounding issue of the (mis) measurement of low level aggression within the school system.

Perceptual ability and feature integration in cerebral palsy sufferers

B. McILWRATH, R. COWIE & H. RAFFERTY, School of Psychology, Queen's University Belfast.

Background: Many individuals with cerebral palsy also experience perceptual difficulties. Perceptual tests are carried out by occupational therapists to aid therapy, however, the nature of the underlying problem has yet to be addressed.

Aims: To explore whether the perceptual problems experienced by cerebral palsied individuals are related to problems in integrating simple features of an object.

Method: A computer-based programme presented participants with three lines, presented sequentially. Participants were asked whether the lines would form a triangle or an asterisk if presented simultaneously. The programme also presented four dots sequentially and participants decided whether they would form a triangle or a square if presented simultaneously. The scores of cerebral palsied and non-cerebral palsied individuals were compared.

Results: There was a significant difference in performance between the two groups. However some of the individuals in the experimental group achieved scores in the control range and a smaller number performed notably worse.

Conclusions: Feature integration does seem to play a part in the perceptual difficulties experienced by cerebral palsy sufferers. Further investigation is necessary to determine whether this is caused by impairment in the development of natural eye movements.

Predicting prejudice and discrimination toward homosexuals: An application of the Theory of Planned Behaviour

C. McLAUGHLIN, M. SHEVLIN & M. GILES, University of Ulster at Magee and Coleraine.

Background: Prejudice and discrimination have been found to be still prevalent toward homosexual males and females in society. The Theory of Planned Behaviour (TPB) has been widely applied in order to understand the relationship between attitudes and behaviour. In addition the TPB model provided a parsimonious explanation of both the informational and motivational factors that may predict prejudice and discrimination toward homosexuals.

Aims: To apply the TPB in order to aid in the understanding and prediction of prejudice and discrimination towards homosexuals within a given scenario.

Method: The TPB questionnaire was distributed, along with a scenario to a university sample ($N = 300$) at the University of Ulster at Magee.

Results: MANOVA and multiple regression (hierarchical or stepwise) were used to examine the possible psychological predictions of the respondents' behavioural intentions toward homosexuals. Consistent with previous research findings sex differences were observed on many of the psychological variables. Within the TPB model the behavioural intention and perceived behavioural control variables were found to be significant predictors of negative attitudes towards homosexuals.

Conclusions: The application of the TPB conceptual framework model will firstly suggest its efficacy in aiding in the understanding of respondents' behavioural intentions toward homosexual males and females. Secondly it will add to previous research by examining the nature of attitudes and behaviour. Thirdly it will add to the on going research in the area of prejudice and discrimination toward homosexuals.

You cannot clap a '£'!!!

B. McVEIGH & M. KEENAN, University of Ulster, Coleraine.

Background: Typically, research into transformation of function has involved training a single function to one member of a stimulus equivalence class. Subsequent testing reveals that the other members acquire this function

without explicit training. To date, however, the operant nature of many of the functions has been simplistic. While there are good reasons for doing this there are nonetheless limitations to the questions that can be asked with these behaviours.

Aims: The present experiments examined the effects of training a drawing response to members of a stimulus equivalence class. This was done across a number of conditions to determine how multiple functions in a stimulus equivalence class might interact.

Method: Two five-member equivalence classes (A1-B1-C1-D1-E1 & A2-B2-C2-D2-E2) were established for each subject. A 'drawing' function was attached to each of various stimuli within these classes. Subsequent tests for transformation of function were then carried out.

Results: Results indicate that not only do multiple functions interact but also the way they interact depends on the way they are trained.

Conclusions: The nature of the stimuli comprising the equivalence class also determines response outcomes.

The impact of erectile dysfunction on sufferers and their partners

C. McVEY, Dept. of Psychology, Glasgow Caledonian University.

Background: Erectile dysfunction (ED) affects at least one in every 10 men (estimated 2.3 million men in the UK). Most recent global expectation is 300 million by 2025. Psychological factors account for 20 per cent and 80 per cent are related to physiological problems with interaction between these elements. As the male's ability to have sexual intercourse is related not just to procreation but to feelings of masculinity and intimacy with partners, inability to perform has serious psychological repercussions.

Aims: To analyse the effects and hidden costs of ED and, using international survey data, analyse the main concerns of sufferers (and partners) with some reference to treatment.

Main Contribution: To raise awareness of the importance of treatment of ED in the context of distress and hidden costs. To analyse the psychological impact of ED and the effect of treatments on sufferers and their partners.

Conclusions: ED has serious repercussions for the man and his partner. Thus it merits serious consideration in terms of therapeutic intervention.

Predicting perceptions of segregation in Northern Ireland

U. NIENS, E. CAIRNS & M. POOLE, University of Ulster.

Background: Perceptions of residential segregation have often been used in Northern Irish research as a variable supposedly indicating actual levels of residential segregation. However the assumption that perceptions of segregation match up with actual segregation has never been tested systematically.

Aims: To explore predictors of perceptions of segregation using an 'objective' segregation index as well as social psychological factors possibly influencing perceptions of segregation.

Methods: Data from two random surveys of the Northern Irish population, conducted in 1998 and 2000, were analysed to investigate predictors of perceptions of residential segregation for Catholic and Protestant respondents.

Results: Objective segregation is the strongest predictor of perceptions of segregation. Additionally, significant percentages of variance could be explained by social class, ingroup and outgroup attitudes.

Conclusions: Social identity theory and minority-majority status of religious groups can be used to explain these findings.

Effects of video modelling on training and generalisation of social initiation and reciprocal play by children with autism

C.K. NIKOPOULOS & M. KEENAN, University of Ulster, Coleraine.

Background: A number of studies have shown that video modelling could be an effective

strategy for teaching children with autism a variety of skills.

Aims: Two experiments were conducted to assess the effectiveness of video modelling to promote social initiation, reciprocal play, and generalisation in children with autism.

Method: A multiple baseline design and an A-B design across four children with autism were used. Each child watched a videotape showing a model and the experimenter engaged in a simple reciprocal play using one toy. After that behaviour had been established, generalisation across four other toys in the absence of a videotape took place.

Results: For all children social initiation and reciprocal play skills were enhanced and these generalised across stimuli, subjects, and settings. These effects maintained at a one- and three-month follow-up period.

Conclusions: Video modelling could be a successful procedure for the target behaviours, without stimulus generalisation being under the effects of stimulus control.

Prospective cognitions and hopelessness: The effects of life orientation, stress and perfectionism

R.C. O'CONNOR, Suicidal Behaviour Research Group, Dept. of Psychology, University of Strathclyde.

Background: There is a growing body of evidence to suggest that a negative view of the future characterised by impaired positive future thinking is associated with increased hopelessness and suicide risk.

Aims: Within a self-regulatory framework, this paper aims to investigate the future thinking-hopelessness relationship more closely and to determine whether future cognitions moderate the relations between comparatively stable dimensions and psychological distress.

Method: Data from three studies are reported. Two of the studies are cross-sectional whereas the third reports a 10-week follow-up study. All participants completed the future thinking test and indices of psychological distress and depending on the aims of each study, measures of stress, optimism and perfectionism.

Results: Study 1 demonstrated, for the first time, that positive future thinking moderates the relationship between stress and hopelessness.

The findings of Study 2 support the notion that perfectionism is best understood as a multidimensional construct and that its relationship with future thinking and hopelessness is not straightforward. Study 3 reinforced the importance of future thinking as a moderator in the prediction of distress.

Conclusions: The results support the postulation that future thinking, life orientation and perfectionism are mediated by different motivational systems. The implications for positive mental health and suicide prevention are described.

Reliability of the California Critical Thinking Dispositions Inventory and the validity of the California Critical Thinking Skills Test

L. O'HARE & C. McGUINNESS, Queen's University Belfast.

Background: Predominantly in Higher Education critical thinking is assessed using specific subject material presented in coursework and exam scripts i.e. domain dependant assessment. The California Critical Thinking Dispositions Inventory (CCTDI) and the California Critical Thinking Skills Test (CCTST) are multiple-choice psychometric tools. These tools measure critical thinking attitudes and abilities without assuming prior subject knowledge, i.e. domain independent assessment.

Aims: Firstly to compare the subscale reliabilities of CCTDI and a restructured version of the test. Secondly to show concurrent validity of the CCTST with other measures of ability/attainment. **Method:** The restructured version of the CCTDI was produced by factor analysing responses of a UK undergraduate sample and sub-scale

reliability was assessed using co-efficient alpha. Correlating participants' CCTST scores, Raven's test of non-verbal intelligence scores and total A-level points produced concurrent validity data on the CCTST.

Results: Mean sub-scale reliability increased from 0.63 (CCTDI) to 0.70 (Restructured CCTDI). CCTST scores correlated significantly with Ravens ($r = 0.268$, $N = 213$, $p = 0.000$) and with A-levels ($r = 0.216$, $N = 144$, $p = 0.009$); however A-levels did not correlate significantly with Ravens ($r = -0.018$, $N = 148$, $p = 0.826$).

Conclusions: Implications and future directions will be discussed.

From victim to offender: A case study

A. REA & O. TRAVERS, COSC Service, North Western Health Board, Sligo.

Background: One of the most challenging questions for both professionals and public alike is how some individuals who have been victims of sexual abuse go on to perpetrate abuse against others, and thus continue the cycle of abuse.

Aims: To increase our understanding of the cognitive processes and distortions that play a direct role in the initiation and maintenance of sexual offending.

Method: This paper will focus on a case study of a man who has committed sexual offences and enables us to hear directly from a victim who became a perpetrator.

Results: Cognitive distortions function in order for the offender to avoid negative self-evaluation and social disapproval and assist the breakdown of sexual inhibitions. Through listening to this man's voice, we can comprehend the process of traumatic sexualisation, where abusive experiences are re-enacted both behaviourally and cognitively, in the progression from victim to offender.

Conclusion: This is only one aspect of our understanding and there are many reasons why a person goes on to sexually offend – no single theory can explain why and a number of theoretical models are discussed here.

The BBC Prison Experiment: Rethinking the psychology of groups and power

S. REICHER & A. HASLAM, University of St. Andrew's & University of Exeter.

In this talk we will present the findings of the BBC Prison Experiment in which 15 men were divided into Guards and Prisoners within a simulated prison environment. The study was rooted in a critique of Zimbardo's Stanford Study and the notion that people cannot escape the roles into which they are placed. We argue that both empirically and theoretically that underestimates the extent to which people resist social systems. Based on the premises of social identity theory, we designed 'The Experiment' in order to address to factors which lead people to oppose as well as impose intergroup inequality. As expected, we found that the Prisoners only acted collectively and challenged the Guards when the system was made impermeable and unstable. However, unexpectedly we found that the Guards were unwilling to accept their position. Their failure to develop a shared social identity made them weak, divided, ineffective and despondent. Ultimately it led to a complete loss of power and the old prison system collapsed. In its place a 'Commune' arose, but that in turn was close to being replaced by a tyrannical social order at the end of the study. We argue that three critical lessons can be drawn from the study. First the role account is untenable as it fails to address the complex conditions under imposed social positions become assumed as social identities. Second, social identity is the precondition of collective behaviour and collective self-affirmation. It therefore has organisational, emotional and clinical consequences as well as social consequences. Third, tyranny arises not from groups and power but from the failure of groups and the lack of power.

Social constructions of masculinity and violence in young men from marginalised communities: A qualitative study

J. REILLY, O. MULDOON & C. BYRNE, UNESCO Centre, UUC, Queen's University Belfast & NI Prison Service.

Background: Young men in Northern Ireland have been disproportionately involved as both victims and perpetrators of violence, during the Troubles and since the ceasefires.

Aims: To explore social constructions of masculinity and violence in young men from marginalised communities.

Method: Four focus groups were conducted. Three groups comprised young men from a Catholic community ($N = 7$), a Protestant community ($N = 8$) and a Young Offenders Centre ($N = 7$). The fourth group comprised six community representatives. Grounded analysis by one researcher resulted in preliminary themes, reviewed by two researchers in an iterative process until consensus was reached.

Results: Violence was perceived as mandatory for young men and often contextually determined. Alienation from social control was normative and a masculine identity incorporating the capacity for violence was valued, despite acknowledged costs.

Conclusions: Initiatives aiming to address young men's violent behaviour should consider constructions of masculinity in order to be relevant to participants.

Obtaining occupational psychology divisional membership of the BPS

C. RODGERS.

Background: The purpose of the DOP is to promote, develop and regulate the work of occupational psychologists in corporate, academic, voluntary, public and private sector settings, so as to enhance the well-being and work-effectiveness of organisations and individuals within society.

Aims: The DOP through the committee Promoting the Profession is encouraging the development of occupational psychology through continual critical examination of its theoretical base.

Main Contribution: This poster will attempt to incorporate the DOP formulation of values, human benefit in Northern Ireland, knowledge and understanding of practice in organisational psychology. Work to-date from the Promoting the Profession group will be available on this poster.

Conclusion: In this way prospective occupational psychology students in Northern Ireland can find direction on chartering and choice of specialisms in this domain.

Learning strategies in engineering education

N. SEERY, W.F. GAUGHRAN & T. WALDMANN, University of Limerick.

Background: Variations in teaching styles and methodologies can frequently hinder learning, if they are not coordinated with the principal styles of the learner. Although students have their own unique modes of learning, many educationalists and psychologists have derived validated generalisations.

Aims: This paper examines the dominant learning styles of engineering students within the Manufacturing and Operations Engineering Department at the University of Limerick and participants from four-second level schools.

Method: The Felder – Silverman Learning Style Model forms the basis of this research technique. This technique, determines a student's preference for, or ability to gather and process information in a predetermined manner. The Felder – Silverman test indicates a person's preference on four dichotomous dimensions: Active/Reflective, Sensing/intuitive, Visual/Verbal and Sequential/Global.

Results: The research examines 239 subjects using the Index of Learning Styles (ILS) questionnaire and illustrates a significant preference for three style modes.

Conclusions: Class streaming and school type

have an important influence on the development of the students' learning style.

Factors contributing to post-conflict community development in Northern Ireland

P.W.G. SURGENOR & E. CAIRNS, University of Ulster, Coleraine.

Background: Research has accentuated an imbalance in an application for, and uptake of, funding for community development in Catholic and Protestant communities in Northern Ireland. It has been suggested that Catholic areas display a greater sense of ingroup unity and cohesion, resulting in a closer, more collective community, with more effective leadership and organisational abilities.

Aims: This research intends to investigate similarities and differences in community development – with specific reference to individualism, collectivism and social capital – in Northern Ireland.

Method: Data have been gathered using qualitative techniques – four focus groups were conducted.

Results: Preliminary results suggest differences are not as pronounced or clear cut as initially considered.

Conclusions: Further research is required.

Improving and evaluating quality of life in dementia

L. THORGRIMSEN, M. ORRELL & B. WOODS, University College London & University of Wales.

Background: Quality of life (QoL) in dementia is receiving increased attention due to factors other than cognition being deemed meaningful when evaluating interventions, but is difficult to conceptualise and measure.

Aims: To investigate the validity and reliability of the Quality of Life – Alzheimer's Disease Scale (QOL-AD); and also what effects an evidence-based psychological group therapy programme has on QoL in dementia.

Method: Validity and reliability were investigated through focus groups, joint assessments and questionnaires ($N = 60$). Additionally, a single-blind randomised controlled trial was conducted of an evidence-based psychological group therapy programme for people with dementia ($N = 100$).

Results: The QOL-AD was found to have good validity and reliability, and a significant improvement of QoL in dementia was found. Significant associations between QoL and other variables were detected, and the intervention was found to be cost-effective.

Conclusions: It is possible to reliably assess QoL in dementia, and also to significantly improve QoL in dementia by using psychological interventions.

Early childhood loss: A pilot study of daughters maternally bereaved before 11 years old

A. TRACEY, University of Ulster, Magee Campus.

Background: In recent years, there has been a shift away from the cause and effect perspective that early maternal loss results in mental health problems in adult women. Rather, there are mediating factors that can influence the long-term outcome for bereaved daughters (e.g. Harris *et al.*, 1990; Hurd, 1999). Many of the previous studies have focused on psychiatric populations and are mainly quantitative in nature. To date, research investigating the effects of early loss has been carried out mainly in America and Britain. In relation to Ireland, early childhood loss has received little attention.

Aims: This research gives a voice to adult daughters who have been maternally bereaved before the age of 11.

Method: Through semi-structured interviews, it examined daughters' perceptions of how their lives have been affected and influenced by the loss.

Results: Key themes are discussed and conclusions are based on the present sample ($N = 3$).

Experiences with e-learning: Student's performance and perspective

D. UPTON & C.D. COOPER, University of Wales Institute & The University of Auckland.

Background: There is a great push for more online teaching methods from a number of sources in the expectation that it will improve both efficiency of teaching and student performance.

Aims: To report on the first year of the provision of an on-line health psychology module and the questions that have arisen from use of this material.

Methods: Health psychology is taught across a range of courses throughout Higher Education Institutions in the UK. Online teaching material in health psychology has been developed ensuring that students from a range of courses and levels can access appropriate material for their course.

Results: Evaluation of the first year indicated a number of pertinent issues. Firstly, students performed at a higher level in examinations, than with 'traditional lectures' and their performance was correlated with usage of the material. However, there was some reluctance by the students to develop an independent learning style.

Conclusions: The development of the material to include interactivity, in an attempt to engage and motivate learners, thereby further developing independent learning is suggested and preliminary experiences with this form of material outlined.

Capability deterioration patterns in institutionalised and non-institutionalised older adults

K. WALSH & T. WALDMANN, University of Limerick.

Background: Vision, audition, manual/digit dexterity, attention/reaction and memory tests were administered to two groups of elderly people: those living in the community and those living in a retirement home. A principal component analysis was conducted.

Aims: To investigate the effect of institutionalisation in elderly people. Main contribution: The findings are presented and discussed with reference to the associated literature. An interpretation of the findings assists in improving the quality of life for elderly people.

Conclusions: Two factors accounted for the majority of the variance in the data from retirement home group, whereas four factors accounted for the majority of the variance in community dwelling group. However, because the sample sizes (11 institutionalised and 14 non-institutionalised participants) and the ratio of variables to cases (> 5:1) were not within the requirements of the factor analysis techniques the findings could not be relied upon. Therefore, with the assistance of the Berlin Aging Study, the analysis was repeated on data obtained from a similar set of tests for 69 institutionalised individuals (72 to 100-years-old) and 410 community dwelling older adults (70 to 100-years-old).

The cross-cultural differences in parenting styles and coping strategies in relation to depressive symptoms among Irish and Taiwanese university students

J.F. WANG & R. WILSON, Ulster of University, Coleraine.

Background: Numerous studies have revealed that parental bonding, family interaction, coping, and social supports were related with depression. Maternal deprivation was considered as a crucial issue in relation to children's mental health. It is revealed that low parental care and high parental protection are linked with depression. Moreover, it is also indicated that poor family interaction is linked with poor psychological well-being. Coping strategies used and social supports perceived were also a crucial issue to mental health.

Aims: The aims of this study is to investigate the cross-cultural differences among parenting styles,

family interaction, coping, and social supports in two separate cultures (Taiwanese and Irish) and examine the relationship among those variables in relation to depressive symptoms.

Method: Five standardised questionnaires were used (Parental Bonding Instrument, Family Assessment Device, Ways of Coping Questionnaire, Social support Questionnaire, IBeck Depression Inventory). In total 1084 students were recruited from the Universities in Northern Ireland and Taiwan.

Results: The result shows significant cross-cultural differences of parenting styles, family functions, and coping methods. More participants in Taiwan were depressed than in Northern Ireland. It is showed that more young people in Taiwan reported major stressful life events than the young people in Northern Ireland. Moreover, Taiwanese participants scored significantly higher scores in all the coping subscales than the Irish participants.

Conclusions: It is showed that interaction with parents and perception of family life are involved in the difference between young people in the two cultures in levels of depression.

Equal opportunities and the British Psychological Society

S. WARNER, SCPEO.

The British Psychological Society has a strong commitment to Equal Opportunities and is committed to a programme of action designed to make its policy effective both in its work as an professional association and as an employer. The Standing Committee for the Promotion of Equal Opportunities (SCPEO) plays an important role in assisting the Society to implement and promote equality. It has various functions, including advising the Council on maintaining an Equal Opportunities Policy, monitoring implementation of the policy across the Society, commenting on internal and external documents, monitoring membership of the Society. This session is aimed at providing an opportunity to inform and discuss with members the work of SCPEO and at how we can work to mutually support shared interests and concerns.

Shiftwork: A window for psychology

Z. WEDDERBURN, President of the British Psychological Society.

Shiftwork has been the main research theme in my career. It is an interesting example of applied psychology for many reasons. Its study is essentially interdisciplinary, as knowledge must be absorbed from, e.g. physiologists on body clocks, circadian rhythms and sleep, and from ergonomists on workplace design, including the design of shift systems: a broad foundation in psychology gives an insight into much of this. Field studies of shiftwork are concerned with both efficiency and satisfaction, two longstanding strands in occupational psychology. Its outcome can influence the home and work lives of shiftworkers, with individual counselling demonstrated to have a positive effect, and the issue of helpful booklets to have no effect. The window of opportunity for psychologists here is still wide open, as relatively little is routinely done to cater for the 10 to 20 per cent of the workforce that handles 24/7 operations.

Video game violence: Measuring aggressive behaviour as elicited by a competitive computer game

J. WILSON & R. BELL, Queen's University Belfast.

Background: It is proposed that observing violent programs heightens aggressive tendencies. This poster specifically examines the impact of a violent computer game on young adults' behaviour.

Aims: To examine the effects of playing either a violent or neutral video game on a person's behaviour, as elicited and measured by a human-irritable aggression paradigm. Aggression is defined in terms of the number of points deducted (deducts) and bursts of noise (masks) issued.

Method: 30 under/postgraduates were assigned to one of three viewing conditions (Aggressive,

Neutral and Control) from their scores on the Buss-Perry Aggression questionnaire. Between groups design identified significant differences between participants' subsequent behaviour. Correlations identified relationships between self reported and actual measures of aggression.

Results: Those in the aggressive condition deducted significantly more points, hit more masks and achieved fewer points as anticipated. A positive relationship was found only between the number of deducts and self report level of aggression.

Conclusions: Despite statistical significance, the emerging picture in the data was more complex. The reasons for this are discussed.

SYMPOSIA

Revitalising personnel appraisal Item generative tests

Convenor: S. IRVINE, Inpsych Ltd.

Since 1997, Item generative tests have been in use in Northern Ireland and the US and Europe. Until the publication of a definitive source, (Irvine & Kyllonen, 2002), little was known of an approach to assessment that promises to change the focus of test construction and use. By the automatic generation of items, multiple parallel forms are produced that guard against compromise by theft and coaching of specific test items. Three studies are presented. The first, conducted on the Northern Ireland Police Service in 1997-1998, reveals the results of paper-and-pencil analogues of the computer-delivered tests. In two years over 4000 applicants were tested and automatically scored and graded. Results of parallelism and gender and sectarian equity are illustrated. The second gives an account of selecting graduates for a rapid advancement programme in computer applications and programming conducted by BIC systems Belfast. The tests were administered by an executable file in a mapped network drive, testing up to 30 applicants per session. Norms were established in Year 1 and follow-up validity studies were conducted on Year 2 Cohorts. The results reveal precise parallelism high reliabilities, and good validity. To facilitate placement in consonant environments, a limited study of motivation and interest profiles of 50 applicants showed wide diversity of interests and distinct personality trends. The third is a comparative study of German conscripts using translations of the original tests. Parallelism was confirmed in paper-and-pencil and computer-delivered versions, while construct, concurrent and profile report validities were established. Data from Ireland, the US and Germany is compared and inferences drawn. Principles governing the introduction and use of parallel forms are presented for discussion.

Up-beat tests for police recruits in Northern Ireland

P. DALTON, Century Management, Belfast.

Background: In 1997, concern was expressed about the compromising of police recruitment tests of aptitude through repeated use of a single form of a short verbal reasoning test.

Aims: To construct multiple parallel forms of a battery of five information-processing tests using item-generative principles. Although these were designed to be computer-delivered, automatically scored, stored and reported, the clients requested a hybrid system with paper-and-pencil versions, template scoring and computer software scoring and reporting.

Method: Following focus group discussions with test presenters, final instruction protocols were devised and training completed for supervised practice sessions preceding each test. Pilot studies were followed by operational use. Each test session was limited to 30 participants with two proctors in attendance.

Results: Using two separate annual cohorts of applicants, attention is given to equity in test outcomes, particularly the effects of gender, age and sectarian origin on results obtained.

Construct and concurrent validities are shown. **Conclusions:** Advise on the continued use of tests in large scale screening operations is offered.

The universal appeal of item-generative tests for large-scale screening

S. IRVINE, Inpsych Ltd.

Background: Since 1997, a number of proving studies of item-generated tests have taken place. These have included the work reported above in Northern Ireland, a major US Air Force trial, and, in 1999 and 2003, research on paper-and-pencil and computer-delivered versions with conscripts in Germany using translated versions of the English language originals.

Aims: To collate the results of these studies for comparative purposes.

Main Contribution: This review shows in general, there are consistent content, concurrent, and construct validities. Reliabilities of individual tests range from 0.8 to 0.9; and that of a composite Capacity to Process Information variable is in excess of 0.96. Parallelism of different forms is constant, with very small effect sizes when mean form differences are compared within national studies.

Conclusions: The whys, whats, whens and hows of parallel form generation are outlined.

Rapid advancement training using item-generative computer-delivered tests

N. McCABE, P. KEERS, P. DALTON & S. IRVINE, BIC Systems Belfast, Century Management, Inpsych Ltd.

Background: A completely computer-delivered suite of information-processing tests to screen the annual graduate entry to a well-established Rapid Advancement Programme (RAP) for information technology training of graduates was required.

Aims: To develop a test of this nature for all graduates special whilst also ensuring gender and sectarian fairness were requirements.

Methods: The Millennium Tests devised by Inpsych Ltd for Northern Ireland use were introduced in a first year pilot and a second year operational trial. Norms for initial and repeated testing were produced.

Results: Estimates of reliability and parallelism over forms for different annual intakes, and the prediction of training success in the second year of use are presented. In the third year of operation, interest and personality tests were administered to 50 volunteers to prepare guidelines for their placement in job-training contexts.

Conclusions: A summary of the findings shows stability of norms compared with the original standardisation group of 1500 participants and examples of the report mechanisms. The Universal Appeal of Item-Generative Tests for Large-Scale Screening

Assembling the jigsaw of attitude toward Christianity: Further pieces

Convenor: C.A. LEWIS.

Over the last 25 years 200 independent studies have been conducted concerned with the correlates of attitude towards Christianity. The synthesis of these findings is straightforward having used a common instrument, the Francis Scale of Attitude Toward Christianity. 'I envisaged the advantages to be gained by attempting to co-ordinate a series of otherwise independent studies which could agree on definition and methodology. The image in my mind was that of a jigsaw puzzle. Properly co-ordinated each individual study could build on what was already known and gradually extend the picture' (Francis, 1993, p.4). The aim of the symposium is to present new research employing the Francis Scale of Attitude Toward Christianity, that provide additional pieces in the areas of mental health (Quigley *et al.*; Francis *et al.*; Fearn *et al.*) and values (Mullan & Lewis; Lewis & Francis) to the developing 'attitude towards Christianity' jigsaw.

The impact of personality and religion on attitude toward alcohol among 16 to 18-year-olds

M. FEARN, L.J. FRANCIS & C.A. LEWIS, University of Wales, Bangor & University of Ulster at Magee College.

Background: Previous research demonstrates a negative relationship between attitude toward alcohol and religiosity. However, what is less apparent is if this direct relationship may, at least in part, be a function of individual differences in personality.

Aim: The aim of the present study was to explore the interrelations between personality, religiosity and attitude toward alcohol among a sample of 16 to 18-year-olds.

Method: The Revised Abbreviated Eysenck Personality Questionnaire (Francis, Brown & Philipchalk, 1992), and the Francis Scale of Attitude toward Christianity (Francis & Stubbs, 1987) were administered alongside the Francis Scale of Attitude toward Alcohol (Francis, 1992) among a sample of 280 sixth-form students.

Results: The data demonstrate that a negative attitude toward alcohol was associated with lower psychoticism scores (tendermindedness) and a more positive attitude toward Christianity.

Conclusions: The data confirm the importance of both Eysenck's dimensional model of personality and personal religiosity in predicting differences in attitude toward alcohol use among a sample of 16 to 18-year-olds.

Religiosity and general health: A study among undergraduate students

L.J. FRANCIS, M. ROBBINS, C.A. LEWIS, C. QUIGLEY & C. WHEELER, University of Wales, Bangor & University of Ulster at Magee College.

Background: O'Connor, Cobb and O'Connor (2003) have recently employed the Francis Scale of Attitude toward Christianity alongside the General Health Questionnaire among a student sample. They report that their data failed to find any significant relationship between religiosity and health. However there are two problems associated with the secure generalisation of this conclusion.

Aim: The aim of the present study is to replicate the work of O'Connor, Cobb and O'Connor (2003).

Method: A sample of 193 undergraduate students completed the Francis Scale of Attitude toward Christianity together with the thirty-item version of the General Health Questionnaire and measures of church attendance, personal prayer, and bible reading.

Results: The data demonstrate that a positive attitude toward Christianity is associated with a higher level of self-reported general health. Church attendance, personal prayer, and bible reading convey no additional predictive power after attitude toward Christianity has been taken into account.

Conclusions: The present results are in contrast to O'Connor, Cobb and O'Connor (2003), and require further replication.

Conservatism and attitude towards Christianity among children

C.A. LEWIS & L.J. FRANCIS, University of Ulster at Magee College & University of Wales, Bangor.

Background: To further examine the relationship between religiosity and conservatism, Lewis and Maltby (2000) successfully located the Francis Scale of Attitude Toward Christianity within Wilson's model of conservatism among a sample of UK adults.

Aim: The present aim was to replicate the work of Lewis and Maltby (2000) among a sample of UK children.

Method: 1000 children completed the Junior Forms of the Francis Scale of Attitude Toward Christianity and the Wilson-Patterson Attitude Inventory.

Results: For the total sample, scores on the Francis Scale were significantly associated with each of the sub-scale scores of the Wilson-

Patterson Attitude Inventory.

Conclusions: These data provide further evidence of the close association between religiosity and conservatism and provide further evidence for the convergent validity of the Francis Scale of Attitude Toward Christianity Wilson's model of conservatism.

Teenage beliefs and values in Northern Ireland: A cross-cultural comparison with England and Wales

M. MULLAN & C.A. LEWIS, University of Ulster at Magee College.

Background: Francis (2001) in his book *Values Debate* presents findings from a survey of 34,000 13 to 15-year-olds drawn from English and Welsh teenagers. The survey included questions on social, personal and moral issues. The impact of religion, social class, school and family background variables were explored with reference to the range of issues.

Aims: The aim of the study was twofold: first to present findings related to current levels of values among teenagers in Northern Ireland; second, to provide a comparison with data of Francis (2001).

Method: 600 children aged between 14 and 15-years-old, from four Catholic schools and two Protestant schools in Northern Ireland completed a questionnaire booklet, containing self-report measures of beliefs, values, religion and personality, alongside some demographic questions.

Results: First, the data pertaining to values was analysed and the impact of religion, social class, school and family variables examined. Religion was found to be an important predictor of values. Second, comparisons were drawn with the data of Francis (2002). Differences between the two data sets were found, and these were related to themes of 'moral law' and 'civic law', with the Northern Irish children scoring significantly higher on 'moral law' and significantly lower on 'civic law' than the English and Welsh respondents.

Conclusions: The present data provides a 'snap-shot' of contemporary values among teenagers in Northern Ireland, and an insight into some factors that may influence individuals' values.

Religion and mental health: Confusions, concerns and comments

C.F. QUIGLEY, L.J. FRANCIS & C.A. LEWIS, University of Wales, Bangor and University of Ulster at Magee College.

Background: The relationship between religion and mental health has been the focus of much research, with the majority reporting salutary outcomes.

Aim: This review examines the mechanisms involved in the religion-mental health relationship and notes conceptual and methodological concerns.

Main Contribution: The majority of studies report a positive link between religion and mental health. Studies generally focus on examining this relationship in mature adults either living in the community or hospitalised with medical illness. The majority of these studies have reported zero or low-order correlations, which do not analyse the effects of various potentially confounding psychosocial variables. In addition, the over reliance on cross-sectional designs prohibit the supposition regarding the possible causes or consequences of religiosity. Consequently, few studies that control for confounders typically observe the association between religion and mental health drop substantially sometimes to non-significance. Therefore, it would seem that there is confusion concerning the sole effects of religion on mental health.

Conclusions: Future research should note these concerns and should try to design research without these conceptual and methodological limitations.

The mental health and well-being of young people in the Republic of Ireland

Convenor: S. McGILLOWAY, National University of Ireland at Maynooth.

Recent years have seen an upsurge of interest among policy-makers, researchers and practitioners – throughout the UK and elsewhere – in the growing number of young people aged under 25 who are developing mental health problems. Added to this are increasing national concerns about suicide rates and the alarmingly high levels of alcohol consumption among young people, both of which have been the subject of recent media attention. To date, relatively little research has been undertaken to examine the prevalence, nature and experience of mental ill health in young Irish people. This symposium aims to throw light on these issues by drawing on qualitative and quantitative research conducted with 145 young people (< 25) living in the Greater Dublin and surrounding areas. These studies examine: the prevalence of minor psychiatric morbidity among consecutive GP attenders ($N = 80$); rates of harmful alcohol consumption in female university students ($N = 30$); the experience of eating disorders among females ($N = 4$); and the quality of life and psychological well-being of young people with and without chronic illness ($N = 31$).

The experience of eating disorders among young females: A qualitative study

L. BRENNAN & S. McGILLOWAY, National University of Ireland at Maynooth.

Background: Relatively little is known about the experience of young Irish people with anorexia nervosa despite estimates that the illness currently affects up to 20,000 people in Ireland.

Aims: This qualitative study explores the experiences of four females (three aged 18–25; one aged 30) recovering from anorexia nervosa.

Method: One-to-one in-depth interviews were conducted using an adapted version of a Mental Health Foundation questionnaire. Interviews were recorded, transcribed and subjected to content analysis to identify key themes including pathways to care and service utilisation.

Results: Participants were unable to identify any specific factors which had led to their illness and one person had no contact with psychiatric services. Key themes included feelings of guilt, isolation and, in one case, suicidal ideation.

Conclusions: Further qualitative research in this area is required to explore in more detail the unique experiences of this vulnerable group of young people and, in particular, to determine the most appropriate and effective service response.

Mental health problems among 16 to 25-year-olds attending their General Practitioner

K. KEOGH & S. McGILLOWAY, National University of Ireland at Maynooth.

Background: There are growing concerns about the increasing prevalence of psychiatric disorders among adolescents. Many of these problems may go unrecognised/untreated but often, the first port of call for young people in distress is their GP.

Aims: This study investigates the mental health and well being of adolescents attending two urban GP practices in County Dublin.

Method: The GHQ-12 (Goldberg, 1978) and a brief sociodemographic questionnaire were administered to 80 consecutive GP attenders aged 16 to 25-years-old.

Results: In total, 47 per cent (38/80) were identified as 'cases' on the GHQ-12 and would benefit from formal mental health intervention. This is dramatically higher than would appear to be indicated by anecdotal reports in both practices. More females ($N = 58$) than males ($N = 22$) participated in the study. Preliminary analysis suggests that those who are single parents, unemployed or poorly educated are most at risk.

Conclusions: The high level of psychological distress confirms recent UK research and has

important implications for the recognition and treatment of mental illness among young people, particularly in view of evidence indicating limited recognition by GPs.

Mental and physical health in young people with and without chronic illness

M. NOONE & S. McGILLOWAY, National University of Ireland at Maynooth.

Background: Few studies have compared the Quality of Life (QoL) of people with and without a chronic illness, particularly with respect to psychological aspects. Recent concerns about the incidence of asthma – and suggested links to (and concern about) mental ill health among young people – provided the impetus for this study.

Aims: The aim was to assess health-related QoL – including psychological problems – in young people aged 18 to 25 with and without asthma.

Methods: The SF-36 (V2) and a brief socio-demographic questionnaire were administered to 15 asthmatics and a comparison group of 16 people with no history of chronic illness (15 males, 16 females).

Results: Preliminary analysis indicated no statistically significant differences ($p < 0.05$) in overall QoL between the groups, although males in the comparison group reported better physical functioning. There were no statistically significant differences ($p < 0.05$) between the groups with respect to emotional problems.

Conclusions: The results suggest that having a chronic illness such as asthma need not affect overall QoL, nor does it have any bearing on the mental health of sufferers. These results, though based on a relatively small sample, appear promising for the growing number of Irish children diagnosed with asthma (and their parents).

Hazardous drinking behaviour in young Irish females

C. TOLAND & S. McGILLOWAY, National University of Ireland at Maynooth.

Background: During the last decade, alcohol consumption per capita in Ireland has increased by 41 per cent and Ireland has moved from twelfth to second place in the world rankings. Recent media reports indicate that young Irish people and, in particular, females, are at risk of harmful alcohol consumption.

Aims: The aim of this study was to assess the prevalence of hazardous drinking behaviour among a purposive sample of female students aged 18 to 25 ($N = 30$) attending NUI Maynooth.

Method: Participants completed a brief Profile Form and the AUDIT questionnaire (Saunders *et al.*, 1993) which screens for hazardous alcohol consumption.

Results: 57 per cent (17/30) were identified as AUDIT 'cases' (indicating hazardous drinking behaviour), 71 per cent of whom had also used drugs compared to 39 per cent of non-cases. Most respondents (83 per cent) reported drinking spirits in preference to beer and described themselves as 'average' drinkers.

Conclusions: The results, based on an albeit small sample, support recent anecdotal reports concerning excessive drinking among young Irish females. They further suggest a need to target this group when designing and delivering much-needed alcohol-related interventions.

Teaching and learning in psychology: Issues for higher education

Convenor: C. McGUINNESS, Queen's University Belfast.

The past 10 to 15 years has seen an enormous expansion in higher education with calls for widening access, quality enhancement in teaching and learning, and a renewed emphasis on educating students for employability. Several national initiatives have been created to support teaching learning and the Learning and Teaching Support Networks (LTSNs) have a specific disciplinary focus. This symposium draws together four papers to create an opportunity to discuss these issues in the context of teaching

psychology. The first paper by McGuinness and Gibbons raises the issue of peer observation of teaching as a quality enhancement tool and describes a survey of current practices in UK psychology departments. The second paper by Muldoon and Curran describes some research on supporting disabled students learning in the School of Psychology at QUB. Stringer's paper shows how employability skills are enhanced in the psychology degree programme at UUC. The last paper from Tweedie presents an overview of the work of LTSN Psychology and how it is creating a research focus for teaching and learning in psychology.

Peer observation and peer review of teaching: Survey of practices in UK psychology departments

C. McGUINNESS & C. GIBBONS, Queen's University Belfast.

Background: Peer observation of teaching (POT) has become increasingly prevalent in higher education as a means for enhancing teaching.

Aims: To report on current peer observation and peer review practices in UK psychology departments, to describe their scope and scale, with a view to identifying good practice for dissemination.

Method: Departments were electronically surveyed using the LTSN list of 122 department contacts. Sixteen questions about peer observation and review practices were posed. Responses were received from 45 departments, equally from pre-1992 and post-1992 universities.

Results: Indicate widespread use (81 per cent of departments) with a big increase around the time of Psychology Subject Review (1998 for England). Observation in lectures is by far the most frequent type of peer review (100 per cent reported), but other types are also frequently described. It is mainly for developmental purposes with pairs choosing review partners within their own departments.

Conclusions: Implications are drawn about POT as a means for teaching enhancement and the attitudes expressed in the survey about its usefulness. Distinctions are made between peer observation of teaching and the more general practices of peer review.

Managing disability in higher education

O. MULDOON & W. CURRAN, Queen's University Belfast.

Background: Policy commitment to widening access has seen a rise in the number of disabled students enrolled in full-time higher education. This paper reports on an initiative to support students, registered as disabled.

Aim: To examine academic performance of disabled students together with matters that have concerned staff attempting to support their learning.

Method: First, a comparison of the academic performance of these students with those within their cohort who are not registered as being disabled was undertaken. Second, a report of two focus groups undertaken with academic, academic-related and support staff is presented.

Results: A comparison between the academic performance of disabled and non-disabled students is presented. The interviews highlight the issues that staff have encountered in attempting to support teaching and learning in the context of disability.

Conclusion: A range of challenges face those committed to widening access to higher education.

Improving interview and career skills in psychology undergraduates: A practical approach

M. STRINGER, University of Ulster, Coleraine.

Background: This paper outlines a practical programme that aims to improve student's confidence in their ability to prepare for and successfully manage job selection interviews.

The programme encourages students to examine the content of their psychology degree programme; to use the University careers advice service; to practice putting together CVs and covering letters and to examine their own performance at a mock selection interview.

Aims: The paper outlines a practical programme aimed at improving student's self confidence and ability to apply for and undertake job selection interviews.

Method: Using quantitative and qualitative approaches students are encouraged to examine the skills required to successfully manage a job selection interview. This involves rating their own performance using videotapes and comparing self-ratings with those of more experienced panel members.

Results: The results reveal that students value the exercise as a means of both building their self-confidence and ability to prepare for job selection interviews. The results also highlight significant differences between self-ratings and panel ratings of interview performance.

Conclusions: The programme can be adopted to run on any Psychology degree programme and offers students practical insights into the skills gained on their degree and how these can be used effectively to gain jobs in an increasingly competitive environment.

Establishing a community-wide approach to research in the teaching of psychology

S. TWEEDIE, LTSN Psychology, University of Strathclyde.

Background: This paper will outline the main features by which LTSN Psychology promotes, supports and disseminates research into the teaching of psychology in Higher Education.

Aims: The subject centre aims to fund, support and encourage a range of projects, reports, events, publications and specialist networks in order to establish good practice in the teaching of psychology.

Main Contribution: LTSN Psychology directly funds pedagogical and methodological research through a rolling series of mini-projects and specialist networks and through commissioned studies and reports. It is also instrumental in co-ordinating and disseminating the current FDTL4 psychology projects. Individual practitioners and departments are encouraged to share their research through national workshops, the website and Psychology Learning and Teaching (PLAT) Journals and Conferences.

Conclusions: It is hoped that this overview will provide an opportunity to explore further possibilities for development of psychology specific learning and teaching research projects and initiatives.

Aspects of identity

Convenor: NIBPS COMMITTEE.

Given that this years annual conference is being held in conjunction with the Welsh and Scottish branches, a symposium focusing on aspects of national/regional identity seemed appropriate. Four invited papers form the basis of this symposium, all of which attend to the importance of external environmental factors to identity development. The first by Scherbrucker and Trew considers how the Northern Irish identity fits into the wider pattern of social identities in Northern Ireland. The second paper by Hopkins and Reicher uses the geographical border between England and Scotland to highlight young people's views and reasoning about issues such as belonging and identity in a Scottish border town. The third paper by Cassidy *et al.*, again examines identity in Scottish young people. This study, however, focuses on how national identity co-exists with ethnic identity and the relationship between these identities and psychological well-being. The final paper by Stronder, examines the role that integrated education may play in moderating identity and social attitudes in Northern Irish schoolchildren. The papers attempt to elucidate the issue of identity using different methods and perspectives, and highlight the vibrancy of this research area.

National and ethnic identity among ethnic minority young people in Scotland

C. CASSIDY, R. O'CONNOR, C. HOWE & D. WARDEN, University of St Andrews & University of Strathclyde.

Background: This study draws on Berry's (1990) model of acculturation and more recent work suggesting group differences in how national and ethnic identity interrelate.

Aim: The present study sought to examine the interrelationship of national and ethnic identity and its implications for psychological well-being among ethnic minority young people in Scotland.

Methods: Our sample ($N = 121$) comprised three ethnic groups: Chinese, Indian and Pakistani.

Participants completed a number of questionnaire-based measures at two points in time, separated by a year. Correlational analysis examining the interrelationship of ethnic and national identity suggested differing patterns for the three ethnic groups. Acculturation strategy was determined by the perceived importance (low or high) of ethnic and national identity.

Results: Analysis of covariance suggested that the relationship between acculturation strategy and psychological well-being varied across the three groups.

Conclusions: Findings are discussed in the context of the ethnic identity and acculturation literatures. The implications for research examining national identity in Scotland are considered.

Border, place and identity

N. HOPKINS, S. REICHER & K. HARRISON, Dundee University & St. Andrews University.

Background: At first sight the England-Scotland border may seem rather irrelevant to young people living in border towns. It has little by way of a physical presence: the most that south-bound motorists may see are signs saying 'Welcome to England'. As one of their leisure-time destinations is a nearby English town these young people cross the border quite regularly in the course of their everyday life.

Aims: To explore the psychological significance of the border for young people.

Methods: Interviews with young Scots (senior secondary school pupils) living in small community close to the border with England were undertaken. Our participants deliberated upon such issues as where they would like to study or take up long-term employment. In this paper we discuss themes arising from interviews.

Results: In the course of the interviews, our participants explored the experience of feeling 'at home' and elaborated quite complex accounts of what made a particular place 'home' and other places 'not home'. In addressing these issues our interviewees routinely invoked issues relating to national identity and we will explore their deliberations as to the identity implications of moving to a range of places within the UK.

Conclusions: Exploration of the arguments about the possibilities of moving to equidistant Scottish and English locations include reference to the degree to which they feel they could 'fit' into these places, the degree to which they would be accepted by others already living there, the degree to which interviewees feel their identities would undergo change in different places, and the perceived reaction of friends and family.

A review of recent work on the Northern Irish identity

I. SCHERBRUCKER & K. TREW, Queen's University Belfast.

Background: Considers recent work on the nature of the Northern Irish identity, particularly from a Social Identity Theory perspective.

Aims: To consider the nature of those individuals proffering the Northern Irish Identity as their primary social identity; to consider how the Northern Irish identity fits into the wider pattern of identities in Northern Ireland; to assess its viability as a common identity for both unionists and nationalists; and to consider possible future influences on the Northern Irish identity, given the current political environment.

Main Contribution: Examines findings from recent questionnaire studies. The main finding is that the Northern Irish identity, in its currently most widely recognised form, does not appear to represent a viable identity for drawing together those from nationalist and unionist perspectives.

Conclusions: It may be that if the flagging peace process begins, once more, to make headway, and especially if, in conjunction with this, there is more civic and institutional support for the notion of a Northern Irish identity, this identity may become a viable common identity for all people in Northern Ireland, in the future.

Does integrated education change children's group identity?

M. STRINGER, P. IRWING, M. GILES, R. WILSON & C. McCLENAHAN, University of Ulster, Coleraine.

Background: This paper presents a range of models based on a large cross-sectional study of Northern Irish schools which suggest that integrated education has a moderating effect on children's political attitudes.

Aims: The paper outlines briefly a number of models that illustrate the way in which parents and schools influence children's attitudes. The role of in school and out of school contacts in changing attitudes is highlighted along with the absence of effects due to friendship quality with other group members or school ethos.

Method: A quantitative questionnaire study of carefully matched Northern Irish schools and their parents provided cross-sectional data on three age cohorts. Data was collected on children's and parental attitudes and contacts with members of the other group in both integrated and segregated schools.

Results: The results reveal that secondary school children's political attitudes appear to be moderated by contact with other group members both in school and outside school.

Conclusions: The paper concludes by highlighting a number of measurement issues in this area along with suggestions for further research.

WORKSHOP

Publishing your research

Convenor: NIBPS COMMITTEE.

Chair/Discussant: D. HANNA.

Panel: PROFESSOR K. BROWN (former editor *IJP*), DR. S. REICHER (current editor *BJSP*), DR. M. DEMPSTER (QUB) & DR. O. MULDOON (QUB).

This workshop aimed at post-graduate students and those at an early stages of their research careers aims to provide useful guidance on the publication process. The session will involve brief panel presentations from contributors and session participants will then be encouraged to engage in a question and answer/discussion session. The panel contribution will be informed by two senior academics who have been or are currently Journal Editors. Their contribution will highlight the expectations of journal editors regarding manuscripts, common problems resulting in rejection of manuscripts and other issues related to the publication process. Further contributions will include guidance on how to maximise the impact of your research and how the research exercise has impacted on the publication process (Martin Dempster). Finally, issues that arise as a result of the reviewing process will be outlined. Using sample reviews, Orla Muldoon will outline some of the issues that can arise for researchers as a result of the peer review process.

Division of Health Psychology Annual Conference

Division of Health Psychology Annual Conference. Staffordshire University, Stoke-on-Trent, 3–5 September 2003.

KEYNOTE SPEAKERS

36 years of reasoned action: A look back, a look ahead

M. FISHBEIN, Annenberg Public Policy Center, Annenberg School for Communication, University of Pennsylvania.

It's now been 36 years since the first publication of a reasoned action approach to the prediction and understanding of human behaviour. Perhaps not surprisingly the theories longevity has led to many questions and challenges. Among other things, investigators have argued that it is 'too rational', 'too behaviour specific', and that the approach does not take all 'relevant' determinants of behaviour into account. In this paper, I'll look back over how the model has dealt with these and other concerns, consider some of the newer questions about the approach that are being raised, and point to some future questions that I think need to be considered if we are to gain a better understanding of behaviour in general and health behaviour in particular.

Sex and sexuality in the land of Oz

M. PITTS, Australian Research Centre in Sex, Health and Society, Melbourne, Australia.

We have never been in a better position to understand sex, sexual health and sexuality from a strong evidence base. In Australia, we have recently completed the first national survey of sex, sexual health and sexuality and I will present data on the changing pace of sexual cultures here. I will also draw on data from three national surveys of secondary school students carried out at five yearly intervals that illustrate specific changes in sexual cultures in 16 to 18-year-olds. Data from associated studies allow us to understand how these sexual cultures include the relation of young people to their bodies. I will place this 'local' research into an international context via an examination of the outcomes of a recent review we carried out. This was commissioned by the WHO, and had the aim of identifying gaps in the research literature to enable the development of a new global agenda in sexual health research. I will offer three challenges to health psychologists working in these areas: The first is a methodological challenge; we need to acknowledge and value the broad range of data that constitute appropriate evidence in the sex and sexuality field. The second is an epistemological challenge that questions the privileging of certain constructs, e.g. gender in an un-problematic way and that views and measures sex as an individual behaviour. The third challenge is the need to get closer to the experience of sex.

Stress, wound healing and recovery

J. WEINMAN, Unit of Psychology, GKT School of Medicine (Guy's Campus), University of London.

There has been considerable research in health psychology on the effects of pre- and peri-operative stress on surgical recovery but there is little work on the possible effects of longer-term life stresses. This talk will describe a number of studies beginning with a clinical study examining acute and chronic stress effects in surgical patients. This led onto two laboratory studies investigating the relation between life stress, other psychological variables, cortisol and speed of wound healing as measured by ultrasound imaging. The consistency of the findings, showing slower stress-related wound healing, prompted the need for intervention studies to test these relationships, and the results from a recent study using emotional writing will be presented. Finally,

preliminary findings from an ongoing study of wound healing in patients undergoing keyhole surgery will be presented.

WORKSHOPS & SYMPOSIA

The final curtain: Methodological challenges in end of life research

Convenor & Chair: S. PAYNE, University of Sheffield.

Discussant: S. HORN, University of Southampton.

Aims: (1) Discussion of methodological issues in a sensitive area of research; (2) Debating the use of quantitative and qualitative methods in one area of health psychology; (3) Examining the 'real world' research issues in one complex area of health care; and (4) Bringing together the leading health psychologists in end of life research.

Rationale: The workshop fits well with the theme of this year's conference because it explicates two of the key words – 'practical' and 'theory'. The workshop brings together four of the leading health psychologists working in the 'practical' area of end of life research. Each speaker is an experienced researcher and leads a programme of research in end of life care. The workshop focuses on methodological and ethical challenges which are highly relevant to health psychologists, such as those working for Stage 2 accreditation. Since methodological decisions are grounded in theoretical perspectives, the workshop will also address what constitutes 'good theory'. The speakers will explore the epistemological assumptions that guide their methodological decisions. We have not sought to privilege quantitative or qualitative methods but instead we seek to demonstrate how differing methods may contribute to understandings in this area of health care and health psychology. Arguably health psychologists have made less impact on research and theoretical developments than other social scientists such as medical sociologists and anthropologists. Research in end of life care has been marked by a lack of rigorous research design and the workshop offers an opportunity for health psychologists to contribute to improvements by stimulating debate. Recent UK government policy initiatives such as the NICE Supportive and Palliative Care Guidance for Cancer and National Service Frameworks which address specific groups and conditions, provides an impetus for improvements in research design. We regard the proposed workshop as a timely opportunity to forge greater links between those working at the boundaries of health psychology and health services research.

Summary: The workshop examines methodological challenges when conducting research with people near the end of life. The workshop will be chaired by Professor Sheila Payne who will start by defining end of life care and outlining recent UK policy developments.

Difficulties of collecting prospective data in the palliative care setting

C.J. TODD, University of Manchester.

Background: Review of palliative care research highlights the difficulty of collecting prospective data with the result that studies are often unsuccessful. Two central problems facing researchers are: (1) how to identify and recruit patients; and (2) how to collect data from patients once they have joined a study. The resistance one experiences in both arenas is often expressed in terms of not overburdening patients and families during this 'difficult time'.

Methods: Using experience from a randomised trial of hospice at home, and a study of patients' symptoms and needs in the community I will demonstrate how resistance to researching the palliative is not simply that patients are physically very ill, but is driven by: (a) perceptions of how sensitive the issues are; (b) health care professionals' gate keeping access to patients and their families; (c) difficulties related to obtaining consent; and crucially (d) the problem

of defining palliation.

Results: The presentation focuses on the results from a study to develop a patient held record (CAMPAS-R), which can be used for prospective data collection in the community by incorporating it into the clinical monitoring of patient physical and psychological function. The instrument has good psychometric properties and alleviates problems (a) and (b) above by making data collection less threatening, and by providing health professionals a stake in research.

Discussion: The transparency of the approach reduces some ethical concerns, but recruitment will remain difficult as long as defining palliation remains problematic.

Can proxies provide valid information on the experiences of people at the end of life?

J.M. ADDINGTON-HALL, Dept. of Palliative Care and Policy, King's College London & C. McPHERSON, University of Ottawa.

Background: After-death or retrospective interviews with bereaved respondents are an important tool in the repertoire of researchers evaluating the quality of end-of-life care or investigating the experiences of people at the end of life. Despite the importance of this approach, the validity of the information gathered has received little attention.

Methods: Systematic review, using established search strategies, of literature that assesses the validity of proxies (family or friends, but not health professionals) acting for patients at the end of life.

Findings: The findings suggest that proxies can reliably report on the quality of services, and on observable symptoms. Agreement is poorest for subjective aspects of the patient's experience, such as pain, anxiety and depression.

Discussion: These are precisely the problems targeted in palliative care, and research is therefore needed to investigate ways of improving agreement between patients and proxies. This needs to be informed by survey methodology and cognitive psychology, and to address factors likely to affect levels of agreement, including factors associated with the patient and proxy (for example, mood, cognitive impairment, type and quality of relationship), the measures used to assess palliative care and the design of the research evaluating the validity of proxies' reports (including time from death). Proxy accounts will continue to have an important role in research at the end of life, and ways need to be found to improve the validity of these accounts.

'Let me explain': Narrative emplotment and one patient's experience of oral cancer

M. CROSSLEY, University of Manchester.

Recent research has investigated the way in which serious illness potentially poses a threat to peoples' sense of ontological security by throwing into doubt assumptions about time and the future. One of the main ways in which people adjust to such threats is through the use of narrative (either consciously or unconsciously) which helps them to make sense of illness. Of particular relevance of people learning to live with a cancer diagnosis, is the concept of 'therapeutic emplotment' developed by Del Vecchio Good *et al.* (1994). This concept refers to the way in which oncologists are taught to structure temporal horizons for their patients in a particular way in order to instil and maintain hope in the context of arduous and toxic treatments. Using a case-study of one man's process of adapting to oral cancer (John Diamond's posthumously published serialised diary entries in *The Times*), this paper investigates the way in which such 'therapeutic emplotment' is implicitly incorporated by the patient, providing an underlying plot structure to his story. Following Diamond's diary entries over the four year duration of his illness, this paper analytically divides them into six main

stages, documenting the underlying temporal structure and themes accompanying each stage of adaptation. The paper illustrates the way in which 'therapeutic employment' encourages the patient to focus on the immediate present and to place faith in the efficacy of specific treatments. However, it also explores how the attempt to live in the context of such a plot if fraught with anxiety for the patient, and how it co-exists with other largely 'unspoken narratives' of uncertainty, fear and scepticism in relation to the power of medicine. The main aim of the paper is to document, for the first time, the process of 'therapeutic employment' from the oral cancer patient's point of view.

Expectations of ethnography in health psychology research near the end of life: Probing in-depth or much too invasive?

S. PAYNE, University of Sheffield,
S. HAWKER & C KERR, University of Southampton.

Background: Ethnography is an approach to conducting research which has been relatively little used within health psychology. The purpose of this paper is to introduce health psychologists to some of the advantages and disadvantages of ethnography as a method of accessing and organising data when researching people who provide and use end of life care. It draws specifically on a current study exploring the role of community hospitals in providing end of life care for older people.

Methods: Building upon a survey of all UK community hospitals ($N = 478$) and semi-structured interviews with 30 hospital managers, six in-depth organisational case studies are being undertaken. Overt non-participant observation of care, a questionnaire for health professionals plus semi-structured interviews with palliative patients and their carers are providing detailed, rich and varied ethnographic data.

Findings: Spending time in the field has enabled us to build trusting relationships with hospital staff and patients. Hospital staff are encouraged to explain procedures and how practice has developed. Problems have been encountered with ambiguous definitions of palliative care in this setting. Negotiating access is time consuming and ethical constraints have rendered access to respondents difficult.

Discussion: An ethnographic approach can supply in-depth data thereby facilitating greater understanding but it is demanding of the time and energies of respondents. It is particularly useful when incorporated at a later stage of a multi-method project. Hospital bureaucracy and ethical restrictions must also be considered. Incorporating psychological insights from respondent accounts, documentary sources and non-participant observation allows complex qualitative analyses of 'real world' situations.

Applying health psychology in professional practice: Combining knowledge, skills and competencies in the workplace

Convener & Chair: C.N. HALLAS, Royal Brompton and Harefield NHS Trust.

Discussant: Panel comprised of contributors.

Aim: This two-hour workshop is designed to discuss professional issues that are relevant and timely to the training, supervision and practice of health psychologists working within applied healthcare settings. Workshop participants will be able to discuss the translation of the core competencies of the Stage 2 qualification directly into applied professional health practice through five 15-minute presentations. Two presentations will directly address professional issues relating to the implementation of theoretical knowledge into healthcare interventions, research and consultancy practice (Owen *et al.* & Sykes). A further presentation (Keen) will address the professional debate surrounding the competencies of health psychologists to work directly with individuals receiving treatment or care for medical conditions within the NHS

setting. Two additional presentations will address professional issues relating to the supervision and practice of trainee health psychologists and chartered health psychologists within healthcare settings. A Stage 2 trainee's presentation discusses the issues relating to completing the competencies within healthcare practice, the supervision of practice and the professional issues relevant to trainees (Pullen). Standards and recommendations regarding the supervision of chartered health psychologists working in NHS settings are also presented to the workshop for discussion (Bath).

Structure: Following the presentations, a brief summary of the presentation will be presented for discussion with the audience and an overview of the workshop issues to be discussed (Hallas). Thirty minutes will be allocated for audience questions and to work towards the workshop objectives. The first objective is to present clear evidence for the application of health psychology research into professional evidence-based healthcare practice. Secondly it is hoped that this workshop will facilitate discussion and a consensus regarding guidelines to aid some of the professional issues that are manifesting as a result of the professionalisation of health psychology. It is hoped that such a consensus can be communicated to the Division of Health Psychology Continuing Professional Development (CPD) Committee to assist in DHP CPD policy.

The role of health psychology in understanding barriers to recruitment in cancer clinical trials: Doctors' and patients' perceptions of suitability for trials

R. OWEN, L. EARLL, Health Psychology Dept., Gloucestershire Hospitals NHS Trust & A. ASHTON, Three Counties Cancer Network.

Background: The role of research and development is increasingly acknowledged within the government agenda for clinical services. The NHS National Cancer Plan (DoH, 2000) proposes that people with cancer should routinely be offered the opportunity to take part in treatment trials. The National Cancer Research Network sets targets for trials involvement as conditions for continued accreditation of the Network. Many Cancer Networks do not yet meet these targets. Research on trials recruitment has, to date, focussed mainly upon patients' decision-making whether or not to participate. However, offering trial participation, and agreeing (or not) to do so are issues of the behaviour of healthcare staff and service users. Many patients who are likely to meet physical inclusion criteria are not approached and offered involvement by their doctors; at present, there is no evidence-base regarding this process. This could be seen as a fruitful area for increasing recruitment rates, but care must be taken that this does not compromise the well-being of service-users. Health psychology research could potentially help clarify important factors in this area and the objective of this paper is to present the process by which a study was designed using health psychology theory to aid greater understanding of the clinical trial recruitment process.

Methods: To help Cancer Networks work towards the national agenda, it was decided to undertake a mixed-methodology study to identify: the factors which experienced clinical trials recruiters (or 'triallists') use to determine those for whom an offer of trial participation would be inappropriate how far these factors reflect the concerns of potential research participants. This presentation outlines the findings from the first qualitative phase to illustrate how health psychologists' theoretical and research skills are applied to address targets within the NHS.

Sharing an experience of implementing health psychology theory into practice: The Coronary Heart Disease Partnership

C.M. SYKES, King's College Hospital, London.

Background: The Coronary Heart Disease (CHD) Partnership is a project that is designed to improve the patient's experience of revascularisation at two tertiary cardiac surgery centres in London. A chartered health psychologist with a background in research health psychology and project management co-ordinates the project which draws upon several theories including action research and narrative analysis. The approach to the project is intended to be participatory at all level and ideas for changing revascularisation services are tested on a small scale, then introduced on a larger scale. Patients and carers are invited to share their stories with professionals in order to generate ideas for improvement. The difficulties and positive aspects of implementing the project will be shared. The political, personality, practical and bureaucracy barriers that were encountered will be described. The project has been a mixture of success and failure. Reflections on the factors that have contributed to the successful aspects of the project will be presented. This will lead to a discussion about the implications for training health psychologists and the skills needed to work successfully within health policy and healthcare project management.

Health psychologists working directly with patients: The development of relevant knowledge and skills

A. KEEN, Royal Aberdeen Children's Hospital, Aberdeen.

Many health psychologists and health psychologist trainees would like to work directly with patients. There are an increasing number of posts advertised in the British Psychological Society's *Appointments Memorandum* that include working directly with medical patients as part of a multi-faceted role. These vacancies, that are typically described as clinical health psychology posts, would appear to be suitable to applicants with health psychology training. However, there is informal evidence that potential employers have expressed concern that health psychologists and health psychology trainees lack the required relevant knowledge and skills to be able to carry out this role effectively. In view of these facts, the way in which relevant knowledge and skills develop is an important issue. It is also a crucial matter for the Division of Health Psychology as trainees could choose providing psychological treatments directly to medical patients as one of those competencies that they wish to develop during stage two training. It is clearly in everybody's interests that supervisors use those training methods that are empirically proven to help development of appropriate knowledge and skills, during this important period of professional development.

Working towards the current qualification in health psychology (Stage 2): The experiences of a trainee health psychologist in the NHS

S. PULLEN, Health Psychology Dept., Gloucestershire Royal Hospital.

Background: This paper attempts to outline my personal experience of working towards the current qualification in health psychology (Stage 2) within the NHS. As a result of completing both under-graduate and post-graduate placements within the Health Psychology Department at Gloucestershire Royal Hospital, I was offered the position of Trainee Health Psychologist. I have gained experience of working within the cardiac rehabilitation service, from providing the psychology component of the programme to completing the annual report for the service. I have also been provided with the opportunity of completing the empirical study for the stage two

qualification within the Cardiac Rehabilitation service (Gender and cardiac rehabilitation, do women receive fair and equal treatment and care?) I have gained further experience of working within the applied research unit of the department. This involves the completion of relevant uni- and multi-professional audit and research within the context of the work setting to improve the health outcomes for patients, their families and carers. From the activities undertaken within the research unit I have been able to complete a systematic review (psychology involvement within a community health setting). The review has been borne out of the interests of the local Primary Care Trust and the Health Psychology Department. The applied research projects undertaken within this area of work have provided opportunities for experience in research and consultancy. The supervision I receive consists of fortnightly one-hour face-to-face meetings with a chartered health psychologist.

Supervising health psychology in the National Health Service

J. BATH, Gloucestershire Royal Hospital. How often should psychologists attend supervision? Should clinical psychologists supervise health psychologists in the NHS? Is it appropriate for a Health Psychologist to supervise, or manage, a clinical psychologist? How are Chartered Health Psychologists going to go about supervising Stage 2 Health Psychology trainees? How important is any of this? I will argue that all of the above questions matter and that they all need to be addressed. Although the answers to these questions may vary depending on the experience of the supervisor or the needs, or perspective, of the supervisee, it is essential that supervision is: (a) needs led; and (b) placed within a framework of Clinical Governance (and more specifically Continuing Professional Development). The emphasis on learning has been adopted by the Division of Clinical Psychology in their 'Guidelines on Supervision in the Practise of Clinical Psychology' and I will discuss the importance of placing supervision within this context. Furthermore I will discuss some of my own experience of being supervised within the NHS by an experienced clinical psychologist and how this experience has both developed my professional practise and benefited the client groups with which I have been working. At the same time I have supervised two Health Psychology Trainees up to Chartered Status and I will describe the framework which we have used for our supervision sessions. Finally I will discuss the onset of Stage 2 Training within Health Psychology and how this will impact on the supervision of Health Psychology Trainees.

Critical health psychology

Convener, Chair & Discussant: M.L. CROSSLEY, University of Manchester. **Aims:** The aim of this workshop is to provoke discussion about what constitutes a 'critical health psychology' and why such an approach is important within the context of contemporary health psychology. Participants have been asked to provide an empirical example from their own research, of what they consider to be a 'critical' approach to health psychology. Why did they adopt such a perspective? In what ways did it differ from more 'mainstream' approaches (theoretically, methodologically, both?). Why did they consider such an approach important? What were the pitfalls of adopting such an approach? The workshop participants have purposely been selected from different substantive research areas (mental health, alcohol use, HIV/AIDS) in order to address the broader theoretical question of what constitutes critical health psychology. **Rationale:** Critical health psychology as an increasingly influential emerging perspective within both national and international health psychology. The BPS Conference Scientific Committee have recognised this in inviting me to submit a workshop around the theme of critical health psychology. **Summary:** The four papers in this workshop all approach the issue of 'critical health psychology' from a different perspective. The papers by Clarke and Joffe use various qualitative

approaches to address the way in which peoples orientations towards health risks and health behaviours are socially constituted rather than being simple reflections of inward dispositions or attitudes. They address the issue of why this is important to critical health psychology and how it might have implications for thinking about different kinds of interventions. The papers by Pilgrim and Fryer build upon these questions in relation to the substantive area of mental health. To what extent should critical health psychology even be focussing on individual talk and interaction? Doesn't it need to go much further in thinking about the way in which health and social reality is constituted? What is the connection between the individual and the social level? How do these questions feed into intervention potentials and what health psychology should be doing to try and improve health?

Health psychology: A critical community psychology perspective

D. FRYER, University of Stirling. From a community psychological perspective, most distress and ill health is socially caused. Moreover the scale of socially caused mental and physical ill health is so great that, even if individual level intra-psychic interventions were effective and we also put aside qualms about collusion with victim blaming, the scale of the problem is so vast that it would simply not be feasible to intervene to treat people one at a time. Social intervention and prevention is, therefore, needed. However, rather than being part of the intervention-and-prevention-solution, much psychological research and practice is part of the social-cause-problem. These claims will be elaborated and supported through discussion of research into the relationship between unemployment and mental health. Much of this research is problematic in process, ideology and political outcome. An alternative, critical community, approach to unemployment and mental health involves investigating which stakeholder groups psychologists are empowering at a variety of levels of engagement; challenging versions of psychology which negatively impact upon public health and actively collaborating with the least powerful and healthy members of our communities to promote their empowerment and health. The alternative will be elaborated, illustrated with examples and recommended as a possible model for critical health psychology.

The Biopsychosocial model in Anglo-American psychiatry: Past, present and future?

D. PILGRIM, Lancashire NHS Trust and University of Liverpool.

The biopsychosocial model is appraised and its presence in the discourse of modern psychiatry compared and contrasted with an enduring biomedical model. The biopsychosocial model represented a popular compromise for many years between a biomedical approach and 'anti psychiatry'. This paper considers the history and uncertain future of the biopsychosocial model and concludes that it is one amongst many forms of opposition to a bioreductionist approach to human distress and difference.

Using a critical health psychology approach to understanding alcohol use

D. CLARKE, University of Southampton.

This paper will present a critical approach to health psychology using findings derived from a recent qualitative study on the use of alcohol amongst young people aged 18 to 30. Previous research in this area has tended to focus on the practice of 'binge drinking' and has largely been of a traditional, positivistic nature. The study presented in this paper, however, will seek to challenge the assumptions underlying such research. For instance, previous research has often assumed that the reasons young people give for drinking are a reflection of inherent traits such as delinquency or sensation seeking. Discursive analytic techniques however,

challenge this by illustrating the way in which reasons for drinking are actively, and collectively, constructed in talk, thereby comprising socially constructed meanings rather than reflecting underlying individual traits. This paper will also challenge the assumption made by many previous researchers that young people's drinking is essentially risky and 'harmful'. An analysis of young people's talk, for instance, shows that young people define these notions somewhat differently, with harm and risk being defined as applicable to older, long-term, persistent drinkers rather than themselves as binge drinkers. Previous research has also assumed that individuals are responsible for their drinking behaviour, in so much as they are deemed to be rational decision makers in control of their own thoughts and actions. Such a focus can have the effect of 'blaming' individuals for their behaviour, whilst ignoring the social, economic and historical contexts in which drinking takes place. This paper proposes that notions of the self as 'rational' and 'in control' are social constructions rather than absolute givens, and, furthermore, are actively challenged by young people who strive to construct their own, different, notions of rationality and control in relation to drinking. The adoption of a critical approach can, therefore, provide new insights into the topic of alcohol use amongst young people. Such insights may facilitate the development of more effective educational programmes providing, however, that these are framed in terms of the constructions young people themselves use rather than the notions of selfhood and alcohol use they so actively resist.

How can a social representations approach enhance health psychology?

H. JOFFE, University College London.

The approach to health psychology proposed in this talk emphasises the meanings people make of health risks in terms of symbolic, emotional and value dimensions. The argument is that these facets of the response to risk form an important, though under-theorised part of human existence. This perspective, broadly termed a social representations perspective, differs from more traditional frameworks which tend to be more concerned with the individual decision maker's cognitions, which are often assessed for their deficiencies when compared with a more desirable form of reasoning. The proposed approach examines the lay response in and of itself, without reference to an ideal. By drawing on a study of representations of AIDS among Zambian adolescents, and of the Ebola virus among British adults, the paper seeks to demonstrate that social representations studies can provide insight into the structure of naturally occurring belief systems. Instead of emerging with a tightly theorised process, or set of processes, the outcome is that one gains access into systems of thinking, only some of which generalise across contexts and health issues. One particularly important insight that this approach can lend is to highlight the interplay of issues of power and identity in the sense people make of illnesses.

There's nothing so practical as a good theory ... for implementing evidence

Convener: S. MICHIE, University College London.

Chair & Discussant: M. JOHNSTON, University of St. Andrews.

Aims: (1) To extend and deepen the scientific understanding of the psychological processes involved in the implementation of evidence based practice (EBP) in health services; (2) To demonstrate the relevance of motivational, behavioural and organisational models to the implementation of EBP; (3) To provide an integrated theoretical framework for use in the multidisciplinary study of the implementation of EBP; and (4) To describe a process of integrating psychological theories and constructs. **Rationale:** The developing field of EBP poses a

new challenge to the adequacy of the theoretical models that health psychologists bring to the field of health services research. Despite having evidence about best practice, this evidence is not implemented effectively, with the result that best health outcomes are not achieved. Other disciplines are looking to psychology for an increased theoretical input into implementation research. We should respond to this challenge.

Summary: The workshop will make the link between the atheoretical nature of studies of the implementation of EBP and the limited practical output generated by them. There are over 250 studies of interventions to change professional practice. They were not based on psychological theory. Without an appropriate theoretical base, the development of effective interventions is limited. The first paper will emphasise the need to revitalise and re-invigorate the scientific base of psychology within this field to enhance its use within this multidisciplinary field. The following three papers will focus on different groups of models, commonly used by psychologists: those which address motivation in people who have not yet established an intention to engage in a particular behaviour; action models in those who have identified a need to change their behaviour; organisational models where more institution level changes are required; The final paper will describe a process, funded by the BPS, in which 17 psychologists attempted to draw on, and integrate, constructs from all three types of model. Implications for multidisciplinary work will be discussed.

Implementation research in evidence-based practice: The need for psychological theory

M. JOHNSTON, Dept. of Psychology, University of St. Andrews, Scotland.

Background: Research on health care practice has identified practices which result in improved outcomes. However, these evidence based practices (EBPs), are not necessarily implemented and, therefore, methods of implementing EBPs have been studied.

Methods: Methods used have been mainly intuitive or educationally based and include printed materials, audit and feedback, reminders and educational outreach. Over 250 intervention studies have been conducted.

Findings: While there has been some success in improved outcomes, there is no clear pattern of results favouring a particular method.

Discussion: Continuing to conduct further studies is unlikely to prove successful unless an integrative framework can be developed. Implementation researchers are looking to behavioural scientists to develop such a framework. Psychological theories provide a starting point, but are limited in usefulness since they are: (a) too numerous; and (b) have too much overlap in constructs. Clarification and simplification are necessary to maximise the usefulness of psychological theoretical frameworks.

Applying theory to changing motivation

C. ABRAHAM, Dept. of Psychology, University of Sussex.

Background: When new guidelines for health care practice are introduced, practitioners do not have established motivation to follow them. Interventions designed to generate such motivation use a variety of techniques with varying success. Explicit recommendations highlighting target cognitions and approaches to enhancing motivation could enhance intervention effectiveness.

Methods: Psychological assumptions implicit in interventions designed to motivate evidence-based practice (EBP) are highlighted. A theory-based model of key psychological components of motivation is presented.

Findings: Knowledge is prerequisite to understanding guidelines and evaluating arguments underpinning their use. Knowledge is not sufficient to generate motivation. Behavioural intention has been used as an index of motivation in social cognition models applied in

health settings (e.g. the theory of planned behaviour) and a theoretical understanding of the antecedents of behavioural intentions is well established. Perceived control and actual control, in terms of resources, including time, are prerequisite to intentions to implement EBP guidelines. Goal theory and more recent research on intention stability and the relationship between intentions and the nature of motivation (e.g. intrinsic versus extrinsic) suggest that interventions could adopt a more comprehensive approach to motivation enhancement. For example, a strong intention to follow guidelines may not be predictive of practice if it is contradicted by intentions concerning popularity and self-presentation at work. A series of goals and rewards are relevant EBP motivation.

Discussion: The implications for interventions designed to promote motivation are discussed in relation to a hierarchy of cognitive targets prerequisite to EBP motivation.

Addressing the intention-behaviour gap in evidence-based health care practice: A case for 'action theories'

A.E. WALKER, Health Services Research Unit, University of Aberdeen, M. JOHNSTON, D BONETTI, University of St. Andrews, J.M. GRIMSHAW, University of Ottawa, M.P. ECCLES, I.N. STEEN, University of Newcastle-upon-Tyne, N. PITTS, University of Dundee & E. SHIRRRAN, University of Aberdeen.

Background: Trials of interventions to implement evidence based health care practice have demonstrated positive effects on professional behaviour, but provide little information about mechanisms of action. Psychological theories may help to elucidate the processes that need to be targeted to achieve reliable practice change. This paper will describe evidence to suggest that 'action models' (e.g. learning theory, implementation intention) may have value in identifying some of these processes. Action theories of behaviour postulate that factors other than (or in addition to) motivation are necessary to predict behaviour. These theories are particularly valuable if individuals are already motivated to engage in a particular behaviour, or if the behaviour is not under cognitive control.

Methods: Surveys of health professionals' practice. Explanatory studies alongside trials. Systematic review of the effectiveness of guideline implementation strategies.

Findings: Surveys of health professionals' practice suggest that motivation to follow evidence-based recommendations is variable but often high. Explanatory studies have demonstrated that strong behavioural intentions are not always associated with evidence based practice. The systematic review of guideline implementation strategies indicates that interventions that target antecedents and consequences of behaviour (e.g. reminders) are among the most effective.

Discussion: The evidence presented suggests that action theories may have an important role in this area. Use of these models raises new challenges for health psychology. These include demonstration of applicability of the models; measurement of constructs; and development of population-based interventions.

Applying theories of human error to the non-compliance of health care professionals with Integrated Care Pathways

D. PARKER & T. CLARIDGE, Dept. of Psychology, University of Manchester.

Background: Protocols and Integrated Care Pathways (ICPs) are examples of what Hopwood (1974) described as tools for exerting administrative control of professionals' behaviour. They seek to define best practice, embodied in EBP, and encourage the standardisation of care. However, evidence suggests that the compliance of health care professionals with protocols and ICPs is not high. Audit shows that the paperwork is often incomplete. This may mean either that

the specified care has not been delivered, or that it has been delivered but not documented.

Reason's (1990) human error theory makes a distinction between errors (mistakes) and violation.s (deliberate deviations from best practice). In terms of compliance with protocols, ICPs, etc., this distinction may prove useful in explaining the low compliance levels noted.

Methods: Interviews, focus group discussions and questionnaire surveys have all been used to test the usefulness of the error-violation distinction in relation to the implementation of EBP.

Findings: There appears to be widespread resentment of this form of administrative control, especially among doctors, who see the demands of EBP as a challenge to clinical autonomy. The theoretical distinction between error and violation has been confirmed and it's relevance to compliance with protocols and ICPs established. Doctors are likely to approve of the violation of a protocol providing the outcome for the patient is a good one, whereas nurse and midwives are more disapproving of violation regardless of the outcome. Senior staff appear to believe that EBP-based documentation is designed for use by more junior staff with less experience than themselves.

Discussion: The implementation of EBP through protocols and ICPs requires careful management if compliance levels are to be improved. At the moment they are seen as a back-covering exercise, and/or an unnecessary administrative burden. This work illustrates the risks of implementing EBP reforms without educating and resourcing the staff whose working lives it will affect. It also shows the usefulness of theories and concepts of human error in unpacking the reasons why compliance rates are low.

Constructing an integrative theoretical framework for evidence-based practice

S. MICHIE, on behalf of the EBP seminar group; Dept. of Psychology, University College London.

Background: To increase the implementation of evidence based health care, a theoretical framework is required to understand and change health professional behaviours. To maximise the impact of psychological theory on inter-disciplinary work, it should be coherent and consensual.

Methods: A small grant was awarded by the BPS to fund three workshops to which 17 UK psychologists, reflecting a variety of theoretical and occupational backgrounds, were invited. The task was to develop a theoretical framework for use in interdisciplinary research and practice.

Theories and constructs were generated in four overlapping areas: motivation, action, organisation and behaviour change. From the resulting 33 theories and 128 constructs, participants were each asked to prioritise three constructs for use in inter-disciplinary research and three for use in changing professional behaviour. Two groups independently assigned these to seven (plus or minus two) construct domains.

Findings: The construct domains used by the first groups were: nature of behaviour, context of behaviour, intentions, self-efficacy, action planning, consequences and knowledge. The second group produced: believe something good or bad will happen as a consequence of the behaviour, believe in one's own capability, social and physical environment, goals, habit/routine, task/performance and stress and emotion. The integration of these domains is the final step. The two areas identified as requiring further thought concerned organisational and environmental factors, and goal intention and planning.

Discussion: The framework will be presented for discussion and its use in future research and practice will be discussed.

Implementation intentions to increase adherence to medical advice: Some methodological and theoretical considerations

Convener & Chair: L. QUINE, University of Kent at Canterbury.

Discussant: L. STEADMAN, University of Kent at Canterbury.

Aims: The purpose of this invited Symposium is to draw together some recent studies that investigate the usefulness of Implementation Intentions (II) interventions in increasing adherence to medical advice and to discuss some methodological and theoretical questions that have arisen while carrying out the studies.

Rationale: The construct of Implementation Intentions is currently the subject of considerable interest to health psychologists concerned with why peoples' intentions to perform health behaviours are not always translated into action. Many studies have used relatively small samples of university students and self-reported measures of behaviour. It is now important to consider how effective II interventions are with clinical populations, how the results should properly be analysed, and how they achieve their effects.

Summary: We will consider four groups of adherence behaviours that have in common the context and time-frame in which they are enacted. The first are behaviours that need to be performed on a daily basis such as taking a course of medication to combat an acute infection or to improve health, or adhering to a long-term regimen of medication to control conditions such as hypertension. The second group are behaviours that need to be performed routinely and frequently, such as monthly performance of breast or testicular self-examination. The third group are behaviours that must be undertaken routinely but infrequently, such as attendance for annual cervical screening or biannual mammography screening. The studies that will be presented provide examples of each of these behaviours. The first presentation will consider two studies reporting II interventions for adhering to daily medication and will introduce some preliminary findings from an ESRC funded intervention for people taking anti-hypertensive medication. The second will present an intervention to increase attendance for cervical screening, and the third, interventions to encourage breast self-examination and attendance for mammography screening respectively. Finally, a psychologist working at the NHS Centre for Reviews and Dissemination will discuss the criteria by which the methodological quality of such interventions are assessed for inclusion in an NHS systematic review of II.

The use of implementation intentions interventions to increase adherence to daily medication

L. QUINE, D.R. RUTTER & L. STEADMAN, University of Kent at Canterbury.

Background: Hypertension (high blood pressure) affects almost a quarter of the population and controlling it significantly reduces risk of coronary heart disease and stroke. Adherence to medication is one of the key factors in controlling it, however it has been estimated that as many as 50 per cent of patients do not adhere though many may intend to do so. Morrell *et al.* (1997) suggest that forgetfulness is the most common reason. Gollwitzer (1990) argued that progress to a particular goal has two phases. The first is a deliberative phase in which the costs and benefits of pursuing the goal are evaluated. This phase results in the development of goal intentions or decisions whether or not to perform the behaviour. The second phase is implemental and involves planning where, when and how to carry out a goal-directed behaviour. Gollwitzer demonstrated that forming such plans – called Implementation Intentions (II) – increases the likelihood that a behaviour will be enacted. Implementation intentions interventions thus seem to offer a promising way to increase medication adherence.

Methods: Two prospective randomised II interventions to increase medication adherence to Vitamin C and Cod liver oil pills in university

students using convenience samples were carried out. Preliminary results from a longitudinal randomised controlled trial to increase adherence to anti-hypertensive medication in patients with high blood pressure, recruited through GP practices will also be presented.

Findings: The interventions were successful. Participants in the intervention groups of both studies were significantly more likely to adhere to Vitamin C and Cod liver oil pill regimens.

Discussion: The implications for theory and practice are discussed.

An evaluation of an intervention to improve attendance rates for cervical screening: The effects of anticipated affect and the formation of implementation intentions

J.C. WALSH, National University of Ireland, Galway.

Background: There is substantial evidence that mortality from cervical cancer can be reduced by regular attendance for a cervical smear test. This study examined the physical and psychological factors that predict attendance for cervical screening, using the Theory of Planned Behaviour (TPB), in a sample of over 1000 women aged between 25 and 60 years of age. The study examined the impact of anticipated affect on attendance for a smear and evaluated the effectiveness of an intervention that encourages women to form implementation intentions as a mechanism to increase uptake rates.

Methods: Participants were randomly selected ($N = 3000$) from the ICSP database of all women aged between 25 and 60 in the Mid-Western Health Board region and sent the study questionnaire and a letter inviting them to attend for a smear test. Attendance was measured by computerised records sent from the cytology laboratories. Half of the sample was asked to specify the details of their attendance (i.e. form implementation intentions) in their questionnaires.

Findings: The questionnaire response rate was 41 per cent. Overall attendance for a smear test was poor (17 per cent). The TPB variables and anticipated affect were significant predictors of intentions to attend. The intervention was effective, with women assigned to the implementation intention condition significantly more likely to attend for a smear than those who did not (32 per cent vs 25 per cent) ($c^2 = 5.55$, $df = 1$, $p = 0.02$).

Discussion: The results of this study demonstrate that a simple intervention was effective in increasing attendance for a smear test and has implications for future cancer screening programmes.

The role of planning, intention and perceived control in implementation intentions

D.R. RUTTER, L. QUINE, L. STEADMAN, L. CALZADA & S. PUGHE, University of Kent at Canterbury.

Background: In an intervention reported to this conference a year ago, we found that women who were asked to form implementation intentions and who wrote their plan down were subsequently more likely to keep an appointment for breast cancer screening than those who were not exposed to the intervention or who were exposed to it but failed to record their plan. Later analyses of the data have shown that the effect was restricted to women whose initial intentions were weak, and may have occurred through a strengthening of their perceived control. Both findings challenge the traditional argument that implementation intentions are volitional rather than motivational and work best for people whose intentions are strong.

Methods: To explore the issues further, we have gone on to examine the effects of a combined motivational and volitional intervention, on breast self-examination (BSE). A sample of more than 200 women undergraduates in lectures and seminars were given questionnaires about BSE, and through a final section of the questionnaire were exposed to one of four interventions: none;

motivational (notes on the benefits of doing BSE); volitional (implementation intentions intervention on where and when to do the behaviour); and motivational and volitional combined. Self-reported behaviour was measured a month later. **Findings:** Two main findings emerged: the only intervention to produce greater adherence than the control condition was the combined one; and the effect was again strongest for respondents whose initial intentions were weak. A direct measure of 'post-decisional' control revealed no evidence that perceptions of control had increased more in women with weak intentions than the others.

Discussion: The mechanism by which the combined intervention achieved its success over the other interventions is unclear, but motivation appears to have played a greater part than volition.

A systematic review of the effectiveness of implementation intention interventions for health-related behaviours

C. BRIDLE, University of York, L. STEADMAN, University of Kent & C. JACKSON, University of Leeds.

Background: The concept of implementation intentions has generated much intervention research in recent years, as well as several meta-analyses. However, there has been no systematic review of the effectiveness of implementation intentions in changing health-related behaviours, and the effectiveness of this approach in the context of health behaviour thus remains unknown.

Methods: In order to identify relevant studies, 12 databases were searched, bibliographies of retrieved articles were handsearched, and authors were contacted for additional unpublished studies. Study designs eligible for inclusion were randomised trials using implementation intentions to change health behaviour. Extracted data included details of the intervention, participants, target behaviour, results, and conclusions. The methodological quality of included trials was assessed against pre-defined criteria. Two reviewers carried out all stages of the review independently. Studies were heterogeneous and thus data were synthesised narratively.

Findings: 14 studies met the inclusion criteria. The methodological quality of the studies was mixed. Common limitations included potentially flawed randomisation procedures, inadequate follow-up of participants, and a failure to use intention-to-treat analysis. Depending on the type of analysis used, approximately half of the studies reported results favouring the implementation intention intervention, with the remainder reporting no difference between intervention and control groups.

Discussion: Potential sources of heterogeneity are discussed. It is concluded that results are promising but, given the methodological limitations of the available evidence, results should be interpreted with caution. There is a need for good quality studies that evaluate the effectiveness of implementation intention interventions in relation to health-related behaviour, particularly with non-student populations.

Innovative research methods in health psychology

Convener: D.P. FRENCH, University of Cambridge.

Chair & Discussant: T.M. MARTEAU, GKT School of Medicine, London.

Aims: The overall aim of this symposium is to provide examples of research employing research methods that are currently not in widespread use. More specific aims are:

- To introduce these methods to researchers who might consider using these methods themselves.
- By highlighting the strengths and weaknesses of these methods, to inform peers who may have to evaluate research using these methods.

- By explicitly contrasting these innovative methods with more widespread methods, to highlight the specific assumptions that underlie the more widespread methods, and their potential implications.
- To focus attention on how the results of health psychology research can often say more about the methods employed, rather than psychological processes that are under investigation.

Rationale: These innovative methods are being increasingly used, driven at least partly by dissatisfaction with more widespread methods. It is, therefore, timely for attention to be directed to these innovative methods, to allow considered judgements to be made about their use.

Summary: Each presenter in this symposium will introduce a method by presenting a concrete example of its application, enabling practical issues in their use to be exemplified. However, each presenter will focus on the strengths and weaknesses of the method employed, when compared to more widespread alternatives.

Dan Mason presents the results of a study that investigates the impact of information about personal risk alongside the risk of peers. Data collection was undertaken over the worldwide web, allowing access to large and diverse samples. Amanda Bishop presents a study investigating pregnant women's preferences for three features of prenatal screening tests. Conjoint analysis was employed, allowing a quantitative assessment to be made of the importance of these three test features.

David French presents a study investigating how a general public sample view three risk factors as combining to produce overall CHD risk. Coombs unfolding technique and conjoint measurement analysis were employed, allowing all variables to be appropriately scaled and hence to allow a valid interpretation of interactions found.

Jane Clatworthy presents a systematic review of studies employing cluster analysis in health psychology. She reports that studies using this technique were not reported in sufficient detail to be evaluated. Finally, Sarah Milne presents an investigation that attempts to predict intentions to take up an intervention to reduce stress. Neural network modelling showed a marked improvement in terms of prediction over the more conventional linear regression approach.

Absolute versus relative differences between personal and social comparison risk levels:

A web-based experiment

D. MASON, University of Cambridge, S.R. SUTTON, University of Cambridge & T.M. MARTEAU, King's College London.

Background: We describe the development of a web-based experimental study examining the contribution of relative versus absolute differences between hypothetical personal and social comparison risk estimates for cardiac events. When a person responds to discrepancies between hypothetical risk estimates for himself or herself and for the average person, it is not clear whether they primarily attend to the absolute difference between the point estimates, or to their ratio.

Methods: We recruited 400 participants via the web. We use a between-groups design, presenting participants with different levels of hypothetical personal and comparison risk. Participants were asked to compare their personal risk with the comparison risk. The groups form two parallel factorials where:

- (a) absolute differences between risk levels are controlled at different levels of personal risk; and
- (b) relative differences are controlled.

Findings: We found an interaction between level of personal risk and absolute difference between risk levels, but no interaction between level of personal risk and relative difference between risk levels. Participants appeared to be responding primarily to relative differences between risk levels.

Discussion: We suggest that when patients are presented with risk information, the information should stress the relative difference between a patient's risk estimate and population risk. Web-based delivery of the experiment gave us

inexpensive access to a large number of participants using a highly flexible presentation medium, and removed the possibility of experimenter bias. However, without an experimenter on hand, motivation to stay within the experiment was low and withdrawal was common. Forty per cent of the participants who initially consented to the study did not go on to submit data.

Using conjoint analysis to assess women's preferences for different screening tests

A.J. BISHOP, T.M. MARTEAU, D. ARMSTRONG, King's College London, L. CHITTY, C. BERLIN, University College Hospitals London, L. LONGWORTH & M. BUXTON, Brunel University.

Purpose: To describe and compare conjoint analysis (CA), a technique commonly used in health economics, with rating and ranking procedures, to elicit women's preferences for prenatal screening tests with different characteristics.

Method: 247 pregnant women completed a questionnaire using three methods of assessing preferences: Rating scales, Ranking and CA. CA required women to choose between nine hypothetical pairs of different Down's syndrome (DS) screening tests varying in three key attributes: time at which the test is conducted, its detection rate, and its safety, i.e. the risk of miscarrying a pregnancy unaffected by DS as a result of subsequent diagnostic tests. Responses were analysed using a random effects probit model.

Results: Preferences elicited varied by method. Rating scales did not discriminate between the three test attributes: all were rated as equally important. Ranking and CA generated safety as most important. CA identified safety, e.g. least amount of risk (coefficient = -0.80), followed by time (coefficient = -0.23) and then detection rate (coefficient = 0.12), as significantly influencing women's preferences for different DS tests. Contrary to CA findings, ranking generated time as least important. Additionally, CA enables 'willingness to trade' to be calculated, e.g. women are willing to trade a decrease of 0.52 weeks waiting time for a one per cent increase in detection rate.

Conclusions: Conjoint analysis provided a quantification of the relative importance women attach to different characteristics of a test, providing more sensitive information than that provided by rating scales or ranking.

Perceptions of synergistic heart disease risk due to smoking and family history: An application of Coombs unfolding technique and conjoint measurement analysis

D.P. FRENCH, University of Cambridge, T.M. MARTEAU, GKT School of Medicine, J. MICHELL, University of Sydney, S.R. SUTTON, University of Cambridge & A.L. KINMONTH, University of Cambridge.

Background: The combined risk of coronary heart disease (CHD) due to family history and smoking is greater than the sum of these factors operating in isolation. Most research in this field suggests that people see the combined risk as less than the sum of these factors operating in isolation. However, these studies employ rating scales that assume equal intervals, despite good evidence to suggest that this assumption is mistaken. Valid tests of interaction require measures with genuinely interval properties. This study aims to develop such measures, to examine how people see three risk factors as combining.

Method: Cross-sectional questionnaire study. 261 UK adults, mean age 46 years: with Type II diabetes ($N = 94$), current smokers ($N = 176$), or both ($N = 19$). Perceptions of overall CHD risk, and three exposures: smoking, family history, and stress. Coombs unfolding technique was used to develop measures with genuine interval properties; conjoint measurement analysis to test for quantitative structure; linear regression to examine how perceptions of the three exposures

are related to perceptions of overall risk.

Findings: All four measures showed marked deviations from the assumption of equal interval scaling. There was no evidence of interaction using either method of scaling.

Discussion: The application of Coombs unfolding yielded measures with genuine interval properties, and hence a valid test of interaction. In contrast to previous research, this study suggests that people see smoking, family history and stress as contributing independently to risk of heart attack.

Misreporting of cluster analysis in health psychology: A systematic review

J. CLATWORTHY, University of Brighton, M. HANKINS, University of Brighton, D. BUICK, Macmillan Cancer Relief, J. WEINMAN, King's College London & R. HORNE, University of Brighton.

Background: Cluster analysis is a collection of relatively simple descriptive statistical techniques with potential value in health psychology as a means of identifying target groups for interventions/ further research. There are many methods of cluster analysis from which to choose, with no clear guidelines to aid researchers. In the absence of guidelines it is likely that researchers will adopt the methods already reported by published researchers, and so clear reporting of statistical methodology, whilst always important, is particularly crucial with cluster analysis. The aim of this review is to describe and evaluate the reporting of cluster analysis in health psychology publications.

Methods: Electronic searches of 18 health psychology journals identified 54 articles using cluster analysis published between 1984 and 2001. Articles were submitted to systematic evaluation against published criteria for the reporting of cluster analysis.

Findings: Over 75 per cent of the papers reviewed did not meet the reporting criteria. Details of the similarity measure and the computer program used were most frequently omitted. Furthermore, whilst researchers usually reported the procedures employed to determine the number of clusters and to validate the clusters, these procedures were lacking in rigour, and were reported in insufficient detail for replication.

Discussion: The reporting of cluster analysis in health psychology is unsatisfactory. The overall paucity of information provided by such reporting raises questions about the quality of the analyses actually conducted and the ability of other researchers to replicate findings. Clear guidelines for conducting and reporting cluster analyses in health psychology will be presented.

Advances in neural network analysis for health psychology

S. MILNE & I. WALKER, University of Bath.

Background: This presentation describes an application of neural network modelling to health psychology. The aim of the study was to explore factors predicting individual differences in stress perception and coping behaviour.

Methods: Data were collected from 371 employees of the Ministry of Defence's Warship Support Agency, based across the south west of England. Participants provided measures of their workplaces stress levels and whether they would take up an intervention to reduce this. Personality and coping measures, together with measures based on social cognitive models of behaviour, were also collected. These data were modelled with two types of neural network.

Findings: In the first analysis, a three layer, feed forward neural network was used as an alternative to regression. This accounted for 67 per cent of the variance in intention to take part in a stress control intervention, whereas linear regression accounted for 49 per cent. Moreover, the neural network identified useful groups of participants form the data that would not have otherwise been visible. The second analysis used a classification network to model the data set, after which the model was examined with various hypothetical participants, to see how it had

summarised the data.

Discussion: The main implication of this is that data-driven statistical techniques (function estimators, Walker and Milne, under review) are valuable in analysing the complex data typical of health psychology. The main practical implication of this work is that such neural networks can be used to target health behaviour interventions and could be incorporated into computer-delivered health education programmes.

Looking good ... feeling good? Body image concerns, health behaviours and treatment decisions

Convener: N. RUMSEY, University of the West of England, Bristol.

Chair & Discussant: K. GLEESON, University of the West of England, Bristol.

Aims: (a) To illustrate the wide range of health relevant research on body image currently in progress in several research groups in the UK and Australia; (b) To explore actual and potential contributions of qualitative, quantitative and 'mixed' methodologies to health related body image research; (c) To challenge assumptions about definitions and the measurement of body image underpinning the majority of health related research; and (d) To discuss the role and potential of theory for research in this area.

Rationale: Although there is a history of body image research in other specialisms within psychology, research exploring the relationship between body image (BI) concerns, psychological wellbeing, health behaviours treatment decision making and health care provision now comprises a critical mass, involving several health psychology research centres in the UK and Australia. Themed contributions from psychologists drawn from representative research groups will provide examples of current research interests and methodological approaches. The discussion session will challenge many of the assumptions that have grown up alongside BI research in health psychology.

Summary: Papers have been selected to illustrate current BI research in a broad range of health related contexts. The first three papers examine the impact of BI dissatisfaction across the lifespan, highlighting the effects of variables such as age, gender and sexual orientation. Using a quantitative approach, Liggett, Burwitz and Grogan's paper explores the effects of physical activity on BI dissatisfaction in 13 and 14-year-old girls. Fawknor and McMurray have used quantitative analyses to explore body image in male adults with heterosexual or homosexual preferences. Using both qualitative and quantitative methodologies, Halliwell and Dittmar have focused on the interplay of age, gender and sociocultural influences on BI dissatisfaction. Harcourt and Griffiths have used a qualitative approach to highlight the importance of appearance concerns in treatment decision making and adjustment following surgery for breast cancer. Frith and Gleeson round off the contributions by challenging several assumptions which have become associated with BI research in health psychology. This provocative paper will act as a catalyst for the discussion session in which the related themes of the roles of theory and various methodological approaches in health related BI research will be debated.

The effectiveness of a six-week aerobic dance intervention on body image dissatisfaction among adolescent females 13 to 14-years-old

G. LIGGETT, L BURWITZ, Manchester Metropolitan University & S. GROGAN, Staffordshire University.

Background: Despite the interest in managing and preventing body image dissatisfaction in recent years (Grogan, 1999), no studies have examined the effects of physical activity participation on body image dissatisfaction. Thus, the purpose of this study was to investigate the effects of a six-week aerobic dance intervention on body image dissatisfaction in female adolescents.

Methods: 50 British schoolgirls low in body

attitudes and aged 13 to 14 years were recruited from a Specialist Sports College to participate in this study. A cross-over design was adopted with random assignment of participants to either a PE group ($N = 25$) or an aerobic group ($N = 25$). The Body Attitudes Questionnaire – BAQ (Ben-Tovim & Walker, 1990) was administered, as a pre-, mid- and post-test. A group by time MANOVA with repeated measures on the second factor was conducted on the BAQ to examine changes over time.

Findings: The results revealed no significant effects for group or time. However, there was a significant group x time interaction ($F_{1,2} = 5.95$, $p < 0.005$) effect. The results of this study reveal that participation in six weeks of aerobic dance significantly reduced body image dissatisfaction. **Discussion:** These findings clearly highlight the role of specific activities in the lives of female adolescents. If the main objectives for educational practitioners are to promote healthy lifestyles and aid positive psychological health in adolescents, then aerobic dance must be considered as an activity that will meet these objectives in females who may be at risk of developing negative body images.

Examination of a cognitive-social learning model for the antecedents and consequences of body image attitudes in men

H.J. FAWKNER & N.E. McMURRAY, University of Melbourne.

Background: Cash (1996) developed a model to explain the antecedents and consequences of body-image attitudes within a cognitive-social learning framework. Causal factors (i.e. cultural and interpersonal influences, physical and personality attributes) shape body image attitudes (i.e. schemas, ideals, self-perceptions), and every day events (e.g. eating, exercising) activate schema-driven processing of information about, and self-appraisal of, one's appearance. These self-appraisals draw on existing body image attitudes, and discrepancies between self-perceived and idealised physical traits result in implicit and explicit cognitions about one's body (Cash, 1996). These cognitions are bi-directionally tied to body image affects, and motivate a range of both positive and negative behaviours to reduce the emotional consequences of a negative body appraisal. This study is the first to test this model for gay and heterosexual men.

Methods: 369 men (17 to 89 years) were recruited from community-based organisations across Australia. Physical measures were obtained (height, weight, muscular and non-muscular girths) and participants completed a battery of inventories to assess potential body image antecedents (e.g. narcissism, neuroticism, self-esteem), the multiple dimensions of body image, and a range of adjustive strategies (e.g. eating behaviours, exercise, steroid, recreational drug and alcohol use).

Findings & Discussion: Preliminary analyses (using SEM) revealed the model of best fit differed for the gay and heterosexual men. These findings suggest different strategies need to be employed in the development of educational programmes and interventions for gay and heterosexual men with body image disturbance.

An investigation of sociocultural influences on men's and women's body image concerns through adulthood: A double standard of ageing?

E. HALLIWELL & H DITTMAR, University of Sussex.

Background: Sociocultural theory posits that body image concerns result from perceived discrepancies between the appearance of an individual's 'real' body and cultural standards of attractiveness (Thompson, Heinberg, Altabe & Tantleff-Dunn, 1999). However, ageing has an important, and rarely examined, impact on how individuals relate to constructions of attractiveness. This paper examines women's and men's relationships with their bodies through adulthood.

Methods: Thematic analysis of interview data ($N = 42$) was used to explore people's views of the ageing of their bodies. In addition, regression analysis of questionnaire data ($N = 366$) examined age as a moderator of sociocultural influences on body dissatisfaction.

Findings: Levels of overall body dissatisfaction were consistent, whilst the dimensions of dissatisfaction varied, through adulthood. Distinctive and consistent gender differences emerged. For both men and women, ageing was found to buffer the impact of sociocultural ideals. Awareness of sociocultural attitudes was less strongly related to internalisation of these attitudes amongst older (women $r = 0.10$, men $r = 0.36$), compared to younger individuals (women $r = 0.55$, men $r = 0.63$). Women reported conflicting and contradictory attitudes towards the ageing of their bodies, whilst men's attitudes were relatively straightforward. With reference to the appearance of the body, women unanimously evaluated the impact of ageing negatively. In contrast men reported that ageing had a neutral or even positive impact on appearance.

Discussion: These findings highlight the importance of considering age in sociocultural theory. Furthermore, they suggest that ageing has gender-specific consequences for health-related behaviours.

Understanding women's experience of Ductal Carcinoma in Situ (DCIS): A qualitative study

D. HARCOURT & C. GRIFFITHS, University of the West of England, Bristol.

Background: Ductal Carcinoma in Situ (DCIS) is a non-invasive form of breast cancer, most often diagnosed through mammogram screening. In times when less disfiguring breast conservation techniques are the treatment option favoured by many women with invasive breast cancer, DCIS provides an interesting paradox: although it is a pre-cancerous condition, many women diagnosed with DCIS undergo full mastectomy – a treatment synonymous with invasive breast cancer. Until now there has been a dearth of research into the psychological impact of non-invasive breast cancer (Carrera & Payne, 1999). Therefore, this study examined the psychological impact of the diagnosis and treatment of DCIS with particular reference to appearance concerns.

Methods: A qualitative approach was taken to data collection and analysis. Semi-structured interviews were carried out with eight women who were at least six months post-diagnosis and treatment. Women were encouraged to discuss all aspects of their experience including initial reaction to the diagnosis, understanding of the condition, involvement in treatment decisions and the implications of surgery in terms of appearance-related concerns and psychological distress. Data were analysed using a thematic approach.

Findings: Women discussed their experiences in terms of the treatment they received, as opposed to the diagnosis they were given. Issues of body image were salient for most women, and were discussed at length particularly by those who had undergone mastectomy, with or without breast reconstruction.

Discussion: This paper will discuss the role of Health Psychology in informing the provision of care to more closely address the concerns of women with this increasingly diagnosed, condition.

Body imaging: Deconstructing the concept of body image

K. GLEESON & H. FRITH, University of the West of England.

Background: Body image is a hypothetical construct which has been widely and productively used by health psychologists to explain patterns in behaviour. However, its reification has led to a series of unarticulated ideological and conceptual assumptions about the nature of body image which have obscured its most dynamic and productive features. These assumptions are that: (1) body image exists; (2) is a socially mediated product of perception; (3) can be treated, and measured, as if real; (4) is 'internal' and,

therefore, 'of the individual'; and (5) people are not aware of or affected by the assumptions that health psychologists make about the 'healthy body' when responding as research participants. **Discussion:** We argue that these assumptions limit the kinds of questions that health psychologists ask about BI and overlook important aspects of BI including: (1) that BI is fluid and shifting and is experienced in context specific ways; (2) that people are agentially engaged in making meaning of their bodies; and (3) that appearance and identity are inseparable. Rather than using the static notion of the body image schema, we argue that it is more useful to consider body imaging as a process, an activity, rather than a product.

Theoretical and empirical integration of physical activity within health psychology frameworks

Convener & Chair: A.M. HAASE, Cancer Research UK, University College London.

Discussant: R.G. OWENS, University of Auckland, New Zealand.

Aims: This symposium presents a series of studies beginning with an exploration of recent integration of pertinent theory to explain exercise behaviour progressing to evidence potentially challenging the application and understanding of theory in practical environments:

- To review current theories explaining physical activity behaviour;
- To explore development and integration of theories to explain exercise motivation;
- To consider additional factors within theoretical frameworks, in particular gender, culture and specific activity behaviour that impacts on the relevance of theory and intervention.

Rationale: Although exercise behaviour has been examined extensively through sport psychology avenues, the convergence of exercise and health psychology theory is becoming more relevant due to the complex issues around chronic diseases confronting society today. Two broad approaches of study through theoretical and empirical research are considered necessary to comprehend the underlying motives for physical activity in order to progress to application of informed and theory-directed strategy to bring about change. Thus the implications of the development of further theory and relevant empirical research will drive future interventions based on practical theory.

Summary: Although current health psychology theory has been widely used and tested in terms of exercise behaviour, integration and further development to improve the theoretical understanding has been somewhat slower to progress. The attempt to merge cross-disciplinary theory to explain exercise behaviour in a more comprehensive manner has begun, for instance through the combination of Theory of Planned Behaviour with self-determination theory. This symposium presents four papers from three research groups in the UK, which as a whole symposium, put forward emerging ideas and theory in order to tackle the problem of understanding motivations and environmental situations for engaging in physical activity, inevitably leading to reduction in obesity and other chronic disease.

The influences of perceived autonomy support on physical activity within the Theory of Planned Behaviour

N.L.D. CHATZISARANTIS, Brunel University, M.S. HAGGER, University of Essex & S.J.H. BIDDLE, Loughborough University.

Background: The Theory of Planned Behaviour (TPB; Ajzen, 1985) has been studied extensively in relation to health behaviour. The theory posits that both personal (i.e. attitudes and perceive control) and social factors (i.e. subjective norms) influence health behaviour via the mediation of intentions. Meta-analytic reviews across a number of different health behaviors have supported the theory, but contemporary research has shown that

subjective norms insufficiently captures the effects of social factors on intentions. This study examined the utility of a social influence construct, termed perceived autonomy support, in capturing social influences in the TPB.

Methods: Research participants comprised 235 pupils, students and adults (M age = 20.28 years, SD = 6.59 years). A prospective design was utilised. Physical activity behaviour was observed for over a five-week interval of time. Structural equations were used to analyse the data.

Findings: Confirmatory factor analysis supported the discriminant validity of perceived autonomy support and subjective norms. Structural equation modeling supported direct and indirect effects from perceived autonomy support to intentions. The indirect relationship between perceived autonomy support and intentions was mediated by attitudes. The effect of subjective norms on intentions was small.

Discussion: The present study helps to resolve the lack of prediction exhibited by the subjective norms variable in the TPB by introducing perceived autonomy support. These findings also underline the need for health practitioners and exercise promoters not to impose their own understandings on people, but to base policy and interventions on people's existing perspectives, practices, and understandings of physical activity.

Evaluating the influence of basic psychological needs and the perceived locus of causality in the Theory of Planned Behaviour in an exercise context

J. HARRIS & M.S. HAGGER, University of Essex.

Background: To investigate the impact of basic psychological needs and motives from self-determination theory (SDT; Deci & Ryan, 1985, 2002) on intentions and behaviour in an exercise context, using the Theory of Planned Behaviour (TPB; Ajzen, 1985) as a framework.

Methods: A longitudinal design using self-report data collected at three time points. Participants were 261 undergraduates and members from the general public (166 females, 95 males, M age = 25.61, range = 17 to 81) completed measures of basic psychological needs (Time 1), motives for exercise from the perceived locus of causality (PLOC), a measure of physical self-esteem and constructs from the TPB (Time 2), and exercise behaviour (Time 3). Data were analysed using path analysis.

Results: Preliminary analyses supported the hypotheses of the TPB, the influence of subjective norms excepted. An augmented version of the TPB that included the constructs from SDT and physical self-esteem (PSE) indicated that intrinsic motivation (IM) and identified regulation (IR) predicted intentions indirectly via the mediation of attitude and perceived behavioural control, supporting the findings of previous studies (Hagger *et al.*, 2002). In addition, PSE predicted behaviour directly. Basic psychological needs were found to have no significant effect PLOC, the TPB variables or exercise behaviour. The only exception was the need for self-esteem, which significantly predicted intention. Further, PSE mediated the impact of the need for self-esteem on exercise behaviour.

Conclusions: With the exception of the need for self-esteem, basic psychological needs were found not to have any motivational influence in the TPB, possibly due to their general, abstract nature. Intrinsic motivation and identified regulation from the PLOC and SDT made significant contributions to the explanation of exercise intentions and behaviour.

Physical activity and sedentary behaviour – two sides of the same coin?

N. STEGGLES, A. STEPTOE, J. WARDLE & M. JARVIS, University College London.

Background: The recent rise in obesity has been attributed in part to the low level of participation in physical activity and high levels of sedentary behaviour (e.g. TV watching, computer games, etc.). In this study we explored whether

sedentary behaviour is simply the inverse of physical activity and whether they are associated with the same factors, using Kohl and Hobbs' 1998 framework for the investigation of physical activity.

Methods: The study used a cross-sectional, questionnaire given to 4320 11 to 12-year-old students participating in the first year of a five-year study (HABITS study). The questionnaire assessed physical activity levels, sedentary behaviour, physiological, environmental, psychological and socio-demographic factors. Univariate and multiple linear regressions were used. Separate analyses were conducted for boys and girls, with adjustments for clustering within schools.

Findings: There was no significant correlation between physical activity and sedentary behaviour ($r = -0.014$, $p = 0.38$). The regression analyses indicated that the behaviours were associated with different variables. The relationships were broadly similar in both boys and girls, however, in the case of sedentary activity a larger proportion of the variance was explained in girls than in boys. The overall proportions of variance explained were low (five per cent to 16 per cent).

Discussion: The finding that physical activity and sedentary behaviour are distinct constructs is of theoretical interest, but also indicates that interventions targeting one behaviour may not appreciably modify the other behaviour. The low proportion of variance explained, whilst comparable to other studies, indicates that these are multi-factorial behaviours, particularly physical activity.

Physical activity around the world: International comparisons of behaviour, beliefs and knowledge of the risks of inactivity

A. HAASE, A. STEPTOE & J. WARDLE, Cancer Research UK, University College London.

Background: Physical inactivity has been linked with chronic disease and obesity in most western populations. However, prevalence of inactivity, health beliefs and knowledge of the risks of inactivity have rarely been assessed across a wide range of developed and developing countries.

Method: Cross-sectional survey data were collected using standardised methods between 1999 and 2001 from a sample of 19,298 university students from 23 different countries falling into five geopolitical /economic groups: North-Western Europe and the US, Central and Eastern Europe, Mediterranean countries, Pacific Asian, and developing countries.

Findings: Women tended to be less active than men in almost all countries. The prevalence of inactivity varied with cultural and developmental factors, averaging 23 per cent (North-Western Europe and the US), 30 per cent (Central and Eastern Europe), 39 per cent (Mediterranean), 42 per cent (Pacific Asian) and 44 per cent (developing countries). While many students exercised at moderate levels, considerably fewer achieved recommended levels of activity. Across all countries, the strength of beliefs in the health benefits of exercise were positively associated with frequency of physical activity. Levels of knowledge about exercise and health were disappointing, with only 40 to 60 per cent of students aware that physical activity was relevant to risk of heart disease. Knowledge of health benefits had a small and variable association with activity levels.

Discussion: Physical activity is below recommended levels in a substantial proportion of students, and is related to cultural factors and stage of economic development. The relationship between health beliefs and behaviour is robust across cultures, but health education remains deficient even in educated sectors of society.

Understanding stroke survivors' distress: A practical area for diverse theory

Convener: E. TOWNEND, Glasgow Caledonian University.

Chair: K. NIVEN, University of Stirling.

Discussant: M. JOHNSTON, University of Aberdeen.

Aims: Emphasise the importance of psychological study of distress following stroke; Introduce the broadness of issues facing stroke survivors (and researchers); Present studies demonstrating the utility of various theoretical approaches; Take stock of our theoretical and empirical base and discuss future challenges.

Rationale: Bring together geographically diverse researchers; Encourage further interest in stroke; Highlight the diverse avenues for theory and research relevant to stroke, illness, disability, recovery and recurrence.

Summary: Emotional distress, particularly depression, is prevalent and pervasive following stroke (e.g. Sharpe, 1994) and appears to impact on functional recovery (e.g. Morris, 1992) and survival rates (e.g. Lewis, 2001). A systematic review found no evidence for a specific organic cause for depression following stroke (Carson *et al.*, 2000). This background highlights the appropriateness of research focused on stroke survivors' own perceptions. The range of areas for study relevant to stroke is extremely wide creating the potential application of diverse theories. This broadness is reflected in our four presentations: (1) Ellen Townend used three strands of theory as a starting point - stroke attributions, self-evaluations and beliefs in recovery; (2) Shirley Thomas used the cognitive theory of depression to validate the Stroke Cognitions Questionnaire Revised (SCQR) studying positive and negative cognitions after stroke; (3) Danny Vine used social ranking theory to focus on shame and its' association with stroke and depression; and (4) Sara Joice developed her work using Leventhal's Self-Regulation Model to understand non-adherence. Our results demonstrate the usefulness of studying distress following stroke from a diversity of belief theories. We now need to build on our findings to strengthen theory and research in specific areas.

Beliefs related to distress nine months following stroke

E. TOWNEND, Glasgow Caledonian University, M. SHARPE, University of Edinburgh, D. TINSON, Lothian Primary Care NHS Trust & J. KWAN, University of Southampton.

Background: This study aimed to test the general hypothesis that emotional distress is associated with beliefs about stroke and its effects nine months after the event.

Method: 81 participants were seen at this time. The original sample consisted of 89 consecutively admitted stroke survivors without severe dementia or aphasia. HADS anxiety and depression subscales were combined and used as the measure of distress. Belief variables related to the hypothesis were: (1) Attributions (casual controllability, 'Why me?', 'Found meaning?'); (2) Self-evaluations (acceptance of disability, negative identity change, shame); and (3) Beliefs in recovery and recurrence (recovery locus of control, confidence in recovery, recurrence fear). Background variables were also assessed (demographics, stroke severity, disability, social support, life events and pre-stroke history of depression). Pearson correlations were used to test for univariate associations with distress. A backward linear regression analysis for distress was conducted to control for inter-correlations between belief variables and confounding by background variables.

Results: Statistically significant univariate associations were found between distress and seven of the belief variables ($r = 0.36$, to $r = 0.73$) and four background variables ($r = 0.25$, to $r = 0.42$). The regression analysis showed that three belief variables (acceptance of disability, negative identity change and recurrence fear)

and one background variable (pre-stroke history of depression) were significantly independently associated with distress.

Discussion: The results support a relationship between beliefs about stroke and its effects and distress following stroke. Participants' emotional distress appeared to be particularly exacerbated by negative self-evaluations and the fear of further strokes.

Depression and cognitions after stroke: Validation of the Stroke Cognitions Questionnaire Revised (SCQR)

S.A. THOMAS & N.B. LINCOLN, University of Nottingham.

Background: The Stroke Cognitions Questionnaire (Nicholl *et al.*, 2002) is a self-report assessment of the frequency of stroke patients' positive and negative cognitions. However, the scale was developed on a small sample of cognitive-behaviour therapy (CBT) treatment notes of depressed stroke patients. In this study the scale was revised using a larger sample of treatment notes, to assess the cognitive theory of depression in stroke patients.

Methods: Treatment notes and diaries from 38 depressed stroke patients who received CBT (Lincoln *et al.*, 1997, 2003) were reviewed. Ten new items were identified, and skewed original items were removed. The Stroke Cognitions Questionnaire Revised (SCQR) consists of 12 negative and nine positive cognitions. In a cross-sectional design, 50 hospitalised stroke patients were assessed on the SCQR and BDI-II between three and 135 days post-stroke. Stroke characteristics and level of disability (Barthel Index) were recorded.

Findings: The SCQR demonstrated high internal reliability (Cronbach's $\alpha = 0.91$). SCQR and BDI-II scores were significantly correlated when time since stroke and Barthel scores were partialled out ($r = 0.78$, $p < 0.001$). Depressed patients experienced significantly more negative and less positive cognitions than non-depressed patients ($p < 0.001$). Exploratory factor analysis extracted a two-factor structure of positive and negative cognitions explaining 49 per cent of the variance. Excellent inter-rater reliability was found (Kappa = 0.89-1).

Discussion: The SCQR is a valid measure of stroke-related cognitions for hospitalised stroke patients. Depressed patients reported significantly more negative cognitions in accordance with the cognitive model of depression. The SCQR may be useful in identifying depressive cognitions, which can be addressed in cognitive-behaviour therapy.

The association between shame and stroke: A preliminary study

D.J. VINE & S. HORN, Dept. of Psychology, University of Southampton.

Background: Studies have demonstrated relationships between negative evaluations of the self, such as shame, and acquired disability, but have tended to overlook individuals who are disabled following stroke. The aim of this study was to investigate whether there was an association between shame and the aftermath of stroke.

Method: 51 participants were employed in this study, 25 were post-stroke (12 females and 13 males, aged 39 to 83-years-old), of which eight had, or were being treated for, depression; and 26 age-matched controls (18 females and eight males, aged 50 to 89-years-old), of which 11 had, or were being treated for, depression. A cross-sectional design was employed, in which all the participants completed two shame questionnaires (the OAS and PFQ-2), and a depression questionnaire (the BDI).

Findings: ANCOVA statistical analyses indicated that there was no significant mean differences between non-stroke and stroke groups on OAS shame scores (OAS = ($F(1, 51) = 1.61$, $p = 0.21$) or PFQ-2 shame scores = ($F(1, 51) = 0.64$, $p = 0.43$). However, when depression was employed as a covariate, a significant effect was produced on the OAS - BDI score, ($F(1, 51) = 11.96$, $p = 0.001$) and the PFQ-2 - BDI score,

($F(1, 51) = 13.98$, $p < 0.001$).

Conclusion: An association between both shame measures and depression was found. Regardless of whether or not participants had sustained a stroke, both a personal sense of shame and the belief that others viewed one negatively appeared related to depression.

Illness representations and distress in stroke patients: An analysis using the SRM

S. JOICE, D. BONETTI, University of St. Andrews, R. MacWALTER, University of Dundee & V. MORRISON, University of Bangor.

Background: Leventhal's Self-Regulation Model (SRM) proposes that patients cognitively process their illness via two separate but related pathways: illness and emotional representations, (IR, ER) Past research has found relationships between these representations in stroke patients. This paper further investigates whether stroke patients' illness representations: (1) Are related to distress? and (2) Are different from those of pain patients?

Methods: 37 stroke patients (mean age 64.43 yrs s.d. 8.4, 13 males) were interviewed using Illness Perception Questionnaire (IPQ-R) and the Hospital Anxiety and Depression Scale (HADS) two weeks after discharge.

Findings: IPQ-R ER, anxiety and depression were all related to illness coherence ($r = 0.51$, $r = 0.51$, $r = 0.42$ $p < 0.01$) and time cyclical ($r = 0.41$, $r = 0.37$ $p < 0.05$). Stroke patients differed from chronic pain patients having greater illness coherence and control (personal and treatment) yet perceived less identity, timeline, (acute/chronic and cyclical), consequence, and ER. Compared with acute pain patients, stroke patients had greater identity, timeline (acute/chronic and cyclical) consequences and ER (all t values = $p < 0.05$).

Discussion: Following discharge stroke patients' distress was associated with perceived consequences, understanding and fluctuations of their condition. Past research defining perceived consequence as confidence in recovery, has also been predictive of distress. Stroke patients' representations differed from patients with other conditions suggesting that interventions to reduce distress need to be tailored to the specific illness and its associated representations to be effective.

Advances in illness representation research: Theory development and diverse applications

Convener & Chair: M. HAGGER, University of Essex.

Discussant: J. WEINMAN, Guy's, King's and St. Thomas' School of Medicine, Kings College, London.

Aims: (1) To give an overview of the recent theoretical advances in the area of illness representations; (2) To report on research trends in illness perceptions across a number of studies; and (3) To provide a forum for the dissemination of recent and original approaches to the study of clinical populations using the illness perceptions approach.

Rationale: A recent review of the empirical research adopting the self-regulation model (SRM; Leventhal *et al.*, 1980) has suggested that it is an approach that is receiving much attention (Hagger & Orbell, 2003). Furthermore, the review suggests that there are consistent patterns of relationships among the components of the SRM across studies. Notwithstanding this consistency, further research is required to address gaps in the research such as the application of the model to an increasingly broad spectrum of illnesses, and to further develop the theory toward a more effective understanding of the cognitive influences on illness and coping. To this end, the present symposium aims to assemble researchers who have made substantial theoretical and empirical advances to research using the SRM in the past alongside current researchers who have recent data to promulgate. It is expected that the presentations in the symposium will provide a showcase for current

state of the research in illness perceptions and self-regulation theory.

Summary: It is appropriate that the symposium begins with Rob Horne's (University of Brighton) contribution since it outlines his very recent advances to the theory and introduces an extended self-regulation model (e-SRM). Martin Hagger (University of Essex) will introduce a study examining the impact of cognitive and emotional representations on emotional outcomes in women after attending a colposcopy clinic. Paul Norman (University of Sheffield) will present findings of a prospective study examining the SRM with myocardial infarction patients. Ian O'Sullivan (University of Essex) presents findings from the efficacy of the self-regulation model to explain how patients who have received an abnormal colorectal cancer screening test and attended colonoscopy. Finally, Gwyneth Rees (University of Stirling and Cancer Research UK) will present a paper examining the differences on cognitive and emotional representations of illness for women at-risk of breast cancer compared with a normal-risk control group. These presentations give an overview of recent theoretical advances as well as being indicative of the state of the research with the SRM. Each contributor proposes caveats, modifications and further questions with respect to the use of the SRM in research in illnesses that are likely to catalyse further investigation and development in this area.

Treatment perceptions and self-regulation

R HORNE, University of Brighton.

This paper will consider the role of treatment beliefs in the self-regulation of illness. It will argue that a better understanding of how people perceive treatments could improve our ability to operationalise theories of social cognition and self-regulation and enhance their power to explain variations in treatment-related behaviour such as treatment choice and adherence and so guide the development of interventions to optimise the use of health care resources. Using prescribed medication as an example, this paper will present a simple necessity-concerns framework for conceptualising the specific treatment beliefs that may be particularly salient to adherence. Drawing on empirical studies spanning a range of illness conditions such as asthma, HIV cardiovascular and renal disease, it will examine the utility of the framework for explaining adherence. The paper will present an extended-common-sense model (e-CSM) in which 'common-sense' representations of treatment (e.g. necessity-concerns) as well as representations of illness are specified. In the e-CSM illness and treatment representations are related as the individual strives to attain common-sense coherence between their perceptions of the illness and treatment. In common with illness perceptions, treatment representations are processed at a cognitive and emotional level and inform the selection and appraisal of coping procedures. Moreover, for treatments such as medication or surgery that are perceived to carry risks or costs, these are balanced against perceived need. The paper will present a framework for understanding the contextual factors influencing these such as 'prototypic' beliefs about classes of treatments (e.g. medication vs homeopathy), past experiences of ourselves and others, social and cultural norms, the information we receive from various sources and satisfaction with care.

Illness representations and specific emotional responses in women attending for colposcopy following a positive cervical smear test

M.S. HAGGER & S. ORBELL, University of Essex.

Background: The present study adopted self-regulation theory (SRT; Leventhal *et al.*, 1980) to examine the influence of cognitive and emotional representations of illness on the emotional responses of women after their first visit to a colposcopy clinic.

Methods: Women who had received a positive cervical smear test ($N = 1258$) were recruited at

their first visit to the colposcopy clinic. Three weeks prior to their first follow-up visit, the women were sent a questionnaire containing the following measures: the Illness Perceptions Questionnaire-Revised (IPQ-R; Moss-Morris *et al.*, 2002), the state-trait anxiety inventory (STAI; Spielberger *et al.*, 1978), measures of anger, embarrassment, guilt, relief and sadness (Smith *et al.*, 1993), and a measure of intention to attend their follow-up visit. The response rate was 52 per cent.

Findings: Emotional representations and illness coherence from the cognitive representations significantly predicted to all of the emotional outcomes, embarrassment excepted. Serious consequences had a significant influence on all of the emotions, while illness identity significantly influenced all the emotional outcomes, except guilt. Attribution of the cervical abnormality to psychological causes significantly predicted all of the emotional outcomes but relief. Importantly, emotional representations mediated the influence of serious consequences on the emotional outcomes, but intention did not mediate the representation-outcome relationships.

Discussion: Results support the inclusion of both emotional and cognitive components from SRT to explain the illness outcomes. However, planning to attend a follow-up visit to the colposcopy clinic, a problem-focused coping behaviour, did not assist in explaining the representation-emotion relationships.

Illness perceptions and adaptation following a first-time myocardial infarction

N. MITCHELL & P. NORMAN, University of Sheffield.

Background: This paper considers the role of illness perceptions in relation to adaptation following a first-time myocardial infarction (MI). According to Leventhal's Self-Regulation Model, individuals form an illness representation when faced with a disease threat that is structured around five dimensions: (i) disease identity; (ii) causes; (iii) consequences; (iv) time-line; and (v) cure/control. The illness representation is then used to guide coping efforts, and thereby drives adaptation to the illness.

Methods: First-time MI patients completed questionnaires: (i) whilst in-patients (< five days post-MI) ($N = 124$), (ii) at three weeks post-discharge ($N = 92$), and (iii) at three months post-discharge ($N = 78$). The questionnaires included measures of illness representations (IPQ), anxiety and depression (HADS), and various health behaviours. Hierarchical regression analyses were conducted in which baseline measures of the dependent variables were entered at a first step followed by baseline IPQ measures.

Findings: Baseline illness perceptions were able to explain additional variance in time 2 anxiety ($\Delta R^2 = 0.12$, $\Delta F = 2.54$, $p < 0.01$) and depression ($\Delta R^2 = 0.19$, $\Delta F = 3.48$, $p < 0.001$), with the perceived consequences dimension emerging as an important predictor. Baseline illness perceptions were unable to explain an additional variance in time 3 anxiety ($\Delta R^2 = 0.09$, $\Delta F = 1.06$, ns) and depression ($\Delta R^2 = 0.18$, $\Delta F = 1.63$, ns). Considering changes in health behaviour, baseline illness perceptions were only able to explain additional variance in time 2 vigorous exercise ($\Delta R^2 = 0.20$, $\Delta F = 1.95$, $p < 0.05$) and time 3 alcohol consumption ($\Delta R^2 = 0.13$, $\Delta F = 2.98$, $p < 0.001$), with the control/cure dimension emerging as an important predictor.

Discussion: The present results provide only limited support for the Self-Regulation Model. Suggestions for modifications to the model and its operationalisation are discussed.

Illness representations in patients attending for colonoscopy following a positive Faecal Occult Blood test (FOBT) screening result

I. O'SULLIVAN & S. ORBELL, University of Essex.

Background: To date illness representations have been studied predominantly in relation to people's experience of chronic illnesses.

Receiving information of a potential health threat by way of screening test result also leads to cognitive processing of information and the Common Sense Model of Illness representations may be a useful framework for studying coping in this context. The purpose of the study was to investigate the relationship between the illness representations of people attending for colonoscopy following receipt of an abnormal colorectal cancer screening test result and strategies utilised to facilitate coping with the abnormal result.

Methods: A cross-sectional survey design was utilised. 701 people who attended for colonoscopy following receipt of an abnormal FOBT result completed questionnaires. Illness representations were measured by the IPQ-R and coping strategies were measured using the revised Ways of Coping Questionnaire. Measures of health behaviour change (fat and fibre intake, smoking and exercise) were also included as measures of coping behaviours. Data were analysed by a series of hierarchical regression analyses.

Findings: Overall, the models explained between 4.6 per cent and 25 per cent of variance in coping strategies/behaviours. The addition of illness perceptions made a significant contribution to the prediction of the different coping strategies and behaviours, controlling for background and health behaviour variables, and diagnosis. Emotional representations, treatment and personal control were the most consistent predictors of the different coping strategies/behaviours.

Discussion: Illness representations regarding were important predictors of the coping strategies/behaviours utilised by people in receipt of abnormal screening test results. The implications of these results in terms of the application of the Common Sense Model of Illness representations are discussed.

Using the Self-Regulatory Model to understand psychological response to genetic predisposition to breast cancer

G. REES, A. FRY & A. CULL, University of Stirling.

Background: There are large individual differences in women's emotional and behavioural response to breast cancer risk. Experience of breast cancer in the family has been linked to psychological response in women with a genetic predisposition to breast cancer. The Self-Regulatory model (SRM) provides a theoretical understanding of these relations. This paper discusses the adaptation of the model to this population and outlines a study that aims to examine the associations between experience of breast cancer, illness perceptions and levels of distress.

Methods: Cross-sectional postal questionnaire study; 117 women at increased risk of breast cancer and 100 controls. Measures included the Illness Perceptions Questionnaire-Revised (IPQ-R) adapted for healthy women, general psychological well-being (GHQ-30) and cancer specific distress (Cancer Worry Scale), and experiences breast cancer.

Findings: Experience and illness perceptions: Women at increased risk held different perceptions of breast cancer than controls. Bereavement experiences in the risk sample were associated with illness perception dimensions. Illness perceptions and distress: In the increased risk sample both general and cancer specific distress measures were associated with the identity, emotional representation, timeline acute and consequence subscales of the IPQ-R ($p < 0.05$).

Discussion: The SRM can be applied to healthy individuals at risk of disease. Using the SRM in such populations is likely to provide implications for the development and evaluation of interventions aimed at improving response to risk. Further work is required to explore additional illness perceptions salient in this population.

Breast or bottle? Exploring beliefs and applying models to influence healthy infant feeding.

Convener & Chair: L.M. WALLACE, Health Services Research Centre, Coventry University.

Discussant: E.M. ALDER, Napier University.

Aims: Present qualitative research that explores the attitudes of young people, parents and family members to infant feeding. Use qualitative research to elaborate theory developments, particularly concerning social norm. Examine the explanatory power of social cognition (TBP models) on sustaining breastfeeding to four months or longer. Investigate the role of TBP variables in measuring attitudes to breastfeeding in teenagers and young adults as a means of informing public health promotion activities. Draw conclusions as to how health psychology can inform the design of educative interventions to promote and sustain breastfeeding.

Rationale: Promotion of breastfeeding is recognised to be one of the most potent public health policies. The positive impacts on health and prevention of disease for mothers and infants have been established in both the short- and long-term. Bottle-feeding and the introduction of solids have health risks connected to content, timing, administration, and especially hygiene. However, in the UK, babies from the least affluent families, who are most at risk of ill-health, are those least likely to be breastfed, and among all social class groups, there is a rapid discontinuation of breastfeeding among those 70 per cent of mothers who initiate, and only 22 per cent are still breastfeeding at four months. From 2003, all English NHS PCTs must achieve year on year improved breastfeeding initiation by two per cent. Infant feeding involves complex learned and culturally influenced behaviour. To develop policies and interventions that will promote and sustain breastfeeding, it is essential to understand the experiences of young people before parenthood, pregnant women and their families.

Content: McMillan presents a study of low income white pregnant teenagers' views of their infant feeding choices, and shows the powerful influence of cultural and social norms, confidence and self-esteem. Ingram examines the impact of professional advice and cultural influences on infant feeding practices among Asians, and responses to an intervention aimed at enhancing breastfeeding through grandparental support. Strange elaborates the experiences of mothers who breastfed for at least four months, highlighting the influence of social factors maintaining breastfeeding. Dunn examines TBP variables as predictors of sustained breastfeeding to four months and beyond, arguably a period of significance for health gain to the infant. Implications for the design of persuasive interventions for mothers can be drawn. For changes to occur in cultural norms, interventions must focus on public health messages for those who may become pregnant soon. Swanson examines problems and suggests means of addressing the use of TBP to build interventions for promoting healthy infant feeding choices.

'Successful' breastfeeding: A qualitative account of women's experience using grounded theory

E.M.C. STRANGE, Leicester General Hospital & O.M. DUNN, Coventry University.

Background: Breastfeeding is an important health behaviour, with benefits for both the mother and child. Little is known, however, about the experience of women who breastfeed beyond four months. This project investigated the experience of 'successful' breastfeeders in order to begin to develop theory about what factors lead to successful breastfeeding.

Methods: Semi-structured interviews were conducted with nine breastfeeding women who had been breastfeeding their babies for between four and 29 months, and one formula feeding mother who acted as a negative case analysis.

Framework & Analysis: The interviews were transcribed, coded and analysed for themes

using Grounded Theory methodology.

Findings: A number of lower-order categories were identified in the transcript which were then organised into the following higher-order categories: impact of others; beliefs that breastfeeding is best and natural; difficulties of the first few weeks; determined characteristic; breastfeeding duration; strategies to continue breastfeeding; breastfeeding etiquette; and bi-products of breastfeeding, guilt, anxiety and emotional bonding. Social regulation was identified as the core category and was defined as the process through which society at both micro and macro levels impacts in positive and negative ways on the breastfeeding woman.

Discussion: Breastfeeding is a complex social behaviour, even if a woman tries to feed only in private, it is something that everybody will comment on and enquire of, from close family to the wider social circle, medical staff and even strangers. Grounded theory enabled the complexities of women's experiences of breastfeeding to be explored. Suggestions are made for health promotion as a result of this research. Further qualitative research would augment theory about successful breastfeeding which could influence policy and practice.

Predicting sustained breastfeeding using the Theory of Planned Behaviour

O.M. DUNN, Coventry University, E.M. ALDER, Napier University & L.M. WALLACE, Coventry University.

Background: Current DoH guidelines recommend breastfeeding until at least four months, as there is strong evidence of health gain to the infant. However only 27 per cent of UK mothers currently breastfeed this long (Hamlyn *et al.*, 2002). Although much is known about prediction of intentions and behaviour to breastfeed up to six weeks, little is known about intentions to feed beyond this point. This is the first study to apply the Theory of Planned Behaviour (TPB) (Ajzen, 1991) to investigate attitudes of mothers who have breastfed to six weeks to sustained breastfeeding to four months.

Methods: Six weeks post delivery, 338 first-time mothers provided demographic information and completed questionnaires based on the TPB. All mothers have been followed-up to four months and follow-up has continued until contact has been lost or last breastfeed has been determined. To date, 189 mothers have reached an endpoint.

Findings: Measures of attitudes, subjective norms (SN) and perceived behavioural control (PBC) predicted 69 per cent of the variance in intention to breastfeed to four months. The inclusion of TPB correctly classified 77 per cent mothers' breastfeeding status at four months, a significant improvement over demographic variables alone. When considering total duration of breastfeeding for those mothers who had reached an endpoint, TPB variables again explain a significant amount of variance above demographic variables.

Discussion: The TPB provides a focus for interventions to support mothers' longer term feeding intentions which can be targeted at non-demographic variables which may be more amenable to change.

South Asian grandmothers' influence on breastfeeding: An ethnographic study

J.C. INGRAM & D.G. JOHNSON, University of Bristol.

Background: The national survey of Infant Feeding in South Asian Families (Thomas & Avery, 1997) reported that even though more Asian women started to breastfeed than white women (90 per cent Bangladeshi, 82 per cent Indian, 76 per cent Pakistani), Pakistani and Bangladeshi mothers were three times more likely than white mothers to leave hospital bottle feeding and by eight weeks over 50 per cent of them had stopped breastfeeding. This project explored South Asian grandmothers' health beliefs and cultural practices around infant feeding, knowledge of breastfeeding and their

ability to support their daughters' or daughters-in-law whilst breastfeeding.

Methods: An ethnographical approach was used.

Participants: 14 Pakistani, Bangladeshi or Indian grandmothers took part in focus groups or interviews. The focus groups were held at a local health centre and conducted in the participants' language, with a linkworker acting as translator into Punjabi, Bangladeshi or Urdu. A post-session debriefing session in English was also tape-recorded. Interviews with Indian grandmothers took place in their homes. Transcripts were analysed using thematic analysis.

Findings: South Asian women are not a homogeneous group and differences were seen in cultural and religious practices around breastfeeding, including giving colostrum, using water and when to wean. There were also differences in breastfeeding rates between the Pakistani, Bangladeshi and Indian communities.

Discussion: Linkworkers are the gatekeepers and provide advocacy for communities who do not speak fluent English and the qualitative methodologies produced a wealth of information about their breastfeeding beliefs and practices. Focus group methods were acceptable to the Bangladeshi and Pakistani communities, but Indian families preferred individual interviews.

Views of white pregnant teenagers experiencing deprivation towards breastfeeding and bottle-feeding, using framework analysis

L. DYSON, Mother & Infant Research Unit, University of Leeds, B. McMILLAN & M. CONNER, School of Psychology, University of Leeds, J.M. GREEN, M.W. WOOLRIDGE, M.J. RENFREW & J. DAVENPORT, Mother & Infant Research Unit, University of Leeds.

Background: This study aimed to identify views of teenagers expecting their first baby toward breastfeeding and bottle-feeding, including their perceptions of societal views.

Design & Participants: Four focus groups were conducted comprising 18 participants who were aged between 16 to 19 years, on low incomes and inner-city residents in a northern city.

Method: Data are considered to be a valid reflection of the complexities of individual's views (Kitzinger, 1995) and generalisable to the wider population of teenagers in similar circumstances due to saturation of issues and diversity of backgrounds of individual participants (Miles & Huberman, 1994). Framework analysis generated thematic content (*ibid*).

Findings: No data were generated on the disadvantages of formula feeding. In contrast, of the eleven themes emerging from this data, 'disadvantages of breastfeeding', dominated by the issue of breastfeeding in public, generated the greatest scope and depth of data. Breastfeeding in public was closely related to other themes of: perceived cultural and moral norms, including sexuality issues and 'sluttish' behaviour; typologies of infant feeding; and confidence and self-esteem. Perceived cultural norms also included concerns of being stereotyped as 'bad mothers' and reported to 'Social Services' and negative media exposure of breastfeeding.

Discussion: The decision to breastfeed for pregnant teenagers on low incomes appears to be closely linked to the prospect of breastfeeding in public. This requires high self-esteem to overcome perceived adverse moral and cultural opinion within their social context. The potential for peer support programmes and locally developed media campaigns to address these complex issues require exploration.

How practical is the theory? Hiccups in applying the Theory of Planned Behaviour to infant feeding research

V. SWANSON, University of Stirling.

Background: Promotion of positive attitudes to breastfeeding is a goal of UK health policy. Research studies have used social cognition models to study infant feeding attitudes,

intentions and behaviour. The Theory of Planned Behaviour (TPB) allows the relative influence of components of the infant feeding decision to be identified and targeted for intervention. Attitudes towards health behaviours may change as a function of perceived personal relevance. Since the decision whether to breastfeed or bottle-feed is often made well before conception, it is important to examine the attitudes of groups for whom the infant feeding decision is personally distant. However, measurement of components of the TPB becomes methodologically more complex when the target behaviour is personally or temporally distant. This paper identifies and addresses some of the methodological difficulties encountered in applying the TPB in three studies of attitudes to breastfeeding and bottle-feeding in samples where the personal relevance of the behaviour varies.

Methods: Data from three cross-sectional questionnaire based studies of attitudes to infant feeding, based on TPB models, are utilised: ($N = 406$) new mothers and their partners (in hospital after birth and at follow-up), ($N = 187$) university students, and ($N = 500$) adolescent girls and boys.

Findings: New parents held stronger (both positive and negative) attitudinal beliefs regarding infant feeding (both breastfeeding and bottle-feeding) than students and school pupils (all $p < 0.001$), implying greater belief strength for individuals for whom the issue has greater personal relevance.

Discussion: Difficulties in applying and measuring the constructs of the TPB, i.e. attitudes, subjective norm, perceived behavioural control, intentions and behaviour in relation to breastfeeding and bottle-feeding in groups exhibiting different degrees of personal relevance are discussed.

Physiology and health psychology

Convener & Chair: P.D. EVANS, Psychophysiology and Stress Research Group, University of Westminster.

Discussant: F. HUCKLEBRIDGE, University of Westminster.

Pioneers of stress research, notably Hans Selye, emphasised the role of physiological and neuroendocrine processes in response to stressful circumstances. Comprehensive theories now consider stress a transactional process, involving external stressors, their psychological appraisal and modulation. By impacting on physiological processes, stress can significantly affect health. More than a decade of research has shown that the immune system, as well as neuroendocrine, can be powerfully affected by stress. In this symposium different authors show how stress theory, encompassing physiological processes, can provide a guide to health-relevant empirical research.

Angela Clow will provide an overview of recent findings in regard to the so-called 'stress hormone', cortisol. She will emphasise the importance of taking into account the normal rhythmicity of cortisol in investigations which are focussed primarily on stress and health outcomes.

Julie Turner-Cobb will present evidence from a study of mothers and children showing how the measurement of cortisol can illuminate the role of well-being and temperament in moderating stress outcomes and possibly health.

Utilising immune measures with direct relevance to health outcomes, Vikki Burns will show how psychological factors moderate relationships between external stressors and antibody status following vaccination.

Phil Evans will present recent highly supportive evidence that simple and conveniently sampled 'bio-measures' (in this case secretory immunoglobulin A) offer promise in health psychology research and large-scale social science research generally. However, echoing Clow's presentation, he will argue that bio-measures can be misleading if used without knowledge or consideration of their normal functioning characteristics.

Chronic stress and the diurnal profile of free cortisol

A. CLOW, P.D. EVANS & F. HUCKLEBRIDGE, Psychophysiology and Stress Research Group, University of Westminster.

Recent advances in our knowledge of the diurnal pattern of the Hypothalamic Pituitary Adrenocortical (HPA) axis through sampling of active (free) salivary cortisol have been considerable. In this presentation, we shall review recent work in our laboratory relating to a number of issues important to researchers in the area of stress and health. We shall examine the consistency and reliability of diurnal and awakening measures of cortisol, and we shall present evidence that individual differences in the pattern of profiles are predictive of stress and health status. In particular we shall emphasise the pathological associations of flatter cortisol profiles across the day and attenuation of the normal pronounced acute cortisol response which follows immediately upon awakening.

Maternal occupational stress moderates salivary cortisol responses to daycare experience and school transition in children

J.M. TURNER-COBB, University of Bath, J.M. CHRYSANTHOPOULOU, Centre for Research in Health Behaviour, University of Kent at Canterbury & D. JESSOP, Research Centre for Endocrinology, University of Bristol.

Background: The influence of maternal multiple role occupancy on a child's neuroendocrine response has been largely unexplored. The aim of this study was to investigate psychosocial influences on hypothalamic-pituitary-adrenal (HPA) axis activity to include the role of maternal occupational stress.

Methods: Self report questionnaire and salivary cortisol data were collected at baseline (T1) and at six-month follow-up (T2) in 67 mother-child dyads with pre-school age children (32 boys and 35 girls). Cortisol was assessed at awakening and at 5.00 to 6.00 p.m. across two consecutive days and mean diurnal change in cortisol calculated. Questionnaire data included child temperament, family relations, maternal well-being (physical health status, job role quality and level of burnout) and hours spent in day care per week.

Findings: Moderating relationships were found between hours in day care and maternal well-being and child temperament on cortisol levels but not on diurnal cortisol change. Child temperament (inhibitory control and shyness) predicted T2 diurnal cortisol decline and T1 maternal physical health predicted T2 cortisol levels. Additional analyses assessing cortisol response to school transition were conducted.

Discussion: This research provides support for the moderating role of maternal well-being and child temperament in protecting against stress reactivity in children. It highlights the importance of early social stress on the developing neuroendocrine system and subsequent health.

Psychosocial factors and antibody status following vaccination in humans

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Background: High levels of psychological stress have been demonstrated to be related to decreases in various enumerative and *in vitro* functional indices of immunity. However, the clinical implications of these changes in healthy people, and within normal ranges, are unclear.

Methods: Measurement of antibody response to specific antigen challenge *in vivo* provides a model for studying integrated immune responses. In addition, assessing antibody status following vaccination allows the clinical implications of any changes to be easily interpreted. In this programme of research, antibody status following hepatitis B, meningitis C, and influenza vaccination has been assessed in young, healthy

populations. Antibody responses to each of these vaccinations were found to be susceptible to psychosocial influences; this effect was most apparent some months after vaccination. This research also included preliminary investigation of the underlying mechanisms of the association between psychosocial factors and immune function.

Findings/Discussion: Higher sympathetic nervous system and hypothalamic-pituitary-adrenal axis reactions to an acute laboratory stress were associated with a poorer antibody status following hepatitis B vaccination. In conclusion, psychosocial stress is associated with clinically relevant declines in antibody status following a variety of vaccines, in young, healthy adults. Perceptions of, and coping response to, stress were at least as important as objective life events and physiological reactivity to stress provides a potential mechanism of interaction.

Secretory Immunoglobulin A, stress, and symptom reporting in a large community-based survey

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Background: In this presentation the potential of salivary immunoglobulin A (sIgA) as a bio-marker of stress and general health is examined.

Methods: Approximately 2000 participants were interviewed and saliva samples taken as part of the West of Scotland Twenty-07 survey of health in West Central Scotland.

Findings: Univariate analyses found lower secretion rates of sIgA to be associated highly significantly with greater stress, as measured by self-reported dissatisfaction over a number of life domains. Lower sIgA was also associated highly significantly with greater reporting of symptoms of ill-health of all kinds. Multivariate analyses confirmed that these predicted relationships were robust with respect to control for demographic variables, smoking status, time of saliva sampling and interview, and current medication.

Discussion: Although the research is exploratory, we conclude that sIgA, in terms of convenience and cost, shows considerable promise as bio-marker for inclusion in a raft of stress-related measures in large-scale survey research concerned with psychosocial determinants of health.

INDIVIDUAL PAPERS

Patients' perceptions and management of psoriatic flare-ups

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Background: This study set out to explore patients' perspectives regarding relapse, remission, predictability, controllability and management of subsequent flare-ups.

Methods: Given the lack of research in this area, a qualitative methodology was adopted and data collected and analysed using the Grounded Theory approach. Ten adults with chronic psoriasis were interviewed in total.

Findings: A number of important themes emerged from analysis, some of which were organised under the headings: Beliefs about Psoriasis as a Chronic Illness; and Management of Psoriasis. Perceptions about causation, illness identity, incurability and control were elicited and appeared to influence the uptake of reactive or proactive strategies (behavioural and cognitive) aimed at managing flare-ups. Although individuals differed in their perceived degree of control, control was largely related to managing symptoms as a way of returning to remaining in a remission phase.

Discussion: Theoretically, the findings provide support for Leventhal's illness representation model including the recently revised dimension relating to treatment factors. Concepts within the category of control (Internal Control and Shared Control) suggest that models which make use of

the internal-external dimension of attribution theory, need to expand to include collaborative control. The findings highlight several areas where interventions from a clinical health psychology perspective could be applied. These include: addressing patients informational care needs, enhancing perceptions of control through the development of a relapse signature approach, and encouraging the incorporation of a psychological perspective via staff supervision and training.

Family factors, problem-solving style, motivation to achieve, adjustment and health in undergraduates

M. ARROLL & T. CASSIDY, Thames Valley University.

Content: To examine the predictive relations between problem-solving style, achievement motivation and health in a sample of university students during their three years at university.

Design: A prospective longitudinal design with questionnaire data collection techniques.

Methods: A sample of 228 undergraduate students (50 males and 178 females) were assessed at three points across their three years at university using measures of family environment, achievement motivation, problem-solving style, and psychological and physical health.

Results: Analysis of the data, using path analysis, shows that family relations have an impact on problem-solving style and achievement motivation and that both impact on student ratings of psychological and physical health across a three-year period.

Conclusion: It is suggested that achievement motivation and problem-solving style might provide a useful focus for interventions aimed at reducing stress and improving health among undergraduates.

Distinct psychosocial differences between women with Coronary Heart Disease and Cardiac Syndrome X

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Background: The degree of psychological distress associated with Cardiac Syndrome X (angina pectoris, a positive exercise test and angiographically smooth coronary arteries) in women is poorly understood. Family history of CHD may influence health anxiety, while social support may moderate psychological morbidity.

Methods: 100 female Syndrome X patients (60 ± nine years), 100 female CHD patients (65 ± nine years) and 100 healthy age-matched female volunteers (61 ± 10 years) were recruited. Participants completed the Hospital Anxiety and Depression Scale (HADS), Health Anxiety Questionnaire (HAQ), a demographic information scale and questions concerning previous medical history and family history of CHD.

Findings: Syndrome X patients had higher levels of life interference ($p < 0.05$) and general anxiety ($p < 0.05$) than CHD patients. Syndrome X and CHD patients had higher HADS and HAQ scores than controls ($p < 0.01$). Syndrome X patients with a large social network had lower HADS anxiety ($p < 0.05$), health worry ($p < 0.05$), interference with life ($p < 0.01$) and total HAQ scores ($p < 0.01$). Sixty-six per cent of Syndrome X patients reported some family history of CHD, compared to 65 per cent of CHD patients and 48 per cent of controls ($p < 0.05$).

Discussion: Syndrome X patients had higher levels of general anxiety than CHD patients and higher scores on all but one HADS or HAQ scale than controls. Size of social network had a profound affect on anxiety, depression and quality of life in Syndrome X patients, while previous family history of CHD was unrelated to psychological morbidity in any group.

Developing a quality of life measure for spousal carers of Huntington's Disease patients

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Background: It is generally the immediate family that take on the responsibility of caring for a family member affected with Huntington's Disease (HD) and more often than not, the primary carer is the spouse. This role is both physically and mentally demanding as HD patients experience emotional changes which can cause considerable distress to family members. This study describes the development of a self-report quality of life (QoL) measure for spousal carers of HD patients (HDQoL-C). The underlying concepts for assessing QoL are based upon Cummins's (1997) ComQoL-A5, a comprehensive and multidimensional quality of life measurement designed for use with the general adult population.

Methods: The ComQoL-A5 was examined for its relevance to the QoL of spousal carers of HD patients through focus groups ($N = 47$), ratings questionnaires ($N = 40$) and 'Photovoice' ($N = 5$). New items were constructed and a disease specific questionnaire was developed and further tested for psychometric properties on a sample of 100 HD spousal carers.

Findings: Although the ComQoL-A5 was relevant to HD spousal carers, a number of reoccurring themes e.g. genetic and financial issues were not fully addressed. Our newly developed HDQoL-C incorporated these issues, and preliminary analyses demonstrates reliability and validity. Discussion: The collection of both quantitative and qualitative data established the need for a HD specific QoL measure for spousal carers of HD patients. It is anticipated that once fully developed, the HDQoL-C will be used as an outcome measure by which to judge the efficacy of interventions put into place to support these caregivers.

Self-help is not a therapeutic alternative: A survey of primary care mental health practitioners' views and behaviour

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Background: Addressing practitioners' attitudes towards self-help are fundamental to the implementation of these resources within routine care. Research aims are: to describe practitioners' use of and attitudes towards self-help; to identify the attitudes associated with the use of self-help materials for clients.

Methods: A cross-sectional postal survey of all registered members of Counsellors and Psychotherapists in Primary Care. Questionnaire informed by the Theory of Planned Behaviour assessing practitioners' demographic characteristics, use of and attitudes towards self-help.

Results: Response rate was 70 per cent (364/522). Although 80 per cent (322/364) used self-help materials in some form, only 16 per cent (59/364) believe self-help should be used without one-to-one counselling. Less than 20 per cent believed self-help would reduce the number of contact sessions or consultation length. Used with counselling, practitioners perceived self-help increased clients' insight of mental health problems, self-esteem, and well-being. However, practitioners perceived clients needed high levels of motivation to use self-help, making them difficult to use and/or adhere to. Practitioners' beliefs about the acceptability, purpose, and benefits of self-help, perceptions of clinical autonomy and endorsement from colleagues were associated with intended future use.

Discussion: UK practitioners view self-help as a resource to enhance the therapeutic encounter not as a replacement for one-to-one counselling. Practitioners are unlikely to support the use of self-help materials alone either as a routine therapeutic practice and/or part of a trial to evaluate self-help's effectiveness. This application of self-help resources will not widen

access to psychological treatment in primary care as outlined by the National Service Framework for Mental Health.

Adherence and adaptive outcomes in asthma: Exploring the role of illness perceptions, treatment beliefs, social support and stress

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Background: Using a self-regulatory framework this study aimed to identify factors related to preventive medication adherence in adults diagnosed with asthma; it also sought to examine the role of illness representations, perceived social support, and perceived stress on adaptive outcomes, specifically health-related quality-of-life and symptom morbidity.

Methods: A cross-sectional design 62 community-based patients with asthma completed a battery of questionnaires consisting of the revised Illness Perception Questionnaire (Moss-Morris, Weinman, Petrie *et al.*, 2002), a modified version of the Beliefs about Medication Questionnaire (Horne, Weinman, Hankins, 1999), the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), the Social Provisions Scale (SPS) (Russell & Cutrona, 1984), the SF-36 (Ware, Snow, Kosinski & Gandek, 1993), and the Asthma Symptom Profile (Lehrer, Hochron, Isenberg *et al.*, 1993).

Findings: Non-adherence to preventive medication was associated with perceived symptoms of inhaler usage, as well as with more general concerns about the potential adverse effects of the medication. Analysis of factors related to health-related quality-of-life and symptom morbidity showed that illness representations, perceptions of stress and social support were directly related to these outcomes whereas adherence was not.

Discussion: The present study highlights the critical role that cognitive factors play both in determining adherence to preventive medication and adaptation to a chronic condition such as asthma. The findings have theoretical implications in terms of extending the self-regulatory model to incorporate beliefs other than those pertaining to illness; it also has practical implications for the design of self-management interventions to improve adherence and adaptive outcome in asthma.

Perceived parenting self-efficacy (PMP S-E) of mothers who are breastfeeding hospitalised pre-term neonates: Implications to health care

C.R. BARNES & E.N. ADAMSON-MACEDO, University of Wolverhampton.

Background: Self-efficacy is acknowledged as one of the strongest predictors of health behaviours and it may play an important role in facilitating breastfeeding of preterm babies. Although it is recognised that breast is best for babies' health, the incidence of breastfeeding by mothers of preterms is low. This study tests the hypothesis that the perceived parenting self-efficacy (PMP S-E) of mothers who are breastfeeding their preterm neonates is lower than their non-breastfeeding counterparts.

Methods: A between subjects design was used; 50 mothers (25 in each group) of relatively healthy pre-term babies were recruited from West Midlands hospitals. Criteria for inclusion were birthweight < 2.5 kg, gestational age < 37 weeks, within the neonatal period and no congenital malformations. The Perceived Maternal Parenting Self-Efficacy (PMP S-E) Likert-type scale previously validated by the authors was used; it consists of 20 items and four sub-scales.

Findings: A one-way factorial ANOVA has shown that PMP S-E was significantly lower in mothers who were breastfeeding [$F(1,49) = 13.57$; $p < 0.001$], as predicted; gestational age (GA) was used as a covariate and ANCOVA results suggested that the variance in maternal self-efficacy scores is independently explained by breastfeeding [$F(1,49) = 4.21$; $p < 0.04$].

Discussion: Breastfeeding a preterm baby appears to act as mediator of how the mothers perceive their parenting self-efficacy whilst in hospital. These mothers appear to need more support in the areas of caregiving procedures, evoking changes in their babies' behaviour, reading their babies' signalling and situational issues. These findings have implications for Neonatal Health Psychologists' practice and research within Neonatal Units particularly with regard to the facilitation of breastfeeding.

Communicating information about medicines: The 'benefits' of a benefit statement

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Background: Social cognition models suggest that perceived risk and benefit are key factors in determining health behaviours. Previous research has shown that provision of information about medication side effects can have detrimental effects on people's perceptions and intended health behaviours. The present study examines the effects of providing written information about a medication's benefits. Experiment 1 looks at whether the benefit information offsets negative effects of side effects information. Experiment 2 examines the effects of benefit information alone.

Methods: Two factor between participants designs were used: With/without benefit statement, with/without side effects information, (Experiment 1): With/without benefit statement, mild/severe disease (Experiment 2).

Participants and procedure: Participants ($N_1 = 188$, $N_2 = 454$) were given a written hypothetical scenario about being diagnosed with an acute infection and being prescribed a fictitious antibiotic, which included the manipulated explanation.

Measures and analyses: Six-point Likert ratings scales of satisfaction, perceived risk, perceived benefit, and intention to comply, and multivariate analyses were used.

Findings: Experiment 1 showed that inclusion of a benefit statement did not affect perceived risk but did positively affect intention to comply, when added to side effects information. Experiment 2 showed that a benefit statement by itself had a positive effect (regardless of illness severity) on perceived risk but did not affect intention to comply.

Discussion: Both experiments showed beneficial effects of providing information about a medicine's benefits, particularly for offsetting the negative effects of side effects information.

Developing a questionnaire measure of holistic treatment beliefs: An internet-based pilot study

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Background: Holistic beliefs about treatment are related to complementary and alternative medicine (CAM) use. A comprehensive measure of such beliefs is needed to facilitate investigations of the role of different treatment beliefs in CAM use. This study aimed to develop a comprehensive, generic questionnaire measure of beliefs about treatment in the context of CAM use, the Holistic Treatment Beliefs Questionnaire (HTBQ).

Methods: HTBQ items were developed from a review of existing research on why people use CAM. An online version of the HTBQ was constructed and advertised through health-related websites. The online questionnaire also included the previously validated HCAMQ (Hyland, Lewith & Westoby, 2003) and a measure of CAM use. Three-hundred-and-twenty-eight completed questionnaires were received.

Results: Exploratory factor analysis suggested a three-factor solution. Three factors were extracted using Principle Axis Factoring with Direct Oblimin rotation. Based on these factors, three subscales were developed measuring beliefs about natural treatment, participation in treatment and holistic health. The internal consistency of the subscales was acceptable (Cronbach's alpha values ranged from 0.68 to

0.75). The criterion validity of the HTBQ was acceptable: High users of CAM scored significantly higher on all HTBQ subscales than low users of CAM. Correlations between the HTBQ and the HCAMQ further demonstrated the validity of the HTBQ.

Conclusion: The HTBQ measures three dimensions of beliefs about treatment with acceptable validity and reliability. The HTBQ could be particularly useful for research seeking to clarify the relative importance of treatment beliefs in explaining why people use CAM.

Risk perception and fuzzy sets

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Background: This study investigated recent claims that individuals perceive the likelihood of negative health consequences in terms of a fuzzy set, rather than the single estimates used in traditional risk perception scales. We also investigated whether comparative optimism can be partly explained by the use of fuzzy sets.

Methods: Using an independent groups design, participants were asked to rate the likelihood of eight harmful alcohol-related outcomes on unmarked semantic differential scales. Single estimates were compared to two responses representing the upper and lower bounds of a set described as 'realistic probability'.

Findings: Both bounds and the midpoint of the bounded sets were as strongly predictive of AUDIT scores as single estimates (the AUDIT is a predictor of alcohol dependence and harm).

They were also better predictors of self-reported worry and fear about the consequences of drinking and intentions to reduce drinking. Compared to single estimates, analyses using the midpoints of bounded sets showed that comparative optimism was significantly reduced, but still extant.

Discussion: Our findings suggest that people appear to use a fuzzy, rather than a literal, representation of outcome likelihood when they make decisions about health endangering behaviours. This is partly responsible for comparative optimism. Theoretical and practical implications are discussed.

Reliability and validity of a computerised dental anxiety scale for children and adolescents: The Smiley Faces Programme

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Background: To provide further reliability and validity data on a computerised dental anxiety scale for children and adolescents using faces as a response set (the Smiley Faces Programme: SFP).

Methods: The SFP was completed by 464 children and adolescents (range – six to 15 years; mean age 10.8 years). For validity purposes, 241 participants also completed two other children's dental anxiety measures (the Modified Child Dental Anxiety Scale and the Dental Fear Survey). For test-retest purposes 100 of the participants completed the SFP two weeks later.

Findings: The SFP demonstrated good internal consistency ($\alpha = 0.8$), test-retest reliability was good ($r = 0.8$, $p < 0.001$) and significant moderate correlations were found between the SFP and the Modified Child Dental Anxiety Scale ($r = 0.6$, $p < 0.01$) and the Dental Fear Survey ($r = 0.6$, $p < 0.01$). The local anaesthetic and drill were the most anxiety-provoking items.

Discussion: This study suggests that the SFP is a valid and reliable measure for assessing children and adolescent's trait dental anxiety and may help encourage dentists to formally assess dental anxiety.

Developing a theory of quality of life in patients with an Implantable Cardioverter Defibrillator

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Background: The implantable cardioverter defibrillator (ICD) is an invasive device which terminates potentially fatal abnormal heart rhythms by delivering a high-energy shock to the heart. ICD implantation has been associated with poor psychosocial functioning (Sears & Conti, 2002), however, the cause of this remains unclear. The current study employed grounded theory methodology in order to develop a theory of quality of life for ICD recipients.

Method: Semi-structured interviews were conducted with 13 ICD recipients selected through theoretical sampling at regular ICD check-up clinics. Data collection and analysis was guided by the principles of grounded theory. Initially, keywords, themes and phrases were identified from interview transcripts, and associated to form categories through open and axial coding. Constant comparison techniques were employed in the development of concepts and higher order categories. Finally categories were meaningfully integrated about a core category.

Findings: Perceived control emerged as the core category. Biographical factors, the experience of cardiac illness, illness interpretation, coping strategies and social integration all emerged as sub-categories, which contributed to the model through their relationship with perceived control over the illness and its treatment.

Discussion: Experiences related directly to the ICD and its therapy were not the most significant factors in determining quality of life. The modest impact of the ICD and the emergence of 'perceived control' as the core category in the theory has important implications for the development of psychological intervention programmes aimed at improving quality of life for ICD recipients.

Secondary prevention of Coronary Heart Disease: Illness and treatment beliefs as determinants of health-related behaviour

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Background: Leventhal's self-regulatory model has been successfully used as a framework for predicting health-related behaviour among patients from a range of chronic illness groups. The aim of the present study was to examine, among a sample of patients with established Coronary Heart Disease (CHD), the relationship between patients' illness perception and treatment beliefs, and their secondary preventive behaviour, including smoking, exercise, diet, alcohol consumption and medication adherence.

Method: Medical and demographic data were gathered from the medical charts of 1,611 patients with established CHD from 35 randomly selected general practices in the West of Ireland. Data on patients' illness perceptions and medication beliefs, as well as self-report data about patients' lifestyles were provided from postal questionnaire (1084 patients responded; 69 per cent response rate).

Findings: The value of patients' beliefs in predicting secondary preventive behaviour was examined using hierarchical linear regression and sequential logistic regression. Illness perceptions appeared to be only weak predictors of smoking, exercise, diet, alcohol consumption and medication adherence, accounting for about two per cent of the variance in these behaviours. Of the illness perceptions, a higher perception of control, a higher perception of disease severity and a lower level of disease-related anxiety were related to more positive behavioural outcomes. Medication beliefs were quite strong predictors of medication adherence, accounting for about nine

per cent of the variance in scores. A strong belief in the necessity of one's medication and a lower level of concern about one's medication were associated with higher levels of adherence.

Discussion: Illness perceptions are not strong predictors of health-related behaviour among patients with established CHD. However, beliefs about medications appear to be significant predictors of medication adherence.

'There's nothing wrong with you!' Functional Somatic Symptoms in an A & E

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Functional Somatic Symptoms (FSS) are non-organic bodily sensations, which may result in multiple A & E visits as patients feel they are not given adequate explanations of their symptoms. The objective of this study was to identify the extent of this behaviour and the nature of the presenting complaints. The study hypothesised patients would present with high levels of health concern associated with anxiety and depression. Using a cross-sectional design the study also investigated whether patients attending A & E could have their needs better met by a referral to psychology services. Patients who attended A & E four or more times within a six-month period and had not received a medical diagnosis on presentation were sent a General Health Questionnaire, Health Anxiety Questionnaire and a Hospital Anxiety and Depression Scale. Of the 100 patients who met this criteria, 35 completed the questionnaires and 15 opted for a one-hour individual interview to further explore their FSS and to determine whether a psychological explanation of their symptoms would be acceptable. Results showed that patients with FSS scored an average of 42 on the HAQ compared to 17.73 for normal controls. 50 per cent also showed a level of anxiety and 30 per cent depression. Patients responded well to a psychological explanation of their symptoms and would be keen for psychological assistance were this service available. This supports the bid for psychology time in A & E services to reduce the number of frequent attenders, using the Health Anxiety questionnaire as a screening tool.

Using the Theory of Planned Behaviour (TPB) to develop an assessment of attitudes and beliefs towards prosthetic use in amputees

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University of St. Andrews.

Background: Around half of lower limb amputees are fitted with a prosthesis, but approximately 40 per cent do not use it. The aim of the study was to develop a questionnaire based on the TPB to predict prosthetic use, using methods proposed by Ajzen (1998, 1991) and Conner and Norman (1995).

Method: Amputees ($N = 31$) completed a questionnaire prior to receiving their prosthesis, which contained 27 bipolar adjectives and open-ended questions on beliefs (two behavioural, two normative and two control). Academic, clinical and patient experts ($N = 12$) identified the attitude items with best face validity.

Results: The five attitude items giving the highest Cronbach's alpha (0.90) were analysed with the seven items with high expert agreement. One item was unacceptable to patients and therefore removed. These 11 items were evaluated, resulting in five items (Cronbach's alpha = 0.87) with correlated item-total correlations ranging from 0.43 to 0.83. The most common behavioural beliefs concerned mobility (46.5 per cent), independence (25.6 per cent) and participation restrictions (16.3 per cent); normative beliefs concerned family (33.3 per cent), NHS Staff (31.7 per cent), friends (19.1 per cent) and other patients (15.9 per cent) and control beliefs concerned slippery/rough surfaces (28.9 per cent), stairs (21.1 per cent), disabled facilities (54.8 per cent) and people helping (22.6 per cent).

Discussion: Based on this qualitative and quantitative development work, the questionnaire

contains five attitude items, three behavioural, four normative and four control belief items. It will be used to predict prosthetic use, functional activity, psychological distress and quality of life in the six-months following discharge from hospital.

Enhancing the rigorous application of the Theory of Reasoned Action in infant feeding research

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The majority of studies to have investigated the application of the Theory of Reasoned Action (TRA, Ajzen & Fishbein, 1980) in relation to infant feeding, have focused solely on the utility of the theory in predicting behavioural or choice intention with respect to breast/and or bottle-feeding (e.g. Manstead *et al.*, 1983; 1984; Kloeblen *et al.*, 1999). This longitudinal study examined the social cognitive processes of 85 first time mothers in forming their intention to breast-feed or bottle-feed, and subsequent infant feeding behaviour using a scale specifically designed for this study. The research focused both on the utility of the TRA for understanding these intentions and behaviour in such a choice situation, and further, investigated theoretical and operational aspects underpinning the theory as a key to advanced understanding of its function, and that of the social cognitive processes it represents. Multivariate analysis revealed differential attitude and differential subjective norm to be highly predictive of the differential intention ($p < 0.01$), which itself was subsequently highly predictive of choice intention ($p < 0.01$). Further, choice intention was found to be highly predictive of infant feeding behaviour following delivery ($p < 0.01$). On assessing positive utility of the theory based on the above analyses, the authors firstly investigated the theoretical concept of the mediating role of intention between the attitudinal and normative components, and subsequent behaviour, and secondly the multiplicative assumption made in the construction and operationalisation of the theoretical components of the TRA. Theoretical, methodological and practical implications are discussed in relation to both future research and practice.

Predicting exercise in Chinese adolescents: The Theory of Planned Behaviour (TPB) versus the Transtheoretical Model of Change (TTM)

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P. NORMAN, University of Sheffield.

Background: The aim of the study was to determine how well the TPB and the TTM explained exercise in Chinese adolescents living in Hong Kong.

Methods: Using a longitudinal design the researchers measured the variables of the TPB and the TTM and exercise behaviour using Chinese versions of standard scales, of 1067 randomly selected Chinese high school pupils in Hong Kong at two intervals six months apart.

Findings: MANOVA showed a main effect for stage of change on all outcome variables. Post-hoc Tukey's HSD showed statistically significant differences between 'active' and 'inactive' pupils on most outcomes with effect sizes highest for perceived behavioural control (PBC), self-efficacy (SE), behavioural processes of change and intentions to exercise. Attitudes towards exercise (ATE) and PBC explained 57 per cent of the variance in exercise intentions. ATE + PBC + past exercise behaviour explained 58 per cent of the variance in exercised behaviour one month later. The same variables explained six per cent of the variance in exercise behaviour six months later. Stage of change at time 1, processes of change, PBC and SE explained 30 per cent of the variance in stage of change six months later.

Discussion: Support is strong for predicting exercise in the short term and weaker in the longer term. SE and processes of change appear to influence movement between stages of change of the TTM. The TPB and TTM aid our understanding of exercise in Chinese

adolescents but only when we account for previous exercise behaviour.

Achievement motivation, optimism, psychological well-being and self- rated health: Some longitudinal data

T. CASSIDY, Thames Valley University.

Background: To investigate the relationship between home background, achievement motivation, optimism, psychological well-being and self-rated health.

Design: A longitudinal study, using cluster sampling, of 447 young adults over a seven-year period with questionnaire data collection methods.

Methods: Participants were assessed at age 16 and again at age 23 on a range of aspects of home and social background including SES, crowding, and parental encouragement. In addition they completed measures of IQ, achievement motivation, optimism, psychological well-being and health.

Findings: Analysis of the data, using path analysis, shows that economic advantage and parental encouragement predict optimism, achievement motivation, psychological well-being and self-rated health.

Discussion: It is suggested that achievement motivation and optimism are contributing factors in the development of vulnerability/resistance to life stress and that they mediate the effects of home and family background.

Taking responsibility: Clinical applications of critical approaches to pill taking behaviour

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Background: Critical approaches to health psychology may have limited appeal because of their tendency to question traditional approaches without offering constructive alternatives.

However, Insights generated by critical qualitative research can enrich traditional understandings of health phenomenon and generate practical clinical strategies on a number of different levels. This paper provides an example of the practical implications of a material-discursive approach to understanding non-adherence to HIV drug therapy.

Methods: A material-discursive perspective was used to analyse transcripts of interviews with eight gay men who had experienced significant physical renewal through anti-retroviral therapy. The analysis focussed on education the meaning systems that constructed participant's talk about pill taking behaviour.

Results: Whether or not participants took medication as prescribed was described as a function of the interplay between several different sources of personal meaning. These included: participant's bodily experience of medication, the nature of the disease process in HIV and the notion of individual health as a matter of moral responsibility. The influence of the medical gaze and the operation of supervisory power in the process of personal meaning making structured the interplay between these potential sources of meaning.

Discussion: The clinical utility of social cognition models is limited by their inability to explain how decisions relating to health are affected by the socio-political context of health care. Insights generated by critical approaches flesh out the complexity of such decisions. A number of practical implications issue from seeing medication taking behaviour in this way. These include the development of prescribing guidelines and working with feelings of guilt and blame in those individuals whose treatment fails.

Parenting and compliance in young children with diabetes

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Background: The incidence of insulin-dependent diabetes is increasing in younger children and their health is dependent on compliance with an intensive regime. Despite the fact that parents must contend with distinctive developmentally-specific caretaking challenges, most paediatric compliance research concerns adolescence. The objective of our study was to investigate maternal strategies for promoting cooperation with the treatment regime in four- to eight-year-old children with insulin-dependent diabetes.

Methods: We recruited 50 children and their mothers from the Diabetes Clinic at the Royal Hospital for Sick Children in Edinburgh. We used assessments from the developmental, diabetes and clinical psychology literature. We videotaped mother and child solving a problem related to the diabetes dietary regime and analysed interpersonal transactions in terms of their socioaffective and cognitive features.

Findings: All measures of parenting stress were significantly associated with psychological adjustment problems in the child. In addition, parenting stress measures were associated with a variety of diabetes-related adjustments. These included: (1) associations with biomedical indices of health status and with children's dietary behaviours (e.g., consumption of sweets); (2) problems concerning individual adjustment (e.g. self-efficacy concerns) and relationship (e.g. child rearing and discipline) issues; and (3) problems implementing the treatment regime (e.g. conflict over food).

Discussion: Findings from different sources converge to show that the interpersonal context in which diabetes is managed is associated with outcomes in the young child which are critical for optimal disease adjustment. Findings also demonstrate that parenting research provides a useful analytic framework for understanding the factors involved in promoting young children's cooperation with the treatment protocol.

The pregnancy experience of methadone-maintained women

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Despite recent enhancements in healthcare staffing provisions for drug-using pregnant women, a dearth of relevant research precludes strong evidence-based practices. There is a clear need for further research to inform and educate those working with this population (Hutchins & Di Pietro, 1997; Kettinger *et al.*, 2000; Powis *et al.*, 2000) and, furthermore, for research which moves away from the descriptive to take account of the subjectivity of the women's experience (Barclay, 1997). This study describes preliminary findings of a qualitative, longitudinal study investigating the pregnancy and early parenthood experience of women who have a recent history of regular use of heroin and who are managing their addiction through the use of prescribed methadone. In particular, the study seeks to identify the women's perceptions of their changing healthcare, support and social needs during this transition period. Semi-structured interviews were carried out with 20 methadone-maintained women during the first trimester of their pregnancies. Interviews were guided by the participants themselves and were analysed according to grounded theory using open line by line coding. A core category of 'consolidation' emerged describing the women's motivation as a result of the pregnancy to identify, sustain and reinforce positive changes that they had already effected in their lifestyles. Integrated and encapsulated within this category and representative of this consolidation process were concepts identified as 'reflection', 'self-assessment', 'acceptance', 'identity', 'planning'

and 'hope'. The analysis provides the basis of a needs assessment for methadone-maintained women experiencing pregnancy and will enable the development of appropriate and informed strategies for healthcare and drug service delivery.

Factors influencing the effectiveness of a group intervention for smoking cessation

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Background: The Specialist Smoking Cessation Service at Hillingdon Hospital provides a seven-week treatment programme for individuals wishing to quit smoking based on the Withdrawal-Oriented Therapy for smokers (Hajek, 1989). The present study aimed to determine which factors, if any, influenced the effectiveness of this intervention. The factors examined were nicotine dependence, motivation to quit, motives for smoking and socio-demographic characteristics.

Methods: The research is based on 637 smokers who joined the programme between August 2000 and February 2003. Nicotine dependence, motivation to quit, motives for smoking and socio-demographic characteristics were treated as the independent variables and were assessed prior to the first session through self-report questionnaires. The dependent variable was four-week abstinence measured via carbon monoxide levels in expired breath.

Findings: Results showed no significant differences between successful quitters ($N = 343$) and non-quitters in terms of nicotine dependence and socio-demographic characteristics. Significant differences emerged with respect to motivation to quit and motives for smoking. Successful quitters reported higher levels of motivation to quit [$t(635) = -2.31, p < 0.01$] and were less likely to report boredom as a motive for smoking [$t(635) = 2.33, p < 0.01$] compared to those who were unsuccessful.

Discussion: Results corroborate previous research documenting the crucial role of individuals' motivation in terms of increasing the efficacy of group interventions for smokers. Furthermore, findings highlight the role of boredom as a potential risk factor for relapse and underscore the importance of considering the psychological motives for smoking initiation and maintenance in future psychosocial interventions for smokers.

Prevalence of sexual and physical abuse in women with fibromyalgia: A community-based study

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Background: Previous studies of sexual and physical abuse in fibromyalgia (FM) have relied on either clinical (care-seeking) or 'non-patient' samples. In this study we rely on a community sample of women to test the hypothesis that women with FM are more likely to have PTSD than women without FM.

Methods: Eligibility was limited to women already enrolled in a community study of FM. In the earlier study, women were physically examined for FM and interviewed to determine if they had major depressive disorder (MDD). A total of 52 female participants were enrolled in the present FM group and 53 in the Control (no FM) group. Sexual and physical abuse were assessed using a standardised interview.

Findings: Women who reported a history of rape were 3.1 times more likely to have FM than women who did not ($p < 0.5$). Other forms of sexual and physical abuse were reported equally often by FM and Control participants. Childhood abuse was not reported more often in the FM group. Women with FM were more likely to have PTSD ($p < 0.01$). When PTSD was included in a regression model to 'predict' FM, the increase in risk due to self-reported rape was reduced from 3.1 to 1.7 (NS).

Discussion: With the exception of rape, no self-

reported sexual or physical abuse event was associated with FM in this community sample. In accord with the trauma hypothesis, however, PTSD was more prevalent in the FM group. Chronic stress in the form of PTSD but not MDD mediated the relationship between rape and FM.

Lifestyle self-management intervention in patients with Type 2 diabetes

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Background: Lifestyle and behavioural factors play an important role in the development of Type 2 diabetes and management of this chronic illness involves a combination of medication and lifestyle change. However, lifestyle change is often the most difficult and challenging aspect of care for both patients and health care professionals.

Aims: To develop, implement and evaluate in a randomised controlled trial a brief intervention to improve lifestyle self-management in patients with Type 2 diabetes.

Method: 100 patients with Type 2 diabetes, aged between 40 to 70 years completed assessments at four time points, baseline, three months, six months and one year. Intervention participants also received follow-up telephone calls at one week, three weeks and seven weeks post-initial assessment.

Findings: Results at six and 12 months follow-up suggest that the intervention was successful in helping patients in the intervention group to reduce their fat intake and increase their lifestyle physical activity levels. These self-reported changes in behaviour were reflected in the objective data with weight maintenance in the intervention group compared to the control group, together with a significant reduction in waist circumference, and were accompanied by a trend towards decreased barriers to change but not increased self-efficacy. Higher levels of physical activity were associated with lower levels of education, fewer comorbid diseases at baseline, higher baseline scores on physical activity self-management and greater self-confidence in ability to increase physical activity. Those with fewer comorbid diseases at baseline showed less improvement on changing fat intake habits, as did participants who regarded their diabetes as less serious and did not believe in the importance of diabetes self-management. Higher HbA1c was related to lower baseline scores on dietary self-management and higher baseline barriers to healthy eating.

Discussion: These results will be discussed in terms of implications for practice and the development of future intervention programmes for this patient group.

Comparison of patients and health care professionals' beliefs about and attitudes towards Type 2 diabetes

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Background: Understanding the behaviour of persons with diabetes requires some knowledge of their beliefs and attitudes towards diabetes and its treatment. Attitudes to diabetes also influence the behaviour of health care professionals. There is growing evidence that differences in the concepts and perspectives of patients and practitioners exist and may be important factors affecting treatment behaviour. This study examines beliefs about and attitudes towards diabetes of health care professionals and patients with diabetes, and explores discrepancies in those attitudes, which may act as barriers to effective diabetes care and therapeutic outcomes for patients with Type 2 diabetes.

Method: 104 primary health care professionals (nurses, dietitians, general practitioners) and 100 of their patients with Type 2 diabetes completed the Diabetes Attitude Scale – third version (DAS-3). Health care professionals also completed a questionnaire related to their provision of diabetes care.

Findings: Doctors were least supportive of the

need for special training to treat individuals with diabetes. Health care professionals viewed Type 2 diabetes as more serious than their patients and all of the health care professionals believed significantly more strongly in the value of tight blood glucose control for patients with Type 2 diabetes than did the patients. A majority of the health care professionals considered diabetes harder to treat than other chronic conditions and felt that they did not have adequate time and resources to treat their patients with diabetes effectively.

Discussion: The implications of these results will be discussed in light of the recently reported National Service Framework for Diabetes and the growing body of research calling for increased patient empowerment and patient centred care in diabetes.

Handwashing practices in catering establishments: Using the theory of planned behaviour in an organisational context

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Background: Research indicates that handwashing is of critical importance in preventing food-borne disease outbreaks from catering establishments. Despite evidence that handwashing is often neglected in food businesses, very little research has investigated the determinants of caterers' handwashing practices. This research aimed to determine whether caterers' implementation of adequate handwashing practices could be predicted by the constructs of the Theory of Planned Behaviour (TPB).

Methods: 115 participants from 29 catering businesses took part in the study. Each participant was observed on three separate occasions for a total of 270 food preparation actions. Participants completed a questionnaire designed using the constructs of the TPB. The data was analysed to establish frequency and adequacy of handwashing practices of each participant and regression analyses were conducted to establish the efficacy of the TPB constructs.

Findings: Results showed a lack of and/or inadequate implementation of handwashing at critical points. All food handlers in this study were trained in food hygiene and yet none of the food handlers washed their hands correctly at every appropriate occasion. Intentions and perceived behavioural control constructs were significant predictors of handwashing malpractices ($p < 0.01$).

Discussion: This research provides important data regarding the applicability of the TPB in an organisational context. Results support previous research findings that there is no positive association between learners' knowledge of handwashing and their corresponding practices. Subjective norms and external controls appear to be critical factors in the determination of handwashing practices in the catering industry. Implications for designers of training and intervention strategies are discussed within the framework of the TPB.

Role of anticipated regret, intentions and intention stability in adolescent smoking initiation

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Background: Smoking represents a significant health behaviour with important negative consequences for health. The most useful way to tackle this behaviour is to prevent initiation of smoking. As initiation of smoking peaks during adolescence we need to understand the factors predicting initiation in this group. The Theory of Planned Behaviour (TPB) may represent one useful way of understanding such behaviour. Two additions to the TPB are considered here. First, anticipated regret which partially address the overly cognitive nature of the TPB. Regret is examined as a predictor of intentions and as a moderator of intention-behaviour relationships. Second, intention stability which may moderate

the intention-behaviour relationship is examined. Two studies of anticipated regret within the TPB applied to adolescent smoking initiation are reported.

Methods: In Study 1, 347 non-smoking adolescents (11 to 12 years of age) completed TPB and anticipated regret measures about smoking initiation. In Study 2, 675 non-smoking adolescents (11 to 12 years of age) completed TPB, anticipated regret and intention stability measures in relation to smoking initiation. Nine months later smoking was assessed objectively by carbon monoxide breath monitor.

Findings: In Study 1, regret significantly ($p < 0.001$) added to predictions of intentions over and above components of the TPB. In Study 2, regret significantly ($p < 0.001$) added to predictions of intentions over and above the components of the TPB. In addition, smoking behaviour was predicted by intentions. The relationship of intentions to behaviour was moderated by regret and intention stability.

Discussion: Implications for preventing smoking initiation in adolescents are discussed.

Implementing best breastfeeding practice in midwifery: Using interpretative phenomenological analysis to discover key factors

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Background: Quality is a principal concern of current National Health Service (NHS) policy (Department of Health, 1997). Currently, far more is known about what constitutes best practice in most areas than is known about how to change hospital policy and professionals' behaviour in accordance with best practice. The NHS Centre for Reviews and Dissemination (1999) reviewed the literature on getting evidence into practice. Their recommendations included conducting a local diagnostic analysis, piloting change strategies, and having discrete dissemination, implementation and maintenance strategies.

Methods: Interpretative phenomenological analysis was used to examine semi-structured interviews with midwifery managers and trainers ($N = 12$). The study aimed to identify key factors involved in implementing a new policy and changing midwives' breastfeeding practice.

Findings: Themes revealed discussion and training remain the key methods of disseminating change in midwifery, and participants did not discuss discrete implementation strategies. The context of change, personal experience, colleagues' attitudes, and agreeing with change emerged as crucial variables in implementing best practice. Participants believed that a 'hard core' of midwives would not change their breastfeeding practice. Breastfeeding emerged as a low priority aspect of the midwife's role, and this impeded changing their practice. Participants expressed a need for resources and general social change to promote breastfeeding.

Discussion: Literature on getting evidence into practice is not being fully utilised by managers and trainers. Resources are necessary to expand the range of behaviour change strategies available to managers, and to reinforce the importance of breastfeeding advice. It is proposed that health psychologists consider greater involvement in professional behaviour change.

The experience of incontinence and fear of incontinence among people with Inflammatory Bowel Disease: A comparison between patients' and partners' perceptions

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Background: Diarrhoea and incontinence are common among people with Inflammatory Bowel Disease (IBD). A common perception is that during remission there are no restrictions on lifestyle. However, in some cases individuals may self-limit their behaviour because of a fear of experiencing symptoms although the likelihood of those symptoms occurring is low. To assess this

people with IBD and their partners were asked to complete a questionnaire regarding fear of incontinence and restriction of lifestyle due to incontinence.

Methods: 88 people with IBD and their partners completed a postal questionnaire. Partners completed this according to how they thought their spouse would respond.

Findings: 53 per cent of variance in patients' and 76 per cent of partners' fear of incontinence scores were explained using a stepwise multiple regression. Frequency of incontinence, number of bowel movements, and disease activity were entered on Step 1. Frequency of incontinence was a significant predictor. Restriction of lifestyle due to incontinence was entered on the second step. In the final models this was the only significant predictor. Forty-six per cent of variance in patients' and 77 per cent of partners' ratings of lifestyle restriction were explained using multiple regression. As above, the same variables were entered on Step 1 with time since last episode of incontinence. Fear of incontinence, entered on Step 2, was the only significant predictor in both models.

Discussion: Fear of incontinence may follow a behavioural model, varying as a function of the frequency and severity of episodes of incontinence. Such a model has been suggested for fear of hypoglycaemia in diabetes.

Impact of temporal stability of intentions on information processing

R. COOKE & P. SHEERAN, University of Sheffield.

Background: Temporal stability has been shown to moderate intention-behaviour relations such that stable intentions are more likely to be acted upon. However, the exact mechanism by which temporal stability influences goal-achievement has never been examined. Two studies were conducted to test the hypothesis that intention stability affects information processing.

Methods: In the first study, $N = 88$ participants were presented with information on the benefits of exercise in reducing the risk of hypertension. They were then given a recognition memory test based on this information. The second study was based on $N = 94$ participants. Participants were asked to rate their intentions to exercise on either a unipolar (0–10) or bipolar scale (–5 to +5). Previous research has shown that ratings on bipolar scales are significantly higher than those on unipolar scales.

Findings: A hierarchical regression demonstrated that intention stability affected participants' performance on the recognition memory test: Participants with more stable intentions had significantly better recognition memory than participants with less stable intentions. For the second experiment, there was an interaction between intention stability and condition: Participants with more stable intentions gave equivalent ratings on bipolar and unipolar scales. In contrast, participants with less stable intentions gave significantly higher ratings in the bipolar condition, than in the unipolar condition.

Discussion: The present research shows that intention stability affects participants information processing. This finding suggests that health interventions could usefully employ measures of temporal stability to ensure the intervention is targeted at those who are most likely to benefit.

Development of a measure to assess patients' views about cardiac rehabilitation

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Background: Cardiac rehabilitation courses (CR) are of proven benefit following acute myocardial infarction (AMI) but many patients fail to attend. The extended Self-Regulatory Model of health behaviour (SRM) suggests that patients'

treatment beliefs are independently associated with treatment adherence. We set out to develop and evaluate a questionnaire that provides a valid, reliable measure of patients' beliefs about the role of CR in recovery from AMI. We hypothesised that CR beliefs may help to identify potential non-attenders.

Methods: Questionnaire items were generated from literature and semi-structured interviews with patients. The questionnaire was prospectively evaluated in 130 patients with AMI (82.4 per cent (104) male, mean age 58.4 years (SD 10.67)). Principle components analysis was conducted with varimax rotation. Independent samples t-test and logistic regression were used to determine discriminant validity.

Findings: Five factors were produced, accounting for 65.5 per cent of variance. Four factors were kept: understanding necessity of CR (a.71), concerns regarding exercise (a. 79), practical barriers (a.70), suitability (a.74). CR attenders were more likely to feel CR was necessary and to understand its role than non-attenders (17.69 (SD2.72) vs. 16.89 (SD3.03) $p = 0.029$). Patients who perceived CR as suitable for a younger, active person were less likely to attend (5.56 (SD 1.88) vs. 4.61 (SD 1.70) $p = 0.007$). Patients expressing concerns about exercise and reporting practical barriers to attendance were less likely to attend (not statistically significant). All factors were moderately to strongly correlated with illness perceptions.

Discussion: Beliefs about CR can be meaningfully quantified and could be used in intervention studies to optimise CR attendance.

Changes in symptom experiences over time predict adherence to highly active antiretroviral therapy (HAART): Results from a prospective study

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Background: HIV-positive individuals taking highly active anti-retroviral therapy (HAART) are required to maintain an unprecedented level of adherence to ensure clinical benefit and prevent viral resistance, yet sub-optimal rates of adherence prevail. We tested the hypothesis that changes in patients' experiences of symptoms over time impact on adherence and influence perceptions of HIV and HAART.

Methods: As part of a prospective study, consecutive patients ($N = 65$) completed validated questionnaires assessing the type and severity of symptoms they attributed to HIV and those they attributed to HAART, perceptions of HIV and HAART and adherence. Assessments were completed before starting HAART and after one and six months of treatment.

Findings: Participants who perceived an improvement in HIV-related symptoms between baseline and six months reported higher adherence at six months ($p < 0.05$). Similarly, those who perceived an improvement in HAART related side effects between one and six months were more adherent at six months ($p < 0.005$). Results are consistent with a causal relationship, since improvement of symptoms was not predicted by earlier adherence ($p > 0.1$). Those reporting an improvement in symptoms or side effects had more positive perceptions of HIV and HAART (perceived fewer and more consistent symptoms, fewer negative consequences, more control, fewer negative emotional representations, and were more convinced of their personal necessity for HAART and harboured fewer concerns) after six months of treatment. All relationships were significant at the five per cent level.

Discussion: These findings are consistent with an extended self-regulatory model, where symptom experiences guide adherence and influence perceptions of illness and treatment.

The development of a self management programme for patients with Ulcerative Colitis

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Background: To develop a self-management programme for patients with ulcerative colitis (UC).

Methods: Colitis patients in North Tyneside were invited to focus groups to consider educational and support needs. Framework analysis was used to analyse meeting transcripts to identify themes. An education programme was devised to address these themes using experimental, participant centred approaches. The self-efficacy model provided a theoretical basis to promote behaviour change. Patients attending local hospitals with a poor quality of life, self-rated using the Inflammatory Bowel Disease Questionnaire, attended the programme. Reflective diaries were written by facilitators and a participant observer on the first working day after each meeting. These were analysed using framework analysis. Two groups were observed. Three observation methods were used: recording to calculate the proportion of time facilitators, patients and relatives spoke, Bales's interactive Process Analysis to identify positive, dominant, and friendly individual's, and an ethological method.

Findings: Participants identified their learning goals but needed to review these during the programme. Individuals were generally friendly and positive towards the tasks used to achieve their learning goals. They felt able to share their experience of living with colitis. Initially group exercises and worksheets took too long to complete, and were revised to allow group members more opportunity to reflect and compare experience. The use of self-contracting was less successful in the early sessions.

Discussion: Early resistance to self-contracting could be explained in terms of the transtheoretical model of behaviour change, or prior expectations of passive learning. A more subtle approach to contracting was employed in the second group.

A thematic analysis of postings to an online bulletin board for individuals coping with Irritable Bowel Syndrome

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Background: The growth of internet access has created new opportunities for people with health-related concerns to engage in supportive communication with a network of individuals coping with similar problems. The aim of this study was to examine the content of messages posted to an online bulletin board used specifically by individuals living with Irritable Bowel Syndrome (IBS).

Methods: This was a qualitative retrospective study of 414 postings made to an online bulletin board over a period of four months (February to May, 2003) using thematic analysis.

Findings: The analysis revealed six key themes: symptom interpretation; diagnosis; interaction with the health-care system; treatment decisions; coping and social support.

Discussion: The data reveal the online bulletin board to be a rich and valuable source of information and support to individuals living with IBS. Specifically, this form of communication appeared to facilitate the processes of symptom interpretation through the sharing of experiences and knowledge transfer and underpinned the adjustment to the diagnosis of IBS. Moreover, the data suggest that the information gathered from the bulletin board influenced their interaction with the health care system (e.g. request for specific tests, medications). Finally, the provision and receipt of social support was evident in the majority of postings, with informational and emotional support being the most common types expressed. In conclusion, the use of the bulletin

board appeared to be an integral part of the coping process.

Expressing distress: A qualitative study of the experience of written emotional disclosure

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Background: Written emotional disclosure has been found to have a variety of health benefits for a range of types of people. Although extensively studied at a nomothetic level, the processes at work have not been studied at an ideographic level. Therefore, to further the understanding of these processes, a qualitative study of participants' experience of written emotional disclosure was conducted.

Methods: The writing intervention was implemented with a group of seven pre-registration house officers (PRHOs) whom, research suggests, experience high stress levels. Semi-structured interviews were then conducted, transcribed and analysed using Interpretative Phenomenological Analysis.

Findings: Four themes were identified: the initial responses to the writing, the experience of writing, the function of the writing and the context of the writing. A super-ordinate theme of the self was also identified as linking the data. This theme was expressed in a tension between the individual's sense of their needs, the demands the intervention made on the individual and the benefits it was perceived as being able to offer. The study also found that the individual's characteristics, as well as situational factors influenced the participants' response to the writing intervention.

Conclusions: The study found support for each of the pathways, cognitive, emotional and behavioural, that have been suggested to account for the health effects of written emotional disclosure. In addition the study suggests that, if written emotional expression is to be used as an intervention, the particular characteristics of the individual and their situation need to be taken into account.

Choroid Plexus Cysts (CPC): The best way to terrify a pregnant woman? A pilot study to assess the long-term adjustment of mother following a false positive soft-marker screen during prenatal ultrasound screening

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Background: The psychological consequences of ultrasound screening has been under-investigated to date. Improved acuity in ultrasound technology means that the unborn child is scrutinised more than ever before. This pilot study investigated the effects of how new technologies impact on the long-term psychological well-being of women, specifically false positive soft marker screens. It also assessed the feasibility of using standardised psychological measures with this specific population.

Method: Women who had a CPC diagnosed on prenatal ultrasound scan (three years previously) and who went on to have a healthy infant were selected ($N = 9$) and matched with women who had a normal scan ($N = 10$). Women were matched by age, parity and expected date of delivery. All women completed a standardised battery of questionnaire measures. These included standardised psychological measures for example the STAI, GHQ28, Parenting Stress Index and the CBCL 1/1/2 - 5. Women's retrospective experience of screening was also examined.

Findings: Preliminary exploratory analysis revealed some important findings. CPC women reported more negative words about their screening experience. They also scored higher on several of the psychological measures. All the women reported completing the questionnaire without any difficulties.

Discussion: These results suggest that CPC women may feel differently to controls about their screening experience. The implications of these results will be discussed, as well as their significance for evidence-based practice.

Factors contributing to patient satisfaction within hospitals and private clinics in Greece

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Background: This study investigated patient satisfaction in the Greek health system using semi-structured interviews to ask patients about various aspects of the relationship between patient, doctor and the health system.

Methods: A total of 27 patients (mean age 48 years) were chosen randomly from the outpatient department of the General Peripheral Hospital of Ioannina (Ss 12, mean age 54) and from a private clinic (Ss 15, mean age 45) in Greece respectively. Interviews took place while they were attending the hospital.

Findings/Discussion: Overall satisfaction with the treatment received in both hospitals. There were more similarities than differences between the two groups of patients. When patients were asked about their satisfaction with the doctor-patient relationship the two groups differed in their expectations. State hospital patients expected information whereas private patients expected emotional support from their consultant. Other differences found were related to their opinion of the Greek Health System. The State hospital patients thought the health system was generally good but expressed some dissatisfaction with the consultation procedure. The private patients expressed their dissatisfaction with the organisation of the system and the bureaucratic procedures, both of which are predominately problems of state hospitals. Interestingly, although the state hospital patients faced more problems they were generally more satisfied with their system compared to the private patients. This may be because the State hospital patients were mostly older and poorer and possibly felt more obligated to the state system, whereas the private hospital patients were relatively younger, wealthier and were paying quite a lot for the services they received.

Comparison of the acute effects of 10 minutes of moderate intensity exercise and 10 minutes of a cognitive distraction task on desire to smoke and nicotine withdrawal symptoms in sedentary smokers

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Background: Previous research has suggested that a short bout of moderate intensity exercise is effective at producing transient reductions in nicotine withdrawal symptoms and desire to smoke in sedentary smokers. An unresolved issue concerns the mechanism responsible for this effect. It is not entirely clear whether reductions in tobacco withdrawal symptoms are due solely to the effects of exercise or by individuals being distracted from their cravings during exercise. This study was conducted in order to address this issue.

Methods: 40 sedentary smokers attended a laboratory having abstained from smoking for between 12 and 15 hours and were randomly allocated into an exercise or a cognitive distraction task condition. All participants rated their desire to smoke and withdrawal symptoms at baseline (at five and 10 minutes of resting), then they performed either 10 minutes of moderate intensity exercise on a stationary ergometer or a cognitive distracter task (PASAT) for 10 minutes. Nicotine withdrawal symptoms were measured at five and 10 minutes (baseline), at 15 and 20 (during the task) and at 25 and 30 minutes (post-task).

Findings: Using Greenhouse-Geisser epsilon corrections there was a significant group by time interaction between the exercise and cognitive

conditions on several symptoms, including desire to smoke a cigarette ($F(3,499,132.9)=17.2, p < 0.001$) and strength of desire to smoke a cigarette ($F(3,669,139.4)=14.5, p < 0.001$). Post-hoc analysis revealed that ratings of symptoms during and directly after exercise were significantly reduced from baseline in the exercise condition ($p < 0.001$), but not for the cognitive distracter condition.

Discussion: Performing a cognitive distracter alone is not sufficient to produce reductions in withdrawal, thus distraction as a possible mechanism for the effects observed here and elsewhere seems unlikely, and as such other potential theories need to be investigated.

Exploring the information needs of patients with malignant melanoma at an outpatient clinic

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Background: The number of people with malignant melanoma is increasing. Most patients with malignant melanoma have a good prognosis, although follow-up treatment after excision of the tumour can continue for up to five years. Consequently, the needs of the increasing number of patients who remain in the system need to be targeted. There is a lack of studies exploring information needs specifically in this group of patients. The current study used a qualitative approach to explore their information needs.

Method: Semi-structured interviews were conducted with 14 patients with malignant melanoma. Interview transcripts were analysed using Interpretative Phenomenological Analysis.

Findings: Melanoma outpatients were found to have a wide range of needs and desires for information. Patients felt that they lacked information on cause, diagnosis, follow-up, health promotion aspects, practical issues, recurrence, prevention, side effects and treatment. Patients also varied in their reaction to the amount of information they received. The style of both the verbal and written information that they did receive was criticised.

Discussion: It was notable that patients reported the lack of information or a desire for more information in areas that they had reported receiving information about, as well as those they had not. This suggests that it is not the case that information is not being provided, rather that it may not be being provided in the right way to match the participant's needs.

A longitudinal study of Quality of Life (QoL) in chronic illness

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Background: To assess adjustment over time, as measured by change in QoL and response shift, and to determine the factors predicting change in QoL.

Method: At baseline and 10 month follow-up 301 people with Meniere's Disease who were members of a self-help group (SHG) completed questionnaires assessing functional QoL (using the SF-36) and goal-oriented QoL (using the newly developed GOQOL). Baseline predictors comprised social comparison (the Identification/Contrast scale and items assessing social comparison through use of the SHG), self-esteem (Rosenberg scale), perceived control (IPQ-R scale), optimism (LOT), disease severity scales, and demographic information. At follow-up the Thentest was used to measure response shift.

Findings: Self-esteem positively predicted change in functional and goal oriented QoL over time, and in addition social comparison occurring through use of the SHG negatively predicted functional QoL. QoL scores significantly improved on the GOQOL but not on the SF-36, whereas response shift occurred on most scales of the SF-36 but not on the GOQOL.

Discussion: Despite no change in functional status on the SF36 between baseline and follow-up, response shift occurred as assessed by the Thentest. This was apparently mediated by a

change in perceptions of movement towards goals (as assessed by the GOQOL). This change in QoL may be promoted by high self-esteem. Persistent social comparison with others with chronic illness may lead to a reduction in QoL, perhaps due to excessive preoccupation with illness and possible negative futures.

Utility of the Theory of Planned Behaviour for predicting adherence to treatment for dizziness in primary care

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Background: To examine the longitudinal relationship between attitudes and adherence to a clinical intervention in primary care, using the Theory of Planned Behaviour (TPB).

Hypothesis: 1. Attitudes to a clinical intervention will be changed by experience of the intervention. 2. Adherence will be predicted by attitudes pre and post experience of the intervention, but the latter will be the stronger predictors.

Methods: 120 people participated in a randomised controlled trial of balance retraining exercises for dizziness, delivered by nurses in a primary care setting. This paper reports data from 64 who completed treatment and 56 controls. TPB variables (attitudes, subjective norms, perceived behavioural control and intention) were elicited in structured interviews before randomisation and at a three-month follow-up. Adherence was also assessed at three months in the treatment group.

Findings: GLM and test-retest reliability calculations both indicated much greater change in TPB variables in the treatment than in the control group. Multiple regression analyses confirmed an association between reported adherence at three months and all TPB variables prior to experience of treatment, but a much closer association between adherence and TPB variables at the three-month follow-up.

Discussion: Attitudes to a treatment that has not previously been experienced may change considerably following experience of the treatment, and so pre-treatment attitudes may not be powerful predictors of adherence. This suggests that it is important to focus on the experiences that shape attitudes during treatment in order to maximise adherence.

Adolescent alcohol use: Consumption, peer influence and temptation-coping

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Background: The onset of alcohol use generally occurs in early adolescence and research has shown that consumption in this population is increasing. There is considerable emphasis on the need to address adolescent alcohol use and strategies are being designed to tackle this. Adolescents are particularly susceptible to social influences, especially those of their peers. The present study was designed to assess the role of peer influence and temptation-coping strategies upon adolescent alcohol use. Temptation-coping was defined in terms of responses to a situation where there was both the opportunity and desire to use a substance.

Method: A single-phase, cross-sectional design was used to investigate alcohol use in 12 to 15-year-olds. Participants completed a questionnaire to identify how they would respond to the offer of alcohol in the presence of friends, and to assess their appraisal and temptation-coping skills.

Findings: The results of this study revealed that participants who reported consuming alcohol on a frequent basis were older, perceived not drinking alcohol as less important, had less confidence in their ability to abstain, and perceived a situation whereby a peer offered alcohol as easier to cope with ($p < 0.001$). Subsequently they implemented fewer temptation coping skills ($p < 0.001$) and were more likely to report having friends who drank alcohol ($p < 0.01$).

Discussion: This study concludes that appraisal and temptation-coping skills, as well as the influences of peers are key determinants in the

consumption of alcohol by adolescents. Implications of this study for theories of coping and models of health behaviour are discussed.

Patients' psychological perceptions and immunological responses before and after Cardio-Pulmonary Bypass (CPB): The impact on neutrophil activity and health outcomes

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Background: Neutrophils, components of the non-specific immune system have recently been implicated in a number of disease states (e.g. myocardial infarction). This study explored the relationships between a 'naturalistic' stressor (heart-surgery), psychological well-being and both the 'current' levels of activity and the phagocytic capacity of neutrophils and the effects these may have on outcome.

Methods: 90 patients who were to undergo CPB were assigned to one of two groups. An 'elective' group $N = 64$ (51 males, 13 females) and an 'acute' group $N = 26$ (22 males, four females). Patients were tested on the evening before surgery and at clinic six or seven weeks after discharge using standard measures to assess psychological well-being. Small peripheral blood samples were taken. Neutrophils' 'Current' activity was determined from whole bloods' capacity to reduce nitro-blue tetrazolium (NBT) (per cent NBT positive cells), phagocytic capacity, from stimulated whole blood, luminol-dependent chemiluminescence.

Findings: Results revealed a consistent, statistically significant association between stress and per cent NBT cells pre and post-surgery ($p < 0.001$) in both groups. Phagocytic capacity was significantly greater in the 'acute' group both before and after surgery ($p < 0.02$). There was a significant difference on perceived stress ($p = 0.009$) between the groups, pre-surgery, both significantly reduced post-surgery. The 'acute' group had the highest stress. No significant differences were found between or within the groups for anxiety, depression, and positive and negative effect.

Discussion: Results highlighted a consistent significant relationship between perceived stress and the 'activity' of neutrophils. The implication of which could be that stress activated neutrophils may impair wound healing, cause tissue damage and affect health outcomes.

The 24-hour Sleep Catastrophising Scale: Development and validation

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The concept of catastrophising is borne from early work on hypochondriasis and its later conception on the continuum of 'health anxiety'. Catastrophising has been examined in relation to several health conditions and sleep researchers have alluded to a form of sleep specific catastrophising. The aim of the present studies was to examine whether sleep catastrophising exists and whether this is related to self-reported insomnia, actual sleep parameters, and other health outcomes. Two-hundred-and-eighty-two older adults responded to an advertisement asking them about their 'sleep related' thoughts, feelings, and behaviours throughout a typical day. These were content analysed to form the 24-hour Sleep Catastrophising Scale (24-hour SCS). The 24-hour SCS was then analysed using a confirmatory factor analysis from the responses of 225 older adults, 153 insomniacs, and 72 normal sleepers. The results indicated good validity and reliability ($A = 0.96$). The 24-hour SCS was then examined over the course of a natural stressor. Ninety-two student nurses completed the 24-hour SCS, measures of actual sleep and levels of stress over a 14-day period. A week's baseline, the two days of their final year exams and the following five days. A series of regressions and ANOVA's indicated that sleep catastrophising related to reporting sleep onset insomnia, early morning awakenings, more

dysfunctional beliefs about sleep and poor adaptation to stress but unrelated to the overall amount of sleep obtained. The results are discussed in relation to preventative sleep medicine, the possible mechanisms under which sleep catastrophising influences sleep, and the cognitive consolidation model of insomnia.

An exploration of the factors influencing clinic attendance and non-attendance in young adults with Type 1 diabetes

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Background: Non-attendance at diabetes clinic is a significant problem which impacts on the efficiency of healthcare delivery and has been associated with negative health outcomes for patients. However, previous research has provided only limited understanding of the reasons for it.

Methods: The current study used a qualitative methodology to explore in greater depth the factors influencing attendance behaviour. The participants were 14 young adults (six male) aged 19 to 35 years with Type 1 diabetes. Seven were defined as regular attenders (history of consistent bi-annual attendance), five as partial attenders (history of inconsistent attendance) and two as non-attenders (history of persistent non-attendance). Each took part in a semi-structured interview, which was audio-taped and transcribed. Inductive thematic analysis was used and comparison of the patterns of data from regular, partial and non-attenders across the emergent themes identified the following factors as influential on attendance behaviour.

Results: Regular attendance was influenced by a strong belief in ones own responsibility for health, an emphasis on the screening role of the clinic, and by the positive nature of relationships with clinic staff (particularly the diabetes specialist nurse) which fostered a collaborative approach to care. Non-attendance was influenced by negative experiences of and difficult transition from paediatric care, lack of recognition of the need for adaptation to diabetes, internal barriers including psychological distress, problems fitting attendance around work schedules and dissatisfaction with the location and surroundings of the clinic.

Discussion: These findings demonstrate the impact of psychological factors on attendance behaviour and illuminate new directions for future research and intervention.

Decision about intentions to use medical bioengineering: Differential sensitivity effects between America and the UK

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Background: The use of bioengineering for medical interventions is increasing. Evidence suggests that Americans, compared to Europeans, perceived such technology as less risky. This raises two questions: First: 'What accounts for this cross-national difference?' One possibility is differential sensitivity across nations to the presentation (framing) of risk information. Second: 'Is this cross-national difference reflected in behaviour?' These questions were explored with respect to the use of bio-engineered artificial blood (human, floricarbon or bovine (cow) derived).

Methods: Using a two-way (1) type of blood (donated, human engineered, floricarbon or bovine) by (2) frame (positive vs negative) between subject design samples from the UK (160) and the US (175) indicated: (1) whether or not they intended accept a transfusion; and (2) how risky they believed it to be.

Findings: The data were analysed with a mixture of MAN(C)OVA and Logistic Regression. The results showed country by frame interaction of perceived risk, with Americans more likely to report lower risk for positive frames. People were

more likely to accept a transfusion if it was: (1) positively framed; (2) not a bovine derivative; (3) perceived as less risk; and (4) in the UK. **Discussion:** These findings are the first to show a cross-nation framing sensitivity effect in perceptions of risk with respect to medical bioengineering. The independent influence of frame and risk perceptions on behavioural choice, is discussed in relation to the 'risk as feelings' hypothesis, and implications are drawn for health promotion.

The relationship between catastrophising, available social support and satisfaction with that support in patients with unexplained facial pain

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Background: Pain catastrophising is a coping strategy associated with negative outcomes (e.g. pain intensity and depression). It is therefore recommended that catastrophising is reduced to facilitate pain relief. However, Sullivan *et al.* (2001) suggest that individuals catastrophise in order to elicit social support. If so, alternative support seeking strategies should be provided before catastrophising is addressed. This study examines both amount of, and satisfaction with, social support in relation to catastrophising.

Methods: Participants in this cross-sectional study were 39 unexplained facial pain patients attending pain clinics. Questionnaire booklets were completed containing measures of catastrophising (PCS), amount of and satisfaction with support (MOS social support survey), depression (CES-D), loneliness (UCLA loneliness scale), pain intensity (10cm VAS scale), pain length and demographic information. Correlational analyses were performed on the data.

Findings: Correlations were found between; catastrophising and pain intensity ($r = 0.61$, $p = 0.0005$); catastrophising and depression ($r = 0.70$, $p = 0.0005$); and satisfaction with social support and pain intensity ($r = -0.34$, $p = 0.04$). There were no significant associations between either catastrophising and amount of social support ($r = -0.04$, $p = 0.83$), or satisfaction with social support ($r = 0.23$, $p = 0.16$).

Discussion: The proposal that catastrophising has a functional, support seeking purpose is questioned, although such a function may be utilised but unsuccessful. Social support remains an important consideration given its association with pain intensity and depression, while the maladaptive nature of catastrophising is confirmed. The low number of participants may affect the reliability of the results obtained and restricts more elaborate analysis of the data.

Non-medical influences upon medical decision-making

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Background: According to the 'prescriptive approach', medical decision-making (MDM) is based on rates and probabilities of disease, and objective signs and symptoms. Conversely, the 'descriptive approach' acknowledges that MDM is a social transaction, strongly influenced by 'non-medical factors' (NMFs).

Methods: A search of the research literature on MDM, restricted to English language papers during the period 1980-2001, was conducted to determine the influence of NMFs upon MDM.

Findings: Over 200 empirical studies demonstrated significant variation in MDM as a function of NMFs in four main categories: patient (e.g. socio-demographic factors), physician (e.g. personality traits), health care system (e.g. characteristics of primary and secondary care) & decision-making environment (e.g. time pressure). Significant variation in MDM as a function of NMFs was evident for a wide variety of medical and surgical treatments; however, clinical consequences of this variation such as increased morbidity and mortality is unclear.

Discussion: To increase the appropriateness and reduce the inequity in MDM, the use of computerised decision-support systems is proposed to support physicians' mental processing and patient education to increase participation in shared-decision making (SDM) with physicians. Health psychologists are conducting pioneering work in this area to enhance the use of decision-making strategies by patients, to ensure medical decisions are congruent with their values and preferences. Future research should address the structure, process and outcome of MDM including the clinical consequences of variation as a function of NMFs. A new conceptual model of MDM that incorporates SDM is proposed to guide future investigation in these areas.

'Achieving togetherness, time and understanding'. Training and Support Programme for caregivers of children with disabilities

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Background: Therapeutic massage can be a helpful intervention for people with a disability or a chronic condition, and their families. The aim of this study was to explore the experience of the Training and Support Programme (TSP) for caregivers of children with disabilities.

Methods: The TSP comprises eight weekly one-hour sessions in which caregivers are instructed in gentle massage. A total of 139 caregivers of children (age range: 0 to 16 years) with disabilities participated in the study and completed Home Record Sheets to monitor their own and their children's progress through TSP. Content analysis was used to analyse the data.

Findings: The majority of caregivers were mothers (81 per cent). Children had a range of disabilities including cerebral palsy, autism, epilepsy, musculoskeletal problems and chromosome disorders. After attending the TSP, nearly a third (30 per cent) of caregivers reported increased feelings of happiness and enjoyment and over half of them (53 per cent) were more relaxed. Approximately half of the parents reported positive effects on children's bowel movement (40 per cent), mobility (42 per cent) and sleep patterns (50 per cent). Potential positive effects for the carers comprise a sense of security and confidence (12 per cent), developing a closer relationship with their child (52 per cent) and a better tolerance for child's problems (20 per cent). Caregivers also found the TSP to be effective, natural and relaxing, providing them with the opportunity to improve and maintain their psychological well-being. **Discussion:** Further quantitative studies are necessary to assess caregiver's well-being.

Men and chronic illness: A qualitative study of LUTS

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Background: Men often fail to pay attention to symptoms, to seek health from healthcare professionals and to undergo screening. It is, therefore, important to understand how men detect and respond to health problems, and how they conceptualise and manage them. Benign Prostatic Hyperplasia (BPH) is a progressive enlargement of the prostate that occurs in most men over 55. The symptoms associated with this are referred to as Lower Urinary Tract Symptoms (LUTS).

Methods: 16 men with LUTS were interviewed to examine the relationship between detecting symptoms and seeking medical help, perceptions of symptoms and the impact of symptoms on daily life. Transcripts were analysed employing IPA.

Findings: Four major themes were identified: Uncertainty/Trying to understand, Implications, Ways of Coping and Self-concept/Identity. Uncertainty about the nature and origins of their condition and its gradual onset contributed to the delay in seeking medical advice. Men adopted a range of coping strategies to manage their

symptoms and reported that their symptoms did not have a major impact on their daily lives.

Discussion: These findings suggest that men need to be better informed about chronic conditions and to be encouraged to attend their doctor more regularly and to be proactive in raising their concerns. Doctors should routinely ask questions based on an anticipation of what men of a particular age might be suffering from. Many men are likely to respond positively to a problem-solving approach to managing symptoms.

Patients' perception of information about highly active antiretroviral therapy (HAART): Impact on treatment decisions

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Background: The aim of this study was to profile patients' satisfaction with information they had received about highly active antiretroviral therapy (HAART) in relation to treatment uptake.

Methods: As part of a prospective investigation into uptake and adherence to HAART, participants ($N = 115$) completed validated questionnaires investigating their satisfaction with information relating to practical aspects and potential problems of HAART, perceptions of information from different sources and beliefs about HAART, following a clinically recommended treatment offer. Interviews were also conducted.

Findings: There was a wide range of total satisfaction scores indicating variation in patient satisfaction and information requirements. Those who declined HAART ($N = 29$) were less satisfied with the information they had received than those who accepted the treatment recommendation ($N = 86$) ($p < 0.05$). Lower levels of satisfaction were associated with stronger concerns about the adverse effects of medication ($p < 0.05$). Interview data revealed four main themes related to information satisfaction: Language of information; Sources of information; Amount/availability of information; and Information requirements.

Discussion: These findings have improved our understanding of how people faced with treatment decisions perceive information about HAART, and how this impacts on treatment decisions. The study emphasises the importance of providing information that meets patients' personal needs and addresses their specific concerns with implications for the design of interventions to support informed decision making.

Exploring expectations of primary health care services as an explanation for the increase in demand. Increasing expectations, service utilisation and the role of social class

J. GIBSON, L.B. MYERS & S.P. NEWMAN, University College London.

Background: Various studies have shown health inequalities between social classes and also the high use of health services in primary care by the middle classes. Barsky (1988) attributed his high use of health services to rising expectations that medical care can achieve better health. The current study explores the effect of social class on expectations of primary health care services in an attempt to explain this high use.

Methods: The design of this study was cross-sectional. Social class was measured by occupation, education, and material circumstances. Participants ($N = 102$) also rated their expectations of consultation with a GP (19 items, measured on a five-point scale) and gender. Analyses were Pearson correlations and Multiple Linear Regression.

Findings: Expectations of primary health care services were high throughout the sample (mean = 3.87). Principal component analysis of expectations yielded a four factor solution: Factors 2, 3 and 4 (expectations of treatment,

negative expectations, expectation of examination) were significant positively correlated with education and occupation but not material circumstances. Multiple regression indicated that both occupation and education were significant predictors of these three measures of expectation.

Discussion: Two measures of social class (occupation and education level) were significant predictors of expectation, indicating that the higher the occupation and education level, the higher the expectations. It could be argued that government health policy, outlined in papers such as the NHS Plan

The effects of written guided disclosure on distress of parents of children with leukaemia

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Background: Research has shown that children with leukaemia do not show severe mental-health changes compared to controls. In contrast, parents of children with leukaemia (PCWL) may manifest long-term distress compared to parents of healthy children. The present pilot study examined whether writing in a guided manner, about the traumatic event of receiving the child's diagnosis and treatment, reduced parents' distress.

Methods: Since we have small numbers at our clinic, we used an AAB design. Eight PCWL completed measure of post-traumatic stress disorder (PTSD) and depression at Time 1, Time 2 and at Time 3 after writing, with one month gaps between each period. The previously developed guided disclosure protocol (GDP) aims at changing the manner in which the brain processes traumatic memories, and asked parents to describe receiving the diagnosis chronologically, to explicitly label their emotions, to explain how the child's illness affected their life (insight) and whether it contributed to their personal growth.

Findings: No significant differences were found in levels of PTSD and depression between both baselines. However, significant reductions were found in PTSD symptoms from the first baseline to post-treatment. No reductions were found for depressive symptoms. Time from diagnosis was unrelated to outcomes.

Discussion: This is among the first studies attempting to prevent distress in PCWL. The GDP appears to reduce PTSD but not depressive symptoms. This study needs to be replicated in a larger sample and other ways for reducing parents' depression are needed.

The relation between gerotranscendence (old-age wisdom) and elderly patients' use of primary care

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Background: According to the recently developed gerotranscendence (G) model, elderly people who achieve a high level of G have a certain type of 'wisdom' and acceptance in viewing themselves and the world, and perceive closeness to people who may be far from them in time and place. Their life satisfaction is enhanced as well. Thus, we expected to find an inverse relation between G and frequency of health-care visits (HCV) in elderly people. Furthermore, we hypothesised that G would moderate the effects of morbidity on HCV.

Methods: 80 elderly people living in one of six villages in the South-East region of Israel took part in this study. They completed the 10-item G scale, and were evaluated for demographic and background data. They were then followed prospectively for six months in relation to patient-initiated (PI) and doctor initiated (DI) HCV.

Findings: G was strongly inversely correlated

with number of PI visits ($r = -0.87$), but weekly related to DI visits. G did not moderate effects of illnesses on PI HCV. However, G did interact with number of illnesses in relation to DI HCV: Among patients with many illnesses, doctors asked patients with high G to come more often than patients with a low G.

Discussion: The present study demonstrates a very strong prospective relation between a measure of old-age wisdom (G) and PI HCV. In addition, doctors invite very ill patients with high G, either because they fear such patients may be too independent, or since they may like treating such patients!

Testing the application of the Theory of Planned Behaviour to condom use in South Africa

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Background: Whilst a number of publications have pointed to the paucity of social science theory in the analyses of HIV/AIDS in South Africa, others have raised serious doubts as to the adequacy of social science theory in contexts different from those where they were initially tested. The study, therefore, set out to: (a) explore the predictive power of an extended version of the Theory of Planned Behaviour (TPB) in the context of condom use amongst young adults in South Africa; and (b) investigate the factors influencing their decision to use a condom.

Method & Design: A questionnaire survey was administered at Time 1 and a short follow-up set of items were administered one week later at Time 2, thereby allowing a comparison of intention for condom use and actual behaviour.

Participants: Participants in the study were 152 young adults (18 to 26 years) living in the KwaZulu Natal region of South Africa.

Measures: Both direct and belief-based measures of the core constructs contained within the TPB were assessed together with a set of indigenous African beliefs about sexually transmitted diseases.

Analyses: Multiple regression analyses provided strong support for the TPB, accounting for some 67 per cent of the variance, and highlighted the importance of both self-efficacy and subjective norm in the prediction of intentions.

Findings/Discussion: Findings show that condom use in South Africa can be predicted successfully by social cognition variables and provide useful information for the design of effective HIV/AIDS education programmes.

The role of partner relationships in young adults' adherence to the diabetes self-care regime

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Background: The investigation of young adults with diabetes has revealed social support to be the main indicator of good adherence to the self-care regime. However, previous studies based mainly in paediatric services have assessed social support as coming from the family unit. With young adults, many are distanced from the family unit and are engaged in partner relationships and it is these partners who offer the bulk of the social support. This study aimed to investigate the role the partner played in providing social support.

Design: Cross-sectional independent measures matched pairs electronic web-based survey design.

Participants: Participants were recruited by advertising in web-based diabetes support group message boards. Fifty participants with diabetes mellitus responded aged 22 to 35 years, 26 were female and their HbA1C scores ranged from 5.90 to 9.00. The mean length of relationship with the partner was 6.58 years. All participants' partners responded creating a sample of 50 matched pairs.

Measures: Relationship Assessment Scale (Hendrick, 1988), the Diabetes Family Behaviour Checklist (Schafer, McCaul & Glasgow, 1986), life threat due to diabetes and the Summary of Diabetes Self-Care Activities Scale (Toobert &

Glasgow, 1994). Data were subject to path analysis.

Findings: Social support predicted adherence to the diabetes self-care regime. For male participants, relationship quality acted as a mediator between reported social support and adherence to the diabetes self-care regime.

Discussion: It is important to be aware that young adults who have moved away from home can find a significant source of social support from partner relationships characterised by practical support for the diabetes and relationship satisfaction.

Inpatient detoxification treatment evaluation: Adequate information provision predicts patients' satisfaction

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Purpose: To evaluate and identify the factors predicting satisfaction among adult psychoactive substance abusers undergoing an inpatient detoxification programme.

Design: A cross-sectional design based upon both quantitative and qualitative items investigated the patients' degree of satisfaction in association with service-related and patient diagnosis variables.

Methods: Over a period of three months, 46 patients were administered a 'satisfaction questionnaire' on the day of discharge. Types of addiction treated, medication administered, patients' origins, social support during treatment, programme completion, perception of the severity of withdrawal symptoms and overall service satisfaction were all quantitatively measured in conjunction with other qualitative items including group session attendance and preferences, attitudes towards staff as well as the amount of information available prior to entry to the unit.

Results: The pharmacotherapeutic alleviation of withdrawal symptoms significantly correlated with high level of treatment satisfaction. This was, however, often related to a lack of communication with staff and particularly doctors. Furthermore, contradicting previous findings, a majority of patients reported a preference for the non-involvement of their relatives in the treatment.

Conclusion: The best predictor of patients' satisfaction being the alleviation of withdrawal symptoms, the implementation of multilevel intervention encompassing both psychological and pharmacological components are suggested. Indeed, problems of communication were also highlighted between both patients and staff and doctors and nurses. Adequate information provision prior to treatment, and especially during the first days of treatment is, therefore, recommended.

Psychological distress and cancer incidence in the Whitehall II Study

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Background: Using longitudinal data from the Whitehall II Study, this research has investigated whether elevated distress in cancer-free participants was associated with an increased risk of cancer over a mean 10.7 years of follow up. Pathways between distress and cancer risk were formulated using Steptoe's (1991) model of Psychobiological stress response, with the aim of assessing the contribution of the cognitive-behavioural pathway.

Methods: The sample consisted of 6799 men and 3300 women aged between 35 and 55 years after exclusions. Psychological distress was assessed at baseline using the chronic scoring of the 30-item GHQ. Low numbers of cancer cases over follow up necessitated the grouping of cancers according to behavioural risk factors and two outcomes were analysed using Weibull regression.

Findings: Participants who were distressed at baseline were more likely to be younger and female, and there were statistically significant associations between distress and health behaviours related to cancer risk (smoking,

alcohol intake, diet and exercise). There were 302 malignant neoplasms eligible for analysis, with breast cancer (86) the most common, followed by prostate cancer (21) and colorectal cancers. Results showed that for each of the outcomes there was no increased risk of developing cancer associated with psychological distress (any malignant neoplasm: adjusted HR 0.84, 95 per cent CI 0.62 – 1.14; smoking-related cancers: adjusted HR 0.43, 95 per cent CI 0.15 – 1.22). **Discussion:** As well as consideration of threats to validity of the study, points to be discussed include the utility of observational epidemiological studies for furthering theory-testing in health psychology.

The effectiveness of implementation intentions in promoting exercise participation – a replication of a study by Milne *et al.* (2002)

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Background: This paper presents the results of three studies assessing the effectiveness of a motivational intervention (using Protection Motivation Theory) and a volitional intervention (based on Implementation Intentions (Gollwitzer, 1993)) designed to increase leisure time physical activity.

Methods: A randomised control trial with four groups. Data was collected at baseline and at a follow up period of two weeks. Standardised assessments of the Theory of Planned Behaviour (TPB), Protection Motivation Theory (Milne *et al.*, 2002), frequency of physical activity (Lowe *et al.*, 2000) and a composite Weighted Exercise Score (WES) were used. The primary outcome measure was WES. Each of the three studies reported followed the same protocol. Participants ($N = 371$) were invited to take part in the study by letter followed by two reminders letters to non-responders sent at one week and to-week intervals. Participants entered the study after returning the baseline questionnaire and were excluded if they did not provide an address. A follow-up questionnaire was sent after two weeks.

Findings: Analysis of demographic, TPB, frequency of physical activity and WES indicated no difference at baseline. MANOVA (four groups * two time) indicated no main effect for WES across the four groups ($F(3, 277) = 0.217, n.s.$), no Group*Time interaction ($F(3, 277) = 0.400, n.s.$) but a significant Time effect ($F(1, 277) = 20.443, p < 0.001$). Nonetheless, subgroup analysis indicated a moderate effect for making an Implementation Intention on the frequency of subsequent behaviour.

Discussion: Motivational and volitional intervention did not increase the frequency of total leisure time physical activity.

'Too busy doing other things': Male GP's attitudes towards their own health and that of their patients

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Purpose: While statistically men have a shorter life expectancy they are less likely than women to consult their GP with health problems. Previous research indicates that this is related to lack of information on health topics, and a need to maintain control in interactions with practitioners. This study investigated the views of male GPs on the provision of services for men, their pattern of self referral and how this compares with their own health care behaviour.

Method: Semi-structured interviews were carried out with 10 male GPs (ages 35 to 53) working in urban and suburban surgeries. Interviews were audiotaped and subjected to thematic analysis.

Findings: For all GPs, managing current service demands was seen as a major challenge and increasing contact with male patients, by increasing demand, represented a threat to this. Non-working men were seen as a heavy demand on the service and associated with negative images of masculinity. Male patients appeared to use a variety of ways of presenting at surgery to enable them to avoid negative effects on their self-image. Like non-medical men, male GPs

emphasised the need to control their own health care, however, this was often in a way which may have negative consequences for their health.

Conclusion: This study suggests that men's health care behaviour is more related to their need for control than with levels of information and that the pressures of service provision and men's need to promote a positive image of masculinity may influence patterns of self referral.

Perceptions of the cost implications of health and safety failures

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Background: The HSE actively campaigns to improve awareness of health and safety issues in the workplace. Although such campaigns have led to improvements in the management of health risks, few companies' make improvements to health and safety based on accurate cost/benefit assessments. This study is assessing companies' perceptions of the financial impact of accidents and work-related ill health.

Methods: Four focus groups were conducted with managers and health and safety representatives to explore the perceptions of the costs of workplace accidents and work-related ill health. Participants comprised representatives from small, medium and large companies across range of industrial sectors. Each discussion was recorded and fully transcribed. The qualitative data were analysed by sorting verbatim material into emergent themes, as described by Dey (1993). The next stage will comprise in-depth interviews and independent cost assessments with 80 case study organisations.

Findings: A number of key themes emerged from the focus groups. Most companies were aware of the types of costs associated with accidents and ill health, however, the majority of companies did not measure them. The participants highlighted a range of problems that they face in accurately assessing these costs, including time, resources and knowledge.

Discussion: The findings are providing greater understanding of companies' awareness of and attitudes towards the costs and benefits of health and safety. The findings will inform interventions aimed at raising awareness of the financial consequences of health and safety inadequacies and the benefits of investing in effective health and safety measures.

'What's going to happen. What are they going to do?': Psychosocial issues in pre-term labour

J.M. HAINSWORTH, J.H. BARLOW, Coventry University & S. THORNTON, University of Warwick.

Background: The identification of women at risk of psychologically-mediated complications during and after pregnancy is felt to be an important part of obstetric care. Attention has turned to investigating the relationship between stress, social support and pre-term labour. The aim of this study was to describe women's experiences on admission to hospital with a pregnancy-related complication using interviews thus allowing women's voices to be heard.

Methods: A descriptive, exploratory study was conducted of women admitted to hospital in pre-term labour ($N = 8$) and women admitted with hypertension ($N = 12$). Issues explored included women's understanding of their condition; expectations concerning their delivery; the degree of stress experienced whilst in hospital and expressed needs. Qualitative data were analysed using Interpretative Phenomenological Analysis (IPA).

Findings: Overall, women described similar feelings in relation to their experience of being admitted to hospital with a pregnancy-related complication. Key themes to emerge related to coping with the uncertain nature and course of a pregnancy-related complication; the importance of being given consistent and accurate information; and being believed (e.g. physical symptoms and associated distress). The exception was that a number of the hypertensive

women felt a 'fraud', as they often did not have any symptoms. Women who had previously experienced a traumatic labour and birth, were clearly anxious about their current condition.

Discussion: The majority of women interviewed valued the opportunity to discuss their experiences, hopes and fears following admission to hospital, and revealed a number of important clinical aspects to their maternity care. For those women who were displaying post-traumatic symptoms, further professional input may be necessary.

A comparison of men and women's attitudes towards seeking help for urinary tract problems

S.C. HALE, S. WILLOTT & S. GROGAN, Staffordshire University.

Background: Analysis of health statistics has shown that while men have a shorter life expectancy, women experience poorer health and this has been attributed to genetic, behavioural and sex role differences. This study aimed to compare views on health, illness, consulting behaviour and beliefs about symptoms between men and women with urinary tract problems using a qualitative methodology.

Method: Semi-structured interviews were carried out with 20 men and 20 women (aged 46 to 79 years) who had been recently referred to a urology clinic. Interviews were audiotaped and subjected to thematic analysis.

Findings: Men and women differed substantially in their definitions of health and illness, in the ways they coped with health problems, sought medical help and in their relationships with health care providers. Men's health behaviours were heavily influenced by parental attitudes while women made health choices based on education or personal experience. Findings suggest that women use their role as family 'health experts' to develop and maintain their own health, whereas men are handicapped by their need to maintain a traditional male image of independence strength and self reliance. Men had more negative attitudes towards male GPs than women did whereas women's prior relationship with their GP was seen as more important than the GPs sex.

Discussion: These findings suggest that sex roles are influential in both men's and women's health care behaviour and has implications for both understanding the differences between men's and women's health behaviours and in targeting interventions relating to encouraging earlier self referral.

The motivating impact of informing women of a link between smoking and cervical cancer: The role of coherence

S. HALL, J. WEINMAN & T.M. MARTEAU, Guy's, King's & St. Thomas' School of Medicine, London.

Background: Most women appear to make little sense of the link between smoking and cervical cancer. The importance of understanding the way people make sense of their illnesses is central to Leventhal's self-regulatory model. This has been acknowledged in the IPQ-R, which now includes a measure of illness coherence. We report here, two studies assessing the role of having a coherent explanation of the link between smoking and cervical cancer in motivating women to stop smoking.

Methods: Study 1: 172 women smokers aged 20 to 64 years, from two general practices in the UK were sent a leaflet with either a detailed or a minimal explanation of the link between smoking and cervical cancer, or no leaflet. One week later they were sent a questionnaire assessing coherence, perceptions of threat and efficacy and intention to stop smoking. Study 2 had a similar design to Study 1 and involved 178 women smokers aged 20 to 64 years.

Findings: In Study 1, both leaflets were effective at providing a coherent explanation. Having a coherent explanation moderated the relationship between perceived vulnerability and intention: higher perceived vulnerability to cervical cancer was associated with greater intention to stop smoking only amongst women with a more

coherent explanation of the link between smoking and cervical cancer. This was replicated in Study 2.

Discussion: These results are consistent with Leventhal's proposal that motivation to change behavior depends, not only upon threat perception, but also upon having an explanatory model linking the behavior with the threat.

Coping with Ankylosing Spondylitis

A. HAMILTON-WEST & I. QUINE, University of Kent.

Background: The study focused on individuals with the chronic condition Ankylosing Spondylitis (AS) and addressed the following questions: What does it mean to live with this condition on a daily basis? What methods do people use to cope with the condition? Are these methods related to the individual's general style of coping, or to the severity of symptoms? Can a brief coping-based intervention bring benefits to AS patients? The intervention tested here was based on Pennebaker's emotional expression paradigm in which participants write about a stressful (experimental condition) or neutral (control) topic for 20 minutes on three consecutive days.

Results: AS has negative impacts on many areas of life. In addition to the physical effects of the condition, AS was associated with changes to the individual's working life, social life, personal relationships and mood. However, the majority of participants were also able to describe positive implications of their condition (e.g. a greater sense of meaning/purpose in life, new or stronger relationships, feelings of achievement). The methods participants used to cope with AS were influenced both by their general style of coping and by daily fluctuations in pain and mood. The emotional writing exercise was associated with significantly improved global health ratings at follow-up relative to controls.

Conclusion: Although chronic conditions may be associated with negative changes in many areas of life, patients are often able to cite benefits. Emotional expression may aid in the process of finding meaning from adversity and lead to a more positive perception of the condition.

Exploring Theory of Planned Behaviour constructs to explain staff adherence to a mental health guideline

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This qualitative study explored, in relation to constructs of the Theory of Planned Behaviour (TPB, Ajzen & Madden, 1986), the experiences and attitudes of mental health (MH) professionals in a Midland's Primary Care Trust (PCT) towards working with guidelines in general, and the seven-day contact (SDC) guideline in particular. This national guideline, positing that service-users should receive contact within seven-days of discharge from inpatient care, was developed following the finding that suicides peak in the first one to two weeks following discharge (Safety First, 2001) and features in the National Service Framework for Mental Health (2000). The aim of the study was to gain an understanding of the factors underlying adherence to the SDC guideline, since this was identified as an area for improvement by the collaborating PCT. One staff member from each of eight relevant services within the MH directorate was interviewed, including nurses, social workers, and occupational therapists. Interviews were semi-structured with questions covering TPB constructs: attitudes (ATT), social norms (SN) and perceived behavioural control (PBC). Interviews were transcribed and analysed using Interpretative Phenomenological Analysis. Six themes were identified and subsequently related to the constructs of the TPB. The themes were predominantly characterised by ATT and PBC constructs, either individually or an interaction of the two, suggesting interplay of these constructs underlies adherence to the SDC guideline. However ATT, PBC and SN all appeared related to a theme concerned with the

role of disciplinary and team differences in guideline adherence, suggesting that the team or profession an individual works in may be particularly influential. These findings will be used in future research to design items for a TPB questionnaire concerning adherence to the SDC guideline, that can then be utilised in designing and testing an intervention to increase adherence.

Long-term adjustment among the partners of cardiac patients

M. HANLEY, University College Northampton.

While an extensive body of research literature suggests that cardiac patients are at risk of returning to a poorer QoL following hospital discharge, little attention has been paid to the psychosocial consequences of the cardiac event for the partners of these patients. This is despite evidence that partners often play a key role in facilitating the process of rehabilitation for the cardiac patient. To investigate this issue, a longitudinal study was conducted of 238 cardiac partners (177 females and 61 males), with adjustment being assessed at six and 12 months following the discharge of the patient from coronary care. Analyses revealed that the partners of cardiac patients were likely to report high levels of both anxiety and depression up to one year following the cardiac event. Furthermore, among the sample, female partners were more likely to report a poorer QoL across a range of functional areas compared to male partners ($p = 0.001$), and partners from lower social class groups were reported poorer functioning compared to their higher social class counterparts ($p = 0.02$).

The findings of this study raise important questions for the design of support services following the discharge of cardiac patients. It may be the case that certain family networks operate to disproportionately impact on the partner in the role of carer, to the extent that it may actually be placing the health of the individual at risk. In view of this data, the design of cardiac rehabilitation services which target the family more broadly will be considered.

Changes in affective and likelihood ratings in response to the presentation of absolute and comparative risk information

P. HARRIS, University of Sheffield.

Background: When absolute and comparative risk were crossed experimentally, Klein (1997) found participants were disturbed by their comparative risk but typically not by their absolute risk. This study tests these intriguing findings in a US ($N = 107$) and UK ($N = 246$) sample. The differences from Klein (1997) included smaller risks (more like those that arise in genetic testing), a no comparative information control, ratios to determine the above and below average figures where these were manipulated, and a broader range of DVs. The goal was to implement recommendations for research made in a recent review of experimental studies of this issue.

Methods: Participants were presented with hypothetical information about their risk of Deep Vein Thrombosis (DVT) in a between-participants design. The low (4/100000) and high (30/100000) absolute risks were the genuine chances of experiencing DVT for those with or without common protein deficiency. In two conditions it was possible also to provide the genuine average risk (5/100000). Thus in 4/6 cases the figures were genuine. Risks were presented to participants as cases per 100000 and as percentages.

Findings & Discussion: Comparative risk information did not affect disturbance, whereas absolute information did in the US sample only. However, perceptions of risk for the average other did predict disturbance in the US sample. Overall, the balance of evidence suggests people do respond primarily to absolute risk information. Discussion will explore why Klein's findings may differ from these, and the theoretical and practical implications of the findings to date.

The accounts of people managing primary systemic vasculitis, a chronic autoimmune disease

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Background: Primary systemic vasculitis (PSV) is an autoimmune condition causing inflammation of blood vessels and damage to organs. The exact cause is unknown but modern therapy has converted this previously fatal disorder to a relapsing and remitting chronic disease. The aim of the study was to gain an understanding of the patient's perspective in order to inform the management of the illness.

Methods: Semi-structured interviews were conducted with a sample of 20 people with PSV. A qualitative analysis was made employing techniques from the grounded theory approach. The interview schedule used focused on the participant's understanding of the illness, its impact and meaning.

Findings: The core category was of survival with a condition that threatened relapse. The emerging theme was of the participants' expertise at regulating their condition, they monitored their illness symptoms and the environment and they modified their behaviour. The overall impact of PSV was that the participants' lives were restricted and socially isolated. They experienced physical disability, fatigue, pain and varying levels of psychological distress and they were focused on there being accessible medical support. The participants had strongly differing attitudes to seeking information about the illness, seeking support from patients with similar diagnoses and to accessing medical input.

Discussion: These PSV patients had a range of complex views on their condition that interacted with their illness experience and affected their behaviour and quality of life. It seems pertinent that these views are elicited and addressed as part of the overall management of such chronic autoimmune conditions.

The impact of hand osteoarthritis on the individual: A focus group study

S. HILL, B.N. ONG, P.Y.L. CHOI & K. DZIEDZIC, Primary Care Sciences Research Centre, Keele University.

Background: Osteoarthritis (OA) is a common disabling complaint in older people, the hands being second to knees in the frequency of involvement. Little is known about the effects of hand problems in OA. The aim of this focus group study was to explore patients' illness perceptions, and in particular the impact of hand OA on the individual.

Methods: Four focus groups were conducted. The focus groups consisted of patients from either primary or secondary care with a clinical diagnosis of hand OA. The verbatim transcripts were content analysed using open, axial and selective coding.

Findings: The themes generated included: (i) Functional impact, in terms of everyday activities and self-care; (ii) Psychological impact, including frustration and self-concept; (iii) Coping and control, particularly in terms of conventional medication, self-help and 'alternative' forms of treatment; and (iv) 'Other' illness perceptions in relation to the Common-Sense Model, a model developed to help understand the self-regulation processes by which individuals make sense of an illness experience.

Discussion: Clinical care is largely geared towards the treatment of symptoms using conventional medication which patients do not like to take. Patients often resort to self-help and 'alternative' forms of treatment. Lack of available information/education was expressed, particularly in relation to coping. This may be a key area for the involvement of a multidisciplinary team, including a health psychologist.

Talking about sex in primary care: Gender relations in the consultation

S. HINCHLIFF, M GOTT & E GALENA, University of Sheffield.

Background: This paper investigates how gender of the patient or general practitioner (GP) can create barriers to discussing sexual health matters in primary care consultations.

Method: In-depth interviews were conducted with 22 GPs (nine women and 13 men aged 34–57) recruited from contrasting practice types and geographical locations across Sheffield. Data were analysed thematically, assisted by the qualitative software programme NUD*IST.

Findings: GPs identified a number of gender-related barriers that impede discussion of sexual health in consultations. These include patient preference for a same-sex GP, a consequence of which was that some GPs felt 'de-skilled' when it came to treating patients of the opposite sex, and how clear gateways to discussing sexual health presented when the patient was female but not when the patient was male.

Discussion: Barriers to discussing sexual matters in consultations have the potential to impinge upon would-be treatment for the patient: inadvertently not exploring sexual problems because the patient is the opposite sex to the GP, or because no opportunities present during the consultation, can have a direct and indirect affect on the patient's life, health and intimate relationships. Implications for practice refer largely to the provision of training for medical students and qualified GPs regarding the management of sexual health problems. A further implication relates to extending the role of Practice Nurses, however problems surround this and will be discussed.

Computer-facilitated smoking cessation services: How well does the internet do in the provision of tailored support?

I.C.A. HOBBS & S.R. SUTTON, University of Cambridge.

Background: The Internet offers the possibility of wide-reaching, easily accessible smoking cessation services, with the added potential of creating tailored interventions using personal assessment information. The number of generic sites currently available is vast with variable content and reliability.

Methods: A review of web-based smoking cessation sites was conducted. Sites were accessed via a generic search term, then links posted on these sites were explored. English-language sites claiming to include tailoring or personalisation were targeted. Twenty-six sites met initial review criteria, of which 21 were reviewed in detail. Sites were evaluated according to the Health on the Net Foundation (HON) Code of Conduct for content and for the degree of personalisation offered. Literature searches were conducted for empirical evaluations of sites.

Results: The majority of sites are commercial, offering smoking cessation products, for example NRT or self-help guides. A significant number also offer generic education and advice to support quitting. Sites offering personalised tailoring of advice are minimal, with the degree and quality of personalisation varying significantly. Few sites currently meet HON criteria, highlighting the potential for misleading and inaccurate information to be posted. Furthermore, there are few published evaluations of the effectiveness of sites available.

Discussion: Whilst the internet offers a rich and varied medium through which smoking cessation services can be offered, currently this resource is poorly used. The quality of the services offered is also variable as the content and reliability of advice is generally unmonitored. Development and evaluation of user-friendly, accurate, personalised services is encouraged.

Exercise levels and individual differences in choices of exercise and physical activity

A.J. HULL & M. MORRIS, University of the West of England.

Background & Methods: This quantitative, quasi-experimental, between groups study aimed to assess how much exercise and/or physical activity four groups of 'exercisers' (Swimming, Gym, doing Aerobics and Yoga) and a group of 'non-exercisers' undertook, whether groups differed in this and in certain personality variables, and, if the latter were predictive of group membership. The personality variables were Extraversion [EPQ-R Shorter Version], Self-Esteem [Rosenberg Self-Esteem Scale], Self-Efficacy [Generalised Self-Efficacy Scale], and the Exercise Orientation Questionnaire with six factors, Self-Control, Orientation to Exercise, Self-Loathing, Weight Reduction, Identity and Competition. One-hundred-and-fifty participants were recruited from five Sports/Leisure Centres plus one health club and 30 'non-exercisers' from local communities.

Findings: 63 per cent of 'non-exercisers' were taking some exercise. Most 'exercisers' and 'non-exercisers' undertook more than the recommended levels of physical activity and a group of 'heavy exercisers', doing significantly more exercise than the others, was identified. Analyses were carried out for the Original exercise groups and for Revised groups, with 'heavy exercisers' as a fifth group. Significant differences were found between groups in Extraversion, Self-Control, Orientation to Exercise, Identity (Revised group only) and Competition but not in Self-Loathing, Weight Reduction, Self-Esteem and Self-Efficacy. Different patterns in correlations of the dependent variables, significant at the one per cent level, for each group were described. Discriminant analysis, with the dependent variables as predictor variables and independent variable as a criterion variable, revealed Orientation to Exercise to be the sole predictor for both Original ($F(3,146) = 5.979$; $p < 0.001$) and Revised ($F(4,145) = 6.346$; $p < 0.0005$) exercise groups (35.5 per cent and 26 per cent overall success respectively).

Sexual risk-taking behaviours and condom use among HIV negative and HIV positive male sex workers

B. HUTCHISON, University of Gloucestershire.

Background: This research considers health and sexual risk-taking behaviours in a sample of London-based male sex workers working privately and independently with a primarily male clientele. Because of the lack of empirical studies in this area, this study is exploratory to gain an understanding of sex worker's experiences related to risk-taking behaviours, condom use and sexual health.

Methods: 50 in-depth interviews were thematically analysed, using a grounded theory approach, to gain an understanding of sex worker's experiences related to risk-taking behaviours, condom use and sexual health.

Findings: It is well established that condom use among sex workers (both male and female) differs according to context (client versus relational sexual interactions). This is a finding that is consistent with the data collected from these London-based interviews. This study demonstrates that whether and how a condom is used can differ according to a number of situational contexts. Sex workers are most likely to use condoms with paying customers and less likely to use condoms with regular partners.

Discussion: One important finding from this current research is that sex workers report sometimes not using condoms when performing oral sex on clients to whom they report feeling attracted as well as engaging in higher risk condomless penetrative sex. Condoms are more likely to be used when performing oral sex on clients who are considered unattractive by the worker and/or because of poor standards of personal hygiene. Whether or not a condom is used depends to a large extent on the type of

activity and even client characteristics and physical attributes.

Can implementation intentions increase fruit and vegetable consumption with cardiac patients?

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Background: Eating at least five portions of fruit and vegetables each day reduces death or cardiovascular illness in people with existing cardiovascular disease (CVD). This prospective study tested the efficacy of implementation intentions to promote eating two extra portions of fruit or vegetables each day.

Methods: A total of 119 CVD patients (71 male, 48 female, aged 47 to 84 years) were requested to increase their intake and randomly assigned to three groups (1. control – time filling activity, $N = 44$; 2. TPB questionnaire, $N = 38$; 3. TPB questionnaire plus implementation intention, $N = 37$). Participants were telephoned at seven, 28 and 90 days after recruitment. Self-reported daily fruit and vegetable intake was recorded at each time point. Dependent variable was the change in daily fruit and vegetable intake.

Findings: A repeated measures ANOVA revealed no main effects for time or group. There was a significant time by group effect ($F(4,112) = 2.50$, $p = 0.047$). At seven days follow-up the intervention group had increased their daily intake by more than the other two groups ($F(2,98) = 0.88$, $p = 0.418$). By 90 days follow-up, the intervention group had increased their intake by less than the other two groups ($F(2,58) = 2.44$, $p = 0.096$).

Discussion: These results suggest that implementation intentions can increase daily fruit or vegetable intake in the short term but question their value over a longer time period. Asking people to increase their intake and then telephoning them can be an effective strategy.

Psychosocial impact of corrective surgery in strabismic adults

S. JACKSON, N. RUMSEY, University of the West of England & R. HARRAD, Bristol Eye Hospital.

Background: Over the past 30 years only six studies have examined the psychological impact of strabismus in adults. There is no data on a UK population comparing pre- and post-operative data using validated questionnaires and relating surgical results to psychosocial outcomes.

Methods: 20 participants were seen twice at the Bristol Eye Hospital: at the six-week pre-operative assessment, and at the three-month post-operative outpatients appointment. A repeated measures design, patients completed a series of questionnaires: including the Derriford Appearance Scale (DAS-24), the WHOQOL (short form), and the Hospital Anxiety and Depression Scale (HADS). Collected data has been analysed using correlation calculations, and Wilcoxon tests.

Findings: There is no correlation pre- or post-operatively between the degree of eye misalignment perceived by the patient and measured eye deviation and scores on the psychological measures. One-tailed Wilcoxon tests indicate that for all patients the surgery significantly improves their perception of the severity of their squint ($W = 28$, $N = 20$, $p < 0.01$). Surgery also significantly improves how they view their appearance – DAS measure – $W = 17.5$, $N = 19$, $p < 0.001$. For non-diplopic patients there is a significant reduction in levels of anxiety – HADS measure – ($W = 13.5$, $N = 13$, $p < 0.025$).

Discussion: This study provides more information on using validated questionnaires with an adult population undergoing what might be termed 'elective surgery' (subjects undergoing surgery for cosmetic reasons only) as opposed to adults undergoing surgery for functional reasons (subjects undergoing surgery to correct diplopia). It also widens the scope of current research with people who are visibly different.

The relationship between cardiovascular reactivity in the laboratory and in real life: Specific stressors and particular people?

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Background: Models of cardiovascular disease assign a significant role to psychological stress. Much of the evidence on the effects of stress on the cardiovascular (CV) system is derived from acute laboratory studies. Such studies would be most persuasive as models of significant processes in CV disease if the response to a variety of different laboratory tasks predicted very general measures of reactivity in real life.

Methods: 60 male undergraduates had heart rate (HR) and blood pressure (BP) measured during six common laboratory stressors and had ambulatory HR, activity and posture measured during a seven-hour period that contained a tutorial presentation. Laboratory measures. HR response to the laboratory tasks. Field measures. HR response to the tutorial presentation and HR variability over the complete ambulatory record.

Results: The heart rate response to four of the six laboratory tasks related positively to the heart rate response to the specific field stressor, the tutorial. Only the HR response to the Cold Pressor stressor related to the general measure of field reactivity, HR variability. Serendipitously it was noted that this relationship was confined to participants who provided reliable data from a BP device measuring BP in the finger.

Discussion: While laboratory stressors predict the effects of a specific real life stressor they are not reliable predictors of a very generalised measure of field reactivity. The response to the Cold Pressor was predictive in participants who, other evidence suggests, may be predominantly cardiac responders.

Predicting exercise initiation and maintenance: A longitudinal study of students

F. JONES, M. CONNER, University of Leeds, P. HARRIS & C.J. ARMITAGE, University of Sheffield.

Background: Poor levels of physical fitness in young people have been identified as an increasing problem. While research has identified many of the predictors of exercise initiation, models who start to exercise will soon give up. Models of health behaviour may provide a less adequate account of exercise maintenance. The aim of the present study is to follow up students, every six months throughout their university careers, to look at the predictors of both initiation and maintenance of exercise behaviour. The present paper will include the data for the first year.

Methods: A questionnaire was completed by 407 students, (332 female and 75 male) shortly after starting at University. Measures included variables derived from the Theory of Planned Behaviour, measures of previous exercise behaviour, anticipated regret, expectations of change, risk/optimism and exercise motivation.

Findings: Based on the initial questionnaire, groups of prior exercisers and non-exercisers were identified. Initial analyses suggested that the predictors of intention in these two groups were very similar. Attitudes, self-efficacy and moral norm were significant predictors for both groups. Anticipated regret and motivation to avoid being unfit added significant extra variance in both groups.

Discussion: The study indicates that similar variables are relevant to intentions to exercise in both habitual exercisers and non-exercisers. Subsequent analyses will examine these relationships longitudinally and also assess the relationship between intentions and subsequent behaviour in the two groups. Together these findings should help further our understanding of exercise initiation and maintenance.

Effects of a self-paced walk on affect and desire to smoke during smoking deprivation

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Exercising may be useful for aiding smoking cessation (Ussher *et al.*, 2003) possibly through enhanced affect. Ussher *et al.* (2001) reported that after smoking abstinence, cycling for 10 minutes (40 to 60 per cent heart rate reserve) reduced mood and physical symptoms and desire to smoke, for up to 10 minutes. The present study investigated the effects of a one mile, self-paced, treadmill walk on activation and valence (two, 10-point scales, based on the Circumplex Model of affect; Russell, 1980), and desire to smoke (Questionnaire on Smoking Urges (QSU); Tiffany & Drobes, 1991) compared with a rest condition. After 15 hours of abstinence, 15 healthy smokers (cigarettes per day: Mean (SD) = 16.6 (10.6) walked at a mean 30 per cent of heart rate reserve, for a mean of 18 minutes, or remained seated quietly for 20 minutes, in a counterbalanced within-subject design. Follow-up measures were taken after 20 minutes seated quietly following both conditions. Repeated measures ANOVA's revealed significant overall interaction effects for time*condition, for both QSU scales ('desire-behave'; $F(1,14) = 12.95$; $p < 0.01$), ('desire-affect relief'; $F(1,14) = 19.46$; $p < 0.01$), and affective valence ($F(1,14) = 14.23$; $p < 0.01$). t-tests revealed significantly reduced urges to smoke and increased positive affect for only the exercise group, 40 minutes after the baseline assessment. This is the first study to show a positive effect of low intensity exercise in a readily accessible form (i.e. walking) on affect and desire to smoke during abstinence and parallels work by others with non-smokers (Ekkekakis, 2000).

Asthma self-management: The effect of repressive coping and anxiety

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Background: It is 24 years since Weinberger, Schwartz and Davidson (1979) identified a group of individuals who possess a repressive coping style. 'Repressors' are identified by their low scores on self-report measures of anxiety and high scores on defensiveness. Numerous studies have found that repressors dissociate their somatic reactions from their perceptions of distress, with repressors in potentially stressful situations reporting low levels of distress but exhibiting high levels of physiological activity. As few studies have investigated repressive coping in adult asthma patients, the current study investigated self-report and objective measures of asthma in adults with a repressive coping style.

Method: Lung function (objective measure of asthma control), attributions of their asthma symptoms and number of asthma symptoms (self-report measures) were measured in patients at hospital asthma clinics. Asthma physicians rated patients' anxiety. Repressors ($N = 15$) were defined using tertiary splits on anxiety and defensiveness. Borderline repressors were omitted and all other participants were defined as non-repressors ($N = 23$). There were a high number of repressors in the sample (39 per cent). Analyses of variance were performed.

Results: Repressors compared to non-repressors scored significantly lower on objective lung function measures, reported fewer asthma symptoms and reported that they were more calm and content, less tense and worried and more in control of their asthma. No repressor attributed any symptom to anxiety. However, asthma physicians rated repressors as more anxious than non-repressors.

Attachment style and symptom reporting: Examining the mediating effects of anger and perceived social support

T. KIDD & D. SHEFFIELD, Staffordshire University.

Background: Attachment style has been linked to social support (Rholes, Simpson & Stevens), anger (Mikulincer, 1998), and health-related variables such as symptom reporting (Ciechanowski, Walker, Katon & Russo, 2002; Feeney & Ryan, 1994). The aim of this research was to examine the inter-relationships of these variables within a single study.

Methods: 191 participants (141 females, 50 males) completed the following questionnaires: The Revised Adult Attachment Scale (Collins & Read, 1990); The State-Trait Anger Inventory – 2 (Spielberger, 1999); The 28-item General Health Questionnaire (Goldberg, 1978) and Perceived Social Support Scale (Blumenthal, 1987).

Findings: Significant differences were found between attachment groups and somatic symptoms $F(3, 187) = 3.42$, social symptoms $F(3, 187) = 4.44$, depressed symptoms $F(3, 187) = 9.95$, and anxiety symptoms $F(3, 187) = 3.43$. Post hoc analysis showed differences were present between secure and preoccupied attachment on social, and depressed outcomes and secure and fearful attachment styles on somatic, social, and depressed outcomes ($p < 0.05$). Negative correlations were found between perceived social support and anxious, social, and depressed symptom reporting. Anger-in was positively correlated with somatic, anxious, depressed and social symptom reporting. Trait anger was positively correlated with anxious and depressed outcomes. ANCOVA revealed that there were no differences between attachment styles and any of the symptom scales when perceived social support, anger-in, and trait anger were entered as co-variables.

Discussion: The results indicate that specific insecure attachment styles are associated with increased symptom reporting, and they suggest that social support and anger mediate the relationship between attachment style and symptom reporting.

A survey of patterns and sources of stress among medical and nursing staff in an Intensive Care Unit setting

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Background: The intrinsic nature of the clinical work within Intensive Care Units has been advanced as a specific source of stress within this setting. Non-clinical aspects of the work environment and the interface between work and non-work aspects of life can also be important contributors to the stress experiences of healthcare staff. Mapping the levels, patterns and sources of stress is an important first step in planning interventions, whether professional, organisational or clinical, to reduce negative effects of stress on staff.

Methods: All nursing and medical staff ($N = 88$), from an adult ICU were invited to participate, anonymously, in a self-report study of stress experiences. Sixty-three per cent of staff chose to participate. Three measures were used – namely the General Health Questionnaire (GHQ 12), the State-Trait Anxiety Inventory (STAI) and an adaptation of the Stress Inventory for Junior Hospital Staff (SMIJHS). Relationships between the psychological measures and differences between professional sub-groups were examined.

Results: GHQ scores indicated high levels of distress in each staff group, with a trend to higher levels among junior staff. State anxiety scores also were higher among less experienced staff. Sources of stress showed some interesting differences between medical and nursing staff. Shift patterns were not a major predictor of stress. Negative effects of work requirements on non-work life experience were particularly identified by medical respondents.

Conclusions: Overall levels of subjective psychological distress were high and could not

be accounted for solely in terms of high but transient state anxiety. Sources of stress varied somewhat between professions. Professional support or training interventions need to take these findings into account. Survey results were fed back for internal consideration and discussion with service commissioners and have been used to enhance professional training support for junior nursing staff. A larger-scale survey of sources of stress experienced by Critical Care medical staff is being proposed.

Patients' beliefs about the causes of their SLE, RA and OA

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Current understanding of the causes of Systemic Lupus (SLE), Rheumatoid Arthritis (RA) and Osteoarthritis (OA) remain unclear. Both rheumatology text books and patient information booklets stress that, as yet, there are no answers as to the cause of these conditions. It has been reported that individuals engage in spontaneous attempts to explain events (Wong & Wiener, 1981) and when confronted with a diagnosis there is a powerful inclination to find a cause (Bulman & Wortman, 1977). This cross-sectional study of 286 patients examined the perception of causes (IPQ Causes Subscale) of SLE ($N = 103$), RA ($N = 101$) and OA ($N = 82$). Besides the IPQ, other measures include the WOMAC (Bellamy, 1998), the HADS (Zigmond & Snaith, 1983), the Brief COPE (Carver, 1997) and Escape/Avoidance scale from Ways of Coping. Groups were classified by cluster analysis of their causal beliefs and group differences analysed by ANOVAs and t-tests. SLE patients had distinct casual beliefs from RA and OA. With the SLE group those who believed that stress caused their illness were more anxious ($p < 0.05$), used more drugs ($p < 0.05$) and used behavioural disengagement as a coping strategy. RA patients who believed stress was a cause were significantly more depressed ($p < 0.05$) and anxious ($p < 0.05$) and coped differently. The OA group which endorsed chance as the cause of their illness were significantly less accepting of their condition. Overall, causal beliefs of chance or stress is associated with lower psychological well-being. This study demonstrates the importance of causal beliefs on coping and psychological well being in arthritis patients.

The application of the Stages of Change model to promote treatment outcome in the management of chronic pain

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Background: The management of chronic pain is a challenge for the individual as well as health care professionals. Evaluation of treatment effectiveness is of increasing significance in applied pain research for theoretical, clinical and financial reasons. Psychological input to pain services take many forms (e.g. individual client work, consultation-liaison, and group work). This paper presents an evaluation of a structured multidisciplinary Pain Management Programme (PMP) based on physical, cognitive and behavioural principles, over a single year.

Method: All patients on the PMP completed the Pain Coping Strategies Questionnaire (PCSQ), Hospital Anxiety and Depression Scale (HADS) and Health Status Questionnaire (SF-36) at pre-course, at end of course and at follow up. One-hundred-and-eight patients returned the questionnaires.

Findings: Using repeated measures ANOVAs, two variables changed over the period of the course and follow-up. Reinterpretation coping and higher order coping factor cognitive coping were significant ($p < 0.05$). Multifactor mixed design ANOVAs demonstrated the use of coping self-statements increased linearly over time

($p = 0.01$) as did the use of cognitive coping ($p = 0.01$). Males and females differed at baseline, men reported less use of coping self-statements (on the PCSQ) and less energy (on the SF-36), whilst at outcome men reported more depression (on the HADS) and less use of diversion coping.

Discussion: These results show significance on only a few of the variables measured. It is therefore suggested that measuring a patient's readiness to adopt change through the application of the Transtheoretical Model (TTM, Prochaska & DiClemente, 1983) may improve treatment effectiveness.

The role of information on the development of pre-treatment expectations in patients with head and neck cancer: A qualitative pilot study

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Background: Little is known about the types of expectations patients with head and neck cancer (HNC) have regarding their treatment and recovery and how this relates to the information supplied. The aims of this study were to investigate the types of expectations patients had prior to treatment and the extent to which these had been met post-treatment and secondly, to investigate the role information played in the development of patient expectations.

Methods: Semi-structured interviews were conducted with an opportune sample of 16 participants with HNC (71 per cent female). Ages ranged from 38 to 75 years and time since diagnosis ranged from two to 548 days. Data were analysed using a framework analysis approach (Ritchie & Spencer, 1994). This technique involved identifying recurring and important themes based on a combination of a priori issues, emergent themes and recurring attitudes or experiences.

Findings: Respondents described expectations reflecting two subordinate themes: relating to 'specific' expectations centred around: side-effects; return to work/resuming roles and aesthetic aspects of treatment and 'global' expectations regarding the whole cancer experience. Favourable experiences were underpinned by expectations being surpassed. A large proportion of patients described the whole experience as being worse than they expected. This was highlighted by a sense of 'enormity' about treatment (surgery and/or radiotherapy) and the recovery process, but also due to unexpected complications from treatment. Expectations appeared to be derived from many factors, not least personality, however, the extent of information supplied and understanding emerged as a recurrent theme.

Discussion: Unrealistic or unmet expectations appeared to be related to psychological difficulties with adjustment at various stages post-treatment. A complex illustration of the informational needs of patients versus the role of information on the development of expectations emerged in this patient sample. This has consequences for patients quality of life and has clear implications for supplying information on an individual basis.

Application of the person-environment approach to railway safety: How to equip the train driver for the cab

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Background: As an application of Health Psychology consultancy to 'human factors' aspects of train driving, to enhance safety, the effectiveness of a four-day training programme to enhance train driver's performance, through improving their self-management skills, is presented. Corresponding skills include managing pressure, trauma, concentration, sleep,

communication and self-awareness. Course content is based on the premise that performance is a function of the interdependence between the person and the environment (Lewin, 1954).

Method: A longitudinal single cohort design involving 170 new train drivers was used. Outcomes assessed at pre, mid and post intervention stages comprised self-report measures of perceived stress (Perceived Stress Scale, Cohen *et al.*, 1993), coping strategies (General Self Awareness Questionnaire, Schwartz, 1998) and a purpose designed enhancing performance questionnaire (Lunt & Micallef, 2002). This contained quantitative and qualitative questions concerning attitudes to the training, self-ratings of concentration and pressure levels and management of negative pressure. A one-way between subjects ANOVA compared quantitative responses. A thematic analysis based on grounded theory was made of qualitative replies.

Findings: Nearly 80 per cent of drivers believed that the training both improved their concentration and reduced their susceptibility to driver error (e.g. Signals Passed at Danger). Statistically significantly more drivers were able to manage pressure (GSAQ means: 14.75 (pre), 17.94 (post), $p < 0.001$), through lifestyle changes concerning exercise, sleep strategies and relaxation.

Discussion: Programme effectiveness will be explained in terms of maximising person-environment fit (French, Caplan & Harrison, 1992). The efficacy of Health Psychology interventions in improving railway, and consequently, public safety will be demonstrated.

The use of reliever medication in asthma: The role of negative mood and symptom reports

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Background: Research suggests that up to one third of asthma sufferers overuse their asthma reliever medication. There is some evidence that overuse of reliever medication is related to psychological distress or negative affect. It has been suggested that negative affect influences individuals' perceptions of the seriousness of their asthma, which in turn causes them to use more medication. The aim of this study is to investigate whether the number of symptoms an individual associates with asthma is related to negative affect, perceived asthma severity and the use of reliever medication.

Methods: 42 adult asthma patients completed a daily questionnaire over seven consecutive days. The questionnaire measured negative affect and the number of different symptoms patients associated with their asthma. The symptoms included those typical of asthma, as well as non-specific somatic and distress symptoms. Subjects were also asked to record their daily use of reliever medication and their peak flow values. Data were then analysed using hierarchical regression analyses.

Findings: Data analysis demonstrated that, even when controlling for lung function, both asthma symptom labelling ($p < 0.005$) and negative affect ($p < 0.01$) were related to reliever use.

Discussion: A mediation model suggested that negative mood leads patients to associate a wide range of non-specific symptoms with their asthma, thereby altering the perception of the severity of the asthma, which in turn influences their use of reliever medication. The results of this study are discussed in relation to asthma self-management strategies.

The emotional impact of human papillomavirus (HPV) testing in women with abnormal cervical smear test results

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Context: Concerns have been expressed about the potential of HPV testing to cause considerable distress to women learning they have the virus. This is the first population-based assessment of anxiety in women undergoing HPV testing, following abnormal smear test results.

Method: State anxiety, distress and concern about smear test results were assessed within two weeks of receipt of test results and compared across four groups of women: those receiving abnormal smear test results, tested for HPV and found to be (a) HPV positive ($N = 327$), or (b) HPV negative ($N = 200$); and two groups that were not tested for HPV: those who received (c) an abnormal smear test result ($N = 104$) and (d) a normal smear test result ($N = 176$).

Results: Women with abnormal smear test results who tested HPV positive were significantly more anxious, distressed and concerned about their test results than the other groups, with state anxiety levels approaching clinical significance. Two variables independently predicted state anxiety in HPV positive women: perceived risk of developing cervical cancer; and, not understanding the meaning of the smear test result.

Conclusion: In the short term, informing women with an abnormal smear test result that they were HPV positive was associated with high levels of anxiety. There was no evidence that receipt of an HPV negative result was reassuring in women with an abnormal smear test result. Studies are now needed to determine whether such high levels of anxiety can be avoided or reduced by increasing women's understanding of the meaning of an HPV positive result combined with an abnormal smear test result.

Osteoarthritis, identity and coping: An interpretative phenomenological approach

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Background: Osteoarthritis (OA) is a common painful disease of the joints affecting 15 per cent of the population age 55 or above (Yelin 1992, McAlindon *et al.*, 1992), with a higher incidence in women (Society for Women's Health Research, 2000). The aims of this phenomenological study was undertaken to examine the personal meanings that OA holds for the participants and the responses they make to their condition.

Method: Three women attending an inner London hospital for outpatient treatment for OA were interviewed using a semi-structured approach within the context of an Interpretative Phenomenological Approach (IPA) (Smith 1995).

Findings: The findings demonstrated that the experience of OA goes well beyond a physical perception of symptoms. In particular the women's identities emerged as a strong context within which the meaning and impact of OA was interpreted and a response to living with the disease was made. The narratives suggested that pre-morbid identity may function as a springboard for subsequent coping attempts. Two of the women's coping responses were aimed at preserving their pre-morbid identities, whereas the third person's was totally undermined by the disease. Social comparisons were used both as a source of encouragement and fear.

Discussion: This study found Identity to be an important construct which drives both the interpretation and meaning of the disease to the individual and then plays an important role in subsequent coping attempts. These findings also converge with existing literature in confirming the role of social comparisons and active and passive coping in adaptation to chronic disease.

Emotional disclosure and health: The role of emotional intelligence

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Background: Research suggests that emotional disclosure can boost autonomic nervous system activity, immune functioning and physical health. Individuals differ in 'emotional intelligence', i.e. their skill in identifying and regulating their feelings and managing those of others. As yet, little research focus has been placed on the role that emotional intelligence plays in the relationship between the expression of emotions and health status. The present study aims to examine this issue.

Methods: 51 undergraduates (75 per cent female, mean age = 24) were initially assessed on levels of physical and psychological health and emotional intelligence. After completing an emotional disclosure task on a daily basis for a period of seven days, participants health was again assessed. It was predicted that psychological and physical health would improve from Time 1 to Time 2, and that individuals lower in emotional intelligence would demonstrate greater health improvements due to increased opportunities to express their emotions.

Findings: In general, results support the notion that emotional disclosure has a positive impact on health. Significant differences were found in levels of physical symptomatology before and after completing the emotional disclosure task for all participants ($p < 0.001$). Levels of psychological distress were improved for those lower in emotional intelligence only ($p < 0.05$).

Discussion: Further research is necessary on the role that emotional intelligence plays in the relationship between emotional disclosure and health. A large more heterogenous sample should be utilised and the emotional disclosure task should be for a longer duration. Physiological markers of health status might also be utilised.

Applying the Theory of Planned Behaviour to decision-making and behaviours among people attending a genetic clinic with family history of colon cancer

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Background: It is estimated that five to 10 per cent of colon cancers have an inherited basis. Genetics clinics offer genetic testing for families in which there is a strong history of colon cancer. People who carry the gene are offered regular colonoscopy to remove pre-cancerous polyps and are advised to adjust their diet to prevent the growth of polyps.

Methods: IPA was used to examine the applicability of elements of the Theory of Planned Behaviour (TPB) in the assessment of factors influencing attendance at colonoscopy, genetic testing and lifestyle changes. Interviews were held with 20 people before and after receiving a genetic test result. The interviews explored beliefs about colon cancer, genetic testing and colonoscopy; the relationship between lifestyle factors and bowel cancer and the influence of normative beliefs and significant others.

Findings: Decisions to have a genetic test and colonoscopy were influenced by the consultant's views, previous experience of colon cancer, the influence of female family members and a desire to reduce personal and family risk. Whilst colonoscopy was believed to be unpleasant, this rarely influenced the decision to undertake the procedure. Many people failed to recognise the link between diet and colon cancer and the disease was often attributed to factors outside the individual's control.

Discussion: The findings show that the components of TPB may be of some value in understanding these health behaviours. However, a more complete analysis needs to examine the ways in which factors such as prior experience, risk perception and beliefs about personal control influence attitudes and consequent behaviours.

Work demands, job satisfaction, psychological well-being and stress in academics

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Background: Studies suggest an increase in stress with escalating work pressure among university academics (see, for example, Winefield & Jarrett, 2001; Kinman, 1998). The present, ongoing study extends on recent work by looking at: (a) the impact of work demands on job satisfaction, job strain and psychological well-being; (b) the mediating effects of negative affect (trait anxiety) and various coping strategies on the association between job demands/strain/satisfaction and psychological well-being; and (c) testing the demand-control-support model (Johnston *et al.*, 1989; Dollard *et al.*, 2000).

Method & Design: A survey design. Questionnaires were distributed to academic staff in a UK university via the university's internal mail.

Participants: 185 male and female academics. Measures: Measures included the Work Environment Scale (Moos, 1974), COPE Scale (Carver *et al.*, 1989), Trait Anxiety Inventory (Spielberger, 1978), Generalised Self-efficacy Scale (Schwarzer & Jerusalem, 1993), Job Satisfaction Scale (Warr, Cook & Wall, 1979), The Maslach Burnout inventory – General Survey (Schaufell, Leiter, Maslach & Jackson, 1996) and the GHQ-12 (Goldberg, 1978).

Analyses: Multivariate statistical analysis. **Findings/Discussion:** Descriptive analyses show relatively high levels of psychological distress ($M = 13.66$, $sd = 6.78$) and relatively low levels of job satisfaction ($M = 63.70$, $sd = 14.37$). Preliminary multiple regression analyses identify trait anxiety and coping strategies such as behavioural and mental disengagement as predictors of psychological well-being and job satisfaction and provide support for the demand-control-support model in predicting job satisfaction and job strain. The present findings will contribute to the accumulating literature on occupational stress among academic staff members in UK universities.

Emotional labour in the clergy

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Background: Emotional labour is the effort involved in managing feelings when the work role specifies (explicitly or implicitly) that particular emotions are routinely 'shown' to customers, students, patients, etc. Although findings are inconclusive, there is evidence that emotional labour can have negative consequences for the individual. Research has been conducted on the nature and impact of the phenomenon in other caring professions, but little is known about the emotional demands experienced by members of the clergy. This study aimed to examine relationships between several aspects of emotional labour (emotional dissonance, frequency, intensity, variety and deep and surface acting) psychological health and job satisfaction. Also assessed was whether role involvement and social support moderated any relationships found.

Methods: Cross-sectional survey. Seventy-four male members of the clergy completed a series of self-report questionnaires.

Findings: In general, significant relationships were found between emotional labour and outcome measures: e.g. emotional dissonance and surface acting was positively correlated with psychological health ($p < 0.05$ and $p < 0.01$) and negatively related to job satisfaction (both $p < 0.05$). Role involvement moderated the relationship between emotional labour and psychological distress and job satisfaction. In general, priests with longer service and those who had received training in interpersonal skills reported lower levels of emotional labour and higher levels of psychological health.

Discussion: Suggestions are made for future research on the emotional demands faced by this little-researched occupational group.

Predicting infant feeding intentions and behaviour using an extended Theory of Planned Behaviour: Utility of moral norms, descriptive norms and self identity

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Background: This study utilised an extended version of the Theory of Planned Behaviour (TPB; Ajzen, 1991) to investigate the factors that influence the infant feeding choice of primiparous women. The predictive utility of additions to the model (descriptive norms, moral norms, and self-identity) were also examined.

Methods: Using the 1998 Department of Environment Transport and the Regions (DETR) data, areas of deprivation were identified in Birmingham, Bradford, Leeds, and two London boroughs. A total of 411 women from these areas were recruited into the project. 301 participants returned completed questionnaires (response rate 73 per cent). These participants subsequently provided information regarding how they had fed their baby at discharge from hospital ($N = 236$), two weeks ($N = 236$) and six weeks ($N = 232$).

Findings: The TPB provided good prediction of intentions ($R^2 = 0.60$; attitude, subjective norm and perceived behavioural control significant ($p < 0.001$)). Moral norms, but not descriptive norms, explained additional variance in intentions ($p < 0.001$). In addition, self-identity explained significant additional portions of the variance in intentions ($p < 0.001$) over and above the TPB variables. The TPB also predicted behaviour well (83 per cent correctly classified at discharge, 82 per cent correctly classified at two weeks, 71 per cent correctly classified at six weeks). Intention, but not Perceived Behavioural Control (PBC), significantly predicted behaviour at discharge and two weeks ($p < 0.001$), whereas both intention and PBC were predictive of behaviour at six weeks ($p < 0.05$).

Discussion: These findings suggest the need for a broader conception of normative influences on intentions, and add to a growing body of literature supporting the inclusion of self-identity in the TPB.

Symptom reporting and adherence in a group of patients taking anticoagulation treatment

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Background: The Common Sense Model (CSM) (Leventhal *et al.*, 1997) suggests that symptom reporting is a key variable in the formation of illness beliefs and coping behaviours including medication adherence. This set of studies used the CSM to examine this relationship in patients who are prescribed the prophylactic treatment warfarin, as warfarin users may be asymptomatic. It was hypothesised that asymptomatic patients may be less likely to take their medication. **Methods:** Three cross-sectional studies were carried out. Two samples of patients were recruited from an anticoagulation outpatient clinic ($N = 73$, $N = 143$) and one from GP practices ($N = 71$). Patients completed questionnaires assessing their illness perceptions (IPQ Moss-Morris *et al.*, 2002) and treatment adherence (MARS-5 Horne *et al.*, in preparation). Analysis of Covariance was used to determine differences in adherence to treatment between symptomatic and asymptomatic patients.

Findings: Patients taking warfarin treatment and who report symptoms related to their medical condition were less likely to be adherent to their treatment. Symptomatic patients were more likely to perceive more negative consequences as a result of their illness and report greater emotional distress towards their illness. Symptomatic patients also had more concerns about their treatment and reported more anxiety, depression and negative affectivity.

Discussion: Interventions based on the CSM to improve warfarin adherence may be especially effective in patients who are symptomatic.

Using implementation intentions to control stress. Can we use internal cues to control behaviour?

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Background: Implementation intention (II) research tends to use an external cue for the critical situation at which behaviour will occur. Health psychologists are often interested in controlling behaviours where the external situations may be hard to define. This study compared an II where the critical situation is an internal state with a traditional II.

Methods: 101 students were randomly assigned into three groups: control, internal II and external II. All participants completed a questionnaire including the perceived stress control technique to use over the following week. The internal II group made the action plan 'When I feel x (e.g. my heart pounding) I will do y (e.g. visualisation)'. Behaviour (using the technique) and perceived stress were measured a week later.

Findings: An ANOVA showed a significant effect of condition on behaviour ($F(1,97) = 10.369, p < 0.0001$). Post-hoc analyses revealed significant differences between the control group and both II groups but no significant differences between the different IIs. A 2x3 split-plot ANOVA showed a significant times x condition interaction for perceived stress ($F(2, 97) = 7.893, p < 0.001$).

Discussion: An II based on an internal state was as effective as an external cue in changing behaviour. This change in behaviour successfully reduced perceived stress. This has important implications for behaviours where an external cue is not readily identifiable.

Self-monitoring of methotrexate in patients with rheumatoid arthritis

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Background: Out-patient appointments for RA patients requiring drug monitoring often result in little or no intervention (Hewlett *et al.*, 2000). A programme for oral anti-coagulation therapy demonstrated successful patient self monitoring and improvement in treatment-related quality of life measures (Cromheeke *et al.*, 2000). The present study evaluated whether following training, RA patients maintained on Methotrexate can successfully monitor their blood results and symptoms and initiate an out-patient appointment when necessary.

Method: 50 RA patients on Methotrexate attended a two-hour training programme which emphasized monitoring of blood results and symptoms. Patients were sent and assessed their monthly blood results over a four-month period. They assessed whether (on the basis of pre-determined agreed criteria) their blood results or severity of symptoms necessitated an out-patient appointment. In order to examine predictors of success and the impact of the programme, participants completed a number of psychological tests prior to an on completion of the programme.

Findings: Over a four-month period a mean score of 95 per cent correct judgements was achieved. Analysis revealed most errors were only made in month one with the majority of participants producing 100 per cent correct assessment of blood results in months two, three and four. Patient satisfaction with the programme was high.

Discussion: Following training RA patients on Methotrexate can successfully monitor their blood results and appropriately initiate follow-up appointments. Participants have a better understanding of their treatment process and greater involvement in their care. Further development of this programme will determine the cost effectiveness of this alternative delivery of care.

Personality and smoking: Applying the Five Factor Model

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Background: Examination of the associations between personality trait dimensions, smoking variables and smoker status may help to elucidate the aetiology of nicotine dependence and contribute to our understanding of individual treatment response. Empirical investigations of the personality-smoking relationship have been inconclusive, and few studies have used contemporary conceptualisations of personality. The present study explored the relationship between the Big Five (B5) personality dimensions and smoking variables in a sample of 139 smokers and former-smokers.

Methods: Participants completed a questionnaire package comprising a 50-item measure of the B5 trait dimensions, validated measures of dependence and craving state, and an assessment of smoker history/typology (composed of qualitative and instrumental items).

Results: Hierarchical regression analyses indicated that four of the five personality dimensions were associated with the assessed smoking variables. Smokers with low Emotional Stability (ES) were more likely to exhibit greater dependence on nicotine. Smokers low in ES, Agreeableness (A), and Conscientiousness (C) were more likely to report higher levels of craving. Smokers low in Surgency (S) and ES were more likely to report mood-related smoking behaviour, and to endorse a greater variety of situational triggers. Smokers with high S scores were more likely to report craving cognition in terms of reward (versus avoidance of a negative state).

Discussion: Different traits relate to different smoking variables, suggesting that the inconsistency in the personality-smoking literature to date may partly be attributable to dependent variable choice. The implications of the study for the assessment of relevant individual-level variability will be discussed.

Predictors of irritable bowel syndrome following campylobacter infection: A test of the cognitive behavioural model

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Background: Irritable bowel syndrome (IBS) is a common and distressing gastrointestinal disorder. The cause of the illness is largely unknown. The purpose of this prospective study was to investigate the role of cognitive behavioural factors in the development of IBS following an acute bout of campylobacter infection.

Methods: 756 patients with serological evidence of campylobacter gastroenteritis were recruited through general practitioners throughout Auckland. Participants completed an initial questionnaire at the time of acute infection which included the Perceived Stress Scale, the Illness Perception Questionnaire-Revised (IPQ-R), the Negative Perfectionism Scale, and a new measure of Behavioural Responses to Symptoms designed specifically for this study. Three months after the initial infection participants completed a second questionnaire asking about their bowel symptoms, to determine whether they were new cases of IBS.

Results: 92 per cent of the participants completed the second questionnaire and 14 per cent of these met Rome criteria for IBS. A series of ANCOVAs controlling for age and gender showed that when compared to non-cases, cases of IBS had significantly higher perceived stress scores, negative perfectionism scores and a 'crash and burn' behavioural response to their symptoms at the time of acute infection. There were no differences between the groups on the number of symptoms reported at time one, and the amount of time off work.

Discussion: This is the first study to demonstrate a prospective link between perceived stress and the onset of IBS. Patients' personal expectations of themselves (high negative perfectionism) and tendency to push themselves too hard and then collapse at the time of acute gastrointestinal infection also appear to be significant risk factors for the illness.

Depressed and anxious mood in patients who have been admitted to hospital with heart failure: The role of illness beliefs

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Background: Heart failure is a major health problem with profound detrimental effects on psychological well-being. Depression has been found to be associated with greater morbidity and mortality in heart failure. This study investigates the beliefs of patients with heart failure and their inter-relationships with mood.

Methods: 68 patients who had been admitted to hospital with heart failure were assessed immediately prior to discharge on depression and anxiety (HADS) and illness beliefs (IPQ).

Findings: 19 per cent of patients scored within the probable clinical range (> 11) for depression and 25 per cent for anxiety. Correlations indicated that greater symptom severity ($p < 0.005$), perceived negative consequences ($p < 0.001$), and belief in a longer timeline ($p < 0.005$) were associated with higher depressed mood scores. A stronger belief in the cure or control of heart failure was associated with a less depressed mood ($p < 0.005$). In a multiple regression, these factors together predicted 24 per cent of the variance in the depressed mood. No correlations were found between IPQ variables and anxiety.

Discussion: Depressed but not anxious mood was associated with patients' beliefs about their heart failure. Illness beliefs could be targeted in interventions aiming to improve depressed mood in patients with heart failure.

Effects of baseline information when communicating risk reductions in the domain of health

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Background: Two experiments investigated effects of improved presentation formats of absolute risk reductions. It was predicted that including the baseline risk (Experiment 1) and presenting both relative and an absolute risk reduction (Experiment 2) would lead to higher ratings of effectiveness and likelihood of undergoing treatment.

Methods & Design: Both experiments were questionnaire-based, two-factor between participant designs (Experiment 1: with/without baseline x absolute/relative risk reduction; Experiment 2: with/without baseline x with/without relative risk reduction). Participants and

Procedure: In a written scenario, participants ($N1 = 190, N2 = 192$) were told that an influenza epidemic would hit Britain. In both experiments, half were informed about the baseline risk of flu (20 per cent). Vaccination would reduce the risk by half. Relative risk reduction was communicated as '... is reduced by 50 per cent' and the absolute as '... is 10 per cent lower'. Measures were taken on six-point Likert scales and analysed with two-way ANOVAs.

Findings: If the baseline was communicated, participants were significantly more satisfied with the information, found it significantly clearer, and ratings of effectiveness did not differ between the relative and absolute groups. Inclusion of baseline information in Experiment 2 also led to significantly higher ratings of likelihood of being vaccinated. In contrast, communicating both absolute and relative reductions did not improve various ratings.

Discussion: Presenting the baseline risk when communicating risk reductions was beneficial, but simultaneous communication of absolute and relative risk reductions was not. The findings are important for health, because unambiguous presentation formats of risk reductions should lead to better decision making by both, professionals and patients.

Are general and specific self-efficacy beliefs related to self-examination behaviour?

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Background: Following surgical treatment, breast cancer patients worry about a possible recurrence. Breast self-examination (BSE) is a way to detect a possible lump. Bandura's Social Cognitive Theory Learned predicts that women would be more likely to engage in BSE if they had higher Self-Efficacy beliefs. The aim is to assess relationships between women's self-efficacy beliefs and their breast self-examination behaviour currently and predictability over time.

Method: The patients were 31 breast cancer patients attending standard follow-up protocols for the detection of recurrence in an oncology outpatient unit in Alicante (Spain). They had had unilateral mastectomy and were currently free of disease. They completed: (a) General Self-Efficacy Scale (GSES; Baessler & Schwarzer, 1996, preliminary validation Martin-Aragon, Pastor, Lopez-Roig, Rodriguez-Martin & Terol, 1997); (b) a specific self-efficacy questions; and (c) assessment of frequency of BSE. Data were collected at three times.

Results: Women who carried out breast self-examination had more general self-efficacy (efficacy in managing difficult events) ($t = -2.84$, $p < 0.01$) and perceived greater specific self-efficacy (efficacy in carrying out a correct self-examination and in finding a lump in their breasts) ($t = -5.87$, $p < 0.001$). Moreover, specific control belief in breast self-examination was a better predictor of breast self-examination behaviour than GSES at first interview ($R^2 = 0.21$, $\Delta = 0.42$, $p < 0.001$) and across time ($R^2 = 0.17$, $\Delta = 0.41$, $p < 0.001$), ($R^2 = .13.8$, $\Delta = 0.38$, $p < 0.001$).

Discussion: The results confirm the hypothesis that self-efficacy, especially specific self-efficacy, predict BSE. It may, therefore, be possible to identify patients in likely to engage in BSE.

Perceived control in childbirth: Implications for the prevention of post-partum post-traumatic stress disorder

K.V. NEWBY & O. DUNN, Health Services Research Centre, Coventry University.

Background: This study aimed to provide evidence to support a theoretical relationship between loss or lack of perceived control over the outcomes of childbirth related to mother/child survival or well-being, and the post-partum development of PTSD.

Methods: 11 women between six and 16 weeks post-partum were interviewed about their experiences of childbirth. The participants were identified as having experienced either high or low perceived control (PCON; Wallston, 1989) during childbirth. Two participants within the low perceived control group had clinically significant symptoms of PTSD. Transcripts were analysed using IPA.

Findings: The low perceived control group described experiencing a birth in which desires for childbirth were threatened. Women with symptoms of PTSD, experienced a threat to desires relating to their own or their child's survival or well-being. Participants within the high perceived control group experienced a birth in which no threat to desirable outcomes was perceived. Aspects of childbirth that were supportive or detrimental to perceptions of control over the achievement of outcomes were identified. These consisted of responses taken to situational demands, perceived social support from health professional/partner, the extent to which the reality of birth met with the mother's expectations, pain and pain relief.

Discussion: On the basis of the findings, practical suggestions were made as to how women could be best supported in childbirth so as to maximise opportunities for perceived control. Suggested changes related to the content of formal antenatal preparation classes, the use of

copied strategies during birth and the support provided by health professionals/partners. These suggestions not only have the potential to impact upon the prevention of post-partum PTSD but also to positively impact upon participants' overall satisfaction with the childbirth experience.

Differences in the sexual experience and attitudes of adolescents: A case for the provision of sex education and sexual health services that are sensitive to gender and ethnicity

K.V. NEWBY & L. WALLACE, Coventry University.

Background: This study investigated the sexual behaviour and attitudes of adolescents.

Methods: A cross-sectional survey of 381 white and Asian adolescents aged 13 to 16-years-old examined reported sexual activity, contraceptive use, and attitudes towards the provision of sex education and sexual health services.

Findings: There was no difference in level of sexual experience according to gender ($\chi^2(1) = 0.182$, $p = 0.670$). White adolescents were found to be significantly more likely to report having ever had sex than Asian adolescents ($\chi^2(1) = 5.698$, $p = 0.017$). A significant relationship was not found between reported condom use and gender ($\chi^2(1) = 3.162$, $p = 0.075$) or ethnicity ($\chi^2(1) = 1.723$, $p = 0.189$). Further analyses revealed disparities in preference for sex education and sexual health services. Boys for example, reported a preference for information from non-personal sources, such as websites ($\chi^2(1) = 14.515$, $p < 0.0005$) and the radio ($\chi^2(1) = 9.229$, $p = 0.002$) whereas, more girls than boys wanted this type of information from parents ($\chi^2(1) = 8.218$, $p = 0.0004$) of friends ($\chi^2(1) = 6.564$, $p = 0.010$). White adolescents were found to have a greater preference for information from their parents than did their Asian counterparts ($\chi^2(1) = 6.112$, $p = 0.013$). Boys reported finding sex education significantly more enjoyable than girls ($t(396) = -2.236$, $p = 0.026$) and also reported feeling more comfortable during classes ($t(396) = -2.069$, $p = 0.039$). Girls were found to have a greater preference for small group work than boys ($\chi^2(1) = 10.083$, $p = 0.0001$) and also reported a preference for single sex groups ($\chi^2(1) = 24.194$, $p < 0.0005$).

Discussion: This study found support for the theory that sex education and sexual health services need to reflect gender and ethnic differences in the sexual experience and attitudes of adolescents. On the basis of these findings, practical suggestions were made as to how education and services could be more sensitive to the differing needs of these groups. The provision of more appropriate interventions may be of vital importance in reducing the rates of STI's and unwanted pregnancy in the UK.

Illness representations and coping in inflammatory bowel disorder – a comparison of perceptions held by adolescent sufferers and their main supporter

M. NICHOLLS & D. STEWART, University of Luton.

Background: This exploratory study ($N = 22$) examined differences in illness representations of the person with inflammatory bowel disorder as perceived by sufferer and main supporter. The coping strategies used by the sufferer and main supporter were also assessed.

Method: A cross-sectional design was used. IPQ-R and COPE were sent to families who identified their willingness to participate.

Findings: Between the groups significant differences were found between treatment control ($p = 0.008$), mental disengagement ($p = 0.001$), and denial ($p = 0.46$).

Discussion: Both groups had similar illness perceptions – adolescents reporting higher levels treatment control – this finding supports an earlier argument (Weinman *et al.*, 1996) that suggests that personal and treatment control should be considered as distinct sub-categories of the 'control' illness perception. Adolescents had used mental disengagement as a coping strategy more

than their supporters as well as denial. It is intended that the findings from this investigation will be used to inform a large future study comparing illness representations, coping and outcome as perceived by both the sufferer and main supporter.

Facilitatory and inhibitory effects in implicit processing of positive and negative expectancies in smokers and non-smokers

A. NIYAZI & I. ALBERY, South Bank University.

Background: To test whether priming with different types of words would effect processing of different smoking outcome expectancy words and whether activating those would have a facilitation or inhibition effect in the modified Stroop task. Also to see whether these implicit measures would correlate with self-report measures.

Method: Fagerstrom Nicotine Test was used to detect smokers ($N = 24$) and non-smokers ($N = 24$) among the university students. All participants were primed, using Scrambled Sentence Task, either with smoking or neutral words prior to a modified Stroop task. In this task they received one of the four orders of word presentation with categories of smoking, neutral, positive and negative expectancy. After those implicit measures, Smoking Consequences Questionnaire (SCQ) was used as explicit measure of smoking outcome expectancies.

Results: Analysis revealed a main effect of Group ($F(1,36) = 5.619$, $p < 0.05$). Smokers had an interference score of 56.4 ms, whereas non-smokers had an interference score of -11.5 ms. This shows that smokers were slower to smoking, positive and negative words, whereas non-smokers were slower to neutral words. Smokers were slowest to negative words (91.5 ms), faster to smoking words (62.1 ms), and fastest to positive words (15.8 ms). On the other hand, non-smokers were slowest to smoking words (0.28 ms), faster to positive words (-9.1 ms) and fastest to negative words (-25.7). Thus, after being primed with smoking words, smokers showed inhibition for positive, negative expectancy and smoking words and facilitation for neutral words. Also SCQ scores did not correlate with the modified Stroop interference scores.

Conclusion: Results are important in understanding the role of automatic and implicit cognitive processing in addiction.

Psychological outcome and quality of life following liver transplantation: A controlled, prospective, single-centre study

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Background: Liver transplantation is a well-established treatment for liver failure. Prolongation in survival is accepted, but the long-term effects of liver transplantation on cognitive and psychological outcome are unclear.

Methods: In the present study, psychological data were prospectively collected in 164 patients who were assessed for liver transplantation. Memory impairment, psychomotor slowing, anxiety and depression were commonly observed.

Results: Severity of liver disease at assessment was significantly associated with slowing of reaction time. Memory impairment distinguished those who were not listed for transplant because of illness severity. One year post transplant, follow up data from transplanted patients revealed significant improvement in most psychological domains relative to both healthy comparison participants and patients with chronic liver disease who were not transplanted. Immunosuppression (cyclosporin versus tacrolimus) did not have differential effects on quality of life, fatigue or affective status, although those taking cyclosporin showed greater

improvements at one-year follow-up on simple and choice reaction times. Elevated levels of anxiety and neuroticism at pre-transplant assessment were associated with poorer psychosocial outcome one year post transplant. Severity of liver disease was not related to psychological outcome at one year. Good psychological outcome at one year was maintained at three-year follow-up.

Intentions to use hormonal male contraception: The role of message framing

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Background: A hormonal male contraceptive is likely to be available soon. However, little research has investigated the factors that may influence intentions to use this form of contraception or examined the potential impact on intentions of how information is presented about this novel method of contraception. Message framing effects have been found in a range of health behaviours (e.g. condom use, breast self-examination), although there is much debate as to whether these effects are influenced by the type of behaviour: prevention or detection (Rothman & Salovey, 1997) or method of frame employed: attribute or goal (Levin, Schneider & Gaeth, 1998). The aim of this study is to investigate the effects of goal framing on intention to use hormonal male contraception. **Method:** A two-way, between participants ($N = 272$) message frame (gain or loss) by gender design was used. Participants were randomly assigned to either a gain or loss condition. Having read the framed message participants were then asked to indicate their intention to use the daily 'male pill' and an injection delivery method (lasting up to two to three months). Theory of Planned Behaviour variables were also assessed (attitude, perceived behavioural control, subjective norm).

Findings: The results provide evidence for a loss frame advantage. Participants in the loss frame condition rated their intentions to use both the daily 'male pill' and the injection delivery method as significantly more likely than those in the gain frame condition. No gender effects were observed.

Discussion: This is the first study to investigate the impact of message framing on intentions to use male hormonal contraception. The results have important implications for how information is presented about this novel male method and are consistent with Levin *et al.*'s typology of framing effects.

There's nothing so practical as a theoretical integration

S. ORBELL & M. HAGGER, University of Essex.

Background: Relatively few studies have attempted to compare or integrate different theoretical approaches. Such an approach may lead to greater parsimony in our theorising and, importantly, may provide clearer implications for practice. We examined the value of a multi-model approach to explaining health behaviour in the context of a prospective study of women's clinic attendance. Specifically, we examine the role of four theoretical accounts of attendance/non-attendance: (a) an avoidant response to emotional distress; (b) a reasoned action (Fishbein, 1975); (c) a planned behaviour (Ajzen, 1985); and (d) a coping response to illness threat (Leventhal *et al.*, 1980)

Methods: Women were recruited to the study at their first colposcopy clinic appointment. Women who were required to re-attend for treatment and follow-up were sent a questionnaire booklet containing variables specified by the four models three weeks prior to their second attendance. The response rate was 52 per cent ($N = 600$). Subsequent behaviour was determined objectively from clinic records.

Findings: Discriminant function analysis discriminated between three different behavioural groups; those who kept all of their appointments as scheduled, those who attended after receiving

further reminders and those who stopped attending even when reminded. Variables from each of the theoretical models were correlated with the discriminant functions. However, importantly, whilst self-regulation theory offered maximum discrimination of the 'reminded attenders', theory of planned behaviour variables maximally distinguished those who 'did not attend'. **Discussion:** The simultaneous examination of multiple models of health behaviour in a practical context demonstrates the value of considering both beliefs about illness and beliefs about performing a recommended behaviour.

Multidimensional health locus of control and response to kidney transplantation

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Background: This study investigated locus of control among kidney transplantees with still functioning and failed grafts and their satisfaction with the service, quality of life, plus side-effects of – and adherence to – immunosuppressant medication (functioning grafts only).

Method: All patients attending a north east Renal Service, who underwent kidney transplants between 1994 and 2000, were invited to take part. One-hundred-and-twenty-two successful and 15 failed transplantees agreed to participate. Each participant completed the MHLIC (Form C), Renal Service Satisfaction Questionnaire, SF-36 and two side-effects questionnaires designed for this study. Statistical analysis employed t -, Mann-Whitney U, Chi-squared and Fisher's Exact tests to compare participants' responses.

Findings: Two thirds of the failed transplantees had a 'pure' internal or chance locus of control, nearly five times the rate of those with functioning grafts, but none of them had a 'pure' external profile. Externals were significantly more satisfied ($p < 0.01$) with the renal service in most areas measured except waiting times, where internals were more satisfied ($p < 0.05$). On the SF-36, internals scored higher on each of PCS, GHP (both $p < 0.001$) and MCS ($p < 0.05$). However, internals also reported more shakiness ($p < 0.01$), mood swings ($p < 0.05$) and difficulty adjusting to their transplanted kidney ($p < 0.05$) on the side-effects measures. Externals reported more concerns with acne ($p < 0.05$). Those with high external or internal locus of control scores reported greater adherence to medication than those with low external or internal locus of control scores respectively ($p < 0.05$).

Discussion: This study has implications for future research and patient care.

Compliance of health care professionals with Integrated Care Pathways

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Background: This paper will describe a three-stage investigation of the compliance of health care professionals with Integrated Care Pathways (ICPs), which are documents encouraging standardisation of care incorporating EBP. In theoretical terms this work will test the error-violation distinction observed in other domains (transport, industrial safety). In practical terms it may explain why ICPs are often greeted with scepticism by healthcare workers.

Methods: Phase 1: Two scenarios were evaluated by 314 healthcare professionals in order to investigate whether judgements of health care professionals' behaviour varied according to whether it involved an error (mistake) or a violation (intentional). Phase 2: Focus group discussions explored and developed the findings of phase one. Phase 3: Healthcare professionals will respond to two scenarios in which non-compliance with an ICP is described as either an error or a violation.

Findings: Phase 1: The violation of ICPs was partially excused by healthcare workers who see the paperwork as unnecessary bureaucracy, and the EBP demands as a challenge to clinical autonomy. Phase 2: Confirmed the theoretical distinction between error and violation and its

relevance to compliance with ICPs. Phase 3: The responses of staff to error and violation will be compared in terms of their professional group and seniority.

Discussion: The Implementation of EBP in the form of ICPs is becoming more widespread. Careful attention must be paid to issues such as the number of professional boundaries the ICP crosses, and the involvement of those expected to use ICPs in their development and design. The introduction of ICPs to the staff who will work with them, and training in their rationale and use, must be adequately resourced if both errors and violations are to be minimised.

Supporting children of cancer patients: Staff attitudes, confidence and current practice

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Background: The diagnosis and treatment of a parent with cancer can be a stressful experience for the whole family. Evidence suggests that a third of children will experience significant distress and that anxiety is related to parental adjustment and quality of family communication about the illness. Medical and nursing staff can play a vital role in ensuring the needs of children are not minimised or overlooked either through direct support or referral to one of the growing number of specialist services. The aim of this study was to explore the current practice, attitudes and confidence of staff in dealing with their patient's children.

Methods: A questionnaire was distributed to staff working at the Beatson Oncology Centre, a regional cancer centre, and to two allied hospices. One-hundred-and-twenty-four questionnaires were returned from doctors ($N = 26$), nurses ($N = 58$), professionals allied to medicine ($N = 36$) and others ($N = 4$).

Findings: The majority of staff (92 per cent) had not received any training relating to working with children who have a family member with cancer. Whilst most staff (76 per cent) will ask patients if they have children, fewer record these details (59 per cent) and fewer still would consider speaking directly to the children (26 per cent). Few staff felt confident about assessing how patient's children were coping (17 per cent) or knowing when it would be appropriate to refer to a specialist service (28 per cent).

Discussion: Clinical Health Psychologists offering support to cancer patients and their families rely on primary caregivers for appropriate referral. However most staff lack specific training and many do not feel confident about assessing children's difficulties. Such training is crucial to meet the psychosocial needs of cancer patients with children.

Cancer genetic risk assessment: Does a distraction-based coping intervention reduce distress?

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Background: The aim of the study was to assess the effectiveness of a written distraction-based coping intervention in reducing distress in women undergoing cancer genetic risk assessment.

Methods:

Design: Participants were pre-randomised into treatment (distraction leaflet) or control condition and required to complete a postal questionnaire at three time points: upon referral, during the waiting period (four weeks post-referral) and after notification of risk status.

Participants: 47 female referrals into the Cancer Genetics Service for Wales (treatment $N = 24$; control $N = 23$) have completed their Time 1 questionnaires and 25 (treatment $N = 12$; control $N = 13$) have completed Time 2 questionnaires. Recruitment and data collection is ongoing.

Measures: Impact of Events Scale (IES; Horowitz, 1979); Coping Inventory for Stressful Situations (Carver *et al.*, 1989); Emotions & Appraisals (Smith & Lazarus, 1993).

Analysis: Repeated Measures ANOVA.

Findings: This preliminary analysis found that the intervention group were engaging in significantly less avoidance (as measured by the IES) at Time 2 than controls ($N = 24$, $p = 0.05$) and were experiencing less intrusive thoughts. This suggests that the intervention (distraction leaflet) reduced the level of intrusive thoughts, resulting in less need to engage in avoidance coping. Trends were also identified which, whilst not statistically significant, suggested that the intervention group were less anxious, more hopeful and more tranquil at Time 2 than controls.

Discussion: The intervention may help individuals to manage intrusive worries when undergoing cancer genetic risk assessment. The 'self-help' easily accessible nature of the distraction leaflet may offer a low-cost but potentially effective coping intervention which could be integrated into existing NHS services with minimal disruption.

Hands-off advice for breastfeeding women in hospital: Midwives' perceptions of a postnatal midwifery intervention

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Background: The Breastfeeding Best Start (BSB) study was commissioned by the Department of Health in 2001 to ask whether midwives could be trained to deliver a hands-off intervention to primiparous mothers wishing to breastfeed within 24 hours of delivery, and whether this new protocol increased breastfeeding duration. This project investigates midwives' perceptions of the BSB protocol tested and their beliefs about breastfeeding.

Methods: Participants were 170 hospital and community-based midwives, midwifery care assistants and midwifery managers. Data collection included open-ended anonymous questionnaires, focus groups and semi-structured interviews. Interpretative phenomenological analysis (IPA) was employed to explore individuals' beliefs and experiences.

Results: Findings across all three methodologies concurred. Midwives wanted to promote breastfeeding but believed the government does not provide sufficient resources to do so. Minimal staffing levels and inadequate equipment and space mean that teaching mothers to breastfeed is not prioritised. Midwives also felt the need for more breastfeeding training and more effective promotion of breastfeeding within midwifery units.

Discussion: The use of three different qualitative methods enabled an in-depth analysis of midwives' experiences, and triangulation of data collection and multiple analysts gave added validity to the findings. As a result of this investigation it is clear that further research is necessary to develop successful promotion and training packages addressing how best to provide breastfeeding care in hospital. Qualitative methods are useful in determining the nature of midwives' concerns and reasons for ambivalence about promotion of breastfeeding. These methods would be invaluable in exploring women's perceptions of breastfeeding care and postnatal support in order to design such packages.

Using an illness representations approach to understand change processes and outcome of a self-management intervention for rheumatoid arthritis

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Background: Rheumatoid arthritis frequently leads to chronic distressing symptoms and

severe disabilities. Self-management interventions may be helpful but little is known about change mechanisms. This study aimed to investigate whether self-management intervention outcomes were explained by illness representations or coping procedures?

Methods: 136 RA outpatients were randomly allocated to treatment or control groups. The treatment group was offered a group self-management programme. Participants were assessed at baseline, pre-intervention (six weeks), post-intervention (12 weeks) and follow-ups (six and 12 months). Assessments included self-report questionnaires, tender joint score and blood tests.

Findings: Illness representations and coping procedures moderated the effect of the intervention on future health outcomes (pain, occupational function and quality of life). Illness representations, and coping procedures mediated the relationship between experimental condition and future health outcomes (pain, disability, emotional distress, social function, quality of life and self-efficacy).

Discussion: Results are discussed in relation to the published literature, methodological limitations are described, theoretical and clinical implications delineated and areas for future research identified.

Spontaneous implementation intentions: Their importance for health intervention

A.J. PRESTWICH, R.K. LAWTON & M.T. CONNER, University of Leeds.

Background: Implementation intentions involve the planning of when, where and how a behaviour will be performed. Health-intervention studies typically involve the request for individuals to form such plans but fail to account for people in the control group who form them spontaneously. This study compared people asked to form implementation intentions, those using them without instruction (spontaneous formers) and those doing neither. The study also explored individual characteristics and the motivational bases that differentiated spontaneous formers from those who did not specify a plan.

Methods: 225 participants were asked to choose a behaviour that they intended to perform once in the next two weeks. Half were asked to form implementation intentions.

Findings: A variety of behaviours including registering with a doctor (72 per cent) were chosen. Of those not asked to form implementation intentions, 52.8 per cent did so of their own accord. Chi-square analyses showed that whilst there was no difference in the success of spontaneous formers and those asked to form implementation intentions, both outperformed a control group. Logistic regression showed that people high in conscientiousness and pursuing goals for controlled, rather than autonomous, reasons, were those most likely to spontaneously form plans.

Discussion: Using implementation intentions, as an intervention, would be most beneficial for health behaviours driven by autonomous motivation and for individuals lacking in conscientiousness. The failure of previous implementation intention studies to control for spontaneous planning may mean implementation intentions are even more important than previously reported, in the translation of healthy intentions into healthy behaviour.

Quality of life and breast cancer treatment: Patient reported side effects after two to three years of adjuvant tamoxifen

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Background: The benefits of hormone therapy in prevention, adjuvant and advanced breast cancer are well documented and regarded as less toxic

than many other cancer treatments. However, recent research suggests that clinicians may underestimate the adverse impact hormone treatments may have on patient's quality of life. The standard adjuvant treatment recommendation for post-menopausal women with oestrogen receptor positive tumours is for them to receive five years of tamoxifen, a selective oestrogen receptor modulator. The study provides an opportunity to examine patient reported endocrine side effects of women who have been taking tamoxifen for two to three years.

Method: In this multi-centre trial, women with primary breast cancer treated surgically and with adjuvant tamoxifen for two to three years, are randomised to either continuation of tamoxifen or exemestane, a novel aromatase inhibitor, to compete a standard of five years endocrine treatment. Five-hundred-and-thirty-eight women recruited to the Quality of Life (QOL) sub-protocol were assessed at baseline using the FACT-ES questionnaire, a well-validated measure incorporating an endocrine subscale specifically developed for use in determining the impact anti-oestrogen therapy has on patient quality of life.

Results: Endocrine subscale data indicated 38.5 per cent of patients reported having hot flushes 'quite a bit' or 'very much'. Further frequently reported symptoms included: weight gain (34 per cent), night sweats (27.5 per cent), loss of interest in sex (22.1 per cent), bloated-ness (13.4 per cent), breast sensitivity (12.4 per cent) sleep difficulty (19.3 per cent), vaginal dryness (15.5 per cent), lack of energy (13.8 per cent) and mood swings (10.7 per cent).

Discussion: Comprehensive evaluation of quality of life and patient reported side effects of hormone therapy is vital to help determine supportive interventions needed to accompany the most efficacious treatments and to aid decision-making.

Alcohol consumption as a coping mechanism after MI: The role of illness representations, anxiety, depression and stress

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Background: The study aimed to assess the influence of illness representations, anxiety, depression and stress upon post-MI alcohol consumption. The study adopted Leventhal's Self-Regulatory Model of Illness Behaviour (SRM) (1980). A quantitative design was used to explore the associations of illness representations, anxiety, depression and stress upon post-MI alcohol consumption. A qualitative design was used to explore the relationship between psychological stress and alcohol consumption in further detail and also to investigate the patients' experience of the stress management component of the course.

Methods: Statistical analyses were performed upon the pre-existing database of 349 patients who had completed the Time One (Before programme) cardiac rehabilitation questionnaire. The questionnaire included the Illness Perception Questionnaire (IPQ), Hospital Anxiety and Depression Scale (HADS) and measures of psychological stress and alcohol consumption. Semi-structured interviews were carried out with nine cardiac rehabilitation patients. IPA was performed upon the verbatim transcripts of these interviews.

Findings: Forward Stepwise Conditional Logistic Regression revealed that pre-MI alcohol consumption ($\beta = 2.281$, $p < 0.01$) predicted post-MI alcohol consumption. The timeline illness representation ($\beta = -0.702$, $p < 0.05$) and confidence to reduce stress ($\beta = 0.232$, $p < 0.05$) were negatively associated with post-MI alcohol consumption. The major themes which emerged from the IPA analysis included: 'Awareness and Control', 'Working Situation', 'Ageing and Comparison' and 'Support'.

Discussion: Patients beliefs concerning the chronic nature of their heart attack and confidence to reduce stress predicted appropriate post-MI alcohol consumption. This highlights the need for interventions to educate patients about

the chronic nature of their heart condition and also to provide stress management strategies.

The understanding of secondary prevention in cardiac rehabilitation

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Background: The study aimed to evaluate the understanding of secondary prevention among a sample of patients undergoing a hospital based cardiac rehabilitation programme. The National Service Framework (NSF) for Coronary Heart Disease (CHD) outlines the need to implement proven secondary preventive measures (Department of Health 2000). The challenge of treatment adherence in CHD is particularly difficult because of the complexity of treatments. Psychological factors are important predictors of adherence in CHD, outlined with the NSF. They can also be a barrier to making the lifestyle changes necessary to reduce cardiac risk (Pg 2, Standard 7). Individuals are believed to hold complex views about their illness and medication, which are thought to determine treatment adherence (Petrie & Weinman, 1997). The study adopted Leventhal's Self-Regulatory Model of Illness Behaviour (SRM) (1980). A qualitative design was used to assess the patients' illness and medication beliefs in relation to secondary preventive medication.

Methods: Semi-structured interviews were conducted with eight patients attending an eight week follow-up of the cardiac rehabilitation programme. The sample consisted of seven men and one woman with ages ranging from 56 to 72 years. The technique of IPA was used to analyse the interview transcripts.

Findings: The major themes which emerged from performing IPA upon the transcripts included the following: 'Searching for answers', 'Positive outlook', 'Relationship with health professionals and medical history' and 'Individual and medicinal control'.

Discussion: It is essential that patients understand that secondary prevention of CHD relies upon a combination of cardiac medication and their own health-related behaviours. The four major themes of this study highlighted patients' fundamental recognition of the controllability of their condition.

The effect of counselling style, ethnicity and culture on attitudes towards genetic counselling among Jewish and Bedouin respondents in Israel

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To evaluate the effects of ethnicity, culture and counselling style on the interpretation of nondirectiveness in genetic counselling, a questionnaire containing premarital and prenatal case vignettes in two versions (pessimistic/optimistic) was administered to 281 Jewish and 133 Bedouin respondents. The first study population was comprised of Jewish students enrolled in a university and a community college in the Negev (southern part of Israel). The second study population was comprised of Muslim-Bedouin college students from the same area. The majority of Jewish respondents interpreted the non-directive message as intended by counsellors, while the majority of Bedouin respondents did not. Counselling style was found to have a statistically significant effect on the interpretation of the general role of counselling. Gender and susceptibility were not found to have a significant effect on interpretation. Group differences are analysed through a cultural lens in which different interpretive norms can generate expectations for either nondirectiveness or directiveness.

Between acculturation and ambivalence: Knowledge of genetics and attitudes towards genetic testing in a consanguineous Bedouin community

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Background: The Bedouins of the Negev (southern part of Israel) are a community at increased risk for genetic diseases and congenital anomalies as a result of frequent consanguinity (particularly patrilineal parallel cousin Marriage) and under-utilisation of prenatal genetic tests due to a Muslim ban on abortion.

Objective: To assess the knowledge and attitudes of Bedouin schoolchildren and their teachers towards a community-based, premarital carrier-matching programme aimed at reducing the prevalence at birth of genetic diseases.

Methods: A questionnaire was presented to 61 teachers and 40 schoolchildren as part of guided interaction in small groups, conducted in Bedouin schools between 1999–2001.

Results: Susceptibility as well as knowledge of genetics were found to correlate with a positive attitude towards the genetics programme among both teachers and pupils. However, pupils had a lower knowledge index as compared to teachers, and their attitudes were slightly less positive.

Conclusion: The difference between teachers and pupils is discussed in the context of the latter's acculturation, which contradicts tradition and parental authority and can generate ambivalence. Attitudes are further discussed in the context of the Health Belief Model and the complex interplay of tradition, Islam, cousin marriage and biomedicine.

Prison staff coping with self-inflicted death in custody

L. REGAN, J. BORRILL, R. TEERS & T. CASSIDY, Thames Valley University & The Safer Custody Group, HM Prison Service.

Objective: To explore the incidence of trauma, and the factors that mediate the impact in prison service staff who have dealt with a self-inflicted death in custody in the previous three to seven months.

Design: A survey using interview and questionnaire data collection techniques. A sample of 48 prison service staff who had dealt with self-inflicted death in the previous three to seven months were interviewed and assessed on measures of trauma, problem-solving style, optimism, control and social support. Quantitative analysis shows that approx 38 per cent exhibit clinical levels of trauma and that trauma levels are mediated by optimism, problem-solving style, control and level of involvement in the incident. There was no direct impact of social support, though it did correlate with both problem-solving style and control. Qualitative analysis provides more detailed information on trauma symptoms and suggests that mission failure and dealing with Coroner's Courts are important aspects.

Conclusion: The prison service is currently working to reduce stress and it's national welfare service provides counselling and critical debriefing where resources allow. This research, when completed, will assist and inform the development and future direction of this service.

Random allocation to treatment arms in clinical trials: Ascertain the perspective of potential trial participants

E.J. ROBINSON, C.E.P. KERR, Keele University, A.J. STEVENS, R.J. LILFORD, D.A. BRAUNHOLTZ, Birmingham University & S. EDWARDS, Bristol University.

Background: Randomised controlled trials play a central role in modern medical advance, and they require participants who understand and accept the procedures involved. Evidence suggests that trial participants often fail to understand or remember that allocation to treatment arms is at random, and that at the outset there are no good

grounds for preferring one treatment arm over the others. Attempts to remedy this have focused on providing clear descriptive information about what will happen in the trial. Findings suggest difficulties may persist despite such efforts due to serious mismatch between the assumptions which underlie trial design and the assumptions which potential trial participants are likely to bring to bear when faced with trial information.

Methods: We report four experiments ($N = 82$; 67; 67; 128) involving members of the public aged 20 to 60+, who answered written questions about imaginary scenarios.

Results: (i) around half the participants did not accept that doctors could be completely unsure which of two treatments was better; (ii) most judged it unacceptable to suggest allocating at random when there was uncertainty about the best treatment; (iii) participants did not consider that doctors would be more certain which treatment was more effective with random allocation than with doctor/patient choice of treatment. That is, participants found random allocation unacceptable and saw no scientific benefits.

Discussion: Providing potential trial participants with accessible explanations of the scientific benefits of random allocation may help them make sense of trial information, and so remember it better, though they may still find randomisation unacceptable.

A model of the role of norms in the prediction of young women's sun-protective behaviour

N.G. ROBINSON & K.M. WHITE, Queensland University of Technology.

Two studies were conducted to develop a model of the role of norms in the prediction of young women's sun-protective behaviours. Study 1 was conducted to investigate the impact of ingroup norms and image norms on intentions to engage in sun-protective behaviour amongst approximately 100 recreational sportswomen. The study was based on the Theory of Planned Behaviour (TPB) and Social Identity Theory (SIT). This experiment compared supportive and non-supportive ingroup norms and media image norms on intentions to engage in sun-protective behaviour. Attitudes, intentions and level of ingroup identification were also assessed. Participants were given the opportunity to redeem a free sample bottle of sunscreen. Results provided support for the basic tenets of the TPB and the role of ingroup norms in this context. Additional support for the role of norms in the prediction of sun-protective behaviour was found in Study 2, a field study of approximately 300 young women who completed questionnaires in the context of an Australian beach. A two-week follow-up was also conducted to measure sun-protective behaviour. Results provided support for the basic tenets of the TPB and SIT. Structural equation modelling confirmed the role of both personal and ingroup norms for intentions to sun-protect amongst young Australian women.

Perceived stress and mental health among consultants in the north west of England

U. ROUT, Laxmi Medical Centre & R. ROUT, Cambridge University.

Background: Due to frequent changes in the National Health Service in the UK, the medical profession has found itself increasingly under pressure. Whilst research has been carried out on stress among junior doctors and general practitioners, little is known about stress experienced by hospital consultants. The aim of this study was to identify sources of stress, job satisfaction and mental health among consultants in the north west of England.

Methods: Both qualitative and quantitative methods were employed in this research. Thirty consultants were interviewed and a stressors questionnaire was constructed. A package of questionnaires containing job satisfaction, mental health and the stressors items were distributed to 200 consultants. One-hundred-and-thirteen questionnaires were analysed by using SPSS (Univariate, Bivariate and Multivariate Analysis were performed).

Results: The top stressors identified were: time pressure, NHS changes, lack of resources, conflict with management, unpredictable demands, increased expectations from patients and factors not under their control. The consultants were least satisfied with their hours of work, rate of pay and the recognition they get for their work. They were most satisfied with the clinical aspects of their jobs rather than administration. When their mental health was compared with junior doctors it was found that consultants had better mental health.

Discussion: This finding suggests that stress management programmes for consultants and other health care professionals need to be initiated and evaluated. There may be substantial benefit in initiating a support network for consultants.

Enabling communication about sexual problems: Views of a therapy team and their clients with multiple sclerosis

R. RUBIN, Canterbury Christ Church University College.

Background: Estimates suggest that up to 70 per cent of men with multiple sclerosis may be impotent, but less than 20 per cent of these patients will ever discuss this with health professionals. The aim of this study was to explore the reasons for difficulties in discussing sexual problems from the points of view of both a Disability and Rehabilitation Team and their male clients with multiple sclerosis.

Methods: 1: A focus group discussion was held with a multi-disciplinary disability and rehabilitation team of ten therapists. 2: Semi-structured interviews were conducted with ten clients of this team. Discussions focussed on facilitating discussion of sexual problems between therapist and client. Analysis was thematic, using elements of the PLISSIT model (Anon, 1976): P giving permission, and LI giving limited information.

Findings: Therapists were concerned at being 'intrusive' by discussing sex and seeming 'unprofessional' if they did not have enough information. They complained about total lack of training. Clients wanted permission to talk about sex, but found it extremely difficult to bring up the topic. Overall, it seemed that whether or not sexual difficulties were discussed was dependent on the therapist and not the client.

Discussion: These findings suggest that therapists need more training in enabling clients to talk about sexual difficulties, and more information. Currently, very little time or resources are allocated to this area, which is so crucial to clients' quality of life.

Introducing a new cross-culturally valid instrument for the exploration of distress in the General population – piloting Bart's Explanatory Model Inventory (BEMI)

K. RÜDELL, K.S. BHUI & S. PRIEBE, Queen Mary University of London.

Background: The varies across cultures making it difficult for health professionals to diagnose and treat it adequately. A cross-culturally valid instrument was developed to comprehensively access individuals' perspectives and document them. This pilot study's aim was to examine the instrument's ecological and concurrent validity and explore cultural differences in perceptions of distress.

Method: A two-phase design was used to explore perceptions of distress in the general population. Phase 1 included screening for distress with the General Health Questionnaire (GHQ) and the Bradford Somatic Inventory (BSI), demographic and cultural identity information. Phase 2 involved a detailed interview using the Clinical Interview Schedule Revised (CISR), BEMI, Illness Perceptions Questionnaire Revised and a Cultural Identity scale. We present data of six phase two interviews from individuals from White British cultural background five from Bangladeshi background. Concurrent and ecological validity was determined by comparing IPQ-R and BEMI

results qualitatively and cultural differences were assessed by independent t-tests.

Findings: The comparative analyses support the concurrent and ecological validity of the BEMI. We also found significant cultural differences in the identity, consequences and control domain. Bangladeshi individuals reported significantly more somatic complaints ($t = -4.08$, $p < 0.005$), social consequences ($t = -2.59$, $p < 0.03$) and less help-seeking behaviour ($t = 4.85$, $p < 0.005$).

Discussion: Although only tentative suggestions can be offered on the basis of small numbers, researchers and clinicians are advised to take cultural differences in mental health presentation and perception into consideration. Following additional replication and validation of the BEMI's reliability and validity (in progress), the use of the BEMI for screening and assessment of distress in multicultural settings is recommended.

The importance of illness beliefs on quality of life and psychological status in patients with ulcerative colitis and Crohn's disease

C.L. RUTTER, King's College London, A. DURHAM-HALL, University Hospital Lewisham, J. WEINMAN, King's College London & H.M. FIDLER, University Hospital Lewisham.

Background: Current treatment of IBD in the UK is largely biomedical; consisting of pharmacological maintenance therapy and routine out-patient appointments. More successful management of IBD may be served by understanding of the patient's unique and subjective situation, and their illness perception. This study was designed to measure the illness perception of IBD patients and to examine whether illness beliefs are related to the quality of life and psychological adjustment in IBD.

Methods: 68 IBD patients were recruited from the outpatient clinic of the Gastroenterology Department of University Hospital Lewisham. Patients completed the revised illness perception questionnaire (IPQ-R), the Hospital Anxiety and Depression Scale (HADS), and the Inflammatory Bowel Disease Questionnaire (IBDQ) – to examine health-related quality of life.

Findings: Patients who report that their bowel symptoms make them angry, worried and afraid, report that their illness has serious consequences, has been caused by stress, and their emotional state, and report that they do not understand their illness. Multiple regression analysis has shown that the illness perception of the IBD patients is significantly associated with their quality of life and anxiety and depression.

Discussion: These findings have important management implications regarding the education of IBD patients about their illness. Interventions should be designed to educate and encourage adaptive illness perception and discourage maladaptive illness beliefs.

Illness representation, coping and outcome in irritable bowel syndrome

C.L. RUTTER, King's College London & D.R. RUTTER, University of Kent at Canterbury.

Background: The majority of research using the illness representation model has focused upon observable, organic illness; little research has been directed at invisible, functional illness, even though a clear understanding of the cognitive mechanisms in functional illness is warranted.

Methods: Four studies were conducted to explore the illness representation of different populations of irritable bowel syndrome (IBS) sufferers over time, to examine whether these cognitions can predict simultaneous and subsequent outcome, and to determine if coping mediates the link between illness representation and outcome. Three of the four studies compared the responses of IBS patients to those of people with inflammatory bowel disease (IBD) (an organic illness). Six-hundred-and-sixty-five participants were recruited from three different populations: self-help groups ($N = 557$), primary care ($N = 61$) and secondary care ($N = 47$).

Findings: All four studies conformed that the illness representation of IBS sufferers does predict outcome – notably the level of anxiety 12 months later. All four studies demonstrated the stability of the representation pattern over time and the importance of the serious consequence component as a predictor of poor outcome. Avoidant coping was found to partially mediate the link between illness representation and outcome, but was not to contribute significantly to the illness representation itself. The predictive strength of the illness representation was stronger in IBS sufferers than IBD sufferers.

Discussion: We hypothesise that the strong influence of the representation is attributable to the functional status of the illness, but we cannot be sure until the work is repeated with other non-bowel functional illnesses.

The roles of perceived control and self-efficacy in predicting intentional non-adherence to the insulin-treated diabetes mellitus regimen

E.P. ST. LEGER, L.B. MEYERS, S.P. NEWMAN, University College London & J. HUREL, University College London Hospitals.

Background: This study aimed to provide further insight into the relationship between self-efficacy beliefs and other control beliefs within the context of a new behavioural domain, notably, adherence to the insulin-treated diabetes regimen.

Method: A cross-sectional, correlation design was adopted. 85 participants completed five self-report questionnaires, a measure of general self-efficacy, Regimen-Specific self-efficacy (R-S SE), general locus of control, Regimen-Specific perceived control (R-S PC) and Regimen-Specific adherence. Analyses were Pearson correlations and Multiple Linear Regression. Findings: R-S PC ($r = 0.27$, $p = 0.047$) was better at predicting adherence behaviour than the general measures of SE ($r = 0.027$, $p = 0.81$) and control (CHLC, $r = 0.01$, $p = 0.931$; PHLC; $r = -0.146$, $p = 0.203$). Hierarchical multiple linear regression analysis indicated that R-S PC explained more of the variance in adherence behaviour than R-S SE ($r = 0.27$, $p = 0.047$; $r = 0.191$, $p = 0.142$, respectively). R-S SE and R-S PC were significantly correlated with one another ($r = 0.575$, $p = 0.0001$). Principal components analysis reported a three-factor model with all factors incorporating both SE and PC items.

Discussion: Regimen-Specific measures of control are more predictive of adherence in insulin-treated diabetes than general measures of control. The two control components were highly correlated in relation to the insulin-treated diabetes regimen although distinctions can be observed depending on the regimen behaviour being measured.

Predicting testicular self-examination for cancer in men: Extending the Theory of Planned Behaviour with masculinity, knowledge and past behaviour

T. SALEEM & L.B. MYERS, University College London.

Background: Monthly Testicular Self-Examination (TSE) is simple to perform and effective in detecting abnormalities and has been recommended for early detection of testicular cancer. The objective of this study was to isolate predictive factors based on Aizen's (1985) Theory of Planned Behaviour (TPB) and extending the theory with three other predictors that have recently been implicated in TSE behaviour (masculinity, TSE knowledge and past TSE behaviour) to predict men's intentions to engage in TSE behaviour.

Method: 138 men completed a questionnaire measuring the constructs of TPB, masculinity, TSE knowledge and past TSE behaviour. **Findings:** Multiple linear regression analysis revealed that the proposed model was more successful than TPB model in explaining variance in intention to perform TSE by explaining 68 per cent of the variance in intention. All the variance

in intention was explained by the TPB constructs and past behaviour in predicting intentions, whilst masculinity (anti-femininity) construct was mediated via attitudes and perceived behavioural control (PBC).

Discussion: The result findings lend strong support for the extended TPB in explaining variance in intention. There was strong support for past behaviour as an independent predictor of intentions to perform TSE. Masculinity appears to act earlier on in the casual pathway being mediated by attitudes and PBC. This suggests theoretical based interventions designed to encourage men to TSE can be explained by TPB model but in addition need to integrate theories of masculinity and the influence of past behaviour.

Withdrawal-oriented therapy as a treatment for smoking cessation in the NHS

A.M. SANCHEZ & F.B. GILLISON, University of London.

Smoking cessation has major health benefits which apply to individuals with and without smoking-related diseases. Smoking cessation also has unpleasant withdrawal symptoms including irritability, poor concentration, urges to smoke, depression and weight gain. These symptoms are most severe in the two to four initial weeks, and some have been related to relapse. Specialist smoking clinics have become a prevailing model of treatment in the new UK specialist smoking cessation services within the NHS. The withdrawal oriented model of smoking cessation treatment (Hajek, 1989) is based on the notion that smokers seeking treatment are addicted to nicotine and helping smokers to overcome the initial withdrawal discomfort is the primary objective of treatment. Smokers receive a combination of psychological and pharmacological support in a group setting. The smoking cessation clinics in East London follow the withdrawal oriented model and are conducted by health psychologists. The group format of the treatment consists of a total of seven weekly sessions which takes advantage of the support and motivation the group can offer. Components of the programme link in with main cognition models within health psychology like promoting positive and realistic treatment and outcome expectations, social support (group dynamics and buddying system), setting implementation intentions to quit (quit date), reinforcing coping skills for difficult situations, constant reassurance for increased perceived control and self efficacy. Specialist smoking cessation clinics are a cost-effective and successful way of helping smokers to change their behaviour and maintain it long term. Health psychologists have an important role in developing and expanding existing services. The empirical findings and theoretical background which inform the components of this treatment package are outlined in this presentation.

Adding an affective component to the TPB: Two types of regret for two types of behaviour

T.M. SANDBERG & M.T. CONNER, University of Leeds.

Background: There is growing research to suggest that affective processes such as anticipated regret add explanatory value to the TPB (e.g. Richard, van der Pligt *et al.*, 1996). This TPB study, however, examined regret in a novel way in that a distinction was made between whether regret stemmed from inaction or action, and whether the behaviour considered was an immediate hedonic behaviour (IHB) (e.g. drinking too much) or a distal benefit behaviour (DBB) (e.g. eating healthily)

Methods: A total of 350 students from various universities logged on to a website and completed a prospective TPB questionnaire, looking at intentions to perform a variety of IHBs and DBBs. A total of 139 students completed the time 2 questionnaire looking at actual behaviour.

Findings: Regression analyses revealed that anticipated regret significantly and independently contributed to the amount of variance explained in intentions over all the behaviours. Moreover, it

was the most significant contributor in the majority of behaviours, even after the addition of past behaviour. There was, however, limited evidence to support either a direct effect of regret on behaviour or a moderating effect of regret on the intention-behaviour relationship. This is in contrast to previous research (e.g. Sheeran & Orbell, 1999).

Discussion: This study considered a variety of behaviours novel to the normal TPB research. It demonstrated not only that regret was the most significant contributor to the model in the majority of behaviours, but also that the nature of regret varied depending on behaviour type. This has practical implications for interventions designed to motivate future health behaviour, such as cancer screening.

Stress – can you beat it! Examining the application of a practical stress management programme in relation to organisational change and self-efficacy

A.L. SCHWARTZ & J.A. LUNT, Arcadia Alive, Human Resource Development Consultancy & Staffordshire University.

Background: Few organisational stress management interventions are empirically assessed. An evaluation of a practical stress management intervention within a social services department undergoing organisational and operational change, is presented. Its effectiveness in reducing stress is examined applying the Transtheoretical Change Model (Prochaska & Diclemente, 1992) and the Theory of Self Efficacy (Bandura, 1977).

Method: A prospective design with pre and post intervention comparison was employed involving 178 social services staff. A qualitative preliminary stress audit focusing on reported stress sources was followed by pre and post intervention self-report measures of perceived stress (Perceived Stress Scale, Cohen *et al.*, 1993), coping strategies used (General Self Awareness Questionnaire, Schwartz, 1998), and work environment (Work Environment Scale, Moos, 1984). Workshop satisfaction feedback was also obtained. Qualitative responses were analysed using thematic analysis based on grounded theory. Students t-test and one-way ANOVA comprised the quantitative analysis.

Findings: Delegates cited client contact, communication problems, workload and insufficient support as their main sources of pressure. Pre and post intervention comparison yielded a significant reduction in reported stress experience (PSS means: 27.5, (pre), 25.0 (post), $p < 0.05$) and significant increase in taught strategy usage (GSAQ means: 15.6 (pre), 17.5 (post), $p < 0.05$) within the intervention group. This was reinforced by positive workshop satisfaction feedback.

Discussion: Practical issues encountered in applying a theoretical approach to stress management consultancy and evaluation are discussed (e.g. role of management, and organizational policies). Ways of optimising maintenance of change through applying Health Psychology interventions in organisations, are considered.

The impact of emotional disclosure and psychological factors on wound healing

S.E. SCOTT, M. EBRECHT, S. HARTLEY, K. MATTHEWS, J. HEXTALL, M. DYSON & J. WEINMAN, King's College London.

Background: Previous research suggests that disclosure of traumatic experiences has positive health consequences, via an upregulation of the immune system. In addition, psychological factors have been associated with changes in the immune system, and more specifically with wound healing. The present study primarily aimed to investigate the impact of a disclosure intervention on the progress of wound healing and secondly the association of psychological factors with wound healing, in a controlled study.

Method: The study used a prospective, longitudinal design with random assignment to

the control (writing about time management) and experimental group (writing about a traumatic event). Participants ($N = 36$) completed questionnaires measuring a range of psychological factors and health-related behaviours. Accurate indication of the healing of a small punch biopsy was determined by using a high-resolution ultrasound scanner.

Findings: Participants who wrote about traumatic events had significantly smaller wounds 14 days after the biopsy. Psychological stress and emotional distress were associated with delayed wound healing, while dispositional optimism related to better progress in wound healing. Regression analyses indicated these were not independent predictors. Low self-esteem correlated with slower wound healing, although this was not anticipated. Loneliness and social support were not related to the rate of wound healing.

Discussion: It is concluded that a relatively brief and easy to administer intervention can have beneficial effects on wound healing. Furthermore, this study provides additional evidence supporting a relationship between perceived stress, emotional distress, dispositional optimism and wound healing. The potential for use in patient samples is indicated, in conjunction with suggestions for advancement of this exciting development.

A comparison between self-report and objective measurement of walking

E. SCOTT & F. EVES, School of Sport and Exercise Sciences, University of Birmingham.

Background: Various investigations have examined walking behaviours using both self-report and objective measures. Few investigators, however, have studied the correlation between actual walking and self-reported walking. This study aims to compare four self-report measures of walking with actual walking.

Methods: 40 participants made two visits to the department. During the first visit participants were issued with a pedometer and instructed in its correct usage. The second visit occurred four days later, at which time the pedometer was returned and the participants completed a questionnaire and two interviews. The questionnaire contained scale correspondent items typically employed in Theory of Planned Behaviour research designed to assess both walking behaviours and other forms of physical activity. The first interview was a five-day version of the Stanford seven-day physical activity recall interview and the second was an adapted version of the seven-day recall focussing on walking as a form of transport. All measures were converted to minutes spent walking for analysis and Pearson Product Moment Correlation Coefficients calculated.

Findings: Correlation between actual and self-reported walking was found to range from 0.217 (TPB measure from questionnaire) to 0.573 (seven-day PAR interview).

Discussion: This study demonstrates a low to moderate correlation between actual and self-reported walking, suggesting that self-report measures are not the most accurate method of measuring walking. This may be because walking, although a recognised form of physical activity, is primarily a method of transport and, as such, is an automatic process requiring little conscious thought or awareness.

Representations of Type 2 diabetes: Do partners' beliefs impact on patients' health behaviours?

A. SEARLE, P. NORMAN, R. THOMPSON & K. VEDHARA, University of Bristol.

Background: The illness representation framework is utilised in the context of managing Type 2 diabetes with particular regard to the partners impact on patient health behaviours.

Method: Patient and partner representations were assessed at 0 and 12 months with the Revised Illness Perception Questionnaire (IPQ-R). Behavioural outcomes were assessed

using self-report measures of medication adherence, physical activity and diet.

Findings: Analysis at time ($N = 164$ dyads) demonstrated a high level of agreement for patients and partners for the five 'core' dimensions of illness representations, however, differences were found between patient and partners regarding personal control, emotional representations, illness coherence, control-future (PMDI). Cross-sectional analysis using ANOVAs demonstrated that both patient and partner representations affected behavioural outcomes. Patients with poorer medication adherence held stronger beliefs in perceived consequences ($p < 0.05$) and beliefs of cause ($p = 0.05$), partners held stronger beliefs regarding the patients' timeline ($p < 0.05$), personal control ($p < 0.010$, treatment control ($p < 0.01$) and emotional representations ($p < 0.01$). Patients undertaking higher levels of physical activity had stronger personal control beliefs ($p < 0.05$), partners of those patients also reported stronger personal control beliefs ($p < 0.05$). Dietary behaviour was also affected by patient and partner representations, for example, patients with higher fibre intake held higher timeline scores ($p < 0.001$), consequences and has less illness coherence ($p < 0.05$) while partners held stronger control beliefs ($p < 0.01$).

Discussion: Patients and partners representations of diabetes have implications for health behaviour in the context of medication adherence, physical activity and dietary choices. These issues will be examined further with the analysis of follow up data and discussed at the meeting.

Causal models of raised cholesterol and perceptions of effective risk-reduction: Self-regulation strategies for an increased risk of cardiovascular disease

V. SENIOR, University of Surrey & T.M. MARTEAU, Guy's, King's & St. Thomas School of Medicine.

Background: Self-regulation models of illness suggest that causal models and perceptions of control are determinants both of perceptions of effective risk-reduction strategies and risk-reducing behaviour. This model is tested in people with Familial Hypercholesterolaemia (FH), an inherited predisposition to cardiovascular disease.

Methods: 317 participants with FH in a trial of genetic and non-genetic risk assessment completed measures of causal model, perceived control, perceived effectiveness of risk-reducing strategies, dietary fat intake, and medication adherence. Cross-sectional analysis of data collected six months after the risk assessment is presented.

Findings: Genetic causal model was related to perceiving medication as an effective risk-reduction strategy (Beta = 0.133, $p < 0.05$). Behavioural causal model was related to perceiving dietary intervention as an effective risk-reduction strategy (Beta = 0.282, $p < 0.001$). Perceiving FH as more controllable was associated with greater perceived effectiveness of both medication and diet in risk-reduction (Beta = 0.156; Beta = 0.166, $p < 0.05$, respectively). The perceived effectiveness of medication was associated with greater adherence to medication (OR = 1.94, $p < 0.01$).

Discussion: These data support self-regulation models. Causal model and perceptions of control are associated with perceptions of effective risk-reduction strategies. Genetic causal model was associated with the perceived effectiveness of biologically based methods, but not behaviourally-based methods, of risk reduction. Genetic testing for preventable diseases is likely to reinforce genetic causal models and, therefore, the perceived effectiveness of biologically-based methods of reducing risk. As perceiving medication as more effective is associated with greater adherence to medication, genetic testing in such a previously aware population could help to increase adherence to biologically-based methods of risk reduction.

Compliance with recommended self-monitoring of blood glucose in patients with Type 1 diabetes mellitus

A. SHANKAR, M. CONNER, University of Leeds & H.J. BODANSKY, The General Infirmary at Leeds.

Background: Regular self-monitoring of blood glucose has been found to be an important factor in maintaining proper glycemic control. However, compliance with recommended self-monitoring is found to be poor. Past research suggests that cognitive factors play a role in determining compliance with various aspects of the self-care regime. The present study used an extended Theory of Planned Behaviour (TPB; Ajzen, 1991) model to predict self-monitoring in Type 1 diabetics.

Method: 64 adult Type 1 diabetics were required to complete a questionnaire measuring variables from the TPB, perceived risk, perceived satisfaction with received outcomes, conscientiousness and past behaviour. Demographic and diabetes-specific information was obtained. Participants were required to complete self-report measures of compliance over a two-week period.

Findings: Rates of monitoring were fairly high with over 68 per cent of participants monitoring at least twice a day but only 50 per cent monitoring as often as or more often than they had been personally recommended. Self-efficacy and past behaviour were the best predictors of intention to self-monitor, while intention and past behaviour were the best predictors of future monitoring behaviour. Perceived risk, perceived satisfaction and conscientiousness did not add a significant amount to the variance explained either in intention or behaviour. There were also significant differences in beliefs between people with a strong intention and those with a weak intention to self-monitor.

Discussion: Forming clear plans about self-monitoring and trying hard for a few days to monitor as frequently as recommended would help in improving rates of self-monitoring. Education sessions could also address previous failed attempts as this may have reduced self-efficacy or caused doubt in ability.

An interpretative phenomenological analysis of young women's experiences of infant feeding in low-income environments

R.L. SHAW, University of Leicester & L.M. WALLACE, Coventry University.

Background: Young women living in low-income areas of the UK are amongst those least likely to breastfeed. This project asked why by investigating the infant feeding experiences of Asian, Black and White first-time mothers in Coventry.

Methods of data elicitation and participants: Focus groups were held with 15 health professionals (community midwives and health visitors) to explore their perceptions of young mothers, individual interviews were conducted with 11 mothers (one Bangladeshi, two Black, three Pakistani and five White).

Framework of analyses: Interpretative phenomenological analysis was used.

Findings: The focus groups yielded in-depth experiential accounts and the health professionals' perceptions of young mothers were distinct according to ethnicity. White women were expected by staff to bottle-feed and non-Whites to breastfeed. Young mothers' choices to breastfeed or bottle-feed did not mirror this traditional view. The mothers were aware of the dominant 'breast is best' discourse and the majority of them intended to breastfeed; four of them did but by six weeks all but one were artificially feeding.

Discussion: Health professionals were frank and sincere in their discussions. Interviews with young mothers presented a challenge because they were nervous and reluctant to discuss their perceptions of breastfeeding and bottle-feeding in depth. This research topic is sensitive to both participant groups; health professionals felt obliged to be all-knowing about breastfeeding

and ethnicity but were forced to acknowledge varying levels of ignorance, while young first-time mothers were so deeply affected by their pregnancy that feeding method was not always considered seriously. Qualitative methodologies are useful in revealing the subjectivities and detail within the field of breastfeeding research.

Meta-analysis of implementation intentions: Analysis of volitional problems and component processes

P. SHEERAN, University of Sheffield & P.M. GOLLWITZER, University of Konstanz/ New York University.

Background: This paper presents a meta-analysis of the utility of implementation intentions (Gollwitzer, 1993, 1999) in: (a) overcoming volitional problems associated with both wanted and unwanted behaviours; and (b) automatising behavioural responses. For wanted behaviours, the problems assessed concern difficult-to-remember behaviours involving short-versus long-term trade offs, and behaviours involving deadlines or windows of opportunity. For unwanted behaviours, the problems examined concern suppressing unwanted responses and blocking detrimental self-states & adverse contextual influences. Three features of automaticity associated with the formation of implementation intentions were examined, namely lack of intent, immediacy and efficiency.

Methods: Computerised literature searches and informal sources produced 85 independent tests of the relationship between implementation intentions and future behaviour ($N = 8155$). **Findings:** the overall effect size associated with forming an implementation intention was $d = 0.63$ (95 per cent CI = 0.58 to 0.68). Implementation intentions had reliable effects of medium-to-large magnitude for volitional problems associated with both wanted and unwanted behaviours. Strong evidence was obtained for component processes of implementation intentions. Effect sizes for lack of intent, immediacy, and efficiency were $d = 0.72$, 0.77 , and 1.12 , respectively.

Discussion: This meta-analysis indicates that implementation intentions are associated with automatization of responses and are highly effective in overcoming a variety of volitional problems. Implementation intentions warrant further and widespread application in health psychology research.

Recruiting London gay men into an HIV vaccine trial: Is it feasible?

L. SHERR, Royal Free & University College Medical School, J. ELDFORD & G. BOLDING, City University London.

Background: To examine willingness to volunteer for an HIV vaccine trial among HIV negative gay men in London.

Method: HIV negative gay men ($N = 506$) were surveyed in central London in February - March 2002. Information was collected on willingness to volunteer for an HIV vaccine trial. Men reporting unprotected anal intercourse (UAI) in the previous three months with a man of unknown or discordant HIV status were classified as being at high-risk of exposure to HIV ($N = 94$, 18.6 per cent). The remainder, who reported no UAI or UAI only with another HIV negative man were considered to be at low-risk ($N = 412$, 81.4 per cent).

Results: Just under a quarter of the HIV negative men in the study (23.4 per cent) said they were either quite likely or very likely to volunteer for an HIV vaccine trial. High-risk men were more likely to say they would volunteer for a trial than low-risk men (37.2 per cent v 20.2 per cent, $p < 0.001$). Of the 506 HIV negative men surveyed, eight (1.6 per cent) were both high risk and quite likely to volunteer. Based on these figures, we estimated that to recruit 1000 high risk HIV negative men into a vaccine trial between 15,000 and 62,000 HIV negative men would need to be approached in the community. Compared with those at low-risk, a greater proportion of high-risk men said that if they were in an HIV vaccine trial they would be more likely to have unprotected sex (23.4 per cent v 7.8 per cent, $p < 0.001$).

Discussion: In London, to recruit high-risk HIV negative gay men for an HIV vaccine trial, many thousands of gay men may need to be approached in the community. Participation in a vaccine trial could trigger risk compensation since some HIV negative men said that they would be more likely to have unprotected sex if they took part in a trial.

Quality of life and coping strategies after liver transplant

C. SIGHINOLFI, C. SICA, D. COMELLI, University of Parma, C. GHINELLI, Hospital of Modena & M. JOHNSTON, University of Aberdeen.

Aims: The aims of this study were to examine the QoL of patients who underwent liver transplant, to investigate post-operative coping strategies and to examine a possible correlation between the two variables.

Methodology and participants: This was a cross-sectional study of liver transplant patients ($N = 30$) from the Multi-Visceral Transplant Centre of Modena (Italy). The Italian adaptation of SF-36 (Apolone, Mosconi & Ware Jr., 1997) was used to assess QoL and the Italian adaptation of COPE (Sica, Novara, Dorz & Sanavio, 1997) was administered for coping strategies. T-test and one-way Anova were used for the statistical analysis.

Results: Health status was similar to the norm group on six of the eight SF-36 subscales. Transplant patients showed the significantly lower scores on Role Physical ($t = 5.41, p < 0.001$) and Role emotional scales ($t = 3.39, p < 0.001$). No significant differences were found about QoL over time although the subgroup with the furthest time since transplant sample reported higher scores on seven of the 14 COPE scales. A larger use of coping strategies such as Positive Attitude, Planning, Religion and Avoidance was associated with higher levels of some QoL domains (i.e. social, mental and psychological).

Conclusions: Liver transplantation results in improved quality of life overall, but problems persist in physical and emotional functioning. The demanding of the transplant seem to require a broader use of coping strategies and this seems to lead to a higher level of QoL.

Can the role of taste mediate the physiological changes caused by psychological stress?

I.P. SINANAN-FORRESTER & A. MANYANDE, Thames Valley University.

Background: Sensory stimulation and sensory depression in moderating physiological changes caused by stressful events has been studied by researchers in neonates with a view to decreasing pharmacological intervention. This study was carried out in order to determine whether the mediating effects that a sweet taste has on the heart rate of physically stressed babies can be replicated in adults who have been exposed to an emotional stressor. A randomised comparison of the effects of a stressor on physiological changes mediated by a sweet tasting drink and a neutral drink consumed immediately (one minute) post-stressor and subsequently (two minutes) post-stressor using no drink as a control procedure.

Methods: Students ($N = 60$) were randomly allocated to receive either 20 mls of 20 per cent glucose solution or 20 mls water. A pulse oximeter was used to measure pulse rate continuously so that interference in the heart rate from contact with the researcher was minimised. The stressor was a coloured photograph of a congenitally deformed baby taken from a medical textbook. Diabetics and individuals with taste impairment were excluded from the study.

Findings: A two-way mixed analysis of variance was used to analyse the data. As expected the heart rate of those who had a sweet drink returned to baseline levels faster than other groups. In contrast, the heart rate of the control group remained elevated even after two minutes.

Discussion: The results are consistent with those found in neonatal studies which suggest that stimulation of a sweet taste could have an effect on physiological changes (i.e. heart rate) caused

by stress. This type of study deepens our understanding of the relationship between behaviour and physiology and it is, therefore, essential to investigate further the mechanisms that reduce stress.

A systematic review to examine the impact of psycho-educational interventions on health outcomes and costs in adults and children with difficult asthma

J. SMITH, M. MUGFORD, University of East Anglia, B. CANDY, Queen Mary University of London & M. KOUTANTJI, University of East Anglia.

Background: Research highlights the importance of psychosocial factors in 'difficult' asthma. This study reviewed the content, effectiveness and cost-effectiveness of psycho-educational interventions for difficult asthma that aimed to address these factors.

Methods: 32 sources were searched using asthma terms combined with complex permutations for describing psychological, educational, self-management and multifaceted interventions. Abstracts were screened in duplicate, against prior definitions, to identify eligible interventions targeted to patients with forms of/risk factors for difficult asthma. Studies were classified by intervention type and patient group (paediatric, adult) and, within eight domains, graded on dimensions of quality related to study design and the certainty with which they targeted difficult asthma. Descriptive, methodological, effectiveness and cost-effectiveness data were extracted from studies above a quality threshold.

Findings: Searches identified 20,000+ citations. After preliminary screening and removal of duplicates 4200 possibly relevant abstracts were assessed. Two-hundred-and-ten relevant papers were obtained, classified and graded. Forty-five studies with concurrent control groups, judged likely to include at least a large minority of patients with difficult asthma, were selected for data extraction. Overall, only one randomised trial unambiguously targeted difficult asthma, interventions and outcomes assessed were heterogeneous, and relatively few studies evaluated formal psychotherapeutic techniques, applied psychological theories in interventions of other types or considered psychological outcomes.

Discussion: Despite the importance of psychosocial factors in contributing to adverse asthma outcomes few studies targeting difficult asthma incorporate psychological theories or outcomes in the design, delivery and evaluation of interventions. Results will highlight the potential role for health psychology in this field.

Illness perceptions, depression and coping in people with multiple sclerosis

H. SPINKS & S. HORN, University of Southampton.

Background: The small amount of research that has been carried out on people with MS concerning illness perceptions has largely considered people with MS as a single population. This study was designed to test the notion that given the variable nature of MS, differences could be expected between people with different subtypes of MS. Measures of coping and anxiety and depression were also administered to evaluate the wider context of illness perceptions.

Method: The study used a cross-sectional between-subjects design. There was one independent variable (Subtype of MS) with three levels (Benign, Relapsing-Remitting and Progressive). There were three dependent variables (scores on the IPQ-R, CRI and HADS questionnaires) with between two to eight levels each. Confirmatory Principle Component Analysis was also used to check the theoretical factors underpinning the questionnaires.

Findings: Results showed significant differences between people with subtypes of MS on the IPQ-R and depression scores but not on coping

scores. Anxiety was fairly high in all MS groups.

Discussion: The suggestion that illness perceptions and levels of depression vary with the subtypes of MS is not surprising, but high levels of anxiety and little variation in coping strategies across the subtypes is a cause of concern and suggests the need for specifically focussed interventions designed to promote effective coping.

Exploratory study of illness representations among men with erectile dysfunction

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Background: Erectile dysfunction (impotence) is one of the commonest chronic disorders in men over 40 years of age with estimates of over 50 per cent of men between 40 and 70 experiencing some degree of erectile dysfunction. The object of the study was to apply an illness representations framework to examine patients' beliefs about erectile dysfunction and the association between those beliefs and reported quality of life.

Method: 41 patients attending two secondary care clinics at a teaching hospital completed questionnaires examining quality of life (ed-eqol), sexual functioning (hr-qol-ucla), illness representations (cause, time-line, coherence, consequences, cure, control, emotions) and perceptions of masculinity.

Findings: Masculinity, sexual function, emotions and beliefs about consequences were significantly correlated with quality of life.

Hierarchical multiple regression analysis (enter method) revealed that 24.4 per cent of the variance in quality of life could be explained by beliefs about the consequences of erectile dysfunction, emotion and sexual functioning ($\text{Beta} = -0.337, p < 0.05$) and that this increased to 33.7 per cent by the inclusion of masculinity ($\text{Beta} = 0.310, p < 0.05$).

Discussion: The results may inform health care professionals of the influence of patient's beliefs regarding erectile dysfunction on their emotional and physical quality of life. An educational intervention could improve patients' perceptions of the consequences of erectile dysfunction and could also include a cognitive component to examine patients' beliefs about their sexual function and how this relates to perceptions of their own masculinity.

Patients' perspectives on living with diabetes: An exploration of adaptation and the self using Interpretative Phenomenological Analysis

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Purpose: Coping with diabetes mellitus is demanding both in terms of its complex self-management regimen and the psychosocial sequelae of threatened complications. Medical sociological research and the self-regulatory model (SRM) in psychology both describe illness as a threat to a person's sense of self. Such threat is proposed to influence coping activities, such as self-management in diabetes. Therefore, the present study aimed to explore the relationship between diabetes, coping and the self.

Method: Nine, semi-structured interviews were conducted with adult, Type 1 diabetics (aged 25 to 35), all of whom had been diagnosed in their mid-teens and for a minimum of 10 years (a range of 10 to 20 years). The analysis adopted was Interpretative Phenomenological Analysis (IPA).

Findings: Four, super-ordinate themes emerged: 'patients' perspectives of healthcare', coping with self-management', 'acceptance and autonomy' and 'the self under threat'. Essential coping strategies were both autonomy and integrating diabetes into one's sense of self. Most participants reported coping well, although there were two, anomalous accounts. The self was

under threat from a number of sources, including 'stigmatisation', 'discrimination' and 'negative media'. An important tension was 'balancing present quality of life with a future self', as this had self-reported effects on self-management. **Conclusion:** Therefore, even after a minimum of 10 years of illness, the psychosocial impact of participants' diabetes was still evident. Also findings were consistent with the self-regulatory model's representation of how the 'self-systems' are related to coping and adaptation. Implications for healthcare are discussed and also future, psychosocial research for the design of interventions.

A conceptual model of adherence to prescribed anti-hypertensive medication

L. STEADMAN, L. QUINE & D.R. RUTTER, Centre for Research in Health Behaviour, University of Kent.

Background: Hypertension is a major risk factor for stroke and heart disease, and it is, therefore, vital to understand the psychosocial and demographic factors that explain and predict adherence to prescribed anti-hypertensive medication.

Methods: A random sample of 1784 hypertensive patients were sent a questionnaire via their GPs measuring beliefs about their anti-hypertensive medication (Theory of Planned Behaviour, Ajzen, 1991), knowledge of hypertension, personality characteristics (conscientiousness and hypertensive self-image) socio-economic and demographic variables (car ownership, education, general health, marital status), number of doses of medication per day, medical and genetic risk factors for related disorders, and adherence to medication. In total, 1070 (60 per cent) patients responded at Time 1, and 934 (87.2 per cent) of these patients responded at Time 2, three months later.

Findings: A conceptual model of adherence to anti-hypertensive medication was constructed from Time 1 data and will be updated when Time 2 data has been fully analysed. Preliminary findings using path analyses showed significant paths to adherence for intention ($\beta = 0.21$, $p < 0.001$) and behavioural control ($\beta = 0.07$, $p < 0.05$). Paths from knowledge of hypertension, conscientiousness, and hypertensive self-image to adherence were all significant ($\beta = 0.07$, $p < 0.05$, 0.09 , $p < 0.01$, and 0.17 , $p < 0.001$ respectively). The socio-economic and demographic variables that showed significant paths to adherence were having a car available ($\beta = 0.12$, $p < 0.01$) and being married ($\beta = 0.07$, $p < 0.05$), but education and general health did not. Medical risk factor showed a significant path to adherence ($\beta = 0.09$, $p < 0.01$), but not number of doses of medication per day, and genetic risk factors. In total, 17 per cent of the variance in adherence was explained.

Discussion: The results suggest that social-cognitive factors are important predictors of adherence to anti-hypertensive medication. The significant role of hypertensive self-image suggests that the promotion of a positive hypertensive self-image would be a possible target for intervention.

Predicting who may benefit from a diabetes self-management intervention

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Background: Self-management interventions (SMI) are accepted as an important component of care for patients with Type 2 diabetes. Identifying whether certain patient characteristics influence the relative success of these programmes remains an important question. This study examines the baseline characteristics of the intervention group in a successful RCT in Type 2 Diabetes.

Methods: 65 individuals with Type 2 diabetes were assessed on clinical and psychosocial variables pre and post a self-management

intervention. Residualised change scores were calculated for outcome variables (diet, exercise, blood glucose monitoring, metabolic control). Correlations between baseline demographic, clinical and psychosocial characteristics with residualised change scores were performed to guide multiple regression analyses.

Findings: No demographic (age, gender, education level) or clinical characteristics (years diagnosed, complications) significantly predicted change in the assessed outcomes. Change in dietary behaviour was significantly predicted by baseline level of social support for diet (33 per cent) and change in exercise was significantly predicted by exercise specific self-efficacy (12 per cent). Although a correlation was found between positive mood at baseline and change in monitoring, mood was not a significant predictor in the regression analysis. No baseline characteristics were correlated to change in metabolic control.

Discussion: Demographic and clinical factors were unrelated to any changes following the intervention. Changes in diet and exercise were predicted by psychosocial variables at baseline, but no baseline predictors were found for changes in monitoring or blood glucose levels. These findings suggest that few patient factors predict benefit from a self-management intervention.

Stress, anxiety and depression in urban and rural police officers

M. STIRLAND & R. KNIBB, University of Derby.

Introduction: The police force is thought to be one of the most stressful occupations (Storch & Panzerella, 1996). A large body of literature has looked at stress in the police force, however, many studies have used anxiety questionnaires to demonstrate a link between anxiety and stress (Evans & Coman, 1993). This study investigated levels of perceived stress, anxiety and depression in urban and rural police officers and also those in traffic division.

Methods: 250 questionnaires were distributed to police officers based at urban and rural stations in two East Midland counties. Officers were sent the Perceived Stress Scale-14 (PSS), the Spielburger State Trait Anxiety Inventory (STAI) and Beck's Depression Inventory (BDI). They were also asked for demographic information and whether they had been for counselling.

Results: There was a 48 per cent response rate. Twenty-five per cent of officers reported mild to moderate depression, mean scores for PSS were above the reported norm mean (21.7 vs 19.6). Traffic officers had significantly lower anxiety and depression scores ($p < 0.01$) than either urban or rural officers, or patrol officers from either urban or rural stations ($p < 0.01$). Officers that had counselling had significantly higher depression scores ($p < 0.05$) and perceived more stress than officers that had had no counselling ($p = 0.053$). Reported stress levels by urban and rural officers were higher than by traffic officers ($p = 0.052$). The STAI, BDI and PSS scores were all highly positively correlated with each other (r values from 0.75 to 0.82), indicating an association in levels of stress, anxiety and depression.

Conclusions: Stress, anxiety and depression levels are high across all areas of the police force, although traffic officers seem to be less at risk than other types of officer. Those going for counselling reported highest levels of stress and depression, however, there was reported confusion in officers as to what the official counselling policies were. This information needs to be made clear to officers at all levels and areas of policing.

An exploration of changes as children mature with reference to sun-related risk perception and protective health behaviour

I. TIJOU & S. HORN, University of Southampton.

Background: The importance of establishing a continuing routine of sun-safe behaviour in those under the age of 20 is discussed. The aim of the study is to elucidate the relationships between risk perception judgements and sun behaviour

and how these change with age.

Method: A quantitative cross-sectional questionnaire design was used. Information from each participant was collected on sun sensitivity, sex and two specifically designed questionnaires assessed reported sun-related behaviour and risk perceptions of severity and probability of outcomes related to sun exposure. Reliability and validity for both questionnaires were good. One-hundred-and-thirty-six participants in four age-groups (5 to 6-year-olds, 10 to 11-year-olds, 14 to 15-year-olds and 19 to 23-year-olds) were recruited from two schools and a university. The results were analysed using MANOVA's and regression analyses (including mediation and moderation analyses).

Findings: The results showed reported risk perceptions and behaviour and their inter-relationship differ by age. MANOVA's showed that reported use of sun-safe behaviour (including sunscreen and use of clothes) peaked in 10 to 11-year-olds, after which use of sun-protection declined. Regression analyses showed that risk perceptions related to severity of outcome explained 8.9 per cent of the variance in sun-safe behaviour across age-groups. Risk perception judgements mediated the relationship between age and sun-safe behaviour.

Discussion: These findings add to the theoretical understanding of how risk perceptions influence behaviour through childhood into adulthood and could help guide age-appropriate interventions to encourage sun-safe behaviour.

Breaking bad news consultations: Gender differences in the communication styles of doctors

L. TIPPER, Coventry University, S. BONAS, University of Leicester, J. FISHER & M. BARNETT, University of Warwick.

Background: Research into communication styles of male and female doctors, e.g. Roter and Hall (1998), has found that female practitioners tend to adopt an interpersonal style that is more consistent with a patient-centred approach to patients.

Methods: This study observed the verbal and non-verbal behaviour of doctors in the particular context of breaking bad news to patients. Forty-six videotaped consultations between genuine doctors and actors role-playing patients were observed to compare communication styles of male ($N = 32$) and female ($N = 12$) doctors in the breaking bad news consultation. Skills used in breaking bad news were assessed using the Breaking bad news Assessment Schedule (BAS, Miller *et al.*, 1999); Henbest and Stewart's 1989 measure of patient-centredness; plus other verbal and non-verbal behaviours associated with good practice.

Findings: Female doctors were found to score significantly higher than male doctors in the BAS ($p < 0.01$) and the patient-centredness measure ($p < 0.05$). Analysis of the discrete patient-variables found that female doctors scored higher than males on measures of number of 'we' statements uttered ($p < 0.05$); the number of back channel responses uttered ($p < 0.05$); number of empathy building statements made ($p < 0.001$); and number of nods made ($p < 0.05$). Differences between descriptive results for male and female doctors on other variables were consistent with the pattern of female doctors being more patient-centred, but were non-significant, $p > 0.05$.

Discussion: Overall, the results provide support for the hypothesis that when breaking bad news, female doctors demonstrate a greater use of verbal and some non-verbal patient-centred behaviours than male doctors. Implications of the results for medical education are discussed.

The decision to accept a blood transfusion: What role do motivations play?

S. TOMLINSON, E. FERGUSON & K.C. LOWE, University of Nottingham.

Background: The purpose of the present research was to identify the motivations and reasons associated with blood transfusion are stable or if they are mutable (i.e. influenced by external factors such as message frame and the

type of procedure offered)?

Method: 334 adults were presented with one of eight scenarios concerning blood transfusion where the nature of the procedure (donated blood, or a blood substitute made from either bovine haemoglobin, human haemoglobin or perfluorocarbon chemicals) and the manner in which the information was framed varied. Participants using free text described their motivations for either accepting or rejecting the transfusion. Responses were content analysed. **Results:** Six major themes explaining 69.8 per cent of the participants' responses: risk (18 per cent), consequences (15.2 per cent), medical need (13.1 per cent), cost benefit (8.6 per cent), beliefs about health professionals (7.9 per cent) and, information seeking (7 per cent) ($Kappa$'s = 0.76, $p < 0.001$). A two way ANOVA revealed significant differences in the motivations by procedure ($F(3,536) = 4.311$, $p < 0.05$) only. A Tukey's post-hoc test demonstrated that cost benefit and beliefs about health professionals were cited more frequently among those participants who had received the vignette using the donated blood in comparison to the perfluorocarbon substitute and bovine haemoglobin where information seeking was more frequently listed. There was no significant difference by frame. **Conclusions:** Motivations for accepting a transfusion do vary as a function of procedure. Future research will employ the motivations identified to further understand the role of contextual information in the decision making process.

The role of trait emotions on past blood donation behaviour

S. TOMLINSON, E. FERGUSON & K.C. LOWE, University of Nottingham.

Background: Previously Boe and Ponder (1981) and Edwards and Zeichner (1985) had reported blood donors as being less anxious than non-donors. To extend this work in the trait facets that influence of the trait anger, anxiety, fear and happiness were explored with respect to past blood donation. The synergist relationship between the traits was explored. **Method:** 367 participants, (115 blood donors and 239 non-donors) completed measures of trait anger (Speilberger, 1996); trait anxiety (Speilberger, 1982); a 12-item measure of the Fear Survey Schedule – II (Geer, 1965); and a six-item measure of Happiness (Underwood & Froming, 1980). Demographic details and data on past blood donation history were also collected. **Results:** Logistic regression revealed that participants scoring high trait anger and fear were 2.50 times and 2.40 times more likely never to have donated blood. Two-way ANOVAs revealing significant interactions between high scores on fear with both anger and happiness show that the effect of fear on past donation behaviour is moderated by high scores on happiness, and that at low levels fear and anger are not independent. **Conclusions:** These results suggest that trait emotions are factors, which may need to be considered by the blood service when designing advertisements aimed at recruiting new blood donors. Further research into the role of personality variables in the willingness to donate blood is suggested.

Socially desirable responding, depression and antidepressant use amongst patients with rheumatoid arthritis: A longitudinal study

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Background: Socially desirable responding involves answering in a self-deceptive manner and is relevant to research on chronic illness reliant on self-report. Rheumatoid arthritis (RA) is a chronic inflammatory condition that often leads

to depression. People who respond desirably report lower depression, although no longitudinal research has been carried out to investigate this in chronic illness.

Methods: Assessments were carried out on two occasions six months apart for 134 RA outpatients (100 female). Mean age was 54.53 years; mean RA duration was 7.31 years. Socially desirable responding was measured using the Balanced Inventory of Desirable Responding; depression was assessed on the Hospital Anxiety and Depression scale; medication details were ascertained from hospital notes. Changes and group differences were calculated using t-tests and ANOVAs.

Findings: Over the six months, socially desirable responding decreased (from 6.01 to 5.34 out of 20; $t(133) = 2.88$, $p < 0.01$) whilst depression was stable. Socially desirable responding increased for people taking antidepressants but decreased for those who were not ($F(1, 132) = 3.95$, $p < 0.01$). Socially desirable responding related to less depression ($r = -0.23$, $p < 0.01$) especially for those taking antidepressants ($r = -0.52$, $p < 0.05$).

Discussion: This decrease in socially desirable responding indicates that participants become more open when they get to know the researcher. The fact that people who were taking anti-depressants showed an increase in socially desirable responding could be a protective form of self-deception. Depression in people with RA does not seem to change when not intervened with.

Older people's views on discussing end-of-life care and resuscitation orders within a family setting: A focus group study

T. VANDREVELA & S.E. HAMPSON, University of Surrey.

Background: The purpose of the study was to investigate older people attitudes and perspectives on discussing end of life issues with their family members. Medical technology has made it possible to revive a person's heart, by performing cardiopulmonary resuscitation (CPR). A patient can opt out of resuscitation by asking the doctor to sign a do-not-attempt to resuscitate (DNAR) order. Often discussions between the doctor and patient about CPR does not take place and the norm is for family members to make the decision on behalf of the patient. This required that discussion of CPR have taken place within the family setting, prior to the person being incapacitated.

Methods: Eight community-based focus groups, consisting of 48 older people, were convened to explore their perspectives of end-of-life communication within the family setting. Transcripts were analysed using Interpretative Phenomenological Analysis.

Findings: The result suggest that participants compare the pros and cons of discussing end-of-life care with their doctors and family members, and were more likely to trust their family members and discuss these issues with them. This was more likely to be done when there were close relationships within the family. Participants acknowledged the difficulties for family members and these attitudes of their family members make these discussions difficult.

Discussion: The results are consistent with social cognitive models. The practical implications of these findings will be addressed.

Social participation and mental health in younger stroke survivors: The role of illness perceptions and coping strategies

L.E. VENTO & A.J. WEARDEN, University of Manchester.

Background: We investigated whether illness perceptions and coping strategies of younger stroke survivors predicted their adaptive outcome (mental health and social participation), even when severity of functional impairment and time since stroke were taken into account.

Methods: 70 younger stroke survivors (43 male; aged 25 to 55, mean age 42.3) were recruited from a neuro-rehabilitation centre ($N = 32$) and a stroke survivors' support group. Mean time since

the stroke was 5.0 years (range 1–21 years). Participants completed questionnaire measures of stroke impact (the Stroke Impact Scale, SIS), illness perceptions (IPQ-R) and coping strategies (COPE). Outcome measures were social participation from the SIS and mental health (the five-item Mental Health Inventory, MHI-5).

Findings: On step one of separate hierarchical regression analyses, functional impairment and years since stroke accounted for 33 per cent of the variance in social participation and two per cent of the variance in mental health scores. Subsequent entry of illness perception dimensions significantly increased the proportion of variance accounted for in both equations. For social participation, consequences, psychological cause and accidental cause contributed an additional 15 per cent. For mental health, identity, timeline, emotional representations and psychological cause contributed an additional 68 per cent. Similarly, entry of coping dimensions increased the proportion of variance accounted for in both equations. For social participation, active coping, venting emotions, denial and mental-disengagement contributed an additional 42 per cent. For mental health, acceptance, venting emotions, mental-disengagement and instrumental support contributed an additional 48 per cent.

Discussion: Illness perceptions and coping strategies both predict adaptive outcome in young stroke survivors, after severity of impairment has been taken into account.

Why GPs do not give brief advice to smokers: A systematic review

F. VOGT, S. HALL & T.M. MARTEAU, King's College, London.

Background: Brief advice from GPs is an effective and cost-effective way of increasing smoking cessation. Important components of such advice are advising smokers to quit and promoting smoking cessation services and products. Many smokers do not receive such brief advice. The aim of this systematic review is to describe obstacles to the initiation of brief advice as perceived by GPs.

Methods: Theories of behaviour change were used to develop the search strategy. Nine electronic databases were searched (including Medline, AMED, and Psychinfo). Three categories of obstacles were used for data extraction: those affecting (i) knowledge, (ii) attributes, or (iii) behaviour. Reliability of the inclusion criteria and data extraction was assessed.

Findings: 23 studies met the inclusion criteria. Most studies were not guided by theory, making synthesis of their results difficult. Preliminary analysis identified 168 perceived obstacles to the initiation of brief smoking cessation advice. Of these, 13 related to knowledge (eg awareness), 82 related to attitudes (e.g. perceived effectiveness, perceived personal reward, neglect of patient privacy, professional role, priority) and 73 related to behaviour (e.g. forgetting, patient resistance to advice, practicability of providing advice, complexity of guidelines, negative emotional experience, time, reimbursement, and perceived ability). The review will estimate the relative importance of each of these perceived obstacles.

Discussion: GPs perceive many obstacles to giving brief smoking cessation advice which need to be overcome if recommendations in current guidelines for health professionals giving smoking cessation advice are to be achieved.

Warwickshire osteoporosis and behaviour study: Exploration of a nurse-led patient education intervention for primary care

L.M. WALLACE & M. BOXALL, Health Services Research Centre, Coventry University.

Background: The study presents a feasibility study for a future RCT to investigate the effectiveness of a single-session intervention led by primary care practice nurses using motivational interviewing to promote protective self-care behaviours (increasing calcium intake

and bone loading exercise) for women at risk of osteoporosis. Theoretical models used included the Transtheoretical Model of Change and the Theory of Planned Behaviour.

Methods: The study was quantitative, investigating a general practice sample of 26 women aged 50 to 70 years who were called for a Bone Mineral Density heel scan and osteoporosis risk screening. Women were randomised to receive either control care (15 minute appointment with practice nurse and usual health risk advice) or an experimental protocol (30-minute appointment with practice nurse and target setting advice concerning exercise and diet change). Questionnaire data considering perceived risk, health beliefs, and intention to change questions, diary data for exercise and diet were collected before and after the session, and interview data was collected at three-month follow-up on six women to obtain more detailed explanatory information.

Findings: Results showed that there were significant differences over time when considering theory of planned behaviour variables regarding intention to change calcium intake. However, these changes occurred regardless of the group in which the participants were allocated. Other variables such as osteoporosis health beliefs, risk perception or diary records of exercise behaviour did not show any significant difference between groups over time.

Discussion: The study suggests that the intervention is feasible, but early inspection of the data suggests a single session nurse-led intervention using motivational interviewing may not be sufficiently powerful in promoting self care behaviours for those at risk of osteoporosis. Reasons for the results are explored and possible improvement to the intervention suggested.

The impact of HIV negative test results on safer sexual behaviour: A systematic literature review

M.L. WALLACE, University College London & TM MARTEAU, King's College, London.

Background: The majority of those tested for HIV receive a negative test result. The process of HIV voluntary counselling and testing (VCT) is regarded as an ideal opportunity to change risk behaviour in those who receive a negative test result. Past research to determine the behavioural outcome of testing has largely focused on homosexual men as participants and these results are confounded by the fact that homosexual men began changing risk behaviour before testing became available. More recent studies suggest that results may be different in heterosexual adults, and that HIV VCT may not be effective in changing behaviour in this group.

Method: Computerised databases, review articles and related journals were explored for relevant literature. Thirteen studies from developed and developing countries met the inclusion criteria and were systematically reviewed to ascertain the effects of HIV VCT on sexual risk behaviour in heterosexuals receiving a negative HIV test result.

Findings: Findings revealed that sexual risk behaviour does not change as a result of HIV VCT in developed countries, with five of the six studies in this group showing no significant change in risk behaviour. In developing countries, sexual risk behaviour appears to decrease, with six of the seven studies showing a significant decrease in sexual risk behaviour. In only one study did the authors attempt to relate their findings to theory.

Discussion: Implications, methodological limitations and future directions are discussed. Reasons for the difference in results in developed and developing countries are explored including methodological, situational and cultural explanations. Recommendations for future research include the use of theory-driven, multi-centred, cross-cultural studies and longitudinal qualitative research on service users.

Watching and participating in exercise videos: A test of the Theory of Planned Behaviour and the role of implementation intentions

J. WALSH, A. BANTA, R. SOARES & D.A. FONSECA, University of East London.

Background: An expanded model of the Theory of Planned Behaviour (TPB – Ajzen, 1991), including conscientiousness, self-concordance and past behaviour, was used to predict intentions to watch a short exercise video and to participate actively in the exercises demonstrated. Actual behaviour was assessed also. A supplementary aim was to determine whether or not the creation of implementation intentions, specifying when and where they would watch the video during the subsequent three days, would facilitate behavioural enactment among intenders.

Methods: A mixed sample of undergraduate students and office workers ($N = 80$) completed traditional measures of TPB variables together with two sub-scales (dutifulness and self-discipline) from the conscientiousness inventory (NEO-PI-R- Costa & McCrae, 1992) the self-concordance scale (Sheldon & Kasser, 1995) and an index of current exercise behaviour. Half of the questionnaires invited participants to stipulate in writing when and where they intended to watch the video.

Findings: Regression analyses revealed subjective norms ($\beta = 0.30$) and perceived behavioural control ($\beta = 0.54$) to be the key predictors of intention ($R^2 = 0.39$), with the additional predictors accounting for no additional intention variance (R^2 for expanded model also = 0.39). Intention proved to be the only significant correlate of behaviour ($r = 0.19, p.05$). Finally, compared with control participants, behavioural occurrence was much more likely among intenders who formed implementation intentions ($X^2 = 29.72, df = 1, p < 0.001$).

Discussion: The results endorse the sufficiency of the TPB as a predictive model of intentions and to a lesser extent health behaviour, and they confirm the effectiveness of creating implementation intentions in behavioural activation.

An investigation into the influence of message framing, size of port wine stain and mood on the decision of a carer to give consent for a child to have laser treatment

T. WEBB & E. FERGUSON, University of Nottingham.

Purpose: Port wine stains (PWS) are congenital birthmarks, with over 85 per cent present on facial areas. Parents/guardians, have to give consent for children to be treated by laser. Personal decisions about treatment are known to be influenced by message frames. Frames involve presenting factually equivalent information as either gains (e.g. live saved) or losses (e.g. deaths). This study further explores the influence of frame by asking: (1) do framing effects generalise to decisions about others; (2) are framing effects moderated by disease severity (i.e. size of the PWS); and (3) what is the role of emotions?

Methods: 193 adults viewed one of two photographs of a child with a facial PWS (one large PWS, one small PWS) and presented with the same factual information regarding the treatment framed as either gains or losses. Participants imagining they were the child's carer were asked if they would give consent for the child to have treatment. Mood was also assessed.

Results: Logistic regression analyses showed that both frame and PWS size were significant predictors of a decision to consent for treatment. Odds ratios showed that those exposed to either gain frame ($OR = 11$) or a large PWS ($OR = 3$) were more likely to give consent. There were no significant effects for mood.

Conclusions: Importantly these results show the framing effects generalise to decision made on behalf of others. The results confirm the importance of severity but show the cognitive

factors (i.e. framing) have an independent effect on decision making.

Can implementation intentions overcome unwanted habitual behaviour?

T.L. WEBB & P. SHEERAN, University of Sheffield.

Background: Many behaviours that are detrimental to our health form part of our habitual routines and are, therefore, difficult to overcome. For example, when we consistently eat fast food for lunch, willpower alone may not be sufficient to attenuate the association between lunch and fast food. The present research employed naturally occurring semantic associations between words (e.g. bread and butter) to investigate whether implementation intentions have the potential to break habitually formed associations.

Methods: Participants ($N = 33$) completed two unrelated tasks. In the first task, half the participants formed an implementation intention to distract themselves whenever they thought about bread and half did not. Next, after a short filler task, participants completed a lexical decision task in which target words (strong versus weak semantic associates of bread) were preceded by subliminally presented primes ('bread' or a neutral word). Response latencies were the DV.

Findings: ANOVA revealed a main effect of word type only for participants who had formed an implementation intention ($F(3, 45) = 11.48; p < 0.001$). As expected, participants responded slower to weakly associated target words following the bread rather than the neutral prime (mean = 808.9 versus 624.7). However, participants did not respond slower to the strongly associated target (butter) following the bread prime (mean = 604.0).

Discussion: The findings suggest that implementation intentions cannot break strong habitual associations. Although, an implementation intention attenuated a weak semantic association, the strong semantic association prevailed.

Family focused rehabilitation in acquired brain injury: An application of the Theory of Planned Behaviour

G. WEBSTER, National Spinal Injuries Centre & A. DAISLEY, Oxford Centre for Enablement.

Background: Acquired brain injury (ABI) may negatively impact the whole family, affecting psychological adjustment and patients' rehabilitation outcome. Family involvement in rehabilitation benefits both patients and relatives, but is often focused mainly on adult relatives. This study aimed to establish whether child relatives of adults with ABI are regularly included in family interventions by UK rehabilitation teams, and to explore factors influencing staff's decisions about involving child relatives, using Ajzen's (1991) Theory of Planned Behaviour (TPB).

Methods: **Design:** A cross-sectional postal survey design was used for the main study. A prospective design was used with a sub-sample of participants completing a repeat survey one month later.

Participants: 202 multi-disciplinary rehabilitation staff from ABI teams across the UK.

Measures: A questionnaire based on the TPB was developed.

Analyses: The data were subjected to logistic regression analyses.

Findings: A response rate of 65 per cent was obtained. Few respondents (19.5 per cent) reported carrying out work with child relatives. Perceived behavioural control (PBC) – e.g. access to training, resources and support – significantly predicted behavioural intention to work with child relatives (explaining 31 per cent of the variance). Behavioural intention and PBC predicted behaviour, but not significantly.

Discussion: Little work is currently carried out with child relatives by ABI rehabilitation staff, partly because of their lack of control in this area. This implies a potentially large unmet need; suggestions for improving service provision to

child relatives will be highlighted.

Manipulating intentions to undergo genetic screening: An experimental study

C. WHITE-GWENIN, N. A'CH DAYFDD, A. UNWIN, G. GRIFFITH & V. MORRISON, School of Psychology, University of Wales.

Background: The desire to know genetic risk for disease such as breast cancer varies across individuals, yet this decision will become increasingly pertinent as genetic science progresses. Identifying factors associated with intention and whether intention can be 'manipulated' hold important implications for genetic counselling.

Methods: An experimental study examined health-related cognitions and emotions associated with genetic testing intention amongst 163 young adults. Replicating and extending Wroe and Salkowskis (1999) study, we experimentally manipulated information about genetic testing given to participants in order to test content and ordering effects on health beliefs, anxiety and screening intention. Participants were randomly allocated into one of four Information groups (Control; Positive-negative; Negative-positive; Positive only).

Findings: No baseline differences existed. Pre-intervention intention was correlated with perceived severity, perceived susceptibility, low perceived barriers, positive attitude, subjective norm, state anxiety, cancer-specific anxiety, and worry. Post intervention changes included:

- Increased perceived susceptibility, positive attitude, subjective norm, reduced barriers, and greater Intention in the Positive Group;
- Increased attitude in the Pos-Neg group but no change in Intention;
- Increased perceived barriers in the Neg-Pos Group but no Intention Shift;
- Reduced benefits in the Control Group;
- Cancer-specific Anxiety reduced in Controls and Neg-Pos group, stayed same in Pos-Neg group, but increased in the Positive Group.

Regression analysis: 50 per cent of variance in Intention was explained by Experimental Group, Attitude to cancer, Perceived Susceptibility, Subjective Norm, and Cancer Specific Worry.

Discussion: Positive Information is most successful in changing intentions, but in non-directive practice this should be counterbalanced with negative information. A counterbalanced approach did not raise anxiety, whereas Positive information alone, did.

The experience of stigma: Living with Myalgic Encephalomyelitis (ME)

H. WILLIAMS & M. MORRIS, University of the West of England, Bristol.

Myalgic Encephalomyelitis is a chronic illness that has been the subject of much controversy and debate. Individuals with ME have been stigmatised because their condition has often been denied the legitimate status of 'organic disease' (Cooper, 1997), since there is no definite diagnostic criteria. As a result these individuals have been labelled as malingerers and the condition a psychiatric disorder. This research explored the illness experience of those individuals with ME, including the impact of stigma upon the self and on their relationships. This was explored using thematic analysis of illness narratives constructed by 21 people with ME during interviews. Three overarching and interactive themes were identified: Self, Medical Professionals and Others all of which interacted illustrate the shared, inter-subjective and social nature of the 'illness experience' (Kleinman *et al.*, 1995). Respondents reported disbelief and a lack of understanding and social support from other people, which often resulted in mistrust of conventional medicine and medical professionals. Additional themes emerging from the narratives highlighted the experience of: a threatened self image, loss, isolation and emotion, which resulted in a pretence to appear normal, a redefined identity, the creation of an expert patient and redefinition of their life goals. These themes are discussed as part of a conceptual model in an attempt to explain their illness experience. This

research highlights a need to educate medical professionals and the general public about the true nature of ME, dispelling myths, in order to reduce stigma towards those affected and improve their quality of life.

The influence of morningness-eveningness on cardiovascular stress reactivity

T.A. WILLIS, D. O'CONNOR & L. SMITH, University of Leeds.

Background: While there is a rapidly expanding body of literature investigating cardiovascular reactivity to stress, very few studies have considered the possible influence of circadian variation. It has been shown that chronotype may play an important role in the magnitude of reactivity to psychosocial stressors (Nebel *et al.*, 1996) with 'Evening types' displaying higher cardiovascular levels in the afternoon and 'Morning types' higher in the morning. The present study aimed to build upon this work, while striving to improve some potential methodological weaknesses in this area of research.

Method: 40 participants were classed as Morning or Evening types according to their scores on the Composite Morningness Scale. Using a within-subjects design, they participated in two testing sessions, one in the morning and one in the afternoon.

Findings: Preliminary analyses of 21 participants (12 M-types and nine E-types) reveal a significant interaction between chronotype and time of day upon diastolic blood pressure reactivity, with a trend towards significance for heart rate. Overall, E-types recorded higher levels on all cardiovascular variables.

Discussion: These findings may have implications for the methodology of reactivity testing, as well as important health considerations for people classed high in 'eveningness'.

'So long as nobody knows': Women coping with urinary incontinence

S. WILLOTT, S.C. HALE & S. GROGAN, Staffordshire University.

Purpose: Urinary tract problems are common in older women and symptoms often cause a great deal of discomfort, misery and embarrassment. This study investigates women's beliefs about symptoms, methods of coping and patterns of interaction with health care providers.

Method: Semi-structure interviews were carried out with 21 women (aged 41 to 79 years) who had recently been referred by their GP to a urology unit. Interviews were audiotaped and subjected to Interpretive Phenomenological Analysis.

Findings: Women's active involvement in the care of other family members led to women assuming the role of 'health expert' within the family, facilitating the health of others. In contrast, they often ignored and concealed episodes of urinary incontinence for long periods of time before seeking medical help seeing it as a normal part of ageing and not a 'real' illness. Participants used a wide variety of self-help methods to treat, control and hide symptoms and became experts at covering up episodes of urinary incontinence but these together with their preoccupation with 'odour problems' had a serious effect on their quality of life. Medical help was only sought when symptoms became intolerable affecting work, social and personal relationships. The quality of the relationship women had with their GP was important in helping them cope even when treatment was ineffective.

Conclusion: This study suggests that women ignore their own health care needs while encouraging others to seek medical advice for health problems due to the widespread acceptance of urinary incontinence as an inevitable part of ageing.

Patients experience of the diagnosis and treatment of skin cancer

A.E. WINTERBOTTOM, MRC Health Services Research Collaborative, Bristol.

Despite the number of newly-diagnosed cases of skin cancer increasing each year, the psychological impact of receiving a diagnosis of skin cancer has received little attention. This research aims to examine the experience of being diagnosed with skin cancer from the perspective of the patient. Sixteen patients who had attended the outpatient dermatology clinic at the Bristol Royal Infirmary were interviewed regarding their experiences of being diagnosed with one of three diagnoses of skin cancer. Employing Interpretive Phenomenological Analysis the data were analysed for emergent themes. Similar themes for both the basal cell carcinoma and squamous cell carcinoma patients emerged from the data. Information and knowledge of skin cancer appeared as a key theme, and influenced the patients' experiences in a variety of different ways. When there was insufficient information patients experienced anxiety and actively sought information in an effort to cope. Attributing a cause was also important in terms of making sense of the illness. The malignant melanoma group utilised a wider variety of strategies in order to cope with the diagnosis, and these varied depending on the stage of the illness. Satisfaction with the healthcare received by each of the three groups of patients, played a crucial role in minimising the psychological consequences of the disease. Within this group of patients there are a number of diagnoses which differ in their prognosis, and so may result in a variety of different consequences and thus experiences, for the patient. The study, therefore, has implications for the provision of care in the early stages of a skin cancer diagnosis and treatment, through increasing the awareness of the disease from the patients' perspective.

Perceptions of health and well-being amongst elderly people living in care homes in Norway and England

A.J. WOODCOCK & M.N. MICIANO, Royal Holloway, University of London.

Background: Elderly people in the UK associate good health with physical activity as well as contentment and happiness (Blaxter, 1990), yet 83 per cent of elderly people living in care homes report long-standing illnesses (2000 Health Survey for England). This study aimed to compare reported health status and well-being of elderly people in care homes in Norway and England using validated questionnaires and to explore their health-related beliefs in interviews.

Methods: 40 Norwegians (20 men and 20 women in two homes) and 40 English (15 men and 25 women in two homes) completed a demographic questionnaire, Dartmouth COOP-WONCA Charts and 22-item Well-Being Questionnaire. Four in each country were interviewed concerning beliefs about health. Scores of Norwegians and English were compared (Mann-Whitney tests). Multiple regression was used to predict total well-being.

Findings: There was no significant difference in the number of health conditions reported by residents in the two countries. The COOP-WONCA charts revealed no differences in perceived health. However, the W-BQ22 revealed significantly greater anxiety and depression and less energy amongst the English residents. Total well-being was significantly poorer. A multiple regression model (independent variables nationality, age, number of health conditions and gender) significantly predicted total well-being, explaining 18 per cent of the variance in well-being, with nationality being the strongest predictor, followed by gender.

Discussion: National differences in perceptions of well-being are discussed in relation to lay beliefs about health. Cultural differences may influence interpretation and responses to questionnaires, even though perceived health and morbidity is similar.

The impact of learning of a genetic vulnerability to the adverse effects of smoking on the heart:

An analogue study

A. WRIGHT, D. FRENCH, J. WEINMAN & T.M. MARTEAU, King's College London.

Background: There is growing evidence of a genetic vulnerability to the adverse effects of smoking on the heart. Informing smokers that they have such a vulnerability may motivate smoking cessation. Protection Motivation Theory (PMT) and the Extended Parallel Processing Model (EPPM) make competing predictions regarding when health risk information will motivate behaviour change, which were examined in this study. The EPPM predicts a threat x efficacy interaction, such that risk information will only have a positive impact on behaviour change when individuals perceive themselves both to be at risk and to have high efficacy. PMT predicts main effects of threat and efficacy in addition to an interaction. Participants receiving positive genetic test results, who perceive high efficacy, were predicted to have the greatest motivation to quit.

Methods: 197 smokers read one of six vignettes, in a three (risk status: gene positive, gene negative or standard smoking risk advice) x two (high or low efficacy) design. Key outcomes were intention to quit, intention to attend an information session, and attitudes towards quitting. Analyses used a three x two ANOVA, with planned contrasts to examine whether the pattern of results better fit PMT's or the EPPM's predictions.

Findings: Participants in the gene positive, high efficacy condition had the greatest motivation for smoking cessation. There were significant risk x efficacy interactions for intention to attend an information session and attitudes towards quitting, $F(2, 195) = 3.194$ and $F(2, 195) = 3.407$, respectively. These interactions better fit the EPPM's predictions than PMT's. For intention to quit, the pattern of means best fit PMT's predictions.

Discussion: While high efficacy individuals with gene positive test results had the greatest motivation to quit, low efficacy individuals who received positive results had decreased motivation. Presenting genetic risk information without taking account of perceived efficacy is unlikely to result in increased motivation for behaviour change.

The effect of psychological stress on symptom severity in patients with gastro-oesophageal reflux disease

C.E. WRIGHT, University College London.

Background: The investigation extends previous research examining the relationship between stress and gastro-oesophageal reflux disease (GORD). It was hypothesised that exposure to psychological stress, would produce a significant increase in reflux episodes (the number highly acidic gastric secretions reaching the oesophagus).

Methods: 42 patients attending St. Thomas' Hospital Oesophageal Investigation Unit, for 24-hour monitoring of oesophageal pH levels completed the experimental between-groups study. During the last two hours of this monitoring period 21 patients received the TSST (a 15-minute stressor involving public speaking and mental arithmetic tasks) while the remaining participants were randomly assigned to the no-stress condition. Subjective anxiety and symptom ratings were obtained one minute pre-test, one minute post-test and 30 minutes post-test.

Results: The TSST induced a significant increase in anxiety ($p = 0.001$); however, this was not associated with any increase in reflux episodes ($p = 0.17$). Interestingly, the experimental group demonstrated an inability accurately to identify their level of symptom severity ($r = 0.26$, $p = 0.25$). In comparison the control group correctly associated actual and reported pH levels ($r = 0.52$, $p = 0.01$). A similar trend was also established for participants who reported greater anxiety or demonstrated a vulnerability to stress.

Conclusions: This (inaccurate) perception of increased reflux when one is stressed may contribute to low response rates for traditional treatments, therefore, highlighting a need to bridge the gap between psychological theory and clinical practice in order to develop more successful GORD therapies in the future.

Emotional factors and decision making about childhood immunisations

A.L. WROE, Institute of Psychiatry, King's College London & H. BEDFORD, Institute of Child Health.

Aim: Previous research has suggested that decisions about immunisations are strongly influenced by emotional factors such as responsibility and anticipated regret if harm were to occur (Wroe *et al.*, 2003). This suggests that decisions may be biased by an assumption that causing harm through action is worse than allowing harm to occur through inaction, known as 'omission bias' (e.g. Baron, 1990). This research was conducted outside the UK and considered only early childhood immunisations. The study described in this paper is a prospective study conducted in UK to investigate the role of emotional factors in carers' decisions about the Measles, Mumps, Rubella (MMR) vaccine, an issue that has received much media attention.

Method: Carers ($N = 100$) of children aged 10 to 12 months completed a structured telephone interview about the MMR vaccine. This included questions about the immunisation decision, perceptions of risks of the diseases and risks of the immunisations, as well as questions about feelings of responsibility for harm, and regret of decisions leading to harm. Carers were contacted after the date of the first expected immunisation, to ask about the final decision whether to immunise the child.

Results: Regression analyses and t-tests suggest that the decision is strongly influenced by emotions related to omission bias (anticipated responsibility and regret), and less so by utilitarian type factors (perceptions of benefits and risks of immunisations).

Discussion: The research suggests that decisions about MMR are strongly influenced by emotions such as anticipated regret and responsibility. Clearly, any intervention to aid such decisions must address omission bias.

Division of Clinical Psychology Faculty of Addictions 2003 Conference

Division of Clinical Psychology Faculty of Addictions 2003 Conference. New developments in the psychology of addiction. University College London, 8–9 September 2003.

INDIVIDUAL PAPERS

Drug-related deaths in police custody

D. BEST, Police Complaints Authority.

Between 1998 and 2003, 153 people have died in police care or custody. While the police have been effective in reducing the number of deaths by hanging, the number of substance-related deaths continues to rise, but in a manner that is not consistent with national death data for England and Wales. There are three main types of drug death that occur in police custody:

1. Accidental overdoses (which are relatively infrequent);
2. Deliberate overdoses (again relatively infrequent);
3. Drug swallowing deaths.

The latter is a particular cause for concern as it is strongly linked to the concealment of cocaine at the point of arrest. These drugs, which are often stored in the mouth or hand, are generally not packaged for passage through the body and death will result from one, or a combination, of hypoxia, a ruptured package resulting in heart failure or brain haemorrhage, or a syndrome referred to as 'excited delirium'. Excited delirium deaths involve a hyperthermic effect (often evidenced by the removal of all clothing), unpredictable and possibly violent behaviour, followed by intense struggle. It is often linked to police restraint, increasing the hyperthermic effect, and resulting in sudden death from heart failure. There is scope for a harm reduction initiative targeting drug swallowers, but considerable need for an improvement in understanding the effects of cocaine and crack, and their morbidity and mortality risks.

Social behaviour and network therapy

A. COPELLO, Birmingham University.

Social behaviour and network therapy (SBNT) is a structured psychosocial treatment designed to help people affected by alcohol and drug problems. Central to this treatment is the premise that 'social support for change' is a key ingredient in the resolution of addictive behaviours. Social behaviour and network therapy has been developed from a range of social treatments with evidence of effectiveness. As part of the intervention, in addition to the person with the alcohol and/or drug problem, those closely affected by the alcohol or drug use (e.g. family members and friends) are invited to the treatment sessions. Within the sessions a range of strategies are used to support the user's efforts to change. The application of SBNT to alcohol problems is currently under evaluation in the United Kingdom Alcohol Treatment Trial (UKATT). This paper describes the intervention structure and session content. In addition, results from a pilot study conducted with drug users in the Birmingham Community Addiction Services are presented. As part of this pilot study drug therapists ($N = 20$) were trained and supervised to deliver SBNT. The pilot study showed that the treatment could be delivered with a range of drug problems presenting in community drug teams. Finally, a case study illustrating the treatment components and processes is presented and discussed.

Beyond the K hole

H.V. CURRAN & C. MORGAN, University College London.

Ketamine is widely used as an anaesthetic for both humans and animals. It is also a drug that is used 'recreationally' and known as 'Special K'. In

healthy volunteers, ketamine acutely impairs memory and induces psychotic and dissociative symptoms. In recreational users, ketamine produces these same acute effects, but three days after drug use, misusers show persisting memory impairment compared with controls (Curran & Morgan, 2000). To explore whether such persisting effects reflect residual or chronic effects of ketamine use, we gave ketamine (0.4, 0.8 mg/kg) or placebo to 54 healthy volunteers and assessed them on the day they had the drug and again three days later (Morgan *et al.*, in press). The healthy volunteers liked the drug and ratings showed they wanted more of it, especially after the lower dose. However we found no residual impairments on day three. This suggests that impairments seen in recreational users are either chronic effects or pre-existing differences between people who do and do not use ketamine. To differentiate between those two possibilities, Curran and Monaghan (2001) compared frequent with infrequent users of ketamine on the night of drug use and again three days later. Acute effects in both groups on day zero again replicated previous findings. On day three the frequent users were significantly impaired on episodic and semantic memory tasks compared with infrequent users. Taken as a whole, these findings indicate that frequent use of ketamine produces long lasting impairments in memory.

Stepped care and alcohol treatment

C. DRUMMOND, Dept. of Addictive Behaviour, St. George's Hospital Medical School, University of London.

Alcohol problems are common in medical settings including primary care, general hospitals and psychiatric units, but are rarely detected or addressed in routine clinical practice. In contrast there is a significant body of evidence for the effectiveness of screening and brief opportunistic alcohol interventions from clinical trials from a wide range of countries and health settings. Barriers to implementation of evidence based interventions include practitioners' attitudes, training, and perceived support from specialist addiction services. Stepped care intervention provides a pragmatic means of implementing appropriate alcohol interventions and a model of joint working between addiction specialists and medical generalists. An ongoing trial of screening and stepped care intervention employs a practical method of integrated care catering for patients with a range of severity of alcohol problems in primary care. This needs to be tested in other medical settings.

The Community Reinforcement Approach (CRA): What it is, how to do it and the evidence base

J.GARDIN II, Life Link Training Institute, Santa Fe.

CRA is a cognitive-behavioural intervention for the treatment of substance abuse problems. Developed in accordance with the belief that environmental contingencies play a crucial role in an individual's addictive behaviour and recovery, CRA utilises familial, social, recreational, and occupational reinforcers to support the individual in changing his or her drinking/using behaviours and in creating and supporting a successful sobriety. The goal is to construct an environment where sobriety is positively reinforced and substance abuse is discouraged (Azrin, 1976; Hunt & Azrin, 1973). The CRA programme begins with a functional analysis of the triggers and consequences of the drinking/using behaviour. The first step in the functional analysis is to identify high-risk situations and the differing components that maintain or compete with drinking and/or using. Next is the introduction of 'sobriety sampling'. This is a motivational technique that allows the client and the therapist to negotiate a period of sobriety. Some drinking

clients may require disulfuram (Antabuse) to abet this period of sobriety. In these circumstances, it is essential to have a supportive disulfuram monitor (a significant other in front of whom the disulfuram is consumed and who accompanies the client to all sessions). The introduction of the CRA plan subsequently follows, which seeks to increase happiness in other, non-drinking/non-using areas of life. For many clients, this will entail skills training (e.g. problem solving, drink refusal, etc.), along with job and relationship counselling. As clients reduce their drinking/using they will find themselves with time for seeking new activities or social circles that are not centred around alcohol or other drugs. Methods for preventing relapse and maintaining sobriety round out the program (Meyers & Smith, 1995; Smith & Meyers, 2001a; Smith, Meyers & Miller, 2001; Miller & Meyers, 2002).

Evidence-based psychological treatments

M. GEORGE, Consultant Clinical Psychologist, West Sussex Substance Misuse Services.

In 2001, West Sussex Drug and Alcohol Action team were selected as a pilot site for the National Treatment Agency (NTA) pilot of the Enhancing Treatment Outcomes (ETO) project. This pilot was designed to explore the implementation issues associated with the Models of Care document (Abdulrahim *et al.*, 2001), which provides a National Services Framework for substance misuse services in England and Wales. Dr. Mike George, was seconded to lead up the project. The pilot designed and implemented, from August 2002, a triage assessment tool as the 'front end' for all substance misuse services in the county was based on the template offered by Dr. John Marsden at the Maudsley Hospital. All new referrals and self-referrals are now offered a triage assessment within ten working days. Four full-time triage co-ordinator posts support the triage framework. Workers in tier 2 (open access, low threshold) services have also been trained to conduct triage assessment on clients who self-refer to their agencies. Of the 2117 new referrals received across the county, 40 per cent were primary drug referrals and 60 per cent alcohol. Of these, 1940 were offered triage assessment and 1473 (76 per cent) attended. Of the total triage attenders, 49 per cent were referred to statutory drug and alcohol problem teams. The remaining 51 per cent were referred to alternative services across all four tiers of the treatment network. This reorganisation of the workload has led to a significant reduction in waiting times in all parts of the service framework. Models of Care (MoC) have now been adopted as the template for national services. West Sussex's involvement in the pilot has enabled the county to move swiftly towards compliance with the MoC framework and offer advice and support to other Drug Action Team areas to implement the service delivery and quality standards which the framework sets out.

Costing alcohol: What are the issues and what do we know?

C. GODFREY, Dept. of Health Sciences, University of York.

Any economic model is based on a number of behavioural assumptions. In this presentation economists' views on the nature of addiction, risk and information are examined in relation to their effect on estimates of the social costs of alcohol and the cost effectiveness of interventions. Economic models require a counterfactual. For cost-effectiveness (or cost-benefit) studies the choice is relatively straightforward, with comparisons being made for example between a new treatment and usual care. For social costs models the costs (and benefits) of current alcohol consumption are compared to the unrealistic hypothetical situation that there was no alcohol consumption. It is also generally assumed that

individuals know the risks of alcohol (and hence balance individual costs and benefits in their consumption decisions) and also can make economically rational decisions. Has the absence of recent social cost estimates played a part in the policy neglect of alcohol issues in the UK? Is there insufficient evidence of the cost effectiveness of alcohol interventions? The answer to both questions may be a partial yes, but new evidence is accumulating. Studies conducted with Scottish data as part of their alcohol policy initiative suggested that there were social costs of over £1 billion but that many psychosocial treatments in the longer term can prevent deaths and save NHS resources. One study in England found 400 heavy drinkers not in treatment had total social costs of £1 million. A number of other studies are underway, including a full new social cost estimate from the Cabinet Office and several economic evaluations of different treatment. The question remains, however, whether this or other governments will adopt evidence-based policies, which seek to reduce alcohol related harm.

Twelve step facilitation in the NHS

S. THOMAS, Leeds Addiction Unit.

This will begin with a brief look at the Twelve Step Movement, its genesis, development, philosophical affiliations, and global situation now. There will be a description of how Twelve Step principles became professionally adapted into a variety of treatments for substance dependence, and some of the differences between those treatments. This will conclude with a very swift overview of the situation in the UK as regards Twelve Step treatment. Then, a necessarily brief examination of the evidence base for the efficacy of attendance at Twelve Step meetings and Twelve Step treatment method – some of the principles suggested as the mechanisms for this efficacy will also be mentioned. The presentation will then go on to focus on the experience of one busy, large NHS Addiction Unit in setting up a Twelve Step Day Programme, including a discussion of obstacles encountered in this process. The programme works alongside the criminal justice system, as it was initially created for clients attending the Unit under a Drug Treatment and Testing Order. The combination of this setting, coerced out-patient clients with a 'spiritual' programme will also be discussed, with particular reference to delivering a Twelve Step treatment alongside harm reduction, motivational enhancement therapy and cognitive behavioural work. The session will end by asking what the implications of the emergence of Twelve Step Fellowships and treatments are for us as practitioners, and how we may best use the resources available to us.

The role of psychology in the management of addiction services

R. VELLEMAN, Director, Mental Health Research and Development Unit, University of Bath.

This paper will look at the skills, which are needed to set up and run specialist drug and alcohol services. It will argue that clinical psychologists are strongly equipped to undertake this role, and will question why (until fairly recently) so few have followed this path. It will conclude by clarifying some of the benefits, which could emerge both for services and for the profession of clinical psychology, and will examine some of the pitfalls which might lie in wait for psychologists who decide to follow the management/leadership pathway.

Psychological principles in the treatment of tobacco dependence

R. WEST, Cancer Research UK Health Behaviour Unit, Dept. of Epidemiology, University College London.

Pharmacological treatment, in the form of Nicotine Replacement Therapy and Zyban, to aid smoking cessation has been well established. It has also been established that 'structured behavioural support' can increase the chances of success of an attempt to stop smoking by about

15 percentage points at four-weeks and seven percentage points at 12 months. Projecting into the longer term, a treatment episode involving weekly hour-long sessions up to four weeks post-quit, with a 40-year-old smoker is estimated to yield an average reduction of about one 'pack year' of smoking which translates crudely into about four months of life expectancy. There have been numerous attempts to apply psychological principles to the development of treatment but methodological issues have so far prevented drawing clear conclusions about what approaches are better than others. Critical among these are the need for very large samples and biochemical confirmation of abstinence. This paper reviews ongoing research in this area including use of physical activity, social support, treatments tailored to 'stage-of change', and treatment tailored to cognitive and behavioural patterns of smoking. With the advent of widespread implementation of NHS smoking cessation treatment services in the UK there is an opportunity to undertake experimental and quasi-experimental research to promote development in this area. A proposal for taking this forward will be presented.

POSTERS

A randomised trial of Early Warning Signs Relapse Prevention Training in the treatment of alcohol dependence

G.A. BENNETT, J. WITHERS, Dorset Health Care NHS Trust, P.W. THOMAS, Bournemouth University, D.S. HIGGINS, J. BAILEY & E. DAVIES, Dorset Health Care NHS Trust.

Aims: Does Early Warning Signs Relapse Prevention Training (EWSRPT) prevent relapse in alcohol dependent persons with history of relapse?

Design: Randomised trial comparing (1) Aftercare as Usual (control) with (2) Aftercare as Usual plus 15 individual sessions of EWSRPT (intervention). Assessment at entry, and four, eight and 12 months later.

Setting: UK day treatment programme. Participants: 124 abstinent alcohol dependent patients just completing a six-week day treatment programme (63 per cent male) who had previously stopped drinking and relapsed at least twice (median five relapses): 62 in each condition.

Interventions: Control; eligibility to attend aftercare groups, supportive milieu, and alcohol-free social club Intervention; as Control plus 15 individual sessions of EWSRPT using Gorski's protocol, delivered by one of three therapists who were trained with Gorski's organisation and certified as competent.

Measures: Any drinking, any heavy drinking (three consecutive days consuming > eight units on each day), per cent days drinking, units per drinking day, GGT, ALT, Brief Symptom Inventory (BSI), Alcohol Problems Questionnaire (APQ) **Findings:** Intention to treat analysis found no significant differences in continuous abstinence during the follow-up year (17 per cent of 58 controls, 31 per cent of 58 treatment). Odds Ratio (OR) of relapse for treatment relative to controls 0.46 (95% CI 0.19 to 1.12, $p = 0.09$, NNT 7). Over the year the treatment group had significantly smaller probability of drinking heavily (74 per cent of controls, 55 per cent of treatment: OR 0.43, 95 per cent CI 0.19 to 0.96, $p = 0.04$, NNT 5), fewer days drinking ($p = 0.05$) and fewer days heavy drinking ($p = 0.04$). No significant differences in daily units, GGT, ALT, psychopathology, alcohol problems, quality of life, or costs of services used during follow-up. Longer-term follow-ups were carried out on 102 participants, 71 of whom were interviewed at a mean of 27 months after entering the trial: no treatment effects were seen in this subsample. **Conclusions:** The use of EWSRPT is justified by its clinically worthwhile effects in reducing the recurrence of heavy drinking.

Relationship between childhood abuse, current mental health difficulties and trauma symptoms in people who misuse substances

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Research has shown that there is significant comorbidity between substance misuse and mental health difficulties (Marsden *et al.*, 2000). There is increasing evidence that a high proportion of clients seeking treatment for substance misuse problems may have a history of childhood abuse (Simpson & Miller, 2002). It has also been shown that there is a strong link between childhood trauma and later mental health difficulties (e.g. Briere & Runtz, 1990).

Aims: This study aimed to examine the relationship between childhood abuse and current psychiatric and trauma symptoms in substance misusing participants.

Design: A cross-sectional study, using standardised psychometric questionnaires.

Participants: 22 clients (13 men, nine women) presenting to the Cornwall Drug & Alcohol Team.

Findings: Half of the 22 clients interviewed reported a history of severe or extreme childhood trauma (sexual, physical or emotional, or a combination of these) as measured by the Childhood Trauma Questionnaire (Psychological Corporation). Statistically significant correlations were observed between the extent of childhood abuse and current mental health and trauma symptoms.

Conclusion: The importance of acknowledging that many clients presenting to substance misuse services may have experienced childhood trauma, and that this is associated with higher levels of mental health difficulties, is highlighted. It is suggested that, in addition to substance misuse treatment, clients require assessment and treatment for existing mental health difficulties and unresolved childhood trauma experiences. An understanding of the possible function of self-medication in the use of substances is also stressed as a crucial aspect of treatment provision.

Does psychological status affect the outcome of a group intervention for smoking cessation?

J. CASSON, C.C. CHRYSSANTHOPOULOU & D. SHAH-ARMON, Specialist Smoking Cessation Service, Hillingdon NHS Primary Care Trust.

Aims: The present research aimed to examine the role of somatic symptoms, anxiety, social dysfunction and depression in influencing the effectiveness of a group intervention for smoking cessation.

Design: Independent variables consisted of somatic symptoms, anxiety, social dysfunction and depression. Four-week abstinence from smoking was treated as the dependent variable. Setting: The study was based on data collected at the Specialist Smoking Cessation Service at Hillingdon Hospital.

Participants: The sample consisted of 383 smokers who attended the programme between April 2001 and June 2003.

Measurements: Independent variables were assessed prior to the intervention through the 28-item version of the General Health Questionnaire (Goldberg & Hillier, 1979). Four-week abstinence was measured via carbon monoxide levels in expired breath at the end of the programme.

Intervention: Participants attended a 7-week treatment programme based on the Withdrawal-Oriented Therapy for smokers (Hajek, 1989).

Findings: Controlling for the effects of confounding variables such as age, significant differences emerged between successful quitters ($N=246$) and non-quitters in terms of somatic symptoms and depression. Successful quitters had lower mean scores on these sub-scales of the GHQ compared to those who were unsuccessful.

Conclusions: Consistent with previous research, results suggest that individuals' attempts to quit

smoking are influenced by their psychological well being and underline the need for a more thorough consideration of the role of somatic symptoms and depression in influencing the effectiveness of group interventions for smokers.

Determinants of abstinence from smoking following a seven-week group intervention

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Aims: The present study aimed to determine which factors, if any, influenced the effectiveness of a group intervention for smoking cessation. The variables examined were nicotine dependence, motivation to quit, motives for smoking and socio-demographic characteristics.

Design: Nicotine dependence, motivation to quit, motives for smoking and socio-demographic characteristics were treated as independent variables. The dependent variable was four-week abstinence from smoking.

Setting: The study was based on data collected at the Specialist Smoking Cessation Service at Hillingdon Hospital.

Participants: The sample consisted of 383 smokers who attended the programme between April 2001 and June 2003.

Measurements: Independent variables were assessed prior to the intervention through a self-report questionnaire. Four-week abstinence was measured via carbon monoxide levels in expired breath at the end of the programme.

Intervention: Participants attended a seven-week treatment programme based on the Withdrawal-Oriented Therapy for smokers (Hajek, 1989).

Findings: Significant differences emerged between successful quitters ($N=246$) and non-quitters in terms of socio-demographic characteristics and motives for smoking. Successful quitters were more likely to be older in age and were less likely to report stress as a motive for smoking compared to those who were unsuccessful.

Conclusions: Results suggest that the effectiveness of group interventions following the Withdrawal-Oriented Therapy model may be influenced by smokers' age. Findings also highlight the role of stress as a potential risk factor for relapse and underscore the importance of considering the psychological motives for smoking initiation and maintenance in future psychosocial interventions for smokers.

Preaching to the unconverted: A study of Hepatitis C in primary care

J. FERNANDEZ, Substance Misuse Services, Camden and Islington Mental Health and Social Care Trust.

Introduction: Hepatitis C is a virus that can cause liver disease; it can lead to years of ill health and can kill. Yet Hepatitis C is preventable. It can only be caught through blood contact, or more rarely other body fluids. For this reason the largest group of people affected by Hepatitis C are those classed as injecting drug users. If drug users can be encouraged to change their behaviour than the rate of incidence of Hepatitis C contraction should decrease. The aim of this study is to identify client awareness of preventative measures around blood-borne viruses. This will include questions asked around those viruses most common in drug users. The Brent study (1999) showed large differences in clients' knowledge of avoiding blood-borne viruses when comparing HIV to Hepatitis C. The proposed study would seek to validate this evaluation and thus indicate a need to emphasise Hepatitis C in health education for professionals and clients in Islington. The study is proposed to take place in all sectors of Islington Substance Misuse Services and in shared care clinics in GP surgeries.

Approach/Methodology: All new clients into the service from the assessment were included from the Probation service satellite at St. John's Street. Those taken into treatment will be re-questioned again for evaluation purposes after

six months. This is very much an evaluation of clients' knowledge and perception, which will help the service plan a suitable training programme for staff and clients in the service. The study will hopefully show areas where greater health education is needed and show drug workers in primary care settings whether evaluation/research can highlight where resources can be better directed to benefit clients' knowledge and holistic health. The study would also aim to encourage clinicians to look at all areas of clinical practice and the role that auditing and research can play in improving research provisions. The study used a semi-structured questionnaire. The approach was qualitative with space for the participants to elaborate their answers. The main demographic questions of age, gender etc. were asked. The questionnaire was conducted in the probation services and collected after a six-month period.

Outcomes: The result of the knowledge audit will hopefully clarify the extent of knowledge of preventative measures for Hepatitis C and treatments that are available.

Client's self-reported experience of inpatient drug or alcohol detox

Z.A. JAY & D. SHAH-ARMON, Specialist Smoking Cessation Service, Hillingdon NHS Primary Care Trust.

Aims: To gain a greater understanding of the experience of clients provided with an inpatient substance misuse detox, in terms of their satisfaction with the personal, social, environmental and staff factors. Also to compare the detox experiences of clients who were inpatients on general psychiatric wards with those who were inpatients at a specialist addiction service. By increasing our awareness of the factors with which clients are unsatisfied improvements to the service can be made.

Design: A 28-item self-report questionnaire assessing various aspects of patient satisfaction was distributed to all clients from the Hillingdon Drug and Alcohol Service who received an inpatient detox between June 2002 and July 2003.

Participants: 20 individuals returned completed questionnaires, a response rate of 42 per cent. Nineteen presented for alcohol detox and one presented for a methadone detox. Five clients experienced detox at a specialist addiction centre whilst 15 received their detox at one of two general psychiatric wards.

Findings: Clients reported satisfaction with the nursing care they received on the wards. Whilst some individuals who were on the general psychiatric wards found the experience of being on the ward stressful, the majority of individuals related positively to the other mental health patients. Forty per cent of patients were unsatisfied with the quality of the food provided and 65 per cent of patients expressed dissatisfaction with the level of daily activities available to them. Overall there were no observable differences in patient satisfaction between the psychiatric wards and the specialist addiction centre.

Conclusions: Overall clients reported being satisfied with the service they received both on the general psychiatric and specialist wards. There were a few particular areas of dissatisfaction, namely the food provided and the number of daily activities offered. There was some discrepancy between client's verbal reports of their experience on the wards to drug and alcohol service staff and the way the forms were completed.

The effectiveness of 'buddy' systems for smokers attending a seven-week smoking cessation intervention

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Aims: The present study aimed to investigate the role of 'buddy' systems in helping individuals attending a smoking cessation treatment

programme remain abstinent.

Design: A retrospective design was employed. The use of a 'quit-mate' or 'buddy' and the frequency and type of support provided were the independent variables. Four-week abstinence from smoking was the dependent variable.

Setting: The study was based at the Specialist Smoking Cessation Service at Hillingdon Hospital.

Participants: The sample consisted of 120 smokers attending a seven-week smoking cessation programme. During the programme, participants were encouraged to have a 'quit-mate', another smoker from the group with whom they could get in touch during the week for mutual support and understanding.

Measurements: Independent variables were assessed after the completion of the treatment through a self-report questionnaire. Abstinence was measured at the final session of the programme via carbon monoxide levels in expired breath.

Findings: Preliminary results showed that smokers who had a 'quit-mate' were more likely to be abstinent at four weeks. Among those who had utilized this support system, those who had kept in frequent contact with their 'quit-mate' during the treatment were more likely to remain abstinent compared to those who had not.

Conclusions: These findings indicate that 'buddy' systems may constitute a useful component of interventions for smoking cessation. Encouraging smokers to maintain frequent contact with a 'quit-mate' may provide them with additional emotional and practical help to cope with withdrawal symptoms and cravings experienced during the first month of quitting.

An exploratory study examining the types of attachment relationships between parents who substance misuse and their children.

J.M. LITTLE & D. SHAH-ARMON,
Specialist Smoking Cessation Service,
Hillingdon NHS Primary Care Trust.

Aim: To explore the type of attachment relationships between parents who substance misuse and their children and to increase our knowledge of their experiences.

Design: Questionnaire administered to clients, in June 2003, attending a Drug and Alcohol Service who were identified as parents by their keyworkers. They were asked to complete 'The attachment questionnaire' (modified Child Rearing Practices Report Rickel & Biasatti, 1982) with additional demographic and substance misuse history.

Participant: Five clients completed the questionnaire, all of whom were the main carer for their child, mean age = 43.2, mean number of children = 2. The most problematic substance clients identified was alcohol, followed by tobacco, cannabis and methadone.

Findings: On Nurturance Scale of the attachment questionnaire: Mean = 62.6, Std = 9.66, Range: 17-82 with the higher score indicating greater nurturance. On the Restrictiveness Scale: the Mean = 54.6, Std = 12.97, Range: 22-88 with the higher score indicating greater restrictiveness. Seventy-one per cent strongly agreed that their use was negatively impacting their life. Forty-three per cent said that it was negatively impacting their relationship with their child, while 57.2 per cent said that it was not applicable. None of the children were misusing substances.

Conclusions: Clients generally scored higher on the nurturance than the restrictiveness scale however the small sample size prevents any generalisations being made. Further research is required in this field with larger samples.

Factors influencing access to drug and alcohol treatments for ethnic minority groups

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Aims: To increase our understanding of factors influencing access to substance misuse treatment for ethnic minority groups, and thereby

provide more appropriate treatment options.

Design: Cross-sectional design. A self-administered questionnaire randomly given to clients attending a community drug and alcohol team.

Participants: 53 clients, mean age 32 years (range 18–60 years). Forty-five male; 20 were from black and ethnic minority (BME) groups.

Measurements: A semi-structured questionnaire measuring demographic details, substance use and factors influencing access to treatment and client-staff matching for ethnicity.

Findings: The majority (75 per cent) of BME

clients were Asian. Sixty per cent of all clients were attending for heroin treatment. In both BME and non-BME groups, pervasive barriers to treatment were feeling of shame, waiting lists and concern that a third party would be informed.

There was a significant difference between BME and non-BME groups in wanting staff to know about their cultural background ($\chi^2 = 6.43$, $df = 1$, $p < 0.05$). Interestingly, the majority in both groups did not wish to be seen by a clinician of the same ethnicity. Both groups also reported they would find relapse prevention and individual counseling helpful.

Conclusions: The findings suggest that BME and non-BME groups are similar in terms of presenting problems and barriers they perceive in accessing treatment. Understandably, significantly more BME clients thought it was important for clinicians to be aware of their culture, yet they did not wish to be ethnically-matched with their worker, suggesting they may feel judged in such situations. Research findings will be discussed in terms of service provision.

Psychobiology Section Annual Meeting

Annual Meeting of the Psychobiology Section.
Old Dungeon Ghyll, Langdale, The Lake District,
10–12 September 2003.

The contribution of the human hippocampus to recognition memory

J.P. AGGLETON, S.D. VANN & E. WILDING, School of Psychology, Cardiff University.

Objectives: The study contrasted two models of the anatomy of human declarative memory that make quite different predictions concerning the importance of the human hippocampus for recognition memory.

Design: The single case study involved subject KN (44-year-old man), who had suffered bilateral hippocampal pathology (50 per cent volume loss) as a result of meningitis 10 years prior to the study. Comparisons were made with normal control subjects.

Methods: Subjects completed standard tests of memory (Wechsler Memory Scale-revised, Warrington Recognition Memory Test, Doors and People, Calev Test) in addition to a task designed to separate putative components of recognition ('know' vs 'remember'). Scalp recorded event-related potentials (ERPs) were made during tests of word recognition.

Results: Subject KN remains densely amnesic as measured by his recall scores, e.g. 88 General Memory WMS-r, 50 Delayed Recall WMS-r (the latter score is at floor). His recognition scores were more variable, ranging from the normal to the mildly impaired. On tests of verbal recognition he consistently performed well (e.g. Warrington RMT 75 per centile, Doors and People name recognition 25 per centile) which contrasted with his recall (e.g. Doors and People name recall one per centile, Calev Test Recall 7/24 Recognition 20/24). ROC analyses of word recognition were consistent with a reliance on 'familiarity', while ERP measures correctly identified old and new items although the ERP signature of recollection was not part of this signature.

Conclusions: Although KN is densely amnesic, aspects of recognition memory are relatively spared. His apparent preservation of familiarity provides strong support for dual process models of recognition that assume that different processes (familiarity, recall) depend on different brain structures.

Measuring the effects of functional foods: Methodological minefield?

L. DYE, G. FINLAYSON & N. KING, Human Appetite Research Unit, University of Leeds.

Background: Consumption of certain macronutrients is thought to lead to metabolic and biochemical changes that may influence subsequent brain function, including cognitive ability and appetitive response. The paper draws on studies of the acute effects of macronutrients and glycaemic index on cognitive performance and subjective state to discuss methodological and substantive issues in the impact of nutrition on cognitive function. Cognitive function is strongly protected and enhancement of performance is seen mainly with glucose manipulations, which provide readily available neural fuel.

Design & Methods: A single-blind repeated measures design study examined subjective mood and appetite, and vigilance before and following the consumption of two pre-loads, almost identical in per cent fat and total energy, that were either low-carbohydrate (~5 per cent) and high-protein (~74 per cent) or high-carbohydrate (~76 per cent) and low-protein (~2 per cent). Blood glucose and heart rate variability were measured.

Results & Conclusion: The pre-loads exerted different metabolic effects, yet resulted in no significant differences on mood, appetite, or cognitive performance. The magnitude of

metabolic and/or biochemical changes that are required to induce/detect a change in cognitive function and the potential to suppress/compensate for changes in energy and macronutrient supply as result of nutritional manipulations with different glycaemic indices are discussed.

Increases in Secretory Immunoglobulin A following disgust

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Objectives: To investigate the influence of gender on the previously reported decreases in Secretory Immunoglobulin A (S-IgA) following the induction of the 'passive stressor' disgust.

Design: A three-factor design was employed. Male and female participants were randomly allocated to either a disgusting or neutral condition. Three measures of S-IgA were collected (immediately before, immediately after and 10 minutes after the manipulation).

Methods: A pilot study was conducted to ensure that the film clips employed evoked a significantly higher disgust rating than seven other emotion dimensions, assessed by a modified version of the Differential Emotions Scale. The clips were amalgamated to create a 10-minute film clip sequence for the experimental stimulus, and a 10-minute neutral clip sequence for the control condition. Forty-two participants were randomly allocated to either the disgust condition (14 women and 12 men), or neutral condition (11 women and five men). The three saliva samples were collected via the Salivette (Sarstedt, Germany) collection system. S-IgA concentration was determined using a commercially available Single Radial Immuno Diffusion kit (Dade Behring, UK) and salivary flow rate determined gravimetrically.

Results: In contrast to previous findings, the results showed an increase in S-IgA output immediately following the induction of disgust for both males and females.

Conclusions: The implications for our results will be discussed in relation to the status of disgust as a 'passive stressor'.

Effect of meals varying in glycaemic index on cognitive performance and subjective perceptions of performance

R. HANDLEY, N. KING & L. DYE, The Biopsychology Group, Psychology Dept., University of Leeds.

Objective: To investigate the effects of two carbohydrate meals with a high or low glycaemic index on objective, cognitive performance and subjective performance evaluation.

Design: A fully repeated measures design incorporating two conditions and three measurement periods; baseline, post-lunch and delayed post-lunch (mid-afternoon).

Methods: An opportunity sample of 12 males and nine females (mean age 25 years) were recruited. Glycogen stores were controlled through the administration of a standardised evening meal and breakfast prior to each testing day. Computerised cognitive tests assessed memory (pattern recognition), vigilance, simple and choice reaction time and visual information processing capacity. Performance was measured at baseline (cognitive battery one), + 45 minutes (cognitive battery two) and + 105 minutes (cognitive battery three). Blood glucose was measured prior to and following the first and second cognitive testing battery. Visual analogue scales were also used to assess expected and actual effort and performance efficiency.

Results: The HGI lunch was associated with faster reaction time on vigilance and pattern recognition tasks, reduced errors in the vigilance task and increased arousal in the early afternoon. Impaired post-prandial reaction time in the vigilance task and reduced arousal were evident following the LGI lunch. However, increased accuracy was associated with this meal.

Cognitive and mood effects of acute doses of caffeine in habitual consumers and habitual non-consumers of caffeine

C. HASKELL, D.O. KENNEDY, Human Cognitive Neuroscience Unit, Northumbria University, K. WESNES, Human Cognitive Neuroscience Unit, Northumbria University & CDR Ltd & A.B. SCHOLEY, Human Cognitive Neuroscience Unit, Northumbria University.

Objectives: Most studies into the behavioural effects of caffeine involve caffeine-deprived, habitual caffeine users. It is therefore unclear whether any beneficial findings are due to the positive effects of caffeine or to the alleviation of caffeine withdrawal. The present study therefore investigated the acute cognitive and mood effects of caffeine in frequent and infrequent caffeine consumers.

Design: The study employed a randomised, placebo-controlled, double-blind, balanced crossover design involving 24 habitual caffeine consumers (mean = 217 mg caffeine/day), and 24 habitual non-consumers (mean = 20 mg/day).

Methods: Following a baseline assessment participants (who were overnight caffeine-deprived) received a 150 ml drink containing 75 mg or 150 mg of caffeine or a matching placebo. Treatments were administered according to a Latin Square with a wash-out period of not less than 48 hr. Assessments were undertaken 30 min. post-drink and included the Cognitive Drug Research computerised test battery, two serial subtraction tasks, a sentence verification task and mood scales.

Results: Results were computed as change from baseline. There were significant dose-related improvements in simple reaction time, digit vigilance reaction time and sentence verification accuracy in both groups. Self-rated tiredness and mental fatigue were also reduced in both groups. There were group effects for rapid visual information processing false alarms and a treatment-group interaction for working memory measures.

Conclusions: These results cannot be explained by a simple withdrawal alleviation model. Rather they indicate that caffeine produces a complex pattern of behavioural effects which differ with respect to task and daily caffeine consumption levels.

The effects of a caffeine and glucose-containing drink on the sustained performance of cognitively demanding tasks

D.O. KENNEDY & A.B. SCHOLEY, Human Cognitive Neuroscience Unit, Northumbria University.

Objectives: Glucose and caffeine are two of the most widely taken psychopharmacological agents, and are commonly consumed together in a number of drinks and foodstuffs. Despite this, little is known about the cognitive and mood effects of the two substances in combination. The aim of the current study was to examine the effects of a glucose and caffeine-containing drink during sustained mental activity.

Design: A placebo-controlled, double-blind, balanced-crossover design was employed.

Methods: 30 healthy young adults consumed two drinks (containing either 38 mg caffeine and 68 g glucose, or 46 mg caffeine and 68 g glucose respectively), and a flavour matched placebo drink on separate mornings. The drink order was dictated by a Latin square. A 10-minute test battery was utilised which consisted of: computerised Serial Threes (lasting two min.); Serial Sevens (two min.); and the Rapid Visual Information Processing Task (RVIP, five min.); and a visual analogue scale rating perceived mental fatigue. Following a baseline assessment the drink was administered. This was followed by a 10-minute break, after which the battery was repeated six times over the subsequent hour.

Results: Compared with placebo both active drinks resulted in significantly improved RVIP accuracy during the third, fourth and sixth post-treatment completion (i.e. when the task was performed at 35–39, 45–49 and 65–69 minutes post-treatment). During the first two sessions (minutes 13–14 and 23–24), Serial Sevens performance was more accurate in the 46 mg caffeine condition, which also reduced self-rated 'mental fatigue' following battery completions three to six. A follow-up study using a lower dose (33 mg caffeine, 60 g carbohydrate) found results largely consistent with this for the RVIP and mental fatigue measures.

Conclusions: Overall these data suggest that a drink containing glucose and caffeine can improve performance and subjective feelings of mental fatigue during sustained mental activity.

Mood effects of *Melissa officinalis* (Lemon Balm) during acute psychological stress

W. LITTLE, D.O. KENNEDY & A.B. SCHOLEY, Human Cognitive Neuroscience Unit, Northumbria University.

Objectives: *Melissa officinalis* (Lemon Balm) has a longstanding history in herbal medicine as a hypnotic and anxiolytic agent. We have recently reported positive cognitive and mood effects of *Melissa officinalis*. The present study examined the effects of single doses of *Melissa officinalis* on mood changes in response to mild, experimentally induced psychological stress. Performance on a series of tasks was also monitored.

Design: A randomised, placebo-controlled, double-blind, balanced cross-over study involving 18 healthy adults was used.

Method: Participants received placebo, 300 mg and 600 mg of *Melissa officinalis* according to a Latin Squares design with a seven-days wash-out period. On each visit, treatment was administered immediately after completion of a baseline session with the experimental session commencing 60 min. later. The Defined Intensity Stressor Simulation (DISS) is a multi-tasking platform and was used to induce mild psychological stress. Mood was assessed using Bond-Lader Visual Analogue Scales immediately prior to, and immediately following the DISS.

Results: Results revealed significantly increased 'calmness', and reduced 'alertness' following the administration of the 600 mg dose of *Melissa officinalis*, in comparison to placebo. The 300 mg dose significantly improved speed of mathematical processing, with no reduction in accuracy.

Conclusions: It appears that *Melissa officinalis*, taken at moderate doses, has beneficial mood effects during mild psychological stress. Furthermore, there was no evidence of any 'cost' to performance, as measured here. The underlying mechanisms remain to be elucidated, and further investigation is necessary to establish whether similar effects would be found in more naturalistic settings.

Social cognition in epilepsy

J.T. McCAGH, Liverpool John Moores University, R. CORCORAN, University of Manchester, G.A. BAKER, Liverpool University & The Walton Centre for Neurology & J.E. FISK, Liverpool John Moores University.

Aims & Objectives: Social cognition is an important but neglected area of study in the field of epilepsy. The present study aims to assess performance on 'theory of mind' (ToM) tasks in relation to epileptic seizure foci in order to investigate the organic basis of 'theory of mind' abilities and to enhance our understanding of social cognition in epilepsy.

Design: This study used six groups ($N = 68$) patients with clearly defined seizure foci in the right and left pre-frontal cortex, the right and left temporal lobes, a primary generalised epilepsy group and a group of normal controls.

Methods: All patients were recruited from a tertiary referral unit. Patients were assessed on two ToM measures, their appreciation of deception and false belief in ToM stories and their

ability to infer the veiled intentions behind speech acts in a Hinting task. Patients were also assessed on their Immediate Story Recall using a sub test from the Adult Memory and Information Processing Battery and IQ was controlled for using the Quick Test.

Results: All the epilepsy groups illustrated poor story recall. ANCOVA was conducted with group between participants. Dependent variables were first order and second order ToM stories and hints, and immediate story recall was included as a covariate. Analyses revealed that only the right frontal group differed significantly from controls on hints and ToM. Right frontals also differed significantly from the other groups on ToM but not on hints.

Conclusions: Findings suggest that impairment in theory of mind may be a particular feature of right frontal lobe pathology, this deficit appears not to be mediated by poor logical memory.

Further evidence for deficits in the updating executive component process of working memory in users of MDMA (ecstasy)

C. MONTGOMERY, J.E. FISK & R.D. NEWCOMBE, Liverpool John Moores University.

Objectives: Research has demonstrated working memory (McCann *et al.*, 1999) and central executive (Wareing *et al.*, 2000) deficits in recreational users of ecstasy. From the perspective of Miyake *et al.*'s construct of a fractionated executive system, it appears to be the 'updating' component which is most susceptible to the effects of recreational ecstasy use (Wareing *et al.*, 2002, Montgomery *et al.*, 2003). Tests that supposedly load on this component have shown an MDMA related deficit (e.g. random letter generation, associative learning, computation span). However, a test (running memory) that directly taps the updating component has not been used before with ecstasy users.

Design & Methods: 21 ecstasy users (mean age 21), and 22 non-ecstasy user controls (mean age 22) were tested on the updating function with a running memory span task requiring participants to watch chains of consonants of unknown length (between six and 12 letters), and to serially recall the most recent six items. Participants were required to complete 24 trials in total, including eight practise trials. A mixed design was used with user group (ecstasy user/non-user) as the between participants variable, and two recall measures (chain length and serial position) as the within participants variables.

Results: There was a significant between subjects effect, with ecstasy users performing worse than non-users on the running memory test. Although there were no significant interactions, the interaction between serial position and ecstasy use/non-use approached significance. The effects of ecstasy on memory updating remained statistically significant after control for working memory and central executive capacity, and also the use of other drugs.

Conclusions: The results of the present paper further support the proposition that it is the updating component of the central executive that is most susceptible to ecstasy use. The results are discussed in light of neuroimaging studies of memory updating from other areas, and a possible location for the localisation of the updating component is considered.

Psychobiological aspects of liver transplantation: A controlled, national, prospective, single-centre study

R.E. O'CARROLL, University of Stirling, M. COUSTON, J. COSSAR, G. MASTERTON & P.C. HAYES, Scottish Liver Transplant Unit, Edinburgh Royal Infirmary.

Objectives: Liver transplantation is a well-established treatment for liver failure. Prolongation in survival is accepted, but the long-term effects of liver transplantation on cognitive and psychological outcome are unclear.

Design: In the present study, psychological data were collected prospectively in patients who were assessed for liver transplantation and were compared with two control groups, chronic stable liver disease patients and healthy individuals.

Results: Memory impairment, psychomotor slowing, anxiety and depression were commonly observed in transplant candidates. Severity of liver disease at assessment was significantly associated with slowing of reaction time. Memory impairment distinguished those who were not listed for transplant because of illness severity.

One-year post-transplant follow-up data from transplanted patients revealed significant improvement in most psychological domains relative to both healthy comparison participants and patients with chronic liver disease who were not transplanted. Immunosuppression (cyclosporin versus tacrolimus) did not have differential effects on quality of life (QoL), fatigue or affective status, although those taking cyclosporin showed greater improvements at one-year follow-up on simple and choice reaction times. Good psychological outcome at one-year was generally maintained at three-year follow-up.

Conclusions: Cognitive impairment is commonly observed in liver transplant candidates. Improvements in cognitive function and QoL generally occur following transplant, but residual impairments may remain. Further research is needed to determine how residual cognitive impairment may impact upon everyday activities, e.g. driving ability.

Effects of testosterone on mood, aggression and sexual behaviour in young men: A double-blind, placebo-controlled, cross-over study

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Objectives: The prospects of wider application of testosterone (T) in novel indications such as male contraception have prompted renewed interest in the investigation of non-reproductive actions and safety of androgens. The aim of this double-blind, placebo-controlled, cross-over study is to investigate potential changes in mood and behavior in response to short-term elevations in circulating T concentrations produced by the new long-acting parenteral preparation, T undecanoate.

Method: 28 healthy, eugonadal men (aged 22 to 44 years) were randomised into one of two treatment groups. A1: active phase – receiving 1000 mg of TU i.m. A2: washout phase (no treatment) – eight weeks followed by A3: placebo phase – receiving 4 mL of castor oil i.m. (T vehicle) – eight weeks. B1: placebo phase – 4 mL of castor oil i.m. – eight weeks. B2: washout phase (no application) – eight weeks followed by B3: active phase – receiving 1000 mg of TU i.m. – eight weeks. Mood, self- and partner-reported physical and verbal aggression, anger, hostility, irritability, assertiveness, self-esteem and sexual function were assessed.

Results: TU treatment produced detectable but minor mood changes. Increased circulating T was associated with significant increases in anger-hostility accompanied by an overall reduction in fatigue-inertia. TU treatment, however, did not increase aggressive behaviour or induce any changes in non-aggressive or sexual behaviour.

Discussion: Our results suggest that exogenous T undecanoate – induced elevation of T, to the range likely to be used to suppress spermatogenesis in hormonal male contraception, have limited psychological effects which are restricted to minor mood changes. These changes were confined to times at which circulating T levels exceeded the physiological range.

Ecstasy tablets have largely comprised MDMA, except during the mid-1990s

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Rational & Objectives: It is widely recognised that not every tablet sold as 'ecstasy' contains MDMA (3,4 methylenedioxyamphetamine). This paper reviews the origins of the problem, and describes how purity levels have changed since it was first used recreationally.

Methods. Surveys into the pharmacological constituents of ecstasy tablets, and subjective reports of their perceived purity, provide the main empirical data for this review.

Results: From the mid 1970s to the early 1990s few problems were reported with the purity of ecstasy tablets, and biochemical analyses confirmed that they nearly always contained MDMA. During the mid-1990s, although most tablets continued to contain MDMA, many of the others comprised MDA (3,4 methylenedioxyamphetamine), or MDEA (3,4 methylenedioxyethylamphetamine), often as amphetamine drug mixtures. Dosage levels were often low during this period. Furthermore a minority (four to 20 per cent according to survey), contained non-amphetamine drugs such as caffeine, ephedrine, ketamine, paracetamol, or placebo. Then in the late 1990s, the proportion of ecstasy tablets containing MDMA increased to 80 to 90 per cent, and during the early 2000s purity levels of around 90 to 100 per cent have been reported. The historical reasons for this problem, also its theoretical and practical implications will be debated (Parrott, in press).

Conclusions: The ecstasy purity problem was mainly a phenomenon of the mid to late 1990s, when many tablets contained substances other than MDMA. However, before and since then, the proportion of ecstasy tablets containing MDMA has been far higher, and complaints from users been less frequent.

Neurosurgery for chronic, treatment-refractory, depression: Subsequent deficits in emotion recognition and social perception?

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Objectives: The aim of the current study was to establish if patients that had undergone a neurosurgical intervention for chronic, treatment-refractory, depression (combined anterior cingulotomy/anterior capsulotomy) would exhibit deficits on a novel test of emotion recognition and social perception.

Methods: Seven neurosurgery (NS) patients, four patients with chronic, treatment-refractory, depression (CTRD) that had not undergone surgery, and six healthy – matched controls were tested on The Awareness of Social Inference Test (TASIT – McDonald, Flanagan & Rollins, 2002). TASIT involves presenting the participants with a series of videotaped social interactions and asking them to either identify the emotion displayed by one of the protagonists (emotion evaluation phase) or to make inferences about the thoughts, feelings, intentions and beliefs of the different individuals involved in the interaction (social inference phase).

Results: Neurosurgical patients, but not patients with CTRD, were significantly impaired, relative to the healthy controls, in recognising the emotion displayed. Both NS patients and patients with CTRD were significantly impaired relative to controls when making inferences about the interactions involving sarcasm. Patients with refractory depression, but not NS patients, also exhibited deficits in interpreting sincere interactions and social exchanges involving lies.

Conclusions: There would appear to be selective deficits in emotion recognition and social processing depending on patient group. Possible explanations for these group-dependent deficits will be discussed with reference to previous literature, particularly concerning the role of the anterior cingulate as a conflict monitor.

Hypertensive hypoalgesia

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Although the prevalence of hypertension in the UK has declined in the past 20 years, high blood pressure remains a common and serious medical condition. National surveys indicate that the prevalence of hypertension is 23 per cent. High blood pressure contributes to an increased incidence of a number of diseases, including coronary heart disease and stroke. Despite medical efforts focusing on early identification of and intervention for hypertension to help prevent the development of these leading causes of disability and death, many individuals with hypertension remain untreated, are inadequately treated, or are unaware of their condition. Studies over the past 20 years indicate that hypertension is associated with decreased pain perception (i.e. hypoalgesia). While a dampening of pain perception may seem benign, or even beneficial, it has been argued that hypertensive hypoalgesia can complicate accurate and early detection of heart disease, possibly by masking angina during episodes of myocardial ischemia. Based on emerging evidence that hypertension and hypoalgesia share common pathophysiological mechanisms, the research presented was designed to enhance understanding of the mechanisms of decreased pain perception in hypertension. The overall hypothesis was that hypertensive hypoalgesia results from enhanced activation of baroreceptors, endogenous opiates, and central pain modulation systems. Studies were conducted using the nociceptive flexion reflex (NFR) paradigm to examine the effects of arterial and cardiopulmonary baroreceptor stimulation, opiate blockade using naltrexone, and distraction/arousal on nociceptive transmission in healthy individuals and patients with hypertension. The results suggest that nociception was inhibited by baroreceptor stimulation but was facilitated by arousal and distraction. Hypertensive hypoalgesia is most likely to be mediated by baroreceptor mechanisms.

The effects of acute stress on cognitive performance in healthy young male volunteers

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Background & Objectives: The aim of this study was to investigate the effects of an acute stressor, Helicopter Underwater Evacuation Training (HUET), on cognitive performance and the mediating effects of social support on anxiety.

Method: 10 healthy male participants exposed to HUET and 10 age and gender-matched controls were assessed for immune function (S-IgA), working memory performance, anxiety level and level of social support. In addition, salivary cortisol levels were assessed. Participants provided a saliva sample and completed the operation span task for baseline assessment two days prior and two days post-training. On the day of the training (test day) participants' saliva samples were taken immediately prior to HUET training and 25 minutes post training. The working memory task was completed immediately prior to HUET.

Results: Results revealed significantly elevated state anxiety levels prior to HUET. Analysis of the cognitive data showed that two days post-stressor performance on the word span element of the operation word span task (working memory) was significantly better in the control group. Analysis of the social support data revealed a negative correlation between satisfaction with social support and trait anxiety. However, no mediating effect of social support on level of state anxiety was observed.

Conclusion: The results of this study indicate that anticipation of an acute stressor may inhibit learning processes. Moreover, the study suggests that although high levels of social support decrease trait anxiety, they appear to have no impact on state anxiety.

Cognitive ability amongst woman with breast cancer treated with adjuvant therapy

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Background: Recent research suggests that deficits in cognitive functioning may occur following adjuvant treatment for breast cancer. However, it is not clear whether deficits in cognitive function are due to chemotherapy and/or hormonal therapy (e.g. tamoxifen), or whether other factors such as psychological and disease morbidity may contribute to changes in neuropsychological function.

Methods: A cohort of 150 women treated with: (i) adjuvant chemotherapy and hormone treatment; (ii) adjuvant chemotherapy alone; or (iii) adjuvant hormone treatment alone were recruited into the study. Cognitive function was assessed using the Cognitive Drug Research (CDR) computerised assessment system. The tasks used were: Simple Reaction Time, Digit Vigilance, Complex Reaction Time, Numeric Working Memory, Immediate Word Recall, Delayed Word Recall, and Delayed Word Recognition. Pre-morbid ability was assessed using the National Adult Reading Test. In addition questionnaires examining prospective memory, cognitive failures, anxiety and depression, and health-related quality of life were administered. Women were at least six months post-chemotherapy at time of assessment.

Results: A series of regression analyses were conducted on preliminary data from 96 participants (mean age 54.27) who had undergone chemotherapy with or without tamoxifen. Results showed that duration of chemotherapy has a small but significant impact upon performance on the Delayed Recognition Task ($p = 0.043$), age, NART score, and emotional functioning were also significant predictors of Delayed Word Recognition. Time since treatment, tamoxifen, fatigue, anxiety, and pain did not predict cognitive performance on this task. However, the overall model had a poor fit (Adj. $R^2 = 0.20$, $F(9,87) = 3.57$, $p < 0.001$). A relationship between treatment related factors and cognitive performance was not found for the remaining CDR tasks.

Conclusions: It is suggested that longer durations of chemotherapy may result in poorer performance in word recognition tasks. However, the impact on cognitive function of specific chemotherapeutic agents and the emotional impact of longer durations of treatment need to be explored further.

Olfaction and male sexual orientation

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Background & Objectives: While there has been extensive research performed on how visual and auditory cues affect human social behaviour there has been little work on the effects of olfactory cues. Within recent years individual researchers have demonstrated that not only do humans have sensitive olfactory capabilities, but that odours can play a significant role in regulating social behaviour. Indeed there is emerging evidence that certain elements of human sexual behaviour are particularly influenced by olfaction (Wysocki *et al.*, 2003; Jacobs *et al.*, 2002; Stern & McClintock, 1998). This study examined the effects that male sexual orientation can have on this process.

Methods: Samples of human body odour were collected from self-designated homosexual and heterosexual males, and were presented to heterosexual female participants for evaluation. All sample collection and analysis was performed under strict methodological controls.

Results & Conclusion: Preliminary findings suggest there are male sexual orientation significantly affects female perceptions of human

body odour. These findings are interpreted in terms of recent evolutionary considerations of human homosexual behaviour (Muscarella *et al.*, 2001; Kirkpatrick, 2000; McKnight, 1997), and research suggesting a link between olfaction and same sex behaviour in non-human animals (Vaias *et al.*, 1992; Kitamoto, 2002; Leybold *et al.*, 2002).

Everyday memory and related processes in patients with anorexia nervosa and patients with bulimia nervosa

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Objective: The aim of the present study was to investigate everyday memory and related processes in patients with anorexia nervosa and patients with bulimia nervosa and to identify factors relating to any impairments identified.

Design & Method: 12 patients with anorexia nervosa, 12 patients with bulimia nervosa and 18 age-matched, healthy volunteers took part in a case-control study. All participants were female. Cognitive functioning was measured using the Prospective Memory Questionnaire (PMQ) and the Dysexecutive Questionnaire (DEX). Eating disorder symptomatology was measured using the Eating Attitudes Test Short Form (EAT-26) and the Bulimic Investigatory Test, Edinburgh (BITE). Measures of attendant anxiety and depression were obtained using the Hospital Anxiety and Depression Scale (HADS).

Results: Scores on the eating disorder scales confirmed that the three groups were clinically distinct. Both patient groups were significantly more symptomatic than controls on the DEX measure and on the anxiety and depression measures. Significant correlations were found between scores on the DEX measure and scores on the anxiety and depression scales. Analysis of covariance revealed that once anxiety and depression had been controlled for, no between-group differences on the DEX measure remained. No between-group differences were identified on the PMQ measure.

Conclusion: Results indicate that day-to-day cognitive functioning is impaired in patients with both anorexia nervosa and bulimia nervosa. This impairment appears to be more associated with attendant depression and anxiety symptoms than with the eating disorder *per se*. Clinical implications of these findings and possible limitations of the PMQ with these patient groups are discussed.

Effects of cognitive demand and word emotionality on memory and blood glucose

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Background: It is known that emotional material is better remembered than neutral material. Implicit memory for emotionally laden material this phenomenon may be linked to the liberation of glucose. Cognitive demand has the opposite effect, leading to reduced performance and measurable falls in blood glucose levels. This study aimed to compare these phenomena directly.

Design: A 2 x 2, parallel groups design was used ($N = 20/\text{group}$), where the emotionality of material and the absence and presence of a secondary task was manipulated.

Methods: 80 young adults were presented with either neutral or emotional word lists with or without a secondary task (prescribed alternating hand movement sequences). Free recall and recognition tasks followed 15 min. later. Blood glucose levels and heart rates were also monitored.

Results: Processing of emotional material resulted in significantly raised blood glucose levels which were independent of heart rate changes. Co-performing the secondary task did not reduce this glycaemic effect, however, it did

reduce recall scores. Unexpectedly, there was no main effect of word type on recall or recognition. This latter finding appeared to be attributable to the generation and acceptance of more false positives in the emotional word conditions, suggesting that these led to a 'false memory' paradigm.

Conclusions: These data confirm that processing emotional material can produce measurable increases in blood glucose supporting previous findings using implicit memory for pictorial stimuli. These data suggest that there are complex, possibly independent, physiological and cognitive processes that modulate trace consolidation of emotional material.

Female salivary testosterone and bio-behavioural studies: The importance of multiple sampling

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Background: In males testosterone (T) has a characteristic diurnal rhythm; higher in the morning and lower in the afternoon and early evening. While taking this confound into account, studies investigating the relationship between androgens and competition have, nevertheless, tended to utilise single measurements to determine baseline, pre-, and post-competition levels. However, little is known about daily patterns of T in females and this hinders the formulation of effective research design. Consequently, this study sought to provide a comprehensive picture of the daily pattern of female salivary T. Findings are discussed in relation to the use of single measurements in bio-behavioural studies.

Method: 28 healthy females, none of whom were administering any form of hormonal medication, participated in this study. Following stimulation with sugar-free gum, nine 5 ml saliva samples were collected throughout the course of the day; one every two hours from 7am until 11pm. In addition, participants were asked to report events such as alcohol consumption, sexual activity, exercise, etc. T concentration was measured, following ether extraction, by an indirect ELISA method.

Results: Although T concentration showed a circadian rhythm this was not significant. Repeated measures ANOVA using Greenhouse-Geisser, $F(3,89)$, 0.878 , $p = 0.458$. Log mean concentration at 9am = 2.20 pg/ml and at 9pm = 2.10 pg/ml. Perhaps more importantly, throughout the course of the day T concentrations were highly variable with episodic fluctuation of individual data points exceeding 93 per cent of 9am levels. Such peaks are far higher than any reported increases in baseline to pre/post competition determinations.

Conclusions: These results suggest that not only may single T measurements be theoretically misguided for bio-behavioural studies but that taking account of diurnal variation only may be the wrong unit of analysis in the design of study protocols.

Development of tests of psychological performance using a digital pen

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Purpose: To automate the administration of paper and pencil tests, thus standardising administration, simplifying the experimenter's task, and allowing the collection of more detailed information about task performance.

Background: Performance tests are increasingly being automated using computers or dedicated equipment, but this approach is problematic for many paper-based tests. In some cases, such as mazes, automation is possible using pen-based computers, but there are limitations with screen size. It is also possible that the different 'feel' of a stylus on a screen might be a factor. Recently a digital pen/paper system (Anoto[®]) has become available which allows automatic recording of the

position of a conventional ink pen on paper. **Methods:** Test material is printed on special paper which has an irregular pattern of dots. These dots are small enough to be invisible in normal use. The digital pen has a camera which records the dot pattern, and from this calculates the position of the pen on the sheet. The accuracy of this position is about 0.3 mm, and the position is recorded 100 times per second, allowing details of both position and speed of each written stroke to be recorded in considerable detail. This approach is suitable for a variety of test types, including maze/tracking tasks, figure drawing or copying, trails, handwriting analysis, and visual analogue scales. **Conclusion:** The digital pen may be a valuable addition to the methods available for automated test administration.

Selective effects of clonidine and temazepam on attention and memory

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Objectives: To compare the effects of temazepam (which enhances GABA actions) and clonidine (a 2 adrenoceptor agonist) on tests of psychomotor function, attention, memory, logical reasoning, and mood.

Design: Five-period crossover comparing placebo (PL); clonidine 150 g (C1); clonidine 300 g (C2); temazepam 15 mg (T1) and temazepam 30 mg (T2) in separate sessions at least four days apart.

Methods: 15 healthy volunteers, seven male, eight female, aged 18 to 25 years (mean 21) and weighing 51 to 127 kg (mean 69) took part in a familiarisation session and then in five experimental sessions each lasting about four hours. A baseline test battery was administered after which volunteers received one of the five treatments by mouth according to a Williams square allocation. Testing was again carried out at 45, 90 and 135 minutes post-dose.

Results: Analysis of Variance was used to test for overall treatment effect, followed by pair-wise comparisons. The sedative and impairing effects of both drugs were clearly demonstrated, particularly in the larger doses. In general the impairments to performance due to T2 were greater than those due to C2. Exceptions were the Arrow Flanker Task, where the effect of C2 was substantially greater than T2, and Selective Reminding, where long term memory formation was very substantially impaired by T2 but where no significant effect of clonidine was observed. **Conclusions:** Clonidine and temazepam are both sedative, but clonidine causes a greater impairment of attention in the presence of distractors, whereas temazepam has a more pronounced effect on memory formation.

Levels of behavioural control: A dynamic interdependence

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A model is proposed in which behaviour is determined by a number of identifiable processes such as 'on-line' direct links between stimuli and responses and 'off-line' cognitions. It is suggested that, under natural conditions, the weight attached to these processes varies as a function of circumstances, reflecting adaptive considerations. Under unusual environmental conditions, an abnormal relative weight can become associated with one or more of the component processes, leading to abnormal behaviour. A model is suggested and it is argued that the relative weight of the factors determining behaviour will vary as a function of: (a) ontogeny and age. With development, the weight that can be attached to off-line processes increases. Senility can be associated with some loss of this capacity; (b) phylogeny. For example, primates have a particularly refined capacity to exploit cognition and have thereby can exhibit the most autonomy from direct stimulus control; (c) learning. With repetition of a given task, control can shift from organization by off-line cognitive processes into a more automatic mode; (d) brain

damage. Given that certain brain structures can be identified as the embodiment of the processes underlying the control of behaviour, their damage can be associated with a shift of control. For example, the hippocampus and prefrontal cortex are specialised at the task of performing off-line cognitive control. Damage to a brain region can affect one factor in behavioural control but spare another. For example, damage to the prefrontal cortex tends to limit the capacity to exhibit off-line control; and (e) chemical factors. A disturbance to the brain's chemical environment can disturb one process more than another. For example, evidence suggests that maintaining prefrontal cortical levels of catecholamines within a narrow range is a necessary condition for performing certain cognitive tasks. The problem of performing a course of single coherent goal-directed action involves a process of competition between candidates for behavioural control. The relevance of the model to the so-called 'misbehaviour of organisms' will be discussed. An impoverished developmental history can lead to a relative weakness of cognitive control in the face of more direct triggers to behaviour. It is suggested that this is reflected in the increased tendency to stereotypes exhibited under these conditions.

The effect of dawn simulation on the cortisol response to awakening in healthy participants

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Background & Objectives: A stimulatory effect for post-awakening light exposure upon the awakening cortisol response (ACR) has been demonstrated, but cortisol secretory activity is not light sensitive later in the day, implicating the superchiasmatic nucleus. In seasonal affective disorder (SAD) cortisol rhythms are phase-delayed. Bright light therapy in the morning normalises the circadian cortisol cycle and alleviates depression. Advances in the treatment of SAD include dawn simulation: light that gradually increases in luminance before awakening. We examined if dawn simulation might have an influence over the ACR.

Design & Methods: 12 healthy participants were recruited from among the academic community at the University of Westminster and supplied with a dawn simulator. The Natural Alarm Clock (Outside In, Cambridge Ltd) is a bedside light that increases in intensity to approximately 250 lux over 30 min. when an audible alarm sounds. A counterbalanced study was performed on four consecutive normal weekdays, two of which were control days (no dawn simulation) and two experimental (dawn simulation). The ACR was determined by salivary measurement over the first 45 minutes following awakening on all four study-days.

Results & Conclusion: Repeated measures ANOVA revealed a significant main effect of dawn simulation ($F_{1,10} = 5.815, p = 0.037$). Mean cortisol production in the first 45 min. after awakening was significantly higher in the experimental condition than in the control condition. There were no order effects. This study provides supportive evidence for the role of light and the superchiasmatic nucleus in the awakening cortisol response.

Psychobiological aspects of cancer

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It is widely recognised that the diagnosis and treatment of cancer are stressful experiences. Various psychosocial interventions have been shown to enhance quality of life. However, although there is clear evidence that certain types of stress are immunosuppressive, the effects of psychosocial interventions on host defences in patients with cancer have received much less attention. Eighty women with newly diagnosed locally advanced breast cancer participated in a randomised trial of relaxation therapy (RT) and guided imagery (GI) during multimodality therapy (chemotherapy, surgery, hormone therapy). Level of distress at diagnosis was a significant independent prognostic factor

for clinical and pathological response to chemotherapy. In addition to improving quality of life and enhancing coping, patients receiving RT and GI had a significantly higher number of T cells (CD2+), mature T Cells (CD3+) and activated T cells (CD25+); they also had lower circulating TNF- α and higher lymphokine activated killer cell activity. We are currently evaluating the psychoneuroimmunological (PNI) effects of relaxation therapy and guided imagery, alone and in combination, in 180 patients with colorectal cancer, and the PNI effects of two 'complementary' interventions (reflexology and scalp massage) in 180 women with early breast cancer. Sixty-three patients took part in a randomised trial of adjunctive psychological interventions (relaxation therapy with, or without hypnotherapy) for chemotherapy side effects. A Cox proportional hazards analysis of 13 year survival showed that the interventions prolonged survival significantly. To date, however, there is no direct evidence that the effects of psychological interventions on host defences prolong survival in patients with cancer.

Characteristics of electrical stimuli and somatosensory evoked potentials

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Purpose: This paper reports work investigating the effects of different electrical stimulus waveforms on somatosensory evoked potentials.

Background: While there has been research into the effects of some electrical stimulus characteristics on somatosensory evoked potentials (SEPs) little attention has been given to the nature of the stimulus waveform despite much variation in the waveforms used.

Methods: 10 normal, healthy controls participated in the experiment. Three electrical stimulus waveforms were used; a continuous square wave, a square wave two pulse train and a square wave four pulse train. Each stimulus was 100 ms in length. Waveforms were delivered at three intensities; 2 mA, 5 mA and 10 mA. Forty stimuli were delivered per condition. EEG data was collected using a NeuroScan Synamps system and analysed using Scan 4.2 software. Subjective pain intensity and unpleasantness ratings were measured using visual analogue scales.

Results: Three main components of the evoked potential were identified; N1 peaking between 90 and 131 ms, P1 peaking between 166 and 219 ms and P2 peaking between 263 and 308 ms. All components peaked later in response to the two pulse train than the other waveforms. The amplitude of all components was higher in response to the two pulse train than the other waveforms. Pain intensity ratings were positively related to the amplitudes of the P1 and P2 components but not to the N1 component. Pain unpleasantness ratings were not related to the amplitude of any SEP components. Pain intensity ratings were higher for the two pulse train than the other waveforms. There were no differences in pain unpleasantness ratings across waveforms.

Conclusions: The findings have implications for the consideration of wave characteristics in the design of experiments investigating SEPs in response to electrical stimuli.

Evidence for impaired information processing efficiency among MDMA users

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Background: Inflated error rates among MDMA users have been reported by a number of researchers. Morgan (1998) has attributed the

inflated error rates to heightened impulsivity among MDMA users. It is possible that impulsivity might give rise to impairments in the speed and accuracy of information processing. Indeed this could be the mechanism underpinning those MDMA related deficits that have been documented on a diverse range of tasks.

Methods: 39 MDMA users (10 previous and 29 current) and 46 non-users were tested on letter and pattern comparison speed tasks. Participants had to judge whether two stimuli presented on the computer screen were the same or different. Stimuli varied in type (letters versus patterns) and in terms of complexity. Participants classified as many pairs as they could within a fixed time period.

Results: Multivariate analyses revealed that users were as fast as nonusers but made significantly more errors. Subsequent analyses revealed that this deficit was confined to the letter stimuli and was unrelated to stimulus complexity. MDMA users were also found to be impaired on a measure of verbal working memory performance. ANCOVA with statistical control for group differences in processing speed errors did not substantially attenuate the MDMA related deficit in verbal working memory.

Conclusion: The results confirm that MDMA users do make more errors on the processing speed task. However, this appears to be unrelated to MDMA related deficits in verbal working memory. It appears therefore that different causal mechanisms underpin these two types of deficit.

The effects of emotional disclosure on psychosocial and physiological outcomes in patients with varying severity rheumatoid arthritis

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Background: Emotional disclosure refers to the process of writing or talking about stressful or traumatic events. This procedure has been previously associated with a variety of outcomes in healthy participants, and also reductions in disease activity in rheumatoid arthritis (RA) patients. The current study reports the findings of a pilot study assessing the effects of emotional disclosure on a variety of psychosocial and physiological outcomes in rheumatoid arthritis patients with varying disease severity.

Methods: 46 RA patients were recruited and assessed at baseline, one, six and 10 weeks post-intervention. At each session clinical and psychosocial data were collected including, disease activity, CRP and ESR (markers for inflammation) and measures of emotional well-being. Patients were randomly assigned to either the disclosure group or an episodic recall control group. The intervention comprised an established disclosure paradigm adapted specifically for RA patients whereby, in their own homes, patients were asked to write or talk into a recorder for a 20-minute period on four consecutive days.

Results: Control patients demonstrated a gradual increase in disease activity and negative mood during the 10-week follow-up period. However, whilst disclosure patients demonstrated increases in inflammation and negative mood at one and six weeks post-intervention, at 10 weeks, reductions in inflammation and improvements in mood were observed.

Conclusions: The results of this study provide further support that emotional disclosure can improve psychosocial and physiological outcomes in patients with rheumatoid arthritis. The study also highlighted important methodological considerations, which will be discussed in relation to the future use of the paradigm.

HPA axis, cardiovascular and psychosomatic responses following inhalation of 35 per cent CO₂: Stability over six months

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Background: Carbon dioxide (CO₂) has been commonly used as a stress-inducing paradigm in the investigation of anxiety and panic. More recently it has been assessed as a stressor as an alternative to paradigms where an underlying emotional component may influence stress reactivity. The current study reports the results from a small follow-up sample to assess the stability of HPA, cardiovascular and psychosomatic responses over a six-month period.

Method: Five healthy male volunteers inhaled a practice breath of air, then a single vital capacity inhalation of CO₂ (35 per cent). Neuroendocrine (plasma cortisol) and cardiovascular (SBPS, DBP and HR) measures were obtained at regular intervals and psychosomatic responses were recorded immediately before and following inhalation. Volunteers repeated procedure at a six-month follow-up.

Results: At session one, inhalation of CO₂ produced an increase in cortisol with a peak between 10 and 20 minutes post-CO₂. Systolic and diastolic blood pressure were both increased and heart rate decreased immediately following inhalation. Negative psychosomatic responses (e.g. feelings of fear and anxiety) were all increased immediately post inhalation. The cardiovascular and psychosomatic patterns of responses were similar at the six-month follow-up, however, HPA reactivity was reduced when compared to that of session one.

Conclusions: Although the small sample size should be borne in mind when interpreting the data, the results demonstrate reduced HPA reactivity following the CO₂ challenge over a six-month period, whilst cardiovascular and psychosomatic reactivity remain stable. The reduced reactivity may reflect habituation of the HPA axis to the challenge and, therefore, suggest that HPA, cardiovascular and psychosomatic responses are independently regulated. However, it should also be noted that at six-month follow-up, the CO₂ inhalation was lower than that of the practice breath. Whilst a small reduction in inhalation would not effect cardiovascular and psychosomatic responses, it has been suggested that HPA axis activation, in this paradigm, requires a CO₂ breath of at least 80 per cent of vital capacity.

The Defined Intensity Stressor Simulation (DISS): The effects of increasing intensity on S-IgA reactivity and perceptions of workload, stress and arousal

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Background: A variety of laboratory-based acute stressors have reliably induced increases in S-IgA secretion. Previous work assessing acute multi-tasking stress suggests that S-IgA reactivity is inversely related to the perceived demands of the stressor. The DISS comprises eight stressor modules, and allows for the manipulation of stress either through increasing the number of modules, or increasing the difficulty of the modules. The current study assessed the effects of increasing the difficulty of four stressor modules (visual and auditory monitoring, a maths task and an attention/reaction time task) upon S-IgA reactivity and perceptions of the stressor.

Methods: Participants ($N = 14$) attended three sessions on consecutive days. At each session they provided a timed saliva sample immediately before and after five minutes on the stressor battery at either low, medium or high stress intensity. Immediately following each session participants recorded, using questionnaires, their perceptions of the stressor with regard to workload and levels of stress and arousal.

Results: Different patterns of S-IgA reactivity were observed at varying levels of stress intensity. Low intensity stress resulted in a slight increase in S-IgA secretion, medium intensity stress elicited a significant increase, while down-regulation of S-IgA occurred following high stress intensity. Increased stressor intensity was related to significant increases in several facets of perceived workload and increases in perceptions of stress, but not arousal.

Conclusions: Perceptions of workload and stress increased in accordance with increases in the difficulty of four DISS stressor modules. However, increasing intensity had differential effects upon S-IgA reactivity. Down-regulation of S-IgA following high intensity stress supports the previous finding regarding reduced reactivity in individuals who report tasks to be more demanding.

'Free will' and the supplementary motor area: A transcranial magnetic stimulation study in the conscious awareness of willed actions

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Background: An alternative paradigm for the study of free will and conscious awareness of actions is proposed, drawing on the relationship between willed actions and the perceived intensity of stimuli to the moving body part. Voluntary actions produce reduced levels of conscious somatic sensation. This sensory suppression has been linked to motor prediction: an efferent signal from motor areas may cancel the sensory reafferences predicted as a consequence of movement.

Design & Methods: We investigated the perceived size of finger-muscle twitches (MEPs) evoked by TMS in eight normal subjects. Subjects freely chose on each trial whether to make or withhold a voluntary flexion of the right index finger, in synchrony with an instructional stimulus. A test MEP occurred at the instructed time of action. The subject then relaxed, and a second, reference MEP occurred a few seconds later. Subjects judged which of the two MEPs was larger. Subjects perceived the first, test MEP to be smaller in trials where they made voluntary actions than on trials where they did not, demonstrating sensory suppression. On randomly selected trials an additional conditioning prepulse of TMS was delivered over the supplementary motor area (SMA) 10 ms before the pulse producing the test MEP.

Results & Conclusion: The SMA prepulse reduced and almost abolished the sensory suppression effect in voluntary action trials. We suggest the SMA may provide an efferent signal which is used by other brain areas to modulate somatosensory activity during self-generated movement. Our experience of our own freely willed action may depend on the balance of efferent and afferent information provided by such signals.