The role of coping styles in the management of chronic pain.

**Overall Objective:** To establish if the predisposed coping style has a moderating effect on the clinical outcome in individuals with chronic pain and to explore whether it has a moderating effect on the interactions between other psychological variables linked to pain and disability.

**Background:** Over recent years, there has been considerable interest in the role of psychosocial factors in the development and management of chronic pain (Woby, Roach, Urmston, & Watson, 2007). Catastrophising, anxiety, self-efficacy, kinesiophobia and depression are all widely recognised as important predictors of clinical outcome (Woby, et al., 2007). Coping style refers to an individual’s response to particular stressors and their subsequent strategy to adapt to this. Weinberger, Schwartz and Davidson (1979) identified four coping style profiles: High-anxious (HA), Low-anxious (LA), Defensive high-anxious (DHA), and Repressor (REP) (identified using measures of trait anxiety and defensiveness from validated questionnaires). Within the general population there is a relatively low prevalence of both REP and DHA individuals. As a result, research investigating these groups is sparse. In addition Lewis, Fowler, Woby & Holmes (2012) found a low percentage (9%) of repressors within a group of chronic back pain patients referred for physiotherapy. This could be explained by the recognised preference of repressors to maintain control over their condition and its management, which may lead to reluctance to attend treatment. However, it is not clear if the low prevalence also exists within the wider pain population. The proportion of repressors has been shown to be greater within clinical disease populations, e.g. cancer (36%) and heart disease (Myers, 2010) than the general population. This could be a result of the specific clinical diagnosis and structured treatment which does not give patients the option to self-manage due to the type of condition. Research within musculoskeletal conditions (Creswell & Chalder, 2001; Lewis, et al., 2012) has revealed a greater proportion (39-46%) of patients as DHA compared to asymptomatic controls (17%). These findings suggest that high defensiveness may be either a risk factor for some chronic conditions, a response to the presence of a chronic condition or an artefact of patient persistence in the care system. Coping style may interact with other psychological factors to moderate and influence clinical outcome. To date, there is a paucity of research that has looked at coping styles in chronic musculoskeletal pain. However, the limited evidence available from the clinical environment provides a prima facia case that coping style interacts with, and moderates the effect of, various psychological factors known to influence clinical outcome. Identifying the mechanisms involved may provide a foundation for targeted interventions to improve clinical outcome.

**Aims:** The aims of the study are to determine (i) if there are differences in the distribution of coping style between those with and without chronic pain; (ii) the relationships between coping style and psychological factors known to influence treatment outcome; (iii) whether coping style is associated with differences in treatment outcome.

**Study 1:** Differences in coping style between individuals with and without chronic pain:
This will be a cross-sectional study which primarily aims to determine whether the distribution of coping styles differs between the chronic pain population and a matched (age, sex) asymptomatic group of similar socioeconomic background. This will take the form of an online and postal survey of patients drawn from chronic pain clinics in Manchester, Leicester and Crewe and asymptomatic individuals from the same areas. Studies investigating variation in defensiveness are rare, however, Zachariae et al. (2003) found an increase in repression in patients receiving cancer diagnosis. Based on a priori power analysis we will aim to recruit 250 participants in each of the chronic pain and asymptomatic groups to give large enough groups to enable a meaningful analysis (allowing for dropouts). Coping style will be assessed using the trait subscale of the State Trait Anxiety Inventory (STAI; Spielberger, Goruch, Lushene, Vagg, & Jacobs 1983) and the Marlowe-Crowne Social Desirability Scale (MC-SDS: Strahan & Gerbasi, 1972). Other psychological variables will be measured to establish relationships between them and, coping styles and reports of pain. Specifically, variables included will be depression (Center for Epidemiologic Studies Depression Scale: Radloff, 1977), catastrophising (Pain Catastrophising Scale; PCS; Sullivan, Bishop & Pivik, 1995), kinesiophobia (Tampa Scale of Kinesiophobia; TSK; Kori, Miller, & Todd, 1990) and self-efficacy (Functional Sub-scale of the Chronic Pain Self-efficacy Scale; CPSS; Anderson, Dowds, Pelletz, Edwards, & Peeters-Asdourian, 1995). Disability (Roland Morris Disability Questionnaire; RDQ; Roland & Morris, 1983) and pain will also be measured. Hypotheses: There will be a larger proportion of DHA individuals within the chronic pain population in comparison to the asymptomatic group: coping style will have a moderating effect on the interpretation of pain and disability and the interaction of these with other psychological markers associated with clinical
outcome. Specifically, defensiveness will moderate the relationships between psychological variables, pain and disability, e.g. higher defensiveness will amplify and low defensiveness will suppress the negative affect.

Data analysis: Data will be analysed using chi square and frequency statistics to compare the distribution of coping styles between patient and control populations. Relationships between coping style and other psychological variables, pain and disability will be analysed using correlation and regression analysis.

**Study 2: Relationships between coping style and psychological variables influencing treatment outcome.**

A longitudinal study is proposed which aims to assess whether associations exist between coping style and attendance at, compliance with and outcome from treatment. The participants for study two will be recruited from the chronic back pain group who participated in study one. This will include patients from two types of clinical intervention; Physiotherapy, audited against current NICE guidelines and Pain Management Programmes (PMPs) audited against The British Pain Society guidelines. Participants will be asked to complete questionnaires before and immediately after completion of treatment and at a six-month follow-up. This study will measure: coping style, similar psychological variables to study one, completion and drop-out rates, clinical outcome (pain, disability & return to work), as well as social and demographic factors. Although drop-out rates will be assessed, detailed analysis involving the variables influencing treatment outcome will focus on those completing their treatment regime. Hypotheses: Defensive high-anxious individuals will attend more treatment sessions and be more compliant than repressors. There will be a higher drop-out rate within repressors than any other coping style. DHA individuals will report higher depression and disability than any other group. Defensiveness will have a moderating effect on the relationships between the psychological factors recorded and both pain and disability.

Data analysis: Longitudinal data will be analysed using correlation and stepwise regression techniques to determine the nature of the relationships between variables and outcomes and the degree to which these explain changes in pain and disability. The stability of coping style measures over the six month period will also be examined to identify if coping style is a stable trait or if there are changes over a period of 3 and 6 months.

**Study 3) Determine whether coping style can affect/predict treatment outcome.**

A qualitative study that will run in parallel with study two to provide insight into the mechanisms underpinning the relationships found in study two. This will be based on interviews with a cross-section of patients at the same time as questionnaire completion in order to understand how and why people respond to both chronic pain and different treatment approaches and how this affects outcome. The study will also consider the factors that influence patients’ treatment preferences and choices. Hypothesis: Repressors will prefer less contact time at treatment clinics and will wish to self-manage their pain. Defensive high-anxious individuals will report requiring more treatment due to their perceived disability and inability to complete daily activities.

Data Analysis: Interviews will be transcribed and analysed thematically to identify the ways relations identified in study two are perceived and interpreted by patients.

**References:**


