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I would like to thank many people both near and far for helping and supporting me along the road to clinical training which begun with my first degree.

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Academic Dossier

Part I

OVERVIEW
This section of the portfolio contains two essays that critically discuss research, clinical practice and professional issues.
To what extent is membership of an ethnic minority group (in the UK) influential in the process of diagnosis and treatment of psychosis?

January 2005

Year 1
Introduction

"No Blacks, No Irish, No Dogs allowed"
Frequently quoted sign from pubs and lodgings in 1950’s London.

This sign is a reminder of the historical context of racism in Britain as it clearly demonstrates the power of one group over another (Fernando, 1995).

Despite the Department of Health’s active commitment to racial equality within mental health services, the most controversial issue today is centred on the comparatively higher rates of schizophrenia and other forms of psychosis amongst the African Caribbean population in the UK (Nazroo, 1999). Alongside this, come allegations of differential treatment. A review by Wall et al. (1999) concluded that people with an African-Caribbean family background and a psychotic disorder are more likely to be detained under the Mental Health Act. Have we not moved on from the 1950’s, is this another way of exerting power over ethnic minority groups through inadvertent psychiatric social control? (Littlewood, 1993). Much research has sought to explain the African-Caribbean peoples’ vulnerability to developing psychosis through racial differences in areas such as cannabis use (McGuire et al. 1994), social and economic status (Bhugra et al. 1997), experience of racism (Chakraborty & McKenzie 2002) and ethnic or biological predispositions to mental illness (Hickling & Rodgers-Johnson, 1995). However, this research has not reached definitive conclusions that confirm an ethnic vulnerability hypothesis (Sasidharan, 1993). As a result, the debate has moved on, to a more critical consideration of the quality and appropriateness of the mental health service provision for ethnic minority groups (Department of Health, 2003a). The over-representation of African-Caribbeans in psychiatric institutions was explained at a conference by MIND (1993) as occurring in part because “black people experience racism and disadvantages in education, housing, employment and other areas of life, which then impacts on their mental health, and partly because they experience institutional racism and an ignorance of cultural diversity once they are in the mental health system” (cited by MIND, 2004).
This essay aims to examine the issue further through critically appraising research surrounding both incidence rates and the assessment and treatment process. My personal motivations for undertaking this topic were driven by two forces. Firstly, having seen the suffering of a friend who was diagnosed schizophrenic, I sought to understand more about the condition. Secondly, having personally felt the difference that goes with being part of an ethnic minority group, I felt determined to understand racial inequalities in healthcare at an early stage in my training in an effort to avoid stigmatising service users in my own future work.

Sasidharan (2001) states that the experience of the "psychiatric services by black and South Asian people is largely negative and aversive". However, this essay will mainly focus on black service users, as they have been at the centre of the controversies in relation to psychosis. Although those of West Indian origin significantly outnumber the black African population (Nazroo, 1999), the term African-Caribbean and black will be referred to interchangeably as much research has considered black people from Africa and the Caribbean as one group. As the majority of research has alluded to black patients, I will use this term throughout the essay, despite a personal preference for the term service user.

Incidence rates

The lifetime individual risk of schizophrenia is approximately 1% and an average of 20 new cases per 100,000 of the population appears every year (Birchwood & Jackson, 2001). The International Pilot Study on Schizophrenia (World Health Organisation, 1973; 1979) conducted across nine centres around the world including Africa, corroborated the general consensus that schizophrenia is evenly distributed across the world (cited in Kaye & Lingiah, 2000). Furthermore, Hickling & Rodgers-Johnson (1995) reported incidence rates of schizophrenia in Jamaica, similar to the rates reported for the native white population in the UK. Despite these findings, there is a general agreement that people of West Indian and African origin living in the UK have an increased risk of being
diagnosed with psychosis compared to their white counterparts, even if the size of this increase is a matter for debate (Sasidharan, 1993). Initial rates of 6-18 times that in the white population were reported, but more recently researchers have concluded that blacks are 2-3 times more likely than whites to receive a diagnosis of psychosis (Bhugra et al. 1997; Harrison et al. 1988; King et al. (1994); Van Os et al. 1996). Why are the rates of psychosis higher for black people living in the UK compared to Jamaica? Firstly, I will consider the methodological issues regarding the research before turning to look at the assessment and treatment process.

Problems with ethnicity research

An article by Senior & Bhopal (1994) has highlighted many problems with using ethnicity as a variable in epidemiological research. These authors defined ethnicity as: “shared origins, culture and tradition which is not a fixed or autonomous feature of one’s life as it has a dynamic relationship with the historical and contemporary experiences of social groups and the individuals within them”. The dynamic nature of ethnicity is an important point to consider when interpreting the findings of research. Especially since, Bahl (1999) suggested that rates of schizophrenia in second generation British born black people might be greater than the rates in first generation. Similarly, taking blacks of African and Caribbean origin together as one homogenous group denies the fact that they originate from diverse cultures, religions and social developments (Hutchinson & McKenzie, 1995).

A lecture given by Professor Singh at the St. George’s Medical School, London (2004) postulated whether it would be just as relevant to group people in terms of the size of a physical feature such as their noses as it was to group them in terms of the colour of their skin. However, this would deny the collective experience of oppression and discrimination experienced by the black population in the UK. A parallel could be drawn with the Irish experience in Britain. While relations have improved, the Irish may still feel subconsciously affected by the difficult political history between both countries. Despite
being part of the white majority, the Irish accent may bring about similar feelings of difference. These feelings of difference could be exacerbated if they are not acknowledged within the assessment and treatment process.

**Problems with treatment data**

Castle *et al.* (1998) advised caution when interpreting early research undertaken between the 1960’s and 1980’s. These studies were criticised on the basis that some relied solely on hospital admissions data, others did not use an operational definition of schizophrenia, while place of birth and ethnicity were not included by other studies. A study conducted by Harrison *et al.* (1988) was considered to be methodologically sound as it overcame many problems by using a prospective design to investigate all African-Caribbean patients making first contacts with both community and hospital services. It also used an operational definition of schizophrenia with standardised diagnostic tools.

A further limitation of the research is related to the fact that it focuses a lot on schizophrenia even though psychosis can occur as part of other disorders. Also, some cases may be missed in the research, as patients tend to have a preference for labelling themselves with bi-polar disorder for example, due to the stigma attached to the psychotic label. Also, an accurate estimation of the size of the African-Caribbean population within the UK was not obtained until the 1991 Census. As the 1991 Census was the first time that people self-rated their ethnicity, the rates of schizophrenia calculated before this time were based on unreliable data around the total size of the African-Caribbean population (Nazroo, 1999). However, research conducted in London since this time, based on people making contact with services, also found significantly higher incident rates of schizophrenia amongst African-Caribbeans compared to whites (e.g. Bhugra *et al.* 1997; King *et al.* 1994). Even still, it is important to consider how representative London data is of the whole UK.
Another issue with this data also lies in the fact that contact with services is directly related to the way symptoms are perceived, evaluated and acted upon, rather than whether the illness exists or not (Blane et al. 1996). This is particularly relevant when looking at mental health variations in terms of ethnicity. Health beliefs and behaviours vary across cultures with certain cultures being more/less reluctant to identify an illness in line with Western views. Therefore service contact may not reflect the true incidence of psychosis, as many patients do not access these services due to a combination of factors, including; the structure of and access to care and dissatisfaction with previous care received (Sharpley et al. 2001). Many others who are within services may argue that they do not have psychosis and/or do not feel the need for the care they are receiving.

This may explain why a National Community Survey published by Nazroo (1999) did not find any evidence of an elevated rate of psychosis in Caribbean men compared to White men in a community sample. The second National Community study assessing prevalence rates of psychosis corroborated these findings, reporting that although there was a twofold higher rate among Black-Caribbean’s compared to the white population this difference was not statistically significant (Sproston & Nazroo, 2002). When Nazroo (1999) compares counting methods, those refusing to take part in the study, the studies confounding variables and its exclusion criteria into account the conclusion was reached that the finding is likely to be genuine.

While researchers generally accept the higher incident rate of psychosis amongst African-Caribbeans in treatment samples, others argue that the actual higher illness rate in the black population remains unproven due to the ethnocentricity of the diagnosis and methodological problems with the research (e.g. Iley & Nazroo, 2001; Sasidharan, 1993). If so, why has the Department of Health (2003b) consultation document entitled: *Delivering Race equality: A framework for Action*, stated that “black and minority ethnic patients are currently over-represented in both voluntary and compulsory hospital admissions, on average stay longer in hospital and are more likely to be readmitted”. We
turn to look at how the process of assessment and treatment may be influencing the experience of black and ethnic minority patients.

Problems with the assessment process for ethnic minority groups

As explained by the Goldberg & Huxley (1980) model of pathways to care, the individual ordinarily needs to pass through a series of referral filters in order to be assessed and reach appropriate specialist care (Bhui & Bhugra, 2002). The National Institute of Clinical Excellence (NICE) have devised a pathway to care for individual’s suffering from schizophrenia, highlighting primary care services as the first stop for a patient which is followed by a referral to secondary services if appropriate. Secondary services include; the early intervention team, crisis resolution and home treatment team, assertive outreach team and/or a psychiatric hospital referral via the voluntary or compulsory route i.e. through the use of the Mental Health Act (NICE, 2002). Grewal & Lloyd (2002) noted that the most important filters to examine in relation to the pathways to care for ethnic minority groups are; a) for the individual or those around him/her to recognise that there is a mental health problem and b) the GP’s ability to detect a mental health problem.

Bhugra et al. (1999) emphasise the importance of the person’s own ability to consider the “sick role” as the first step in the assessment process. However, the first hurdle to overcome in the process of assessing whether a deviation from the norm exists is to have a universal meaning of mental health that is relevant across cultures and society. Owusu-Bempah (2002) notes the problematic nature of the World Health Organization’s definition of mental health because it does not include spiritual well being. Owusu-Bempah (2002) cites the WHO definition for mental health as “A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Interestingly, McCabe & Priebe (2004) found that whites cited biological causes of schizophrenia more frequently than African-Caribbeans, Bangladeshis and West Africans. While the latter three groups cited supernatural and social causes more frequently than whites.
Therefore, someone who believes supernatural forces are at the root of their ailments may be more likely to contact a traditional healer as opposed to their GP. Indeed, Harrison et al. (1988) noted that 40% of African-Caribbean patients made contact with some helping agency in the week preceding admission compared to 2% of the general population. Gray (1999) argued that despite the finding that the voluntary sector is the most appropriate and least stigmatising service for black patients, it is rarely included in the strategic development of mental health services in the UK.

An example from my placement experience would support the argument for better links between the statutory and voluntary sectors. The lead psychiatrist relayed a recent example of the involvement of a spiritual healer when he worked with a service user. The spiritual healer in this instance facilitated a holistic assessment of a Punjabi lady whose psychotic type symptoms could not be explained away as a religious experience. As a result of the three-way communication between the psychiatrist, the spiritual healer and the service user’s family, treatment compliance and satisfaction increased. Potential problems with the involvement of traditional healers should also be considered (e.g. reluctance to involve psychiatry due to the stigma of mental illness, negative perceptions of services and perceptions of power being taken from the healer).

The second step in the assessment process lies in the GP’s ability to detect a mental health problem and make an appropriate referral to secondary services. A medium quality paper (as rated by Bhui et al. 2003) by Burnett et al. (1999) highlighted the difficulties in getting the assessment process underway, as they found that black service users were less likely to visit their GP of their own accord. Worryingly, GPs have also reported that they perceive themselves to be less involved in the care of their African-Caribbean patients (Bindman et al. 1997: cited in Burnett et al. 1999). Furthermore, Burnett et al. (1999) found that after an individual visit, GPs were less likely to refer African-Caribbean than white and South Asian patients to specialist services. This is a particularly significant finding as patients who were referred via their GP of their own volition were significantly
less likely to experience compulsory admissions (Burnett et al. 1999). Another medium quality paper by Cole et al. (1995) also demonstrated the importance of GP involvement in the assessment process. They concluded that ethnic status in itself, did not determine whether police were involved in the first point of contact for first episode psychosis. The significant factors associated with compulsory detention in this study were living alone, being unemployed and/or the absence of a GP or friend involved in the negotiation of access to care.

Interestingly, a review conducted by Erens et al. (2001) noted that certain groups of Irish people do not access primary care out of concern about the stereotype of the high rate of alcoholism among this group, fearing that it would increase the chances of the GP diagnosing alcoholism and missing other factors. The following statement also demonstrates a black person’s distrust of the system.

"I don’t trust anything outside the family or friends...too many black people are diagnosed schizo, mad...maybe they don’t understand what you’re saying, so you’re mad... and then they’re writing it down and then it stays with you for the rest of your life.. I could never go to the doctor or social worker"

Female, Black Caribbean cited by Grewal & Lloyd (2002)

Towards clinical formulation – a critical analysis of the diagnosis of psychosis

Psychiatric assessments are generally undertaken on patients suspected of attracting a diagnosis of psychosis. Fernando (2002) explains how psychiatry has retained its influence in western society based on its positioning as a “medical science”. Alongside its image as a medical science comes the notion of objective assessments. However, Fernando (1995) argues that psychiatry is far from objective, as the assessment tools used allow bias to influence the conclusions drawn from them. Similar arguments also exist within psychology. While some psychologists refer to themselves as scientist practitioners, others feel more comfortable with the term reflective practitioners. I would
view myself as a reflective practitioner who draws upon scientific methods to influence my practice.

Fernando (1995) has criticised the Mental State Examination and the Present State Examination on the grounds that they are not standardised for non-Western cultures and are likely to be influenced by stereotypes in society. Fernando (1988) comments that the judgements made in the assessment “are largely based on the interaction between the patient and the doctor and are further influenced by society’s norms, which are institutionalised in education, training and so-called common sense”. Schizophrenia carries its own negative images of deviance and dangerousness, which get mixed up with the clinician’s personal misunderstandings of cultures (e.g. blacks are dangerous, Irish are alcoholics, all Asians have supportive environments) to subjectively influence decision-making. Value-laden judgements are also fuelled by media images of blacks being dangerous and/or lazy (Fernando, 1995).

Fernando (1988) feels that another problem lies in the history of Western psychiatry and psychology, which has gleaned its knowledge through the years from various theories and research, which could be challenged for their racist ideologies. Sasidharan (2001) concludes however that as a result of inquiries into the controversial deaths of Black men in the system e.g. Stephen Lawrence, today’s political climate allows open discussion of racism on both an individual and systemic, institutional level.

Kleinman (1977) questions the appropriateness of using diagnostic categories based on Western phenomena when assessing non-Western people. He coined the term “category fallacy” to describe a mistaken belief that a category of illness derived from one culture can present similarly across cultures. This is especially relevant because some studies suggest that African-Caribbeans had a different course of illness and series of symptoms to the white majority (McKenzie et al. 1995; Bhugra et al. 1997). In my opinion, the practice frequently noted in psychology and psychiatry of applying research findings from one sample of patients to the general population could be viewed as similar to
stereotyping and should be exercised with caution. Instead of solely fitting the individual into a diagnostic category, Fernando, (1988) urges the clinician to embrace people holistically recognising the “overall culture of each individual and the social pressures that influence the person’s life”. The clinical psychology practice of formulation with its emphasis on the analysis of the influence of factors specific to the individual and his/her environment facilitates a more full understanding of the person.

The following example shows how a formulation that incorporates the influence of the systems around the individual is more useful than a clear-cut assessment of the presence/absence of a list of symptoms. During the late 80’s, many sightings of moving statues were reported in Ireland. In catholic communities these sightings were seen as an enviable indication of closeness to God. If I had gone to a Catholic doctor in Ireland with reports that I had seen a moving statue, he/she would probably have asked me where the statue was in an attempt to seek out the same experience. In contrast, if I had told a doctor in another country he/she may have begun to question my sanity; after all, I would have been noted as displaying a positive symptom of schizophrenia. I am not advocating the practice of matching the culture of practitioners to the culture of the service user. However, an openness to explore and discuss the influence of culture within the assessment is beneficial.

Problems with the treatment process for ethnic minority groups

Most of the research for this essay was obtained from psychiatric journals, which reflects the current influence of drug treatments for schizophrenia. Anti-psychotic medication has traditionally been the typical treatment option for psychosis, with psychological interventions being largely viewed as inadequate (Tarrier & Wykes, 2004). Psychotherapy has received criticisms in relation to its cultural applicability due to the weighting on the patient needing insight for therapy to proceed. However, many psychotherapists such as Don Bannister who has applied personal construct theory to work with psychosis patients’ offers inspiration for working with diverse groups. After
critically examining different ways of working with delusions, Don Bannister advocates an open discussion of the theme of a delusion as opposed to its specific content with the client. Also, a recent review of 20 randomised controlled trials of cognitive behaviour therapy for psychosis has revealed that there is good evidence for its effectiveness in alleviating medication resistant symptoms in chronic patients (Tarrier & Wykes 2004). CBT and family therapy are now included in the NICE guidelines as recommended treatment options (NICE, 2002). This recommendation has been long awaited, as two thirds of the people who take medication regularly, are likely to re-experience a psychotic episode within two years (British Psychological Society, 2000).

In my opinion, the provision of satisfactory services to culturally diverse people through the use of medication would require a universal acceptance of the medical model of mental illness. This model suggests that biological disturbance is a central feature in the causation and maintenance of a mental illness. This is probably one of the main reasons why ethnic minorities are increasingly demanding alternatives to pharmacological treatments. However, the provision of these alternatives through statutory care is fraught with problems due to the difficulties in conducting randomised controlled trials to prove their efficacy (Bhui & Bhugra, 1999).

A London study conducted by Lloyd & Moodley (1992) revealed that black patients were more likely to be given anti-psychotic medication, instead of more varied treatment options. For example, they are less likely to be offered talking therapies compared to their white counterparts (McKenzie et al. 1995). It is also important to note that the study by Lloyd & Moodley (1992) was a survey relying on opinions rather than fact. Although, MIND (2004), Fernando (1998) and the Department of Health (2003) provide provocative texts surrounding disturbing allegations of black patients being more likely to receive more coercive physical treatments such as ECT and higher doses of medication and less likely to receive talking therapies such as counselling and group therapy. I am dubious about drawing firm conclusions around current racial inequalities in the treatments offered to black patients within hospitals. For instance, the research cited by these
Adult Mental Health Essay

authors, is either based on data collected in the 1970's, 80's and early 90's or is qualitative in nature.

Case management can take the form of inpatient or community care. Community care is seen as the least stigmatising and disruptive form of care for mental health sufferers. Unfortunately, after a consideration of the methodological flaws within the research, a review conducted by Bhui et al. (2003) still concluded that black patients are more likely to be inpatients and have more complex pathways to care leading to crisis arrivals partly as a result of ethnic variations in primary care assessments. Furthermore, a review by Wall et al. (1999) concluded that African-Caribbeans were more likely than whites to be admitted under the Mental Health Act.

Researchers have sought to investigate the differing experiences of black patients as ethnicity by itself was not found to be a significant factor in determining compulsory admissions and police involvement in first episode psychosis patients (Burnett, et al. 1999; Cole et al. 1995). In support of the notion that black clients’ relationship with mental health services seems to deteriorate over time, relative to Asian and white people, Goater et al. (1999) found that during the fifth year of their illness, black Caribbeans were more likely than others to be detained, brought to hospital by the police and given emergency injections. Keating & Robertson (2004) noted that the sources of fear amongst black patients related to negative perceptions of mental health services, different user/professional attitudes to mental illness and diagnosis and negative/coercive experiences of hospital care. As a result of this, the researchers conclude that black patients have limited trust in the services and a reluctance to engage, resulting in a delay in seeking help.

An investigation by Davies et al. (1996) supports this argument as they highlighted that black patients compared to white patients had a higher likelihood of being admitted under the Mental Health Act a number of times. Davies et al. (1996) went on to discuss how compulsory admissions appear to set up a vicious cycle leading to a greater likelihood of
future compulsory admissions and dissatisfaction with services. Coid et al. (2000) point the blame towards the community services’ inability to intervene effectively in the cycle of relapse following discharge. While, other researchers lead us to believe that the racial inequalities within service delivery may fuel black patient’s mistrust and avoidance of services, thereby leading to crisis arrivals. A longitudinal study conducted by McKenzie et al. (1995) noted that although African-Caribbean patients had a better prognosis and a lower risk of self-harm, they were more likely to undergo involuntary admissions and more imprisonments in the four-year follow up period.

Seclusion and/or restraint are seen as a form of inpatient management in that its aim is to reduce the risk of harm to self and others. Fernando (1991) noted that studies on seclusion were very rare and the ones that did exist were generally descriptive and/or cross sectional surveys based on USA populations. Fernando (1991) went on to comment on the seriousness of the issue of seclusion within the UK as it was highlighted as a factor for investigation by the Committee of Inquiry into the deaths of several black patients at Broadmoor Hospital. The influence of stereotypes was again referred to as an influential factor in these tragedies as the report was subtitled “Big, Black and Dangerous”. Furthermore, Nazroo, (1999) cited a study conducted by Harrison et al. (1989), which suggested that stereotyping was influential in the treatment process. This study found that, once admitted black patients were more likely to be perceived as being a potential danger to themselves or to others, despite the fact that they were not aggressive at the time of admission.

Discussion

Psychosis is a debilitating condition for all sufferers irrespective of their culture or country of origin. It brings vocational, social, psychological and economic burdens to its sufferers and their families. Unfortunately, membership of an ethnic minority group seems to impact negatively on the diagnosis and treatment received by these groups. Sadly, researchers point to disadvantages for black people suffering from psychosis once
they enter the mental health services. This is due partly to the ethnocentricity of the diagnosis and partly to the free reign of stereotypes and prejudices within the assessment and treatment process. Action is clearly needed.

In response to these findings, Burnett et al. (1999) recommended that GPs actively liaise with African-Caribbean patients and their families in an attempt to facilitate earlier responses to mental health problems and avoid the likelihood of compulsory admissions. Bhui & Bhugra (2002) suggest that improved links between statutory and voluntary services would be a step in the right direction. While, Sasidharan (2001) points to a more radical approach stating that “until we begin to address racism within psychiatry, in its knowledge base, its historical and cultural roots and within its practices and procedures, we are unlikely to achieve significant progress in improving services for ethnic minority groups”. Fernando (1998) suggests eliminating the diagnosis of schizophrenia all together based on its limited validity across different cultures.

The essay has required me to examine how I am influenced by stereotypes and think about how they would influence my work with ethnic minority groups. Furthermore, an examination of government literature leads me to believe that the NHS as an organisation is taking its responsibility seriously. Under the Race Relations Amendment Act (2002), Trusts have a legal duty to promote race equality within their services. Specifically, this means that individual Trusts have a legal obligation to publish evidence relating to how they plan to address cultural diversity and ethnic equality within mental health service planning, delivery and training.

The Service User Group Movement has facilitated safe places for black service users to discuss their grievances with the mental health services and become an instrumental part in the planning and delivery of services. Shiers & Lester (2004) welcome early intervention services as they aim to reduce delays to accessing secondary services. This service alongside the introduction of 24 hour access to acute care and assertive follow up of patients who have difficulties complying with treatments has also been welcomed from
the perspectives of black and minority ethnic groups. However, McKenzie et al. 2001 states that clarity is still being sought around the beneficial effects this is having on the experience and outcome of these groups.

Much debate has gone into the advantages and disadvantages of having separate services for different cultural groups. I would tend to agree with Bhui & Sasidharan (2003) who favour tackling institutional racism within all aspects of patient care from assessment to treatment rather than separating communities further from the mainstream by providing separate services to minorities. After all would a separation of services not be similar to saying “No Blacks, No Irish, No Dogs allowed” here, instead go to the service next door that’s designated for you. These researchers go on to advocate the utility of a culturally capable service, which responds to the needs of all cultural groups by avoiding discrimination and ensuring equal access. A consideration of the availability of interpreters would have to come into this discussion alongside high quality research and creative ways of making treatment options/interventions more culturally relevant.

To conclude, I believe this essay has opened an opportunity for me to learn about how to provide a culturally aware service, as it required me to confront my own stereotypes and critically appraise the research and practices of psychology and psychiatry within the modern multi-cultural NHS. This is a worthwhile training step towards facilitating my ability to “provide services that are always in the interests of the client; that are accessible and non-stigmatising and enhance self-efficacy, self-worth and personal dignity” (Professional Practice Guidelines, 1995).
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The increasing need to access mental health services has left the government with a challenge to ensure access to services. The Government, in order to develop a solution has requested that NIMHE and professional bodies consider developing new roles to meet the multiplicity of mental health agendas. How can the profession of clinical psychology rise to this challenge?

December 2005

Year 2
Introduction

The demand for increased access to mental health services requires major changes within the culture and delivery of mental health services. To meet this demand, a programme called 'New Ways of Working' has been established by the Department of Health (DoH) to redesign both the roles and capabilities of all professions involved in the delivery of mental health services. The potential for change can be disconcerting to a profession, so from the outset, I will remain mindful that listening to the needs of service users is at the heart of this essay. By listening I mean, being open to taking a critical look at existing practices and being willing to make the necessary changes for the benefit of the mental health of the nation.

The push for increased access to mental health services has been backed by governmental policies. For instance, the National Health Service (NHS) Plan (DoH, 2000) prioritised the modernisation of mental health services. The aim of this plan was to fast-forward the implementation of the National Service Framework (NSF) for mental health (DoH, 1999), which highlighted the multiplicity of mental health agendas within its seven standards. These standards are broadly focused on improving all aspects of mental health care ranging from mental health promotion for all, to improving primary care mental health services, improving specialist care and access to round the clock services, improving access to hospital and crisis accommodation and preventing suicide. Unfortunately, demand for professional psychology services within the health care system outstrips supply (Management Advisory Services, 2003). The DoH has tasked the Modernisation Agency to ensure that the commitments in the NHS Plan are made a reality. This Agency has set up several teams, and the National Institute for Mental Health in England (NIMHE) is the mental health team.

To fast forward the NSF for mental health, DoH and NIMHE have already come up with various solutions through the development of new roles. Although many new roles have

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1 'I' will be used throughout this essay to facilitate easier reading and to provide opportunities to reflect on personal opinions and experiences.
been created, the following section will focus on the new roles that I feel will be particularly related to clinical psychology services. For instance, the Community Development Worker (CDW) role aims to increase the accessibility of mental health services for black and minority ethnic (BME) groups (DoH, 2004a). The Primary Care Graduate Mental Health Worker (PCGMHW) was designed to strengthen primary mental health care through client contact, practice teamwork and work within the wider community (DoH, 2003). A document has already been published regarding ‘New Ways of Working for Consultant Psychiatrists’ (DoH, 2005), which has repercussions for other members of the multi-disciplinary team (MDT) including psychologists. This document encapsulates a future where the MDT is no longer led by psychiatry. Instead, other professions such as psychology will be increasingly required to undertake clinical leadership, hence, changing the culture of care from the medical model to a more bio psychosocial model. The implications of this will be addressed in this essay.

The Department of Health document entitled ‘Organising and Delivering Psychological Therapies’ has stated that the provision of psychological therapies is no longer optional (DoH, 2004b) and a lecture by Layard (2005) as cited in Roth & Stirling (2005) suggested that clients should have the choice of evidence-based treatments such as cognitive behaviour therapy (CBT) on the grounds that the National Institute for Clinical Excellence (NICE) guidelines have found medication and CBT to be comparable. Roth & Stirling (2005) also state that Layard (2005) estimates that 10,000 extra therapists are needed to deliver 10 sessions of CBT to an estimated one million, ‘at risk’ individuals, per annum. In order to increase the provision of psychological therapies such as these, the Associate Psychologist role is being piloted.

It is also important to bear in mind that all of these changes are occurring amidst a backdrop of major financial debts within the NHS. To rise to the challenge of widening access to psychology services, I will discuss how clinical psychologists’ roles will change and how the new roles (as previously discussed) will link in with clinical psychology. I then aim to identify how the changing roles of the clinical psychologist can be facilitated.
Firstly, I will discuss issues around training and funding. Secondly, by examining the career structure, I aim to address how the increasing demand for psychological services may be partly met. Finally, I will critically examine the practice of clinical psychology, while remaining mindful that ‘listening’ to service users, runs through the core of this essay.

**How will clinical psychologists’ roles change?**

NIMHE and the British Psychological Society (BPS) have formed a working group aimed towards deciding how clinical psychologists roles will change in line with the ‘New Ways of Working’ (NWW) theme. A document created by this group has summarised how clinical psychologists of the future will make a distinctive contribution to the MDT (NIMHE, 2005). This document envisions clinical psychologists becoming increasingly more involved in the management of severe mental illness, adopting the role of clinical supervisor as part of the Mental Health Bill, overtly supervising other members of the multi-disciplinary team, having greater influence on strategic Trust decision-making and clinical leadership while ‘engendering wider access to and choice in psychological therapies’. I also see a major role for clinical psychologists to lead regular reflective practice multi-disciplinary groups in order to facilitate a psychological focus within the fabric of mental healthcare on a day-to-day basis.

A survey of trainees’ views of the future revealed that the majority felt that psychologists would fulfil one of two main roles, i.e. by either working in a more generic role within primary care or towards a more specialist and consultancy role within specialist services (Harding, 1999). This is in line with the government’s objectives for tackling mental health both at the primary and secondary care levels.

By introducing PCGMH workers, the DoH aimed to tackle mental health promotion in primary care through the provision of self-help, group work and computer based therapies (DoH, 2003). Although the structure and duties of PCGMH workers varies from one
location to another, the model described by Bains & Shah (2004) suggested that GPs referred patients directly to PCGMH workers. However, similar to Lucock et al. (1999), I believe that services will be more efficient if they provide a match between the clients needs and a therapeutic model and such a match can only be achieved by experienced assessors who have the knowledge of a broad range of therapeutic approaches. Therefore, in my opinion a major task of clinical psychologists within primary care should be to assess patients before referring them to PCGMH workers or other appropriate services such as secondary care.

Furthermore, in conflict with the DoH guidelines, which suggest that any professional group can supervise these workers, I strongly feel that clinical psychologists or another one of the applied psychologies should supervise PCGMH workers. Clinical psychologists could then ensure that they be properly integrated into the primary care team and that they provide evidence based care. These were two concerns voiced by Richardson (2003). Clinical psychologists are also in a good position to prevent harmful practices because they possess the relevant knowledge and skills in therapeutic work and research and evaluation.

**How can clinical psychologists exert a greater influence on mental health services?**

In accordance with the above model and the New Ways of Working document, clinical psychologists will be required to take on new roles and supervise more workers. At a joint conference held by NIMHE and the BPS (2005), it was identified that clinical psychologists' clinical leadership skills need to be strengthened. In order to meet these requirements, further training is needed alongside an increase in the number of qualified clinical psychologists who are already overstretched across services. One way of acquiring further training is by exerting pressure on the education and training Consortia within every Trust. Unfortunately, a survey in one area of London revealed that clinical psychologists input to meetings held by the Consortia were severely lacking (Sperlinger, 1999). Perhaps this also points to a more widespread need for clinical psychologists to
market their services and exert more pressure on funding bodies. Maybe it is no surprise that despite the DoH’s commitment to increasing the availability of psychological services, the increase in the number of training places has fallen short of its target, i.e. instead of increasing the number of training places by 15%, a mere 4% increase has been achieved (as cited in Kinderman, 2005). It maybe however, that we need more clinical psychologists on the ground first of all so that they have time to spend on issues beyond their clinical workload. It may also be that clinical psychologists need to prioritise managerial and professional issues into their workload.

Turpin (2005b) feels that expanding access to psychological therapies is the ‘most challenging, single development for psychologists working in the NHS since the inception of the Division of Clinical Psychology (DCP)’, yet, as far as I am aware, out of 26 trainee clinical psychologists, I am the only one who has chosen to write about this topic. What does this oversight say about the profession? Perhaps it reflects a general tendency for trainee clinical psychologists to prioritise their focus on day-to-day tasks and overlook their duty to pay attention to wider issues facing the profession as a whole. Clinical psychology has in the past been criticised for focusing on an understanding of human distress from the individual perspective while ignoring the wider social and political contexts from which their clients present. We face a similar criticism if we continue to focus on our daily tasks in ignorance of the political climate.

A priority identified at the joint conference held by NIMHE and the BPS (2005), was to develop mechanisms aimed towards promoting greater working partnerships between local psychologists, strategic Health Authorities and regional NIMHE centres. Clinical psychology training courses may be a place to start considering raising trainee’s awareness of the importance of developing such partnerships. Essays such as this one have certainly increased my awareness. However, a module in professional issues could supplement this essay. Hay (2005) offers another solution to psychologists wishing to get more involved in the strategic development of services. By joining NIMHE as a fellow,
Hay (2005) described how she had the opportunity to present the difficulties faced within her service and develop solutions from the top down.

With the introduction of new ways of delivering psychological therapies in the NHS through new roles, it is increasingly important for clinical psychologists to be able to show that they are administering evidence based practice. With the onslaught of the NICE guidelines, there is now considerable evidence to support the administration of manual based psychological therapies. In line with the current plans, PCGMHW’s, Associate Psychologists and ‘extra therapists’ will be trained to deliver therapies in accordance with the NICE guidelines, but at a fraction of the price that a clinical psychologist delivers their services. In addition, in my experience, clinical psychologists rarely deliver pure manual based therapies, preferring instead to assess the person holistically and apply therapeutic approaches to match service user needs. The use of multi-theoretical perspectives however, poses problems for the researcher partly due to the greater number of variables requiring measurement and because of the greater number of therapeutic tools used (Nokes, 2005). This poses a dilemma for clinical psychologists who are required to demonstrate the delivery of efficacious therapies in line with clinical governance principles.

An additional problem is that despite clinical psychologists being trained to undertake a high standard of research, the majority rarely publish any research (Dunkerley & Waterworth, 2005). Dunkerley & Waterworth (2005) explained the main reason for this was; lack of time to produce research due to high demand for client contact coupled with a low supply of psychologists. A solution may be for clinical psychologists to supervise Psychology Assistants carrying out audits, service evaluations and analysing qualitative information in order to give purchasers an idea of what works for whom.

Furthermore, as I know from my own experiences and from my reading of the literature a considerable amount of therapeutic effect is down to process issues such as engagement, empathy and validation skills which can only be gained from experience and therefore
may be beyond the competencies of PCGMHW and Associate Psychologists as there is a correlation between experience and effectiveness (Scott, 1997). Clinical psychologists also need to remind commissioners of the limits of applying manual based therapies to older adults, learning disabilities, children and complex mental health conditions where clients would require more sophisticated formulation which would be beyond the competency of associates and PCGMHW’s (DCP/BPS, 2005). This is not to say that I am against having PCGMHW and associates’ administering manual based therapies but my aim is to point out the possible limitations.

Examining the career structure in clinical psychology

Pressure to re-examine the career structure in clinical psychology and other applied psychologies comes from different angles. On one side there is the service user who typically has to wait an average of 0-26 months for their first appointment (cited by Modernisation Agency/BPS, 2004). On the other side there are many clinical psychologists whose pressured time is taken up with delivering therapies for mild to moderate problems. At the same time there are numerous vacancies within the NHS for clinical psychologists operating between the spine points 20-27 because newly qualified clinical psychologists seem to engage in bargaining with prospective employers and end up taking up posts between the Spine Points 28-53. This means that in reality, spine points 20-27 rarely seem to get utilised and there is a gap in the system for the delivery of short-term manual based therapies.

In addition, many of the 13,000 psychology graduates are lost from the health service, because the only long term career option currently available is to obtain one of the 500 training places on clinical psychology training courses around the UK. This creates a bottleneck of assistant psychologists waiting to get on training courses. While career options for psychology graduates has expanded slightly with the introduction of the PCGMHW role, there is still an over supply of graduates and assistants for the number of career development opportunities available (Modernisation Agency/BPS, 2004). One
option to meet the demand for psychological therapy is to train other health disciplines (i.e. nursing, OT’s, social workers) (Layard, 2005) while the more sensible option would be to use the over supply of psychology graduates, given the substantial vacancy rates in other professions (Modernisation Agency/BPS, 2004).

To fill the gap in service provision, the associate role has been created which would involve training the Psychology Assistant to a master’s level. The role encompasses undertaking psychological assessments and administering treatment approaches and techniques that can be described by protocol and are applicable to individuals, couples, groups and families (Management Advisory Service, 2003). This would essentially mean that we are creating a two-tier profession. The Division of Clinical Psychology within the BPS has expressed concern that a two tier profession may confuse commissioners and lead to an oversupply of the cheaper option (associates) within one service and a consequent under supply of qualified clinical psychologists as they are judged to be more expensive (DCP/BPS, 2005). In its response to the associate role, the Membership and Professional Training Board (MPTB), of the BPS also expressed concern about the potential confusion that the associates would create if they were to be registered via statutory regulation with the Health Professions Council, as they would not be educated to doctoral level (MPTB, 2005).

While, I recognise the necessity of developing career opportunities and skill mix solutions, I have reservations that the associate role will answer the problem of the limited supply of psychological therapies. Similar to the MPTB, I believe that the title ‘psychologist’ should be protected in line with European standards for the professional standing of a qualified chartered psychologist (ordinarily trained to doctoral level). It also seems a bizarre state of affairs to create a new role because clinical psychologists are not filling the posts from spine point 20-27. Secondly, creation of this role may mean that Associates will be in competition for positions with newly qualified psychologists. Thirdly, as associates are more expensive they may squeeze out availabilities for assistant posts and trainee posts by placing extra demand on supervision time from qualified
clinical psychologists. I also wonder if the development of the associate role will create a bottleneck for places in a similar way to the current bottleneck for clinical psychology training places.

Inspired by reading the Psychology Associates briefing paper (Modernisation Agency/BPS, 2004) and my own experiences as a psychology assistant, I am in favour of giving assistants the opportunity to develop core skills and providing training and accreditation for each of the core skills gained. The idea of offering assistants formal pre training, which could be accredited and used for clinical psychology course entry in the future is not new. Miller and Wilson (1998) previously suggested a number of options including; the development of in house part time modular training, accredited training within specialities, professional development on placement and/or introduction of a master’s degree with the aim of providing training for the provision of safe psychological therapies. Assistants with this training could be appropriately remunerated by assimilating different levels of psychology assistants/technicians onto the Agenda for Change scheme.

Specific training would be determined by local need, so an assistant in one area may obtain further training in delivering therapies that can be described by protocol to adult mental health service users, whilst an assistant in another location may specialise in carrying out psychometric tests for people with learning disabilities. This model would also meet Layard’s (2005) demand as cited by Roth & Stirling (2005) for 10,000 extra psychological therapists to deliver CBT for anxiety and depression in accordance with the NICE guidelines without placing extra pressure on vacancy rates in other health professions.

Ultimately, what service users want is increased access to skilled and experienced qualified staff and the above model would facilitate this. The criticism for this model is that it may create a further queue for training courses and that it may get rid of the assistant role as it currently stands, i.e. conducting audits and service evaluations (Modernisation Agency/BPS, 2004). However, with the above model an assistant
engaged in audit and service evaluation work would deliver this to a high standard, as they would undertake training in this area while they are working. Hence, the money spent on training would be paid back into the system as it ensures that audits and evaluations are conducted to a high standard, which fulfils the need for routine outcome measures in psychological services as suggested by Sperlinger (2002).

Kinderman (2005) also suggested an overhaul of the training at doctoral level. In acknowledgement of the success of the clinical psychology doctoral training, Kinderman (2005) suggested that all specialities including forensic, health, counselling and clinical would engage in similar modules for two years in order to develop their core competencies before specialising in a desired specialist area in the third year. In my opinion, this seems like a sensible option as it places particular emphasis on the development of the core competencies within psychology, while at the same time recognising the areas as being distinct from one another. This would also provide a more equitable route to qualification across the specialities, as state funding is currently only available to train clinical psychologists, making entry to the other areas less desirable.

Upon qualification, Kinderman (2005) goes on to recommend that key targets for continuing professional development would be clinical leadership, management and clinical governance in preparation for the consultant role, hence distinguishing the roles of newly qualified psychologists from the consultant roles. With this model of training in mind, if the NHS funded training in all branches of applied psychology, the MPTB of the BPS believe that the level of skill mix required at sub Chartered level to deliver CBT in accordance with the NICE guidelines could be provided. It would also provide increased qualified psychologists, which would increase capacity to supervise trainees, assistants and PCGMH workers.
Making psychological services more accessible and acceptable to service users

Although it has not been easy to facilitate and negotiate, universities have made efforts to include service users within clinical psychology training courses (e.g. University of Surrey). In order to improve communication between service users and the BPS, discussions are currently taking place with a view to establishing a Service User Liaison Committee within the BPS (Turpin, 2005a). If service users’ voices are to be taken seriously, it is imperative that their views are incorporated into clinical services. Furthermore, the DoH (2004b) has advocated the involvement of service users in choosing the most appropriate therapy for their condition and situation. However, in order to do this, psychological services need to ‘provide more effective information about their services and how they can be accessed, to both service users and referrers’ (DoH, 2004b). Although, more information about the different psychological therapies is available through the DoH, (2001) ‘Choosing Talking Therapies’ publication, significant improvement is still needed at a local level (DoH, 2004b).

To date services have also come under an increasing amount of pressure to address the mental health needs of Black and Minority Ethnic (BME) groups through legislation such as the Race Relations Amendment Act (2000) and the ‘Inside Outside’ report by NIMHE (2003). It is also clear that clinical psychologists are aware of the need to address issues of racism, diversity and responsibility, as an entire issue of the monthly journal published by the DCP within the BPS was dedicated to these topics. Upon reading this issue, I was alerted to many of the inappropriate practices within clinical psychology. For instance, research and clinical practice with BME groups continue to utilise assessment tools and measures that have not been validated or standardised on BME populations.

Furthermore, the psychological approaches on offer are largely based on Eurocentric and American models without a critique of their relevance and limitations in relation to BME populations (Patel & Fatimilehin, 2005). A further criticism is that the racial and gender make up of clinical psychologists is largely limited to females of white British origin. In
other words, the population of clinical psychologists is not representative of the population it serves. One of the key skills of clinical psychologists is to have the ability to empathise or step inside the shoes of another human being, so to speak. It is surprising then to read that ‘psychologists find it difficult to engage with the notion of offering Black and ethnic minority people a service in their own language or an option to be seen by someone of their own race’ (Patel & Fatimilehin, 2005).

Some psychological services have become active in liaising with and making links with minority ethnic communities as part of conducting needs analysis to inform development of services (Patel & Fatimilehin, 2005) and this should be encouraged on a wider scale. The appointment of community development workers is a positive step forward in bridging the gap between BME and mental health services. However, in order to make the most of these workers, clinical psychologists should consider engaging in joint working with them by attending faith groups and/or community meetings to talk to individuals with concerns and provide another route for referral to the mental health system. This would also give clinical psychologists first hand experience of what BME communities want from services which would hopefully help them to change their practice in line with more acceptable practices for BME groups. Through the course of his work, Webster (2005) also hypothesised that single points of entry to mental health services may inadvertently discriminate against those who are most suspicious of psychiatric institutions. By directly engaging with BME groups, psychologists would expand on the current single entry point to services, which may make services more accessible and less threatening.

Having recently finished an induction with a Primary Care Trust responsible for medical care and learning disabilities services, I was heartened to listen to their focus on respecting cultural diversity. However, I was saddened to hear the conversations and rhetoric of my colleagues, which was stigmatising towards mental illness and learning disabilities. In this age of equality, why was it ‘ok’ for the speaker to compare learning disabled people to ‘normal’ people and why was it ‘ok’ for one of my colleagues to add
‘you never know what you are dealing with’ when referring to people with mental health problems and why do sick days continue to refer to physical illness and rarely to mental illness. As cited by DoH (2004c) an inquiry into the death of a doctor highlighted the need to make it easier for staff with mental illness to find the care they need.

As health professionals, everyone has a responsibility to think about the language they use to avoid the further stigmatisation of an already stigmatised group. Reducing the stigma of mental illness would open the doors to services for more people, which would improve the mental health of the nation as a whole. It should therefore be seen as a priority for all health professionals. The PCGMH workers can be used effectively to encourage mental health promotion and reduce stigma in creative ways. Reducing stigma and discrimination can also be achieved by clinical psychologists. This can be achieved by remaining focused on promoting the social inclusion of those with serious mental illness through the development of links with voluntary and statutory services aimed at providing opportunities for employment, training, befriending, advocacy, promotion of service user groups, self-help and advice and information (DoH, 2004c).

Summary and conclusion

Undertaking this essay has been an overwhelming task largely due to the copious number of documents, websites and organisations that have been generated in relation to the topic under investigation. Coupled with the increasing workloads and time pressures on both trainee and qualified clinical psychologists it is not surprising to hear that many shy away from issues relating to the political climate. In my experience, I have also heard clinical psychologists voice exasperation with the constantly changing guidelines, which many feel, are largely fuelled by political agendas as oppose to service users’ interests. However, I have found it a rewarding experience to find out what the future holds and how I can best prepare myself for it. Each topic covered could have been an essay in itself but it was my aim to develop an understanding of some of the main issues facing the profession of clinical psychology. Service users consistently cite access to psychological
therapies as their main priority. In this essay, I have mainly focused on the changes involved in the roles of clinical psychologist as opposed to focusing on how psychology services should be organised. This is an issue that clearly needs to be addressed as psychology service provision has been described as 'patchy, uncoordinated, idiosyncratic, potentially unsafe and not fully integrated into management systems' (DoH, 2004b). The need for major changes in the organisation of psychological services is further highlighted by Layard's (2005) proposal of 10,000 extra psychological therapists (as cited in Roth & Stirling, 2005).

In this essay, I have highlighted how clinical psychologists will become increasingly involved in strategic decision-making and clinical leadership. Clinical psychologists will be increasingly involved in primary care work and/or consultancy work. To keep abreast of these changes, training institutions and clinical psychologists need to push for training to facilitate continuing professional development. The development of new roles where less skilled workers take over the work formerly managed by those in highly skilled positions is not new. In fact this is a growing trend, for example, nurses and pharmacists now have prescribing powers, special police constables give the streets the policing presence previously occupied by trained policemen. The question is whether this provides a 'fast tack', rather than a 'fast track' to services.

I believe that on the whole the new roles such as CD workers and PCGMH workers and the psychology assistant/technician role will bridge a gap in service provision. However, to make the most out of these roles, adequate supervision by appropriately trained staff is needed. Clinical psychologists also need to work closely with CDW's, PCGMHW's and other members of the MDT in order to provide a psychologically focused service. In order to make services more accessible, clinical psychologists need to critically analyse whether they are delivering services that are appropriate for BME groups and are focused on mental health promotion and anti-discriminatory practices.
Instead of the Associate role I propose an alternative model whereby psychology assistants would become increasingly skilled and have the option of remaining in the Psychology Assistant position or going onto clinical training. This option, together with proposals to increase funding for training places on applied psychology courses would fill the gap in service provision at sub chartered level and may free up clinical psychologists' time to a degree at least, to pursue their changing roles and responsibilities. This does require an increase in funding for further training places in psychology and in order to persuade the already overstretched NHS to do this, clinical psychologists need to ensure that they are conducting research as a matter of routine so they have evidence to show that extra clinical psychologists will save money in the long term.

To conclude, “a mental health workforce is needed with the competence and organisational strength to deliver effective and appropriate psychological treatments, backed by good ethical and supervisory support and within the framework of clinical governance” (DoH, 2004b). Clinical psychologists have the skills and training to make a major contribution to deliver a service such as this, it is time therefore, to embrace the changes and lead the way if service users’ interests are at the heart of what we do.
References


Academic Dossier

Part II

OVERVIEW
This section of the portfolio presents reflections on case discussion group activities. Over the course of the three years, the five trainees in this group remained constant and a new facilitator was introduced each year. Each year the group was asked to create and deliver a presentation to the year group, regarding a clinically relevant problem. The resulting problem based learning reflective account, provided trainees with the opportunity to reflect on their experience and learning processes from undertaking this task. The second major activity of the case discussion group was to meet regularly to reflect upon clinical training, clinical practice and trainees' personal and professional development. This section also provides a summary of the case discussion group reflective accounts, which provided an opportunity for trainees to reflect on group discussions and processes.
Problem Based Learning Reflective Account 1: Relationship to change

March 2005

Year 1
Introduction to the task

Having been on my adult mental health placement for over four months now, I am in a position to reflect on the clinical relevance of the problem based learning exercise.

I begin with a recollection of my personal experiences of approaching the task. The group met for the first time on “day 2” of clinical training. At this time, I considered “the relationship to change” to be a particularly difficult topic to discuss as it seemed so ambiguous and irrelevant to our future professions, yet relevant to what I was going through at the time, as thoughts of change, were raw and alive in my mind. I felt vulnerable and open on one hand, but excited on the other. I was thrust into an unexpected situation; I thought that the style of lecturing was going to be directive. On the contrary, I was with a group of trainees I did not know, speaking about myself, being ‘facilitated’ by the lecturer.

As time went by, we began to see the relevance of the topic to our future clients. Also, having been on placement, I realise that a major strength of these meetings lay in working through the uncertainty and vulnerability that we felt from the outset. Having this experience has enabled me to work through these feelings and moments in therapy instead of feeling overwhelmed by them. Reflecting on my experience, leads to greater empathy for the client who may also be feeling vulnerable and exposed when discussing their emotions. Also, when I get unwittingly placed in the expert position by one of my clients in particular, I remind myself of how I developed within the group from the facilitative stance of the lecturer.

Another point that stands out in my memory was the diversity within our group. Even though we were going through the same transition, the subject of change meant different things to each of us. On placement, I have also noted that no two clients require the same approach despite having the same diagnosis. Looking back, I realised that we grew in

Account is written in first person to aid self reflection.
confidence in ourselves and as a group, perhaps because of the respect for each other as individuals. When people spoke they were listened to and this was illustrated by the other group members accurately reflecting and clarifying the topics spoken about. From being on placement, I also realise that one of the major keys to developing a trusting relationship is to show respect and a genuine interest in diversity by actively listening to clients.

How we tackled the task

One of our first tasks was to ensure that each group member had a role/position within the group. I felt more at ease after being assigned a role, as I was aware of the expectations surrounding the position I chose. Hawton (1989) also highlights the importance of making clients aware of the structure of the session so that they have an idea of what to expect. On reflection, I realised that we were quite structured and focused from the outset.

In the first meeting, we decided on our goals, which included; 1) defining our understanding of the task at hand, 2) researching theoretical models of change, 3) delving into our own experiences of change and 4) relating our understanding of the processes of change to our future clients.

Generating these goals early on in the process allowed us to stay focused. When I reflect on my clinical placement, this point also comes to mind. One of my clients who experiences anxiety in social situations reported disappointment regarding the lack of progress he was making. In hindsight, I realised that this was because our sessions lost their focus by diverting from the original goals he had drawn up. Reverting to the original goals of his graded exposure programme enabled him to see the successes he was making as he was working on tasks, which were appropriate for his stage in therapy. In other words, goals give therapy a focus that is meaningful and realistic for the point the client is at (Padesky & Greenberger, 1995).
The second meeting involved discussions around our understandings of the literature. At this meeting we focused on the stages of change model developed by Prochaska & DiClemente (1992) and the personal and environmental factors that influenced our readiness to change from an assistant psychologist to a trainee psychologist position.

The remaining groups were spent *inter alia* discussing the literature around personal and environmental factors associated with helping/hindering our readiness to change, mapping our individual experiences to the model, discussing the clinical implications of what we explored and finally, putting all of the above into a neat presentation.

**A dilemma**

As a group, we tried to squeeze our experiences into the model and ignored the elements that did not fit. We were experiencing a dilemma; instead of using the theory to enhance our understanding of our experiences, we were using it in such a way that inhibited our understanding. We resolved it by recalling our experiences as they occurred and then fitting the model to them. Having done this, I found the theory useful in gaining a deeper understanding of my transition and noted the emergence of idiosyncratic themes in relation to our readiness to change at different stages.

Having been on placement, I realise that the client is in a similar position when the therapist limits his/her questioning to fit different aspects of a model or diagnosis. For instance, one of my clients had self diagnosed himself to have Generalised Anxiety Disorder (GAD). Also, discussions at the team meeting lead the psychiatrist to believe that he may have obsessive-compulsive tendencies. With these diagnoses in mind, I quickly went about formulating his difficulties using the GAD model and obsessive-compulsive literature. However, this served to confuse rather than illuminate. I discussed this within supervision, analysed his thought diary and realised that the GAD model did not fit for him. Reflecting on this has allowed me to see that models can constrict our
understanding when they are used in a rigid way. From reflecting on both experiences, I have learned that it is more beneficial to fit the model to the client as opposed to fitting the client to the model. This allows me to move forward. My next task is to understand why this dilemma may have arisen.

Why did this dilemma arise

Our presentation and our group meetings comprehensively uncovered how our readiness to change from being an assistant to being a trainee unfolded in a detailed way. However, we never reflected on the potential impact that being a trainee would have on us as practising clinicians. On reflection, I think we squeezed our experiences that fitted into the model and ignored the ones that did not in a desperate bid to appear competent and show we had the ability to link theories to reality within a limited time frame. As a trainee on placement, I was faced with similar pressures. As stated by Padesky & Greenberger (1995), “to be effective, we must be able to understand, conceptualise and skilfully apply treatment plans for the broad spectrum of human problems in increasingly brief periods of time”. With this mammoth task in mind, I quickly became aware of the gaps in my knowledge, which served to increase my anxiety. Had we reflected on the developmental process as cited by Mearns (2002), within our presentation, we might have felt more prepared for this feeling of being de-skilled. As cited by Mearns (2002), Clarkson & Gilbert (1991) stated that the trainee goes through a developmental process from being unconscious of his/her incompetence through to being conscious of his/her incompetence before going onto a degree of being conscious of his/her competence. Although I currently feel conscious of my own incompetence, I do not feel as exposed because I can recognise that I am going through a natural developmental process. On placement, I have observed that clients also feel relieved when their problems/situations are also normalised.
The Stages of Change Model

Readiness to change is the central feature of this model, which highlights five stages of intentional behavioural change. In pre-contemplation stage people are not considering change, in contemplation stage they are aware a problem exists but are not ready to make a commitment to change. In preparation stage individuals are ready to try change and are preparing themselves for the change. In the action stage, people are taking active efforts to maintain the change. Whilst in the maintenance stage, individuals are working to maintain the behavioural changes they have made. The model suggests that self-efficacy differs at different stages of the model, as does the person's ability to see the barriers and/or benefits of changing. It is not a linear model, so people can go backwards and forwards through the stages at different times. The clinical utility of the model lies in its ability to match strategies with the psychosocial characteristics of the person to enable individuals to move from one stage to the next.

I have found this model useful on my clinical placement particularly when I related it to a client suffering from an eating disorder. I have employed the strategies of motivational interviewing to help her move to the action stage. It is my opinion that the psychosocial characteristics in this model are quite limited. For instance, I noted that behaviourally she reported being ready to change but found it difficult to move forward as a result of complex psychological factors, such as secondary gain, mood intolerance etc. As a result, I have turned to various models to work and understand her readiness to change. On reflection, I realise that this is frequently the case in practice.

Our presentation was quite narrow in its focus, we could have reflected on the emotional changes that take place when a change is imposed upon someone. These emotions were alluded to as part of my mandatory training within my clinical placement. They include firstly experiencing denial, followed by anger, self blame and depression before engaging in a struggle in order to finally reach new hope regarding the possibilities of the change. I have found these processes particularly helpful in understanding one of my clients who is
experiencing anger, self blame and depression in response to being forced to move out of the house he lived in for 30 years.

Conclusion

A clinician is not a blank slate. Indeed, depending on our disciplinary backgrounds, organisational roles, past histories and current situations, interests and socioeconomic perspectives, we frame problematic situations in a different way (Schon, 1987). We are as diverse as the clients we see and therefore, have an ethical responsibility to our clients to critically reflect on our practice. My opinion regarding the relevance of exploring “the relationship to change” has certainly changed since Day 2. An exploration of our individual experiences of change allowed us to gain much clinically relevant information. The diversity of our experiences of the same transition facilitated a rich discussion but also highlights the multidimensional nature of change for individuals. We used the Stages of Change model to reflect on the meaning of our transition from being an assistant to a trainee. In hindsight, it would have been more beneficial to use more than one model as clients seldom fit neatly into one theory. I have reflected on the benefit of a supportive and collaborative relationship through personally experiencing this within the group and the hindrance of matching the client to the model as oppose to the other way around. To conclude, I feel that writing this report has facilitated my professional development as it has given me the opportunity to critically reflect on the task in more ways than one.
References


Problem Based Learning Reflective Account 2: Children, Young People & Learning Disabilities

March 2006

Year 2
Introduction

This account provides me with an opportunity to reflect in more ways than one, on the problem based learning (PBL) exercise undertaken at the beginning of the second year of my clinical psychology-training course. This exercise spanned three sessions and ended with a group presentation to the year group. Having been together as a case discussion group for a year, we were undertaking this task when we were starting our 6-month child and/or learning disability placements. The exercise covered topics of particular relevance to our child and learning disabilities placements, such as parenting and learning disabilities, domestic violence, child safety and abuse and the psychologist’s role around such issues. All of these issues were presented in written format with reference to the Stride family who were at risk of being separated as Mr. and Mrs. Stride’s ability to parent was in question. As I am now approaching the end of my learning disability placement, I am in a position to reflect on both my own and the groups’ approach to the task.

Group processes

My mindset going into this PBL task could be encapsulated by ‘what can I give to this group and what do I need to do in order to get something valuable out of it’. Following conversations with the other case discussion group (CDG) members, I was excited to know that all of us approached the task with a similar mindset. Interestingly, upon writing about our reflections in relation to our Year 1 case discussion group we had reached a consensus in terms of our need to take personal responsibility for the group’s progress. In hindsight, I feel that this influenced our collaborative approach to the task, which had an influence on our cohesiveness as a group.

We were also starting this task with a new facilitator and that facilitator could not attend our first meeting. Having two different facilitators was a potentially threatening situation. Instead of negatively affecting our focus however, this situation added to our group spirit.
of collaboration and cohesiveness. In fact, we were so task focused that we did not fully acknowledge our new facilitator’s position, which may have led her to question our empathy towards her. This reminds me of my observations as part of the reflective team in family therapy when the clinician remained focused on the assessment questions to the detriment of acknowledging the position of the family. This in my view affected the development of rapport, making it more difficult for the family to open up. I recognise that in-depth introductions are often unnecessary but in my future practice I will be aware of the need to acknowledge the positioning of the person in front of me.

There were many strengths to our approach. As is good practice upon receiving a referral, we thoroughly discussed the issues surrounding the Stride family. In line with the spirit of formulation, we discussed the differing perspectives (current and historical) of the professionals, Mr. and Mrs. Stride, the Stride children and the public. Interestingly, we then began talking about the interface between psychology and the law before finally facing up to our own feelings about approaching such a task. This has been similar to clinical practice, where I have approached situations without thinking of my own feelings around such issues until those feelings arose. From supervision, I have reaped the benefits of discussing my emotional reactions at an early stage in the process so that I have a greater awareness of how they have the potential to impinge on the assessment process.

**Personal and professional learning**

From the outset, I acknowledged that I had much experience of particular relevance to the task. Interestingly, despite acknowledging this experience, I recognised that upon reading the problem, there was so much I did not know about. As I near the end of my placement, I realise that it is healthy to acknowledge that I will always be in a naive position upon receiving a referral and that it would be a potentially dangerous situation to only focus on those aspects that are familiar and avoid acknowledging my ignorance of certain areas. Similarly, a quote from Bion, 1975 as cited in Casement pp.147 (1985) gave me food for thought in relation to the position of ‘not knowing’. The quote reads, “however
experienced we are, we still know very little indeed about how to bring up children, of whatever age. We are beginning to know that we do not know – that is something”.

Within the presentation we also emphasised the importance of referring to the literature, which is something that I continue to be mindful of within my practice. Our discussions within the first meeting also alerted me to the fact that my experiences of learning disabilities were quite narrow. This realisation influenced my willingness to embrace my stereotypes when I went on my learning disabilities placement. The task forced me to consider that my work on placement could involve helping people through life transitions that many people experience when living independently, such as parenting. I had previously construed the psychologist’s role in learning disabilities as being mainly associated with challenging behaviours.

This realisation, spurred me into action. When I started my placement, I attended a meeting around parenting and arranged a meeting with the community team who support people with learning disabilities who live independently in the community. During the parenting meeting, it was fascinating to observe the clinical psychologist and the social worker (both females), discuss how ‘good enough parenting’ was essentially a personally constructed idea. At the same time, the male social worker who was care managing a couple with learning disabilities and their new born infant, was solely concerned about the parents’ understanding of risk management. He recalled that the couple had taken the baby on public transport to visit their relatives, against his recommendations. The male social worker felt that the parents’ behaviour was an indication that they lacked an understanding of risk and showed that they were incapable of keeping the baby safe because they could not follow what ‘he’ had asked. The psychologist and female social worker retorted that his demands upon them were unrealistic in the first instance. They explained that it was healthy and normal for the couple to want to show the baby to their relatives and that public transport was their only means of doing this, as they did not own a car. I wondered if it was the differences in gender, positions of responsibility or personal experiences that influenced the differences in opinion.
The situation reminds me of a lecture by Coyle (2006) who explained the social constructionist point of view, which acknowledges that the same statement or action can mean different things to different people depending on the context of the statement and individual experiences. This experience highlighted to me, that our emphasis within the presentation on acknowledging the influences of one’s own experiences in determining ‘good enough parenting’ was a pertinent idea to think about when involved in such assessments. Although, we highlighted the fact that assessments of parenting ability involved the multi-disciplinary team, we could have used the presentation to emphasise the different pressures and perspectives of different professionals within such a network as the Strides’.

I also attended a meeting with the community support team. At that meeting I was enlightened to get into a discussion with a married man who was living in the community and working part time in a service user involvement group. After that meeting, I began to understand what it must be like for people with learning disabilities who live in the community, if they not only have to challenge the prejudices of a non-learning disabled community but also of the psychologist who works for them. Despite, my ample experience and knowledge of the Government paper on Valuing People (2001), I had not stopped to think that parenting would be a major part of my role as a psychologist for people with learning disabilities. I had also overlooked the idea of service user involvement groups for people with learning disabilities. If I were to do the presentation now, I would reflect upon how our own perceptions and prejudices were challenged through the course of the task.

How we tackled the problem

The timing of the task was such that we felt we needed to get a handle of how we could embrace such a problem in clinical practice as we were all starting our respective placements. We spoke about our potential emotional reactions to such a referral, the tasks we would need to complete in order to take on such a referral, alongside the challenges
faced by psychologists when tackling such a problem. With the help of our facilitator, we came up with a way of incorporating our discussions within the presentation. By drawing out, general themes from our discussions, we were able to make better sense of what we had discussed.

In a similar vein, my supervisor on placement has helped me to make sense of the copious details I obtain from assessments, by highlighting the main themes that arise from the information, I relay to her. On reflection, I realised that this has been a very important element in supervision and something that I have valued to a great extent. In the event of me becoming a supervisor this would be a strategy, which I would also use in the hope of helping a supervisee to feel contained, just as I had done within the group and during this placement.

Within our presentation, we reflected on the pressure of being forced to give an answer. Instead of focusing on what that answer might be, we focused on the process of carrying out such an assessment. Taking a step back from this, I realise that I can draw parallels with similar experiences in clinical practice, where I have felt pressured to provide an answer or diagnosis. In those situations, I have become bogged down by information and have felt as though I am trying to squeeze information into a pre-determined position. The PBL task we undertook was not dissimilar as the eventual aim was to determine Mr. and Mrs. Stride’s ability to parent the children.

Providing yes/no answers is uncomfortable in psychology as it is not a clear-cut science. During my placement, I have felt a lot more contained when I have focused upon the process of the assessment as opposed to the end point. I have also felt more comfortable, when I recognised that each piece of information could be interpreted in many different ways and by acknowledging this, feel that there is less of a chance that I will limit the understanding of the person to one problem or diagnosis, which may not necessarily be valid.
Conclusion

To conclude, I have learned from writing this account, that it is not necessarily the end point that is the most important aspect, but the journey that you take in order to reach that end point. Reflection has helped me see what I have valued from completing the task and how I would have improved upon the presentation, if I were to undertake it once again with the benefit of hindsight. Having completed my placement, I still feel that I could not have given a definitive answer on whether the Strides are fit to parent their children because we did not expand on the specifics of the case. If I were to undertake the task now, I would expand on the specifics of the case by reflecting on the position of the Strides and the other members of the multi-disciplinary team. However, I feel the most valuable thing from our approach was to break down the specifics of how one would tackle and approach such a situation. From writing this account, I realise that I have developed personally and professionally from the experience and can apply that development to my future practice.
References


Problem Based Learning Reflective Account 3: Working with Older People

February 2007

Year 3
Introduction

This account is focused on using the benefit of hindsight to reflect on my third year problem based learning (PBL) exercise. Usually, trainees will reflect on a PBL exercise after obtaining experience in the relevant discipline (i.e. older people). However, since the PBL exercise, I have undertaken my advanced specialist placement. In this placement, I have gained experience in the neuropsychological rehabilitation of brain injured adults. I will draw upon this experience, alongside other relevant experiences and personal life experience to reflect on the task. Our task was to generate a presentation, which was inspired by the story of the referral made to social services by Mr. Khan’s daughter (Maya). The information received suggested that Maya was concerned about her 72 year old fathers' health. The referral information led us to think about many issues some of which included; older people experiencing dementia, depression, normal bereavement and/or normal ageing, the culture of Pakistan, the Islamic faith and what it might be like for a migrant to grow old in Britain. The following paragraphs will present: a snapshot of the group processes as they evolved within the first and second meeting, a brief description of the essence of our presentation and how I may have contributed differently to the task with the benefit of hindsight and clinical experience.

The first meeting

Upon reading the information, the emphasis of our group’s discussions turned to culture and religion. There was a sense that both these factors were unknown to the group and therefore needed further exploration. I added to these discussions with questions about the position of women within Pakistan’s culture and the Islamic beliefs and practices around death and mental health problems. Similarly, on placement, I recall meetings where the referral would point to mental health issues but instead of talking about the presenting problem, the team would often seem to focus on the unknown points of the person’s culture of origin, appearing to find it difficult to reach a conclusion or way forward. Indeed, my supervisor and I had lengthy discussions about working with diversity. We
reached the conclusion that while it was important to know the major points about
different cultures, it is also important to approach every referral with an open lens
because culture is not as broad as a person’s country of origin or a person’s faith (Fenton,
1987).

Writing this account has made me more aware of how easily it can be to forget my usual
ability to formulate when faced with information that is unknown. In hindsight, perhaps
this discomfort reflected a degree of embarrassment on my behalf because I did not know
the basic facts of other cultures. This reflection has made me recognise that action is
needed. Interestingly, this point is currently topical as the government has vowed to
introduce teachings on different cultures to schools following a display of ignorance of
other cultures from a participant on the reality TV show Celebrity Big Brother.

The second meeting – quick decision-making

During our second meeting, our conversations were quite focused. We decided to do a
presentation that involved making an argument, for the case that Mr. Khan may be
experiencing depression, dementia, bereavement and/or normal ageing. The presentation
involved 4 different group members, each representing one of these points of view. In line
with the usual approach to formulation, I suggested that Mr. Khan’s presentation could be
understood within the context of his cultural background. As a group, we felt there were
three main merits to undertaking such a presentation. Firstly, such a presentation would
give us the opportunity to learn about the literature around these pertinent topics before
we undertook our placements in relation to working with older people. Secondly, the
division of tasks in this way meant that we would not need to meet as a group very often
and could do a lot of the work on an individual basis. Thirdly, this approach was
appealing as it would allow us to meet the demands of the assignment in an efficient way
giving us time for the competing demands of the course, placement and our personal
lives.
After discussing these merits we decided on the focus and format of our presentation in that second meeting. This quick decision-making was very unusual for us as a group and possibly reflected our increased confidence following our experience of other PBL tasks. It also, possibly reflected our experience of working as trainee clinical psychologists, where efficient decision making is important because there is often limited time to weigh up the pros and cons of different approaches. The fact that we chose a presentation style that allowed us to divide our time between the competing demands of our workload also reflects the reality of work within the NHS, where prioritisation of tasks is of paramount importance in managing an ever increasing workload. In hindsight, I wonder if our choice of format, which prioritised individual work over group work also reflected the status quo of our group and the timing of the PBL exercise. The PBL exercise was given to us after the summer holidays, which meant that we had not met as a group for at least two months. Because we do not socialise outside the group meetings, I feel that we take time to get used to each other and perhaps this was also why we reached a consensus to do the greater quantity of work on an individual basis.

Unfortunately, despite the fact that I recognised the advantages of undertaking the presentation in this way, I felt uneasy about the speed of our decision making and the straightforward nature of our presentation. I did not want to mention this at the time because the group was very enthused about the decision. In hindsight, I recognise that my discomfort was probably influenced by my underlying drive to achieve perfection rather than sit with something that is simply 'good enough'. I recognise this is an area of development for me and my experience of being within the group has helped me to think about the fact that 'good enough' work is acceptable. Interestingly, the idea that one should strive for perfection in place of creating a piece of work that is 'good enough' was reinforced by the feedback we received from the course tutor, who felt the presentation was of a good standard but questioned our choice of 'rigour over creativity'.

During my current placement, my supervisor has reinforced the importance of achieving work that is 'good enough' rather than 'perfect'. Following these conversations, I
interestingly felt that I was free to do better work by focusing on the bigger picture rather than spending lots of time and energy on single areas. This is a concept, I will attempt to instil in my supervisees when supervising in the future.

**What I may have done differently – drawing upon my placement experience**

In my current placement, I was asked to consult with a staff team of psychology graduates who are working as healthcare assistants. The consultation involved offering the healthcare assistants advice around the management of depressive symptoms for a lady with fluent aphasia. The nature of aphasic difficulties means that instead of expressing her distress verbally, this lady was expressing it through her behaviours. As I had not encountered aphasia before, I asked my supervisor how [she] would usually respond. She asked me how I would respond if the lady were my own mother, she then prompted me to think about the theories for managing depression, the organisational policies around managing mental health problems and the resources on the unit. To me, those prompts provided a framework around which I have learned to approach situations as I have developed over the course of training.

Over time, I have become increasingly aware of my personal reaction to clients. Being from a family with many relatives who could be classed as ‘older people’, Mr. Khan’s information made me think about how I would respond if he was my father. As an immigrant in this country, it also made me think about how uncomfortable I would feel about growing old in Britain, away from my extended relations. A poem highlighted this dilemma for one man (Fenton, 1987) (see Appendix I). It also made me think about my own father, who was forced into becoming a farmer as a 16 year old man and is only now realising his dream, by working creatively as a carpenter in his retirement. It made me wonder if Mr. Khan realised his dream as a bus driver, if not what would that dream be and whether he had concerns about the cultural appropriateness of services in Britain.
Indeed, it also made me think about the resources available for working with older people in Britain. The document entitled ‘Securing Better Mental Health for Older Adults’ (DoH, 2005) points out the gaps in services for older people with mental health problems.

A strength of our presentation was the in-depth coverage of depression, dementia, normal ageing and bereavement. In hindsight, I feel our presentation could have been improved upon by incorporating how our thinking has developed over the course of our training. In approaching clinical work, I feel my thinking has developed as I am now aware of my personal reactions to a referral, the theories around managing/understanding the different possible presentations, the local and national policies and the availability of resources. The presentation could therefore, have been improved upon by incorporating these elements.

For my part in the presentation, I focused on presenting the argument that Mr. Khan’s presentation was a reflection of the normal ageing process. A strength in my approach lay in the fact that the presentation covered the physical and psychological sequelae of ageing. However, it painted a bleak picture of decline. Although the research highlights that physical decline in old age is a universal phenomenon (Coni, Davison & Webster, 1992), it also highlights the qualities that older people have compared to their younger counterparts. A recent quote from my mother reminded me of the wisdom associated with old age.

‘I may be forgetful in the moment, but I have not forgotten all those extra years I have on you’ (My mother aged 66 years)

In support of the above quote, Woods (1999) highlights that while some intellectual skills decline, others will improve with age. For example, Woods (1999) concludes that studies have shown that ageing does not alter crystallized intelligence, otherwise known as ‘general knowledge’.
To conclude

As this is my third and final PBL reflective account, it is important to reflect on my development in both the process of reflection and how I have come to value the exercise of reflection. In contrast, with the discomfort I felt in approaching my first PBL account, it is gratifying to reflect upon the ease with which I approached this exercise. I believe that this is also a reflection of the fact that there has been a shift in my approach to clinical practice, as I now prioritise the process of reflection on a day to day basis. At the beginning of training, I considered myself to be a reflective individual. However, my reflections have moved from being less self critical to being a valuable part of my clinical practice, whereby I now use them to plan a course of action and gain a deeper insight into my work. On reflection, I feel the presentation that we did was ‘good enough’ as it addressed the issues in such a way that answered the core question. I realise that there is always scope for improvement in work and I have highlighted some of the potential areas we could have incorporated into the presentation. Most importantly, I have begun to learn to tolerate producing work that is ‘good enough’ within the limits imposed upon me, in place of striving for perfection at all times. This will be an invaluable skill when working within the NHS.
References


Appendix I

Left my homeland so long ago
What I was coming to
I did not know.

I had so many dreams so many plans
But as each day went by
They all began to fade.

Pension of consolation
Can't make ends meet
Can't afford to buy the food
I'm accustomed to eat.

If only the Authorities would understand
That my needs and ways
Are different from the natives of this land.

Separated from family and friends
Placed in a home where I can't relate
Where there is no respect – only hate.

Patrick Robinson (cited by Fenton, 1987).
Summary of Year 1 Case Discussion Group Process Account

September 2005

Year 2
Summary

This account presented my reflections on our case discussion group (CDG) meetings during Year One of clinical training. A substantial proportion of the account was dedicated to discussions around the development of our group processes. One of my reflections of the groups' development focused on how we became “stuck” in the early stages of development. The reasons for this “stuckness” were explored and reflections were made regarding the possible contribution of a lack of ground rules, the ambiguous role of the facilitator, the group’s formal and inflexible structure and format, the group’s timing, the mood and personality of group members and our stage within the training process.

The account then focused on the resolution of this “stuckness”. As the group gained momentum, I reflected on how we all began to benefit from open, frank discussions about our experiences on placement and on training and how this in turn informed our clinical practice in many ways. Furthermore, I reflected on how the experience within the group coupled with the process of reflection furthered my own personal and professional development.
Summary of Year 2 Case Discussion Group Process Account

September 2006

Year 3
Summary

This account presented my reflections on the second year of our case discussion group (CDG) meetings. In it, I recognised that my Year Two reflections did not exist in isolation but rather illustrated how we evolved as a group and as individuals since Year One. The account reflected on the increased sense of cohesiveness we enjoyed and the increased sense of individual and collective responsibility over the groups' discussions, structure and format. I likened the welcoming of a new facilitator to my own experience of joining teams within the NHS. I reflected on how the experience of chairing meetings within the CDG could help me to take on leadership roles as a psychologist within the NHS. I also reflected on the utility of having a flexible structure and regular reviews, which in my view facilitated open discussions and a fluid process.

I went on to reflect on how I recognised and valued the unique contributions of the individual group members and the interpersonal obstacles I encountered. The meetings allowed us to become aware of our own learning styles and we began to explore different methods of presenting case information to suit our learning styles. Furthermore, I reflected on how this awareness could help me as a potential supervisor. The account also focused on how I could use the reflections in approaching my final year CDG meetings. I recognised that the aims of the CDG were achieved in that they helped me develop a growing awareness of myself as a person, as a practitioner and as a group member. In recognition of the fact that training will not stop when we finish the course, I acknowledged that having the opportunity to reflect openly and honestly, sparked the beginning of a lifelong learning process.
OVERVIEW

This section of the portfolio contains a summary of the clinical experience gained over three years of training. This includes summaries of the five case reports submitted and brief details of the experiences gained across four core placements and one specialist placement.

Statement of anonymity: Some details in this section, including names, have been changed to preserve the anonymity of the clients and services involved.
Summaries of Case Reports
Summary of Adult Mental Health Case Report 1

Title: Cognitive behaviour therapy with a 29 year old lady, presenting with an eating disorder.

Referral of the Problem: Tracy, a 29 year old lady, was referred to the community mental health team by her General Practitioner complaining that she had had Bulimia Nervosa for the last 2 years and was extremely nervous and suffering from low mood.

Assessment Procedure: I observed my supervisor undertaking the first assessment session and I carried out the second assessment session alone with Tracy. The sources of information used for the assessment were: face to face semi-structured interview using a cognitive behavioural framework, Beck Depression Inventory (BDI-II) and the Body Shape Questionnaire (BSQ).

Background Information: Tracy defined her ethnicity as White British and on first impressions we appeared quite similar to one another. However, through the course of the intervention I acknowledged our similarities and differences and remained mindful of their impact upon the therapeutic relationship. Tracy was one of two siblings. Tracy’s parents had separated when she was younger and her father had died a few years prior to the assessment. After a relationship break up, Tracy started dieting, which led to her feeling happy and comfortable. This was followed by a period of weight gain and subsequent dieting, after which people started to comment upon how well she looked. Since this time, her rules around eating became more rigid, giving rise to her eating disorder. At assessment she reported that her last binge/purge was one month ago and felt she could control her binges but wanted help with her preoccupations with food and eating; although she did not want to gain weight. Her Body Mass Index BMI was 18.2 and she had many rules around maximum daily calorie intake and exercise, she weighed herself everyday and judged her weight and shape to be the most influential factors on how she felt about herself.
Formulation: Tracy’s eating disorder was formulated using the cognitive model of BN. Collaboratively, we understood that Tracy’s eating problems stemmed from low self-esteem, which resulted in her over-valuing weight, shape and attempts to be slim. This over concern about weight and shape resulted in rules around dieting and exercise. These rigid rules around eating and exercise, which were impossible to obey, increased the likelihood of Tracy eating banned foods, resulting in binges and further impairments to self-esteem and an increased likelihood of continued dieting.

Action Plan: The action plan involved three stages:

Stage 1 – socialisation to the model, education, food monitoring, motivational interviewing, reduce weighing frequency, include partner in therapy.

Stage 2 – reduce dietary restraint and introduce forbidden foods, cognitive strategies to modify dysfunctional attitudes and enhance problem solving skills.

Stage 3 – discuss endings and develop relapse plan for the future.

Intervention: Up to the time of writing the case report, the intervention phase had spanned 14 sessions. In consideration of Tracy’s wish to retain a BMI of 18.2, motivational interviewing and psycho-education played a bigger part within the therapeutic process than was originally anticipated. The food diary helped Tracy recognise evenings as times of increased risk of binges. In response, she introduced stimulus control techniques and distracting activities. Over time, Tracy began to introduce more food to her diet. Tracy’s partner was introduced to therapy sessions. As Tracy’s fears and negative cognitions came to the fore, reformulation was necessary.

Reformulation: The trans-diagnostic model was used to incorporate the influence of stressful life events, interpersonal difficulties, and the effects of hunger, clinical perfectionism and mood intolerance into the cycle of maintaining factors. Following on from this reformulation, stage 2 was pursued with an emphasis on cognitive restructuring, behavioural experiments and the tackling of clinical perfectionism through a recognition of the advantages and disadvantages of the rules she made for herself. Weight charts
allowed Tracy to see that her weight did not increase uncontrollably after increasing her food intake. A further five sessions were planned to tackle the over concern about eating, shape and weight, eliminate calorie counting and introduce relapse prevention work.

**Outcome:** The BDI-II score had reduced from 27 to 16, indicating a significant reduction in depressive symptoms. The BSQ had increased indicating that her fears and concerns about weight gain had intensified as a result of weight gain. Tracy’s ratings of the importance of holding a dysfunctional rule/goal had decreased from 80% to 50% and from 100% to 60%. Tracy had begun to rationalise her fears in relation to weight gain, distract herself at danger times and use her long term priorities to help reduce her anxiety around weight gain and rule breaking. Tracy’s level of avoidance of social situations decreased and she stopped weighing herself each morning. Tracy reported feeling like her old self, her libido had returned, she solved conflict by talking and had more days where she broke her strict dietary rules. Although fearful of weight gain, she reported that her current weight was acceptable. Her frequency of binge/purge cycles remained low; however, episodes of vomiting had been followed by her spending much time outside her home where she ate in environments within which, she could not control her calorie intake.

**Critique:** The strong therapeutic relationship between Tracy and I was critical in maintaining the focus on change when faced with the challenges of this work. If I were to do anything differently, I may have facilitated Tracy addressing her over concern about shape and weight, earlier than I had done, however, we did address it once it came to the fore. The involvement of Tracy’s family and partner within the sessions was important, as it provided a source of support for her outside therapy sessions. Researchers consider ones ability to manage the over concern about weight and shape as the most significant aspect of therapy in reducing the risk of relapse. Therefore, the outcome of the remaining phase of therapy was considered to be, most revealing in assessing the long term impact of the therapeutic intervention.
Summary of Adult Mental Health Case Report 2

Title: Cognitive behaviour therapy with Anthony Brown, a 30 year old man, previously diagnosed with drug-induced psychosis, presenting with agoraphobic symptoms.

Referral of the problem: Anthony Brown, a 30 year old man, was internally referred to psychology by the Social Worker; following an annual review of his care plan within the community mental health team. The purpose of the referral was to address Anthony’s anxieties around leaving his house.

Assessment Procedure: The social worker and I attended the first assessment session at Anthony’s home. I attended the remaining assessment sessions alone. The sources of information used for the assessment were face to face semi-structured interview based on the cognitive behavioural framework, a review of his case notes, discussion with team members and an administration of the BDI –II.

Background Information: Anthony described himself as white British and used English as his first language. Anthony was one of two siblings. Anthony lived with his mother. Several years prior to my involvement with Anthony, he had received a diagnosis of drug induced psychosis, which required an inpatient stay in a psychiatric ward. Anthony revealed that both he and his friends had been robbed/assaulted on separate occasions, in the years preceding this admission. Since his admission, Anthony had not socialised with anyone outside his immediate family members. He noted that his attempts to go out had failed due to either his legs ceasing up or his psychotic symptoms returning. Anthony’s case notes revealed a history of high suicidal intent; therefore the issue of risk was taken seriously and assessed on an ongoing basis during the intervention.

Initial Formulation: Anthony’s presentation was formulated using Beck’s cognitive model of anxiety/depression and Clark’s (1986) model of anxiety. For Anthony, difficult childhood experiences (which have not been documented to preserve anonymity), coupled with later experiences of him witnessing or experiencing muggings/assaults led
to the consolidation of beliefs that the world was dangerous and that he was vulnerable. As an adult he coped with this by staying fit and keeping a watchful eye for danger, however, the period of hospitalisation confirmed his vulnerability and his inability to cope. Furthermore, his anxiety was maintained by a vicious cycle of negative automatic thoughts, bodily sensations, cognitive biases and safety behaviours (e.g. avoidance).

**Action Plan:** The action plan involved a combination of emphases, including the following: building rapport; socialisation to the cognitive model of anxiety; developing therapeutic goals; introducing motivational strategies as appropriate; introducing cognitive restructuring techniques; implementing a graded exposure programme; developing relaxation skills; and providing advice about physical exercise.

**Intervention:** I had 15 fortnightly sessions with Anthony, five were carried out jointly with the social worker and Anthony’s mother was present for four of the 15 sessions. Socialisation to the cognitive model of anxiety was the focus of the first four sessions. Anthony’s main goals were: to loose weight through exercise, to be able to go out whenever he wanted and in the long term to be able to return to work and have a network of friends. In order to maintain the momentum for change, we developed a list of the pros and cons regarding leaving the house. The sound therapeutic relationship gave Anthony the space to voice his worst fears, which were then, challenged collaboratively using cognitive restructuring techniques. We also collaboratively developed a graded exposure programme, which involved my accompanying Anthony to the shops.

**Reformulation:** As the cognitive formulation did not include systemic factors, a reformulation was undertaken to understand Anthony in the context of his family system, the professional helping system and the wider socio-cultural context. Crucial to the reformulation was the finding that Anthony’s mother was also anxious when out and would come back with stories of people “nicking stuff” in the local shop. Also, Anthony had refused to go out for a two week period because his mother had been asking him to go to the large supermarket in the area. A session involving Anthony and his mother
resolved this situation through empathic listening, socialising Anthony’s mother to the model and educating her about anxiety and gradual exposure work. As the sessions progressed, I also learned that Anthony frequently confused anxiety symptoms for psychotic symptoms.

**Outcome:** Anthony showed a significant reduction in depressive symptoms as evidenced by the BDI-II score, which reduced from 30 in the assessment phase, to eight in the last session. Anthony’s score of eight, on the Beck Anxiety Inventory indicated that he was experiencing anxiety in the normal range in the last session. As time passed, Anthony became able to foster the support from his mother, who accompanied him on eight outings. Towards the end of sessions, Anthony had begun to express his fears and feelings more openly and was able to normalise the symptoms of anxiety he experienced, instead of misinterpreting them as psychotic symptoms. At the end of sessions, Anthony had incorporated a walk to the shops as part of his daily routine and he reported feeling “more confident and easier about going out”. At two months follow up, Anthony phoned the social worker requesting a Bus Pass. Anthony’s mother reported being pleased with his progress and the social worker described him as a “different man”.

**Critique:** Developing rapport and a sound therapeutic relationship within which, Anthony felt empowered to assert himself and think about the pros and cons of changing; were the key elements to engaging Anthony in the change process. On reflection, the work involved much more than graded exposure to anxiety provoking situations. It involved fostering the development of the identity of a man that reached beyond his diagnosis of psychosis to a renewed outlook of his vulnerabilities and most importantly his capabilities. The involvement of Anthony’s mother within the work was also considered to be a crucial factor in instigating long term changes.
Summary of People with Learning Disabilities Case Report

Title: Behavioural assessment and intervention with a 20 year old man diagnosed with a severe learning disability presenting with self-injurious behaviour.

Referral of the problem: The Psychology Learning Disability Team received an internal referral from Wai's care manager. Wai's care manager had received a referral letter from his GP, because his mother was concerned that Wai was hitting himself.

Assessment Procedure: Behavioural theory guided the assessment, which spanned eight sessions. It involved a combination of the following: face to face semi structured functional assessment interviews; a review of Wai's case notes; adaptive skills assessment, communication skills assessment and health assessment using the Behaviour Assessment Guide; Motivational Assessment Scale to assess the functions or motivations of behaviours; and ABC contingency charts to identify antecedents, behaviours and consequences of behaviour. I had individual assessment sessions with an interpreter and Wai's parents, the college tutor, the school tutor, the resource centre worker and I observed Wai's speech and language therapy session. The initial interview with Wai's parents was observed by my supervisor and I carried out the remaining assessment and intervention sessions independently.

Background Information: Wai, a Chinese British man, is one of two siblings living at home with both his parents. Wai was documented as having a severe learning disability and had very limited verbal communication skills. Wai's parents did not speak fluent English and required an interpreter for all sessions. Wai had recently finished the school he had attended for 16 years and had recently started attending a college and a resource centre. Wai's father had recently taken over from his mother as his main carer. Wai's parents had different approaches to caring for him. Wai's school teacher reported that he hit himself from an early age. Wai's activities at home were restricted to engaging in functional tasks. He was fed with a spoon at home but he fed himself in all the other settings. Wai's mother successfully used objects of reference to communicate with him.
This form of communication was not employed by Wai’s father or by the carers in the other settings. Wai initiated and maintained communication during intensive interaction with the SALT, which was in contrast to how he presented in the other settings. The assessment revealed that noisy, inconsistent environments were the main antecedents to Wai hitting himself. Wai was less likely to hit himself in the SALT sessions and when he was engaged in sensory activities. Wai’s hitting was differentially responded to, in different settings.

**Initial Formulation:** Wai appeared to have difficulties processing and filtering relevant information within his environment as a result of his learning disability. Little was known regarding why the behaviour started, however, Wai had recently experienced major life events, which included; finishing school and starting attendance at a college and a resource centre. It appears as though the expectations of Wai vary from one setting to another, communication methods vary from one setting to another and he receives different consequences for his behaviour and different levels of stimulation in each setting.

**Action Plan:** I aimed to share the formulation with all settings and work collaboratively with Wai’s carers to develop both reactive and proactive strategies designed to reduce the frequency of the challenging behaviour and increase his quality of life in the long term. The reactive strategies planned were; stimulus change and active listening. The proactive strategies planned were as follows: ecological strategies designed to enrich his environment by providing him with increased access to preferred activities; effective communication opportunities using intensive interaction principles and structured environments using the TEACCH approach; teaching general skills in the area of domestic, vocational and community functioning; and teaching Wai coping and tolerance skills through staff support and encouragement.
**Intervention:** The intervention followed the action plan and was summarised across different headings, including, the intervention at home, at the resource centre and at college.

**Outcome:** The outcomes were evaluated in the three different settings. At home Wai’s parents had been spending more time interacting with him, using the principles of intensive interaction. His hitting had reduced in frequency from 15 to 3 times in one week. In the resource centre, Wai’s keyworker noted that he had no incidences of hitting himself in the previous two weeks and that the manager had planned training for staff on the principles of intensive interaction. In college, the classroom tutor did not feel there was a reduction in the frequency of him hitting himself, however she had managed to find an activity that maintained Wai’s interest for 40 minutes and a staff member noted that she had engaged Wai in mutual communication using the principles of intensive interaction.

**Reformulation:** Although, a radical reformulation was unnecessary, the information gained from the intervention was combined with the original formulation. This information was then shared with the different settings as appropriate.

**Critique:** In line with the principles of positive behaviour support, the intervention not only focused on reducing the frequency of incidents of challenging behaviour in the short term, it also focused on improving the long term quality of Wai’s life. This was considered a strength in this approach. The most challenging aspect of the intervention related to managing the various relationships in different settings, which had different cultures and philosophies of care. Ideally, it would have been useful to invite all of Wai’s carers to a meeting but this option was not possible due to difficulties recruiting all his carers within my restricted time on placement.
Summary of Children and Young People Case Report

Title: An integrative approach to working with an eleven year old boy presenting with anxiety symptoms.

Referral of the problem: Sam Jones, a white British, eleven-year old boy was internally referred to the Child and Adolescent Mental Health Service (CAMHS) psychologist by the CAMHS psychiatrist. The referral was made following his parents reports of a “disastrous deterioration in his behaviour” since Sam’s Fluoxetine medication was discontinued. Fluoxetine was initially prescribed two years previously because Sam was presenting with anxiety and depressive symptoms.

Assessment Procedure: I was observed by my supervisor during the first assessment session, which included Sam and his mother. I met Mr. and Mrs. Jones alone for the second assessment session. Face to face interviews, risk information, Spence Children’s Anxiety Scale (SCAS) and the Strengths and Difficulties Questionnaire (SDQ) were used as sources of information for the assessment.

Background Information: Sam was the middle child of Mr. and Mr. Jones. Aged eleven, Sam had already received a diagnosis of dyslexia, dyspraxia and severe depression and had intermittent involvement with CAMHS since the age of six years. Sam’s oldest sister had an illness. At the time of referral, Mr. and Mrs. Jones were concerned about Sam’s clingy behaviour, angry outbursts, jealousy towards his sister, fear of bowls, ‘deficient’ reasoning skills, his difficulties talking about his feelings and the difficulties they had in helping him grieve the loss of his grandmother. Sam was taking melatonin to aid sleep. Sam explained; he felt anger towards his school, he became ill first thing in the morning and last thing at night and he hated bowls because they reminded him of dead people.

Initial Formulation: Weerasekera's (1996) formulation model was used to understand the predisposing, precipitating, perpetuating and protective factors using a combination of
cognitive behaviour theory, attachment theory and systemic theory. Sam was hypothesised to have an insecure attachment and this alongside his dyslexia/dyspraxia, was hypothesised to predispose him to developing difficulties later on. The precipitating factors variously included; Sam’s sister’s illness, which meant that his mother was unavailable, leaving Sam to cope with his own anxieties, which may have lead to anger that could not be expressed because of his insecure attachment, resulting in depressive and anxiety symptoms. The disastrous deterioration in behaviour happened around the time of the death of his grandmother and the time he stopped taking medication. Perpetuating factors were understood using a cognitive behaviour model, which posited that; anxiety was maintained by a vicious cycle of negative thinking, anxious feelings, physiological symptoms and avoidance behaviours. Systemic theory was also used to understand how Sam’s behaviour escalated when he was involved in an altercation with his mother as they mutually influenced each other’s actions and reactions. Narrative theory allowed me to recognise that Sam and his parents had come to conceptualise Sam in terms of a ‘problem saturated story’.

**Action Plan:** Develop therapeutic goals; challenge Mr. and Mrs. Jones’ and Sam’s negative beliefs; look for exceptions to the problem saturated story; reduce avoidance and clingy behaviour through graduated exposure work; develop Sam’s relaxation skills; and involve Sam’s parents as collaborators and consultants to the intervention.

**Intervention:** The intervention was based on the action plan and spanned eight sessions. Sam was engaged in emotional discussions through the use of pictures. Sam’s therapeutic goal was to stop taking melatonin at night and his parent’s therapeutic goals were: for Sam to go to bed at night and get up in the morning with less of a struggle, for Sam to be less clingy and fearful of bowls and for Sam to be able to manage those times when he does not get what he wants. Beliefs were challenged through behavioural experiments and cognitive restructuring work. Sam’s engagement in sessions increased when the focus was around searching for historical unique outcomes to the problem-saturated story. Over time, Sam and his parents developed a night time routine incorporating talk time, which
involved putting notes about feelings of anger, anxiety and sadness into one side of a box and putting evidence of bravery on the other side. This was followed by relaxation skills practice. In a parenting session, Mr. and Mrs. Jones discussed Sam’s progress and I emphasised the importance of continuing to give Sam opportunities to express his feelings, I introduced the concept of gradual exposure techniques and explained the idea behind social stories. Sessions were ended with the ritual of giving Sam a certificate of bravery, which both I and his family completed.

**Outcome:** Sam slept without the use of melatonin and bed time involved fewer arguments. Sam documented many moments of bravery, which involved exposure to anxiety provoking situations, in place of avoidance. Angry outbursts were fewer and Mr. and Mrs. Jones reported that Sam was easier to manage in the mornings and at night. When completing the box, Sam began to express his emotions and he also expressed difficult emotions in sessions. The SDQ score remained in the high level of need range but reduced from 25 to 21. The SCAS did not reach clinical significance initially but reduced from 19 to 12. A follow up telephone call one month later revealed that Sam had requested that his parents accompany him to school on his first day, indicating that he was asserting his needs appropriately.

**Reformulation:** A radical reformulation was not necessary; instead, information received through the intervention was added to the original formulation to enrich our understanding of Sam.

**Critique:** In this intervention I was open to using different approaches that were in line with the families needs, rather than expecting them to fit into a particular model. The main strength of the intervention lay in the flexible and collaborative stance I took, which enabled me to maximise engagement and guide Sam and his family to an integrative intervention that suited them. However, the disadvantage of working in this integrative way is that it was not purely evidence based, as I used a combination of empirically based approaches.
Summary of Advanced Competencies Placement Case Report

**Title:** Neuropsychological assessment of a 47 year old lady who suffered a right hemisphere cerebral vascular accident.

**Referral process and presenting problem:** In preparation for her transition to home living, Francesca, a 47 year old lady who had suffered from a right hemisphere cerebral vascular accident two years previously, was referred to the assessment and rehabilitation unit for people with brain injury. As part of her multi-disciplinary assessment, an assessment of Francesca's cognitive function was requested. The aim of the neuropsychological assessment was to provide information that could be used to establish appropriate supports for Francesca and to tailor future treatment strategies to her strengths and weaknesses.

**Assessment procedure:** A thorough review of Francesca’s case notes was undertaken, which was followed by meetings with members of the multi-disciplinary team and an observation of one of Francesca’s physiotherapy sessions. The face to face assessment was carried out over four sessions. Initial interviews were undertaken to get Francesca’s perspective of her difficulties and to gain consent for neuropsychological assessment.

**Background Information:** Francesca was born and raised in Britain. English was Francesca’s first language and she spoke the language of her parents’ country of origin. Francesca was one of five siblings. Francesca had a preference for using her right hand. Prior to the stroke she obtained a Bachelor of Science University degree and worked as a primary school teacher. Francesca explained that she had previously suffered from low mood. In terms of her living situation, Francesca had been living with her sister and was due to return to this home following her stay on the unit. A review of the medical notes revealed that Francesca was diagnosed as suffering from a middle cerebral artery and an anterior cerebral artery infarction. CT scan records showed evidence of oedema resulting in a shift of midline structures to the left, which required a decompressive right-sided decompression.
craniotomy. Francesca felt that the stroke affected her memory, her concentration and understanding of nuances in conversation and her ability to judge distances.

**Hypotheses:** Following a literature review, I hypothesised that Francesca could have executive difficulties and non-verbal difficulties such as left side neglect, poor visuo-spatial skills and poor visuo-spatial memory. I also hypothesised that Francesca may have some verbal difficulties consistent with left hemisphere damage due to oedema.

**Rationale:** The following tests were chosen on the basis that they were both valid and reliable and provided an adequate assessment of the hypothesised areas of difficulty. Tests included: Wimbledon Self Report Scale to assess mood; Wechsler Test of Adult Reading to assess pre-morbid intelligence; Wechsler Adult Intelligence Scale Third Edition to assess general intellectual functioning; Test of Everyday Attention to assess attention and concentration; Behavioural Assessment of the Dysexecutive Syndrome and the Hayling and Brixton to assess executive functioning; the Wechsler Memory Scale Third Edition (WMS-III) and the Rey Auditory Verbal Learning Test (RAVLT) to assess memory; and the Rey Complex Figure Test and Recognition Trial and the Visual Object and Space Perception Battery to assess visuo-spatial skills and memory.

**Findings:** Francesca was estimated to be functioning in the superior to very superior range prior to her stroke. There was a large discrepancy between her verbal (75th percentile) and non-verbal skills (2nd percentile). Indeed, apart from her working memory, Francesca’s verbal skills were deemed to be similar to that expected from her previous level of functioning. There was evidence of selective visual attention difficulties, selective auditory attention difficulties and slowed speed of processing. Visuo-spatial skills and executive skills were also deemed to be below the level expected for Francesca’s pre-morbid level of functioning. Francesca’s memory assessment showed a mixed picture with visuo-spatial memory abilities falling below average and verbal and auditory memory falling in the very superior range. Behavioural observations during the assessment revealed evidence of left-sided neglect as Francesca failed to complete items
when they were placed on her left side. Francesca was motivated to perform well and her approach to verbal tasks appeared more confident than her approach to non-verbal tasks. Despite her apparent motivation to engage in the assessments, Francesca appeared to have difficulty getting organised for tasks. Francesca fatigued after 50 minutes of assessments. She naturally employed strategies to concentrate (closing her eyes) and to recall information (visualisation technique).

**Discussion and recommendations:** The results of the assessment revealed difficulties consistent with damage to the right frontal, parietal and temporal lobes. The hypothesis that verbal difficulties would be observed was not upheld. Testing coupled with observations and interviews confirmed the existence of executive functioning difficulties, visuospatial difficulties, attentional difficulties and visuospatial memory difficulties. In contrast, the assessment revealed considerable strengths in verbal comprehension, expression and verbal memory. Various recommendations were made in relation to the employment of approaches aimed at maximising Francesca’s performance and minimising the impact of her difficulties. These recommendations were included in the multi-disciplinary assessment report.

**Critical evaluation:** The literature review undertaken, the assessments chosen and behavioural observations made, provided the opportunity to assess everyday abilities, making it a functionally relevant assessment, which enabled me to provide recommendations for the care plan. However, since the assessment I carried out further observations that extended our understanding of the everyday problems Francesca experiences. In hindsight, I could have carried out these observations before undertaking neuropsychological assessments as they would have further enhanced the functional applicability of the assessments and may have allowed me to restrict the number of tests undertaken.
Summaries of Placements

September 2004 – September 2007

Years 1, 2 & 3
Summary of Adult Mental Health Placement

Setting: Adult Community Mental Health Team.

Age Range: 18-69 years.

Presenting Problems: eating disorder, adjustment difficulties to loss of job and house, generalised anxiety, agoraphobia and drug induced psychosis, post-natal depression, active suicidal ideation and plans, social anxiety, post-traumatic stress disorder, depression, general anxiety, obsessive compulsive disorder, self-neglect, voice hearing, needle phobia, schizophrenia, challenging behaviour, prisoner needing psychometric assessments and forensic client needing psychometric assessment.

Assessment: Various measures designed to assess depression, anxiety, obsessive compulsive disorder, eating disorder. Questionnaires and tools designed to gather information about thinking patterns, antecedents, behaviours and consequences, food intake, meta-cognitions, generalised anxiety and social phobia. Psychometric tests designed to assess personality, visuospatial skills, executive skills and general intellectual functioning. Face to face interviews were also used, alongside ongoing risk assessments.

Model: Cognitive Behaviour Therapy was the predominant model.

Summary: This placement primarily consisted of 1:1 work. Some joint working and family work was undertaken. Clients were from diverse ethnic and social backgrounds. I co-facilitated a group entitled “Looking After Yourself” on an inpatient psychiatric ward. I presented at and regularly attended team meetings. Settings included: clients own home, outpatients clinic, psychiatric inpatient ward, prison and the community.

Summary of People with Learning Disabilities Placement

Setting: Community team for people with learning disabilities (Adult Service).

Age Range: 20-64 years

Presenting problems: anxiety, suspected aspergers, suspected dementia, bereavement issues, challenging behaviour – hitting self, family relationship difficulties, breakdown of placement, staff difficulties managing client group.
**Assessments:** I used a range of psychometric tests to investigate aspergers and dementia, including the assessment of general intelligence. Behaviour assessment tools were also used alongside face to face interviews, observations and ongoing risk assessments.

**Model:** Predominant models used were behavioural theory, psychodynamic theory and systemic theory. I was also introduced to intensive interaction principles.

**Summary:** I engaged in direct work with people with learning disabilities and indirect work with families, carers and staff teams from diverse backgrounds, in various settings including clients own home, residential homes, resource centres, college and in the outpatients' clinic. I was part of the reflective team in family therapy sessions. I co-facilitated staff training in a residential home, and worked jointly with my supervisor when engaging in staff consultancy work. I regularly attended multi-disciplinary team meetings and did presentations at the team meetings.

**Summary of Children & Young People Placement**

**Setting:** Tier 2 and Tier 3 Child and Adolescent Mental Health Service (CAMHS)

**Age range:** 2-17 years.

**Presenting Problems:** depression, suicidality, bereavement issues, behavioural difficulties, ADHD, anger problems, chronic fatigue syndrome, anxiety, persistent headaches, trichlomania, bullying, difficulties sleeping, parenting and risk assessment.

**Assessment:** Psychometric assessments were used to investigate possible aspergers. Various questionnaires were used to monitor low mood, anxiety and behaviour problems.

**Model:** An integrative approach was generally employed in this placement incorporating systemic theories, psychodynamic thinking and cognitive behaviour therapy. I was also involved with the parent child game.

**Summary:** This placement mainly involved family work, with some 1:1 work. The work involved the CAMHS setting and a local school and clients were predominantly from a white middle class background. Problems ranged from mild to severe. I regularly attended multi-disciplinary meetings and was part of a psychodynamic case discussion group.
Summary of Advanced Competencies Placement

Setting: Inpatient neuro-assessment and rehabilitation unit for adults with a brain injury.

Age range: 27-73 years.

Presenting problems: memory problems, executive functioning difficulties, visuospatial difficulties, aphasia, attentional problems, aphasia, adjustment issues, low mood, suspected dementia, anxiety, difficulties understanding brain injury.

Assessments: Face to face interviews, ongoing risk assessments, observations, measures to assess mood, pre and post group measures and a range of psychometric assessments to assess executive functioning, visuospatial skills, attention, memory and perception.

Model: Neuropsychological models were predominantly used alongside, cognitive behaviour therapy and systemic thinking.

Summary: Most of the work was carried out on a 1:1 basis. I also co-facilitated three separate groups entitled: Fundraising Group, Life after [the unit] and Brain Injury Education Group. I provided staff training on memory rehabilitation and worked very closely with the multi-disciplinary team on a daily basis.

Summary of Older People Placement

Setting: Older people community mental health team and a primary care service.

Age range: 65-88 years

Presenting Problems: Carer strain, conversion disorder, anxiety and low mood, agoraphobia, bereavement issues, memory problems – suspected dementia, fear of falling, health adjustment issues, consultancy work needed for local falls service.

Assessment: Validated measures were used to assess anxiety and depression. Face to face interviews were used to gather background information and risk information. Psychometric assessments were used to assess possible dementia.


Summary: Mainly 1:1 community work. I did joint assessments with my supervisor, staff training in the Day Hospital and consultancy work. Presentations were given to the psychology team. I received Rio Training and attended Trust wide psychology meetings.
OVERVIEW
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<tr>
<td>26</td>
<td>Presenting research findings in a variety of contexts</td>
</tr>
<tr>
<td>27</td>
<td>Producing a written report on a research project</td>
</tr>
<tr>
<td>28</td>
<td>Defending own research decisions and analyses</td>
</tr>
<tr>
<td>29</td>
<td>Submitting research reports for publication in peer-reviewed journals or edited book</td>
</tr>
<tr>
<td>30</td>
<td>Applying research findings to clinical practice</td>
</tr>
</tbody>
</table>
Qualitative Research Study

Clinical and counselling psychology trainees' perceptions of the professions of clinical and counselling psychology.

May 2006

Year 2
Abstract

Background: The current situation reflects an ambiguous professional identity for both clinical and counselling psychologists. This research aimed to explore the perceptions of clinical and counselling psychology amongst trainee psychologists in a British university.

Method: The study used a cross-sectional focus group design with a semi-structured interview. Participants were invited to participate via email. A focus group comprising four clinical psychology doctoral trainees and four counselling psychology doctoral trainees (n=8) was conducted at the University of Surrey, UK. One counselling psychology trainee and one clinical psychology trainee facilitated the focus group.

Data analysis: Interpretive Phenomenological Analysis (IPA) was employed for analysing audio transcripts. Each of the six researchers analysed the transcript individually and then met as a group in order to agree upon a framework that the researchers felt most accurately reflected the data.

Results: Analysis of the data revealed six main themes: Different levels of knowledge of the professions, both professions draw from several theoretical orientations, variety of roles in professional practice, rationale for entering into chosen profession, training specifications, and potential for merging of the professions.

Conclusions: Trainee clinical and counselling psychologists involved in this study were involved in a process of making sense of their own professional identity. While this research is not without its limitations, its findings do concur with previous research that suggests fewer distinctions between the disciplines of clinical and counselling psychology than previously evident. This perception of fewer distinctions between the professions has implications for service delivery, funding, and training.
Service Related Research Project

An audit to evaluate the content and appropriateness of General Practitioner referral letters received by a Community Mental Health Team within a 5-month period.

July 2005

Year 1
Abstract

**Background:** The Community Mental Health Team (CMHT) concerned was receiving many referrals from General Practitioners (GPs), which were either deemed to be inappropriate for the service or were lacking adequate information to assess needs.

**Objective:** To compare GP referral letters received within a five-month period with the CMHT’s referral criteria.

**Method:** An audit of 77 GP referral letters was undertaken. Data was pooled to explore the presenting problems, examine the appropriateness of referrals and to check if adequate information was provided within the letters.

**Outcome Measures:** The outcome measure used was the CMHT criteria for appropriate referrals and a checklist of information items.

**Results:** Patients’ name and address were the only information items from the checklist included in 100% of the referral letters. Many letters did not provide adequate information to assess needs. Only 63% mentioned current risk, 89% listed symptoms, 55% mentioned duration and 43% included current living situation and level of support. The percentage of letters meeting one or more of the CMHT appropriateness criteria was 78%. However, only 65% were considered appropriate based on the severity and complexity of their needs. In line with the criteria, 22% of letters were considered inappropriate.

**Conclusion:** These results can be used to inform future interventions aimed at improving the usefulness of GP referral letters. Interventions to consider could include: updating existing criteria and databases to facilitate an ongoing audit of letters, providing feedback through personal visits to GPs on an ongoing basis and creating a standardised referral form.
Acknowledgements

I would like to take this opportunity to thank both my field and university supervisors for the support and advice they have given me during the process of carrying out this study. Furthermore, I would like to thank all of the CMHT team members for facilitating the opportunity to carry out the audit and for their input and advice on updating the guidelines.
Introduction

The move away from hospital-based services to care in the community has increased the importance of the role of secondary care teams such as CMHTs in UK mental health service provision (King, 2001). CMHTs provide a specialist community focused, mental health and social care service to adults whose mental health problems, due to their seriousness or complexity cannot be effectively treated within primary care (Operational Policy, 2003-2006). In line with the NICE guidelines, primary care teams are urged to treat presentations of anxiety and depression ranging from the mild to the moderate–severe range through the provision of at least two of the following: CBT, self-help and/or medication before referring patients to a specialist service (e.g. CMHT).

The CMHTs’ Operational Policy Guidelines (2003-2006) stated that clinical/professional judgement would determine priority for CMHT treatment and support, but in line with the policy implementation guidelines (DoH, 2002) the CMHTs’ focus is on the following:

- Providing longer term treatment and support for people with more serious and enduring mental health problems
- Providing treatment and support for those people with time limited disorders of a degree of complexity that requires specialist mental health care.
- Giving advice on the management of mental health problems to other professionals, especially primary care.

As a result of these guidelines, CMHTs have developed systems for screening access to their services in order to concentrate on the needs of individuals with ‘more serious and enduring mental health problems’. The referral criteria developed by the CMHT concerned is one such system that informs clinical/professional judgement when prioritising and/or gate-keeping access to services and informs GPs about what is/is not appropriate to refer to the CMHT.
Researchers agree that 'more serious and enduring mental health problems' have traditionally been viewed with reference to medical definitions of severe mental illness (King, 2001), which encompass psychotic illnesses and severe mood disorders. In line with recommendations made by an audit undertaken by an adjacent CMHT and through consultation with CMHT members, this study focused on a more bio-psychosocial approach in assessing the severity of a severe mental illness and thus establishing appropriateness. Similar to Gregoire (2000), the CMHT judged severity in terms of diagnosis, disability, duration, danger and distress. Furthermore, King (2001) recognised the contribution of social factors such as finances and accommodation, while the CMHT concerned also considered social support when evaluating patients' needs.

For the majority of people who experience mental health problems, the general practitioner (GP) is the first point of contact on the pathway to secondary care (Goldberg & Huxley, 1992). As a result, Newton et al. (1992) emphasised the importance of the communication between GPs (primary care) and CMHTs (secondary care) being as efficient as possible, especially since patient care depends at least in part on how well case details are relayed from one clinician to another. Inappropriate referrals can result in a wasteful use of CMHT resources and/or delays in the referral process, which may lead to the development of crisis situations such as hospitalisation being required when it could have been avoided through accurate communication (Riordan & Mockler, 1997).

The CMHT involved in this study was faced with a situation whereby they were receiving many referral letters, which were either deemed to be inappropriate for the CMHT service and/or were lacking vital information to inform decision-making. This was a particularly difficult position since the CMHT has a maximum caseload of 300 clients (Operational Policy, 2003-2006). As the process of clinical governance is central to the work of CMHTs (Operational Policy, 2003-2006), the team requested an audit of referral letters.

This study focused on the third stage of the audit cycle identified by Crombie et al. (1993) in an effort to compare existing practice against a previously agreed standard
Service Related Research Project

developed by the CMHT concerned. More specifically, the aim is to analyse referral letters with a view to getting an idea of the problems being referred, the appropriateness of referrals and the kinds of information provided within the letters in order to assess their usefulness from the perspective of the CMHT concerned.

Research Questions

1) What types of presenting problems were in the referral letters?

2) How many referrals met the criteria for severe and enduring mental health problems based on diagnosis? (see Appendix I).

3) How many referral letters met the criteria for CMHT involvement based on the severity and complexity of their needs? (See Appendix I).

4) How many referral letters fulfilled any one or more of the CMHT criteria for appropriate referrals (See Appendix I).

5) Do the letters include the information items from the CMHT information checklist criteria (See Appendix II)?

Method

Design
Audit of referral letters.

Setting
Multi-disciplinary CMHT located in an outer London urban area.
Sample

GP referral letters were collected and analysed from January 2005 through to May 2005 inclusive. Referral letters included in the analysis were those from GP’s aligned to the CMHT or from unaligned GP’s who were referring patients living within the CMHT boundary. From a total of approximately 157 referrals received by the CMHT within this time period, 77 were analysed.

The remaining 80 letters were excluded from analysis on the following basis:

- Referrals reflected transfers within the Trust and did not need to be reassessed as they had previously been assessed and deemed appropriate for another CMHT service.
- Letters presented patients who were outside the CMHTs’ catchment area
- Referrals were from a source other than the GP
- A small proportion of referrals had been discussed more than once within team meetings
- 30 letters from the five-month period could not be located.

Main outcome measures

As part of the referral criteria the CMHT had a checklist of information items required from the referral letters. This list was updated through consultation with current team members (see Appendix II).

The CMHTs’ guidelines also provide information about the kinds of patients who are appropriate for the CMHT service. Recommendations from an audit by an adjacent CMHT and consultation with current team members were used to modify existing criteria so that they reflected the CMHTs’ current perspective on appropriateness for the CMHT service (See Appendix I).

The team was also consulted to develop a coding system, which clarified ambiguous terms within the guidelines (see Appendix III).
Procedure
Firstly, each referral was analysed separately to determine whether it contained words/phrases reflecting each referral criteria for appropriateness. Secondly, each referral letter was examined to see if it clearly specified each information item as outlined on the checklist.

Inter-rater reliability was established by asking two professionals to rate 10% of the letters. These ratings concurred with the ratings given by the researcher.

Ethical approval was considered and deemed to be unnecessary (see Appendix IV).

Anonymity
Anonymity was maintained by giving each referral letter an identification code. GPs details were not held on the analysis spreadsheet.

Results

Presenting problems
Various problems were presented in referral letters (see Table 3). It is important to note that GP letters did not always specify a diagnosis and therefore letters were allocated to the following categories on the basis of the main symptoms that were described as presenting a primary concern to the GP/patient. Many GPs also mentioned previous diagnoses that the patient had but these were not referred to in this section unless it was clearly identified as a current area of concern.

As can be seen from Table 3, the single most frequently noted symptoms fell within the depression category (31%). Please note that six of the referrals, presented people who were also currently abusing alcohol/drugs.
Table 3 – showing frequencies of the main presenting problems

<table>
<thead>
<tr>
<th>Category of main presenting problem</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (symptoms of)</td>
<td>24</td>
<td>31%</td>
</tr>
<tr>
<td>Anxiety (symptoms of)</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Anxiety and depression</td>
<td>12</td>
<td>16%</td>
</tr>
<tr>
<td>Psychosis (symptoms of)</td>
<td>5</td>
<td>7%</td>
</tr>
<tr>
<td>Psychosis and depression</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td>Eating disorder</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>PTSD</td>
<td>6</td>
<td>8%</td>
</tr>
<tr>
<td>Other (sleep, sexual problems, aspergers etc.)</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Does not specify/difficult to determine</td>
<td>11</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Appropriateness of referrals**

All of the letters analysed, presented patients who were within the CMHT catchment area and were between the ages of 19-75 years and were thus deemed appropriate in terms of demographics.

**Primary problem relates to mental health**

As stipulated in the guidelines, the primary problem in referrals must relate to mental health problems. As highlighted in Table 4, the primary concern did indeed relate to a mental health problem in 81% of the letters, although this was not so in 5% of cases. In 14% of cases, further assessment was needed to determine if mental health problems were the primary concern.
Table 4 – showing frequency and percentage of appropriate referrals under different criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>States symptoms/diagnosis</td>
<td>62</td>
<td>81%</td>
<td>11</td>
<td>14%</td>
</tr>
<tr>
<td>Unclear</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary problem relates to mental health/psychiatric problem</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis of severe mental illness</td>
<td>20</td>
<td>26%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Met one or more symptomatology criteria</td>
<td>50</td>
<td>65%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Met one or more of the other criteria</td>
<td>42</td>
<td>55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taking all criteria together and excluding inappropriate cases based on exclusion criteria</td>
<td>60</td>
<td>78%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inappropriate referrals</td>
<td>17</td>
<td>22%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proportion of letters meeting diagnosis criteria

The referral criteria state that referrals are considered appropriate on the basis of their diagnoses. The diagnostic criteria were met in 26% of the letters as the GP stated that patients either had or were suspected of having a psychotic illness or severe mood disorder (see Table 4).
Proportion of letters meeting symptomatology criteria
One or more of the criteria based on symptomatology (i.e. complex needs, risk, severe, possible referral to specialist service needed via CMHT) were met in 65% of all referral letters (see Table 4).

Proportion of letters meeting ‘other’ criteria
As illustrated by Table 4, one or more of the ‘other’ criteria were referred to in 55% of referral letters (see Appendix I for description of ‘other’ category).

Proportion of letters meeting overall appropriateness
Taking all three criteria together and examining the percentage of appropriate referrals by excluding those based on the exclusion criteria reveals that 78% of the referral letters met one or more of the CMHT referral criteria (see Table 4). As shown by Table 4, 10 of the appropriate referrals met the ‘other’ criteria. These were considered appropriate as the GP clearly stated that he/she wanted advice/support, medication was not helping, the diagnosis was unclear or the patient requested CMHT involvement. The 17 letters were considered inappropriate on the following basis; 7 presented cases which were either mild-moderate or lacked sufficient information to determine severity, 5 were excluded on the basis that a mental health problem was not the primary concern, the GP could have made their own referral to specialist services in 3 cases and 2 letters presented people with a diagnosis of bipolar disorder who were currently experiencing no problems.

Information contained within referral letters
As illustrated by Table 5, the only information items to be included in all of the referral letters were the patients’ names and addresses. Only 3% of all letters clarified if the person had special needs i.e. required interpreter or facilities for physical disability, making it the information item that was mentioned least frequently. Other crucial information relating to severity was not mentioned in a substantial proportion of letters. For instance, the duration of symptoms was only mentioned in 55% of letters, risk in 63% and symptoms were described in 89% of letters.
The provision of self-help material was not mentioned in any of the letters, while a mere 23% of letters clarified if counselling had been either offered or considered recently. The majority of letters stated if medication was considered for patients' primary problems (88%). Chi square revealed that GPs had a preference to refer cases of high risk immediately without changing medication, \( \chi^2 (2, n=51)= 6.080, p<.014 \), possibly as they felt more capable of treating those posing low risk.

Table 5 – showing percentage of referrals including the information items

<table>
<thead>
<tr>
<th>Information item</th>
<th>Frequency (stated)</th>
<th>Percentage (stated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>78</td>
<td>100%</td>
</tr>
<tr>
<td>Address</td>
<td>78</td>
<td>100%</td>
</tr>
<tr>
<td>DOB</td>
<td>75</td>
<td>96%</td>
</tr>
<tr>
<td>Telephone nos</td>
<td>49</td>
<td>63%</td>
</tr>
<tr>
<td>National Insurance no</td>
<td>44</td>
<td>56%</td>
</tr>
<tr>
<td>When last seen by GP</td>
<td>13</td>
<td>17%</td>
</tr>
<tr>
<td>Symptoms described</td>
<td>69</td>
<td>89%</td>
</tr>
<tr>
<td>Duration</td>
<td>43</td>
<td>55%</td>
</tr>
<tr>
<td>Severity</td>
<td>60</td>
<td>77%</td>
</tr>
<tr>
<td>Current risk</td>
<td>49</td>
<td>63%</td>
</tr>
<tr>
<td>Medication in relation to problem considered</td>
<td>68</td>
<td>88%</td>
</tr>
<tr>
<td>Recent medication change/trial considered</td>
<td>37</td>
<td>48%</td>
</tr>
<tr>
<td>Not relevant for consideration(^3)</td>
<td>14</td>
<td>18%</td>
</tr>
</tbody>
</table>

\(^3\) These cases were not considered relevant for a medication change, as a proportion of patients had either requested psychological input instead of medication, or the current medication was considered appropriate and therefore did not need to be changed, while others did not have mental health problem as the primary concern.
Review of recent medication trial | 17 | 45%
---|---|---
Counselling offered/considered | 18 | 23%
Summary of treatments tried in the past | 44 | 56%
Response of patient to treatments tried in the past | 23 | 32%
Other medication/significant medical conditions | 38 | 49%
Origin of diagnostic label | 18 | 16%
Risk history | 32 | 41%
Special needs required | 2 | 3%
Advice/treatment/assessment stated | 59 | 76%
Current living situation/level of support | 33 | 43%

**Discussion**

This audit has revealed much about the types of problems and the appropriateness of referrals made from GPs to the CMHT, alongside the quality of these referral letters. In line with the Operational Guidelines (2003-2006), this audit suggests that the CMHT currently receive a substantial proportion of referrals with serious and enduring needs (65%) and also provide GPs with support when dealing with mental health problems in primary care (13%). Overall, the majority of referrals from GPs were considered appropriate (i.e. 78%).
The proportion of appropriate referrals is higher than the team had originally predicted when the audit was first requested. The clinical psychologist within the team reflected that data collection was undertaken 3 months after the audit was requested and that appropriateness of referrals may have improved before data collection as a result of ongoing communication between the CMHT and GPs. This communication took the form of letters and phone calls to GPs explaining why referrals were considered inappropriate. This is in line with previous research, which suggests that GP’s knowledge of service criteria for appropriate referrals and the quality of communication with mental health services are important factors affecting the GPs referral decision process (Ross & Hardy 1999). It is also important to reflect however, that 22% of referrals were judged as inappropriate. By reflecting on the reasons why these referrals were considered inappropriate, we can surmise that GPs continue to lack knowledge both of the referral criteria in relation to appropriateness and information items required and of the non-psychiatric services available to those who do not have a mental health problem as their primary concern. Another reason for inappropriate referrals may relate to the GP having inadequate counselling and self-help services within primary care to treat mild-moderate problems.

Pertinent information items identified by the CMHT members when judging severity such as symptom duration, current risk, description of symptoms and living situation or social supports were not provided in all of the letters. The information item that was missing the most from referral letters related to whether the patient had any special needs (i.e. required an interpreter, had a physical disability). A CMHT that does not have this information would struggle to provide a service that is ‘accessible, relevant, non-discriminatory and respectful of diversity’ (Operational Policy, 2003-2006).

A reason for information items not being included in referral letters besides lack of GP’s knowledge of referral criteria, may relate to the fact that GPs may not provide the information if they do not consider it to be pertinent to the referral. A solution would be to provide GPs with a standardised referral form that would require GPs to respond to all
of the necessary information items within the referral letter. This would allow CMHTs to know the relevance of all the items when judging appropriateness.

Although, referral criteria reflect operational policies, judging appropriateness for CMHT can be a subjective process. Johnson (1997) highlighted the difficulties faced by multi-disciplinary teams in reaching an agreed consensus on ‘appropriateness’, as each profession tend to emphasise different aspects of a persons presentation. In line with recommendations made by O’Donnell (2000), future research could resolve this issue by following up the referrals after assessment. One of the strengths of this study, in this respect was that the referral criteria were updated to reflect the opinions of the multi-disciplinary team.

Limitations of the study
The referral criteria used in this study were updated following discussions with current team members. This meant that these criteria were slightly different from those sent to GPs previously. It is recommended that a future audit be undertaken following formal communication of these updated criteria with GPs.

Furthermore, these criteria were updated through individual discussions. Future studies could use focus groups to update criteria to facilitate debate and general agreement on certain items.

It is also important to interpret the results with a degree of caution, as 30 letters could not be located.

A second rater was asked to judge the appropriateness of 10% of all referral letters. Although this was adequate, reliability of future studies could be further improved upon by having two raters analyse the appropriateness of all the referral letters.
Recommendations

It is recommended that the criteria, which have been updated in order to undertake this study, be forwarded to GPs to ensure that they have knowledge of the CMHT's current referral criteria. Furthermore, it is recommended that the CMHT continue to provide ongoing feedback to the GPs on the reasons why referrals are inappropriate. This audit revealed that vital information required by the CMHT was lacking from many letters, it is recommended that the GPs be informed of this and change their letter writing accordingly to include all of the information items whether they appear relevant or not. The CMHT may also consider highlighting certain information items to be included that are a high priority to them when making judgements about appropriateness and urgency.

The team currently holds a database of referrals, which tracks referrals. This database could be updated to include information regarding the outcome of the assessment, appropriateness of the referral and adequacy of information provided as discussed within the team meeting. This would facilitate an ongoing audit of referral letters that could be systematically fed back to GPs on a regular basis. Other options to consider would be to provide updated standardised referral letters in a hard and soft copy format.
References


(please note the trust was not identified to preserve anonymity)

Appendix I: Referral Criteria to Judge Appropriateness of Referral Letters
**Appendix I: Referral criteria used to judge appropriateness of referral letters**

<table>
<thead>
<tr>
<th>Basic Inclusion criteria</th>
<th>Clearly stated/specify</th>
<th>Not clearly stated/specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter from GP aligned to the CMHT or patient resident of CMHT boundary area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aged between 16-75 yrs or 19-75 yrs if in full time education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary problem is a psychiatric illness or mental health problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does patient fulfil one or more of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptomatology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complex needs*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poses Risk*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient showing symptoms which may suggest referral to specialist service via CMHT*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronicity – however this alone does not qualify appropriateness*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other appropriate reasons for referral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment offered in primary care has not improved the problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient shows a pattern of repeated relapses*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient requests an assessment with CMHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis is unclear and confirmation is requested</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary care team would like support from the CMHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exclusion criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GP can make direct referral to specialist service*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main problem not related to mental health problem*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* See coding system for elaboration
Appendix II: Information Needed from Referrers
### Appendix II: Information needed from referrers

<table>
<thead>
<tr>
<th>Information</th>
<th>Clearly states</th>
<th>Does not clearly state or specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name, address, date of birth, national insurance number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last seen by GP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A description of symptoms, their duration and severity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication considered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent medication change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review of recent medication change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summary of counselling, self help tried/considered recently</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summary of treatments tried in the past</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response to treatments tried in the past</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other medications/significant medical conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Origin of diagnostic label</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current risk factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special needs (requires, interpreter, adaptive environment due to physical disability)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearly states if referrer is requesting either advice, treatment, assessment, diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current support/details about living situation and level of support received</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix III: Coding System
Appendix III: Coding System

This coding system was designed to explain ambiguous terms within the guidelines and to elaborate on items with an asterisk beside them in Appendix I and II.

Diagnosis criteria: Diagnoses that will be offered an assessment include:

a) Psychotic illness – schizophrenia, psychotic episode etc.; may be first episode, relapse or other change e.g. non-compliance with medication, dual diagnosis

b) Severe mood disorder e.g. severe depression, bipolar disorder (manic depression).

Symptomatology criteria

Complex needs: Patient has multi-disciplinary needs (social, psychological, nursing etc.) needs are considered complex if person requires input from two or more disciplines. The following words/phrases suggest that the person requires input from different disciplines.

**Occupational Therapy**
- Difficulties retaining/seeking employment
- Difficulties functioning in everyday activities

**Nursing**
- Severe mental health problem – non-compliance with medication
- Problems at home

**Psychology**
- Emotional turmoil – high levels of distress
- Severe anxiety and/or depression and requesting psychology sessions
- Risk of harm to self or others
- Adjustment issues
**Psychiatry**
- Patient has not improved after medication trial(s)
- Review of medication requested/second opinion
- Clarification on diagnosis needed
- Symptoms of psychotic illness/severe mood disorder

**Social work**
- Problems with housing
- Problems with finances/receiving benefits
- Risk to children
- Capable of working and seeking employment
- Needs help organising structured day of activities
- Transport problems – needs freedom pass

**Risk:**
Patient poses a significant risk to self or others.
Risk to self – cutting, saving medication, suicidality, plans to harm self, risk of exploitation from others.
Risk to others – command hallucinations, aggressive/abusive behaviour towards others, risk to children via emotional abuse, neglect, physical abuse.

**Problem is severe:**
Risk was judged as an important determinant of severity – a problem was judged severe if the person posed an imminent risk to self others including children, other indicators of severity included GP indicated as urgent, hearing voices/command hallucinations.

Other factors considered under severity were:
**Significant distress:** problem causes personal distress, distress/burden to family members/friends, distress in the workplace.
Significant disturbance/disruption: problem results in inability to care for oneself independently, to work and/or sustain relationships.

**Chronicity**: Problem has been going on for a significant period of time, e.g. depression 6months+, anxiety >6months, PTSD – years to recent event, bereavement – must be 3 months after the incident.

**Treatability**: problem relates to primary mental health concern and is therefore manageable by the CMHT.

**Patient request**: patient is displaying constellation of problems and there is a possibility that a CMHT assessment is required in order to refer the person onto a specialist service.

**Specialist services requiring CMHT assessment include**:

- Post Traumatic Stress Clinic
- Eating Disorders
- Behavioural Cognitive Psychotherapy Unit
- Early Intervention Services
- Personality Adjustment Disorders team
- Assertive Community Outreach Team

**‘Other’ criteria**

A referral can also be made where, in the context of a mental health problem:

A) The treatment offered in primary care has not improved the problem

B) The patient shows a pattern of repeated relapses – i.e. problem is recurring or patient has experienced a problem on more than one occasion despite primary care involvement

C) If a patient requests an assessment with the CMHT

D) If letter states that the diagnosis of the problem is unclear

E) If the primary care team would like support from the CMHT.
Exclusion Criteria

A referral is considered inappropriate if it is requesting referral of the patient to a specialist team that the GP can make their own referral to. The following is a list of specialist services that the GP can self refer to:

- Community Alcohol team
- Community Drug Team
- High Support Drug Team
- Psychotherapy Services
- Psychiatry of learning Disability
- Family Therapy Service

The following groups of patients are considered inappropriate for CMHT involvement unless in the context of an additional mental health problem which is the primary concern:

a) patients with learning disabilities
b) those with primarily bereavement or other counselling needs e.g. relationship problems
c) Anyone with a forensic history
d) Psychosexual problems, such as premature ejaculation, impotence.
e) Anger management/assertion training needs
f) Primarily immigration/housing/other social issues
g) Alcohol/drugs as the primary problem
h) Patients requiring assessment for dyslexia/ADHD etc.
Appendix IV: Form signed by Placement Supervisor stating that Ethical Approval was Not Necessary.
The nature of the proposed project is such that I am satisfied that it will not require scrutiny by the trust's ethical committee.

Name of Field/Placement Supervisor: .................................................................

Signature of Field/Placement Supervisor: ........................................................

Name of Trainee: ..................................................................................................

Title of SRRP: Audit to evaluate the content and appropriateness of GP referral letters received by the Community Mental Health Team (CMHT) during a specified period.

Date: .......................................................................................................................
Appendix V: Letter from Team Manager Confirming that Feedback was Provided to the Service.
To whom it may concern,

I, CMHT Manager, confirm that the service related research project titled: 'An audit to evaluate the content and appropriateness of General Practitioner referral letters received by a Community Mental Health Team within a 5-month period' was relayed to the team on the (Trainee Clinical Psychologist).

Signed: CMHT Manager
Major Research Project

A Cognitive Behaviour based Pain Management Programme for Chronic Pain: Relationships between Pain Beliefs, Catastrophizing and Acceptance

July 2007

Year 3
Acknowledgements

I would like to take this opportunity to sincerely thank all of the participants who made this research possible. Thanks also to both my university and field supervisors (Dr. Vicky Senior and Dr. Keren Fisher) for their continued patience, support and advice throughout. I would also like to thank all of the Pain Management Programme staff for making me feel welcome and facilitating the opportunity to carry out this research.

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Abstract

Background: Cognitive behaviour therapy (CBT) based multi-disciplinary pain management programmes (PMPs) have been established as effective but more research is needed to understand mechanisms of change and predictors of outcome. Beliefs are one of the main targets for change in CBT and acceptance and catastrophizing are considered to be important determinants of adjustment in chronic pain. Research is needed to explore relationships between pain beliefs, acceptance and catastrophizing.

Method: A prospective design was used. Participants were invited to complete questionnaires on the first and last day of a CBT based PMP. Of the 66 participants, 16 completed questionnaires at baseline only, 43 completed questionnaires at baseline and at the end of the intervention and 7 completed questionnaires at the end of the intervention only.

Results: Participants experienced significant changes in acceptance, catastrophizing, and various beliefs. At baseline, identity beliefs and re-injury beliefs predicted catastrophizing, however baseline beliefs did not predict baseline acceptance. Changes to consequences beliefs predicted changes in catastrophizing and changes in emotional representation beliefs predicted changes in acceptance. Furthermore, baseline re-injury beliefs predicted end catastrophizing levels and there was some evidence to suggest that baseline personal control beliefs predicted end acceptance levels.

Conclusions: This study found that acceptance levels changed through participation in a CBT based PMP. In many cases beliefs were important baseline predictors of outcome. Furthermore, in support of CBT for chronic pain, changes in beliefs were related to changes in catastrophizing and acceptance. Strengths, limitations, practical implications and ideas for future research are discussed.
Introduction

There is much evidence to suggest that pain management programmes (PMPs) based on the theoretical perspectives of cognitive behaviour therapy (CBT) are effective for chronic pain (see Morley et al., 1999). However, more studies are needed to further investigate which specific treatment components are associated with desired outcomes (Morley, 2004).

In terms of outcomes, qualitative studies (e.g. Silva, 2006) and anecdotal information from clinics would suggest that PMPs are exerting their influence by increasing patients’ level of acceptance of their chronic pain and by reducing their level of catastrophizing. Quantitative research has also established that acceptance and catastrophizing are related to psychological adjustment in chronic pain (e.g. McCracken, 1998; Severeijns et al., 2001). For the purposes of the present study, adjustment is generally considered to relate to low levels of self-reported anxiety, depression and physical and psychosocial disability.

CBT posits that pain related beliefs are one of the main targets for change in CBT based PMPs. Gaining an understanding of the relationship between specific pain beliefs, acceptance and catastrophizing would allow PMPs to target the beliefs most closely associated with acceptance and catastrophizing.

Unlike the majority of previous studies examining pain beliefs, the beliefs investigated in this study will be based on a theoretically derived model (the common sense model of self regulation - CSM) (originally developed by Leventhal et al., (1970)). This model explains how people make sense and respond to a health threat, for example, chronic pain. This study will expand on an unpublished thesis conducted by Rankin (2001) and a published study by Rankin and Holttum (2003) exploring the relationship between pain beliefs and acceptance. The additional contribution to the literature will be achieved by the utilisation of updated measures and via the exploration of the relationship between acceptance,
catastrophizing and pain related beliefs and how these factors change through participation in a PMP.

In the following section, I aim to introduce the problem of chronic pain and the format and efficacy of CBT based PMPs before explaining the CSM and establishing why the relationship between pain beliefs, acceptance and catastrophizing is particularly important to consider in relation to the self-management of chronic pain.

Chronic pain and its prevalence

Efforts to determine the prevalence of chronic pain have been faced with challenges mainly because there is not a standard internationally accepted definition for chronic pain (Harstall & Ospina, 2003). The PMP used as the site of data collection for this study generally refers to chronic pain as pain that persists for more than 6 months in duration (Nielson, 2001). In assessing the economic burden of back pain in the UK, Maniadakis & Gray (2000) found that its direct costs in 1998 were £1632 million, while its indirect costs reached a total of £10668 million. Although, advances in medical diagnosis, surgical procedures and drug therapies have led to improvements, for many there is no medical resolution of the suffering associated with chronic pain. Consequently, sufferers are left with the task of “living with” their chronic pain. Self-management programmes are targeted at those for whom there is no known medical cure. These programmes are a relatively recent phenomenon and have developed as a result of the evolution in our understanding of pain.

An evolving understanding of pain

Early theories of pain were based on two extreme views: Aristotle (384-322 B.C.) viewed pain as an emotion and Descartes (mid-19th century A.D) expanded on Epicurus’ (342-270 B.C.) view that pain is purely a physical sensation (Nielson, 2001). These early theories of pain gave rise to a tendency to view pain as purely psychogenic (i.e. ‘pain is all in the patient’s mind’) or purely organic with a single cause (i.e. ‘real pain’ resulting from clear tissue damage). According to these models, the role of psychology was
limited. The last four decades, however have seen a rise in the tendency to view psychological (e.g. perception, beliefs and affect) and behavioural (e.g. avoidance) factors as an integral part of the pain experience (Melzack & Wall, 1988; Turk et al., 1983; Turk & Okifuji, 2002).

Chronic pain is now understood in terms of a bio-psychosocial model. In contrast to the medical model's emphasis on disease process, the bio-psychosocial model views pain as a complex interaction between biological, psychological and socio-cultural variables (Turk & Okifuji, 2002). It is understood that chronic pain can exist in the absence of ongoing tissue damage as a result of changes to the nervous system that has become overly sensitive to pain messages (Staud et al., 2004). Pain is largely explained to sufferers using the Gate Control Theory of Pain (cited in Melzack & Wall, 1996), which suggests that pain messages from the body are sent to the brain via the spinal column where they are modulated by a series of gates. Melzack & Wall (1996) explained that at these gates, pain messages are influenced by stress levels and thinking processes that serve to either strengthen or dilute the messages, thereby influencing perceptions of pain. Although, this legitimises a role for psychological factors in the pain experience, the theory does not seem to have been scientifically proven. However there has as yet, been no research to contradict it (Melzack & Wall, 1996).

**The role for psychological factors in chronic pain**

Wilbert Fordyce (1976) was one of the first to offer a behavioural explanation for the maintenance behaviours incompatible with recovery. Fordyce believed that people develop maladaptive behaviours in reaction to pain and that these behaviours can be reinforced and rewarded through classical and operant conditioning, and could be extinguished by preventing rewards (cited by Melzack & Wall, 1996). According to Williams et al., (1993), patients whose behaviours in response to acute pain (e.g. rest, medical help) persist beyond tissue damage become increasingly distressed by the failure of pain to dissipate. Williams et al., (1993) went onto explain that such behaviours become established habits when they are supported by the patient’s interpersonal
environment. As a result, the patient may become increasingly unfit, fearful of activity and movement and more focused on finding ways to control their chronic pain.

Research on the cognitive components of pain has also been undertaken. In his research on soldiers who did not request analgesics following wounds in battle, Beecher (1946) understood that the personal meaning of a painful event is an important determinant of the degree of pain experienced. When asked, the soldiers explained that the wounds represented a "ticket home" and resulted in feelings of relief and sometimes euphoria as opposed to severe pain (cited by Melzack & Wall, 1996). In the fear-avoidance model of exaggerated pain perception, Lethem et al., (1983) attempted to explain how emotional and sensory components of pain persist beyond the tissue damage in musculoskeletal injuries, leading to longstanding pain, depression and disability. Vlaeyen et al. (1995) further expanded on this model to illustrate that catastrophizing increases fear of movement, resulting in avoidance of pain-evoking activities leading to subsequent disuse of limbs, depression and disability (see Figure 1).

![Figure 1: Illustration of the relationship of fear of movement in the pain experience](Taken from Vlaeyen et al. (1995).)

A number of authors have since confirmed that cognitive and behavioural aspects rather than sensory and biomedical aspects are particularly important in the maintenance of the disability associated with chronic pain (see Asmundsen et al., 1999; McCracken, 1998; Vlaeyen & Linton, 2000).
Cognitive behavioural therapy based pain management programs

As studies increasingly showed that several cognitive and behavioural factors contributed to the persistence of pain disability, treatment regimes using the cognitive behavioural based approach followed suit to address these factors (Turk et al., 1983). The UK established its first CBT based PMP in Liverpool in 1983 (Main & Spanswick, 2000).

The theoretical underpinnings of the cognitive model suggest that "people's emotions and behaviours are influenced by their perception of events" (Beck, 1995, pp.14). Therefore, the person's beliefs are the targets for change in cognitive therapy (Beck, 1995). Indeed, Rudy et al. (1988) found that pain itself was not sufficient for the development of depression. The important determinants of depression for pain sufferers were personal beliefs about self-control and the interference of pain in one's life. Furthermore, in commenting on the importance of beliefs in relation to illness, Halligan (2007) stated that the beliefs held by patients about their health and illness are central to the way they present, respond to treatment and evaluate their capacity to return to work. Therefore, knowledge of a patient's beliefs can help predict subjective experience and capacity to cope and recover (Halligan, 2007).

CBT based PMPs focus on addressing the patients' physical functional capacity, their cognitive and affective processes and their behaviour and positioning for tasks (Keller et al., 1997). Furthermore, these approaches emphasize the role that learning, avoidance and beliefs have in the development and maintenance of chronic pain problems. Patients are taught strategies such as cognitive restructuring techniques, relaxation skills, realistic goal setting and pacing of exercises and other activities (Williams et al., 1996). Programmes are multi-disciplinary in nature and typically involve professions such as psychology, nursing, occupational therapy and physiotherapy working under the general principles of CBT. PMPs are generally delivered in a group format on either an inpatient or an outpatient basis. In a randomized controlled trial (RCT) Williams et al, (1996) found that compared to outpatients, inpatients made greater gains, maintained those gains at 1-year follow-up and used less health care services.
PMPs based on the CBT model have prevailed for approximately 30 years as being highly effective (Flor et al., 1992; Turner, 1996; Morley et al., 1999). The most recent meta-analysis of RCTs concluded that treatments of CBT were effective relative to waiting list controls with average effect sizes of \(d = 0.5\) across all measures (Morley et al., 1999). When comparing CBT with other therapies, CBT produced significantly greater changes in ratings of pain experience (pain intensity, sensation and unpleasantness), cognitive coping (positive cognitive strategies and appraisals in attempting to manage pain) and overt pain-related behaviours. Interestingly, differences between the treatment approaches were not significant in the following domains; mood/affect (depression and other affect measures), negative cognitive coping and appraisal (e.g. catastrophizing) and social role functioning (Morley et al., 1999). Perhaps, CBT was no better at targeting those beliefs specifically linked to catastrophizing than any of the other therapies. Unfortunately, it is difficult to understand and explain results such as these as there have been limited studies examining the specific processes of change in different therapeutic approaches for chronic pain.

Turner (1996) recommended that further research was needed to evaluate the efficacy of PMPs in improving specific outcomes. Furthermore, Morley (2004) argues that researchers in CBT need to be more strategic in developing models of change by establishing links between specific cognitive changes and specific outcomes that are theoretically driven. Furthermore, as cognitive behaviour theory suggests that treatment is effective on the grounds that it would result in changes to both patients’ beliefs and behavioural responses to their pain, studies looking at the links between changes in beliefs and patients’ way of responding to pain would prove useful (Hobro et al., 2004; Main & Spanswick, 2000).

**Research on pain beliefs with chronic pain patients**

Instead of being driven by a theoretical framework, the pain beliefs examined by various instruments appeared to be based on qualitative studies of small sample sizes and/or clinical observations. Nonetheless, these studies were informative as they tended to look at many of the beliefs examined by the instrument that will be used in the current study,
albeit separately. Several instruments have been developed to examine pain related beliefs (Edwards et al., 1992; Jensen & Karoly, 1987; Morley & Wilkinson, 1995; Waddell et al., 1993) and many cross sectional design studies have been carried out and have consistently found significant relationships between measures of pain beliefs and measures of functioning (Sirois et al., 2006; Strong et al., 1992; Turner et al., 2000; Williams & Thorn, 1989).

Jensen, Turner, Romano & Lawler (1994) investigated the relationships between beliefs and adjustment with 241 chronic pain patients using the Survey of Pain Attitudes (SOPA) (Jensen et al., 1987). Based on clinical observations of patients’ reports of hesitancy to exercise due to an underlying fear of re-injury, the authors added the harm subscale to examine the belief that pain signifies damage and that movement should therefore be restricted. The results of this study suggested that the harm subscale was associated with physical dysfunction but was not linked to psychosocial dysfunction variables. The belief that one is disabled by pain was linked to self-reported psychological and physical dysfunction and the belief that emotions affected pain was associated with greater psychosocial dysfunction.

Williams & Thorn (1989) developed the Pain Beliefs and Perceptions Inventory (PBPI) based on qualitative interviews with 90 chronic pain patients documented in an earlier unpublished study by Williams (1988). With a sample size of 87 chronic pain patients, Williams & Thorn (1989) found that responses to the PBPI predicted pain intensity, treatment compliance, low self-esteem, psychological distress and the tendency to somatise. Using a revised version of the PBPI, Williams et al. (1994) found that the belief in pain constancy was associated with greater levels of pain and the belief in pain endurance was associated with anxiety. Furthermore, the belief that pain was a mystery was associated with anxiety and depression and self-blame for pain was associated with depressive symptoms.

It is possible however, that pain beliefs exert their influence in different ways. For instance, they may influence disability directly by changing a patient’s functional
Changes in beliefs are related to changes in outcome

In order to test the CBT model, Jensen, Turner & Romano (1994a) assessed whether changes in beliefs and coping strategies were actually related to changes in outcomes using the SOPA. Consistent with the CBT approach, these researchers calculated change scores from pre-treatment to follow up and found that belief changes scores were indeed related to depression and physical functioning change scores. In 2001, Jensen and colleagues replicated these findings by establishing that change scores in beliefs and coping strategies were related to changes in improvement following a PMP. In this study, decreases in guarding and resting and in the belief that pain signals damage were associated with decreases in physical disability. Furthermore, increases in perceived control coupled with decreases in catastrophizing and in the belief that one is disabled by pain were related to decreases in depression, pain intensity and reported disability. This study suggested that perceived control over pain beliefs were adaptive and the belief that pain signals damage and is accompanied by disability were maladaptive. Using the SOPA, Nielson & Jensen (2004) found that increased personal control beliefs, decreased disability beliefs and decreased beliefs that pain signals damage were positively related to outcome for patients with Fibromyalgia Syndrome who undertook a PMP. Lipchik et al. (1993) found that after participating in a multi-disciplinary PMP, chronic pain patients developed an increased sense of personal control over their pain and believed their pain to be less mysterious. Furthermore, pre to post-treatment changes in pain beliefs, catastrophizing and self-efficacy for managing pain mediated the effects of CBT on pain and activity interference at one year follow-up (Turner et al., 2007).

Walsh & Radcliffe (2002) used the Pain Belief Questionnaire (Edwards et al., 1992) to investigate the influence of the belief that pain is largely physical in nature and requires
medication to treat it and the belief that psychological factors influence the experience of pain (e.g. anxiety makes pain worse, thinking about pain makes it worse). This prospective study found that a reduction in organic beliefs was associated with improvements in reported disability. The results of the above studies are consistent with the cognitive behavioural model of treatment, which suggests that changes in beliefs are related to changes in psychological adjustment.

Fear avoidance research

The fear-avoidance model of pain expanded by Vlaeyen et al. (1995) explains how pain catastrophizing influences fear of re-injury, which in turn contributes to avoidance behaviour, resulting in longstanding pain, depression and disuse. Central to this model is the belief that the sensation of chronic pain signifies an ongoing disease process and that exercise and/or movement should be avoided in order to deter further potential damage. In measuring this belief, Vlaeyen et al. (1995) used a Dutch version of the Tampa Scale of Kinesiophobia (TSK) (developed by Kori et al., 1990), which incorporates items assessing the above belief with items reflecting the idea that movement is fearful. Research has found that high levels of fear of movement and re-injury led to pain related avoidance behaviours, impaired physical function and greater self reported disability (Vlaeyen et al., 1995; French et al., 2007). Furthermore, pain related fear can have a negative impact on physical performance over time by reinforcing reductions in daily activity (Vlaeyen & Linton, 2000). Indeed, Vlaeyen et al. (2002) found that significant improvements in pain-related fear and catastrophizing were accompanied by decreases in pain disability, pain vigilance and an increase in physical activity levels following exposure treatment. A criticism of this research however, is that fear of movement was examined together with the actual belief that pain signals damage and this construct was compared with catastrophizing and anxiety. However, fear of movement and catastrophizing would inevitably be associated as they may be considered to be measuring similar constructs. Consequently, research is needed to focus solely on the link between the actual re-injury belief and catastrophizing to avoid assessing overlapping constructs.
The common sense model of self regulation (CSM)

The present study will use the CSM, which was developed by Leventhal and colleagues in the 1960s from work on the role of fear communications in health behaviours. As cited by Leventhal et al. (1997), Leventhal (1970) proposed that health threats generate emotional states of fear and distress as well as cognitive representations of the threat (termed the parallel processing model). In response to these representations people develop action plans to reduce fear and danger and these action plans are in turn appraised and incorporated into one's representations (see Figure 2).

![Parallel Processing Model](image)

**Figure 2**: Parallel Processing Model: taken from: Leventhal et al. (1997).

This model maps onto the cognitive approach, which also implies that individuals construct working models or beliefs that help them make sense of their experience and guide their way of responding (Weinman & Petrie, 1997). The original Illness Perception Questionnaire (IPQ) (Weinman et al., 1996) was developed to quantitatively assess five components of illness representations originally identified by Leventhal (1970) as cited by Leventhal et al. (1997). It was revised by Moss-Morris et al. (2002) to be more inclusive of all the elements of the original CSM and to incorporate the results of ongoing research. Hobro et al. (2004) noted that the revised IPQ could be usefully employed with

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4 Figure 2 presents "The parallel response model. Situational stimuli, both internal and external, generate both cognitive and emotional representations in response to possible danger. Each representation elicits coping procedures, which lead to outcome appraisals that can result in revised outcome criteria, the selection of new procedures, change in the representation and/or change in the eliciting stimuli". Pp. 21. Leventhal et al. (1997).
chronic pain patients to test the assumptions of the CSM, in establishing a link between beliefs and how people respond to the chronic pain experience.

The components assessed by the revised IPQ include: cognitive representations such as cause, identity, timeline acute/chronic, timeline cyclical, consequence, personal control, treatment control, illness coherence and the emotional representation of the illness. The identity subscale is concerned with a patient’s search for a label for their problem and can cause someone to search for symptoms associated with that label (when patients ascribe a greater number of symptoms to their condition they are noted as having a stronger identity). The timeline acute/chronic subscale refers to ideas about the duration of the condition. Timeline cyclical refers to the cyclical/constant nature of the condition. The consequence subscale comprises beliefs about the personal, social, physical and economic impact of the illness. The personal control subscale provides an indication of the patient’s belief in his/her own ability to control their illness. The treatment control subscale assesses the extent to which individuals believe that treatments can control their condition. Illness coherence assesses the extent to which the patient has a coherent understanding of their illness. The emotional representation subscale provides an indication of the person’s ideas of the negative emotions generated by the illness (Moss-Morris et al., 2002).

Leventhal et al. (2003) went on to explain how illness representations and ways of responding to illness were interlinked in the following statement “if I am suffering from a stress headache (identity) due to a bad day at work (cause), then taking two aspirins (procedure) should eliminate the pain (consequences; control) in 20-30 minutes (time frame for consequences). Weinman & Petrie (1997) explained that illness representations show logical interrelationships. Weinman et al. (1996) found that patients with a stronger illness identity were more likely to perceive their illness as lasting longer and having more serious consequences. In their validation study using many different illness conditions, Moss-Morris et al. (2002) found that strong beliefs in personal and treatment control were related to perceptions of a shorter timeline, less severe consequences and a less negative view of the emotions generated by the illness. No research exclusively
examining the interrelationships between chronic pain representations using the IPQ-R could be located.

Several quantitative studies have provided support for the components measured by the IPQ-R and for the expected links between illness representations, coping and outcome across different health conditions as predicted by the CSM (Hagger & Orbell, 2003; Hobro et al. 2004; Jopson & Moss-Morris, 2003; Moss-Morris, 2005; Petrie et al., 2002; Rutter & Rutter, 2002; Scharloo et al., 1998; Walker, 2004;). In their meta-analysis of 45 studies, Hagger & Orbell (2003) found that overall a strong illness identity (many symptoms), chronic timeline and serious consequences were negatively related to psychological well-being and positively related to avoidance and expression of emotions. In contrast, perceptions of control were related to problem-focused coping, cognitive reappraisal and psychological well-being.

Importantly, Petrie and colleagues (2002) found that changes in illness representations resulted in improved functional outcomes for myocardial infarct patients. Using a prospective randomized control study, Petrie et al. (2002) assessed 65 patients pre-treatment, post-treatment and at 3 months follow-up. An alteration in patients' illness representations following participation in an in-patient treatment programme resulted in positive changes in patients' views of their illness and a quicker return to work for the treatment group. At 3-months follow-up the treatment group reported lower levels of symptoms compared to the control group.

Research using the IPQ with chronic pain patients

Unfortunately research using the IPQ with the chronic pain population has been relatively scant. In revising the original IPQ, Moss-Morris et al. (2002) found that compared with acute pain patients, chronic pain patients had a stronger illness identity, a more chronic and cyclical timeline and perceived their pain as having more severe consequences on their lives and as being less controllable. In line with the CSM, Hobro et al. (2004) found that 130 chronic pain patients could be clustered in terms of the associations found between their illness representations and psychosocial functioning. In this study,
compared to ‘adaptors’, ‘non-adaptors’ reported less energy, poorer physical and mental health functioning and high levels of depression. In contrast, the group labelled ‘adaptors’ had better outcomes and lower timeline beliefs, less pain related consequences, stronger beliefs in personal and treatment control over pain and a more coherent understanding of their pain.

Using the original IPQ, Rankin (2001) found significant changes in pain beliefs from the start of the waiting list period to the end of a CBT based outpatient PMP. Specifically, Rankin (2001) found that patient’s belief in the degree of consequences and the frequency of symptoms significantly decreased. There was no significant change noted in any of the other beliefs, as measured by the IPQ. Rankin (2001) highlighted that the lack of change in timeline scores may have been due to a ceiling effect as the majority of patients initially acknowledged that their pain was already a long-term phenomenon.

Responses to chronic pain – catastrophizing

Sullivan et al. (2001) described catastrophizing as an ‘exaggerated negative mental set brought to bear during actual or anticipated pain’. Sullivan (1995) viewed catastrophizing as comprising three related constructs: rumination ‘I can’t stop thinking about how much it hurts’, magnification ‘I worry that something serious may happen’ and helplessness ‘there is nothing I can do to reduce the intensity of the pain’. In over 100 studies, catastrophizing has been associated with heightened pain and disability and it has been found to be a better predictor of distress than disease related variables (Sullivan et al., 2001). Catastrophizing is also amenable to change through participation in CBT based PMPs (Morley et al. 1999). Through engagement in CBT multidisciplinary programmes, researchers also found that decreases in catastrophizing were associated with decreases in depression (Jensen et al., 1994; 2001).

In the cognitive theory of depression, Beck proposed that cognitive distortions of reality (such as catastrophizing) are more likely to happen when depressive schema become activated in response to a negative life event. Catastrophizing can distort the information in such a way, resulting in an increased likelihood of developing depression. In the same
way, catastrophizing can arise as a result of the pain related beliefs that are activated in response to chronic pain. Therefore, pain related beliefs and catastrophizing are very different in nature. Whilst beliefs represent general intellectual views/perceptions regarding pain and its potential impact on one’s life that people have irrespective of whether they are in pain or not. Catastrophizing, on the other hand, refers to a specific way of responding to pain when in pain. This way of responding involves actively distorting the painful episode in a negative way, either through an active process of rumination, magnification and/or reminders to oneself of how helpless one feels. However, some researchers have argued that depression and catastrophizing are such similar constructs that they should not be examined separately (Sullivan & D’Eon, 1990). In defiance of this notion, investigations have shown that catastrophizing contributes to the pain experience independent of its relationship with depression (Keefe et al., 2000; Sullivan et al., 1998).

Catastrophizing has also been referred to as an appraisal (see Sullivan et al., 2001). In Lazarus & Folkman’s transactional model of stress, primary appraisals were referred to as judgments about a potential stressor as irrelevant, benign-positive or stressful and secondary appraisals as beliefs about coping options and their effectiveness. The different components of catastrophizing such as magnification, rumination and helplessness (Sullivan, 1995) can be understood in terms of primary and secondary appraisals (Sullivan et al., 2001). Sullivan et al. (2001) suggested that magnification and rumination could be viewed as a primary appraisal in which individuals focus on and exaggerate the threat value of a painful stimulus. On the other hand, helplessness may be viewed as a secondary appraisal where the individual negatively evaluates his/her ability to deal effectively with pain.

Indeed, research has found that catastrophizing has been associated with beliefs about the controllability of a condition (Crisson & Keefe, 1988). Crisson & Keefe (1988) found that those pain patients who believed that they had control over their pain were less likely to catastrophize. Other studies have also found links between certain beliefs and catastrophizing. Williams et al. (1994) found that the tendency to catastrophize in
response to pain was positively correlated with the belief that pain is permanent, the belief that pain is mysterious and the tendency to blame oneself for the pain. Williams & Keefe (1991) also found that patients who believed their pain to be enduring and mysterious were more likely to catastrophize than those who believed their pain to be understandable and of a short duration.

The Survey of Pain Attitudes Revised (SOPA-R) (Jensen & Karoly, 1987) is a measure that has received attention within the pain literature. Strong et al. (1992) found support for its reliability, validity and factor structure. Attitudes were defined as underlying feelings or affect held towards something, which influences behaviour (Fishbein & Ajzen, 1975 cited by Strong et al, 1992). The attitudes that ‘one requires solicitude’ and is ‘disabled by pain’ were positively correlated with a tendency to catastrophize, while the attitude that ‘one can control pain’ was negatively correlated with catastrophizing (Strong et al. 1992). Given these findings, Strong et al. (1992) went on to recommend that further research was carried out to investigate whether the mediation of attitudes results in a decrease in catastrophizing.

The focus of this study will be to investigate the association between pain-related beliefs and catastrophizing. This will provide a test of the CSM as applied to chronic pain, where catastrophizing would be considered as a distress response to pain.

Responses to chronic pain – Acceptance

When someone experiences chronic pain and subsequent disability, there are different ways of responding. One way of responding is for the patient to become absorbed in a negative mind set about the pain (i.e. catastrophizing as described earlier). Another way of responding is through acceptance. Many researchers have attempted to provide definitions of acceptance. Risdon et al. (2003) reported a social constructionist analysis of everyday understandings of the lived experience of acceptance of chronic pain in British culture. In relation to acceptance, they suggested that all the accounts shared the following features; 1) the acknowledgement that a cure for pain is unlikely, 2) a shift of focus away from pain to non-pain aspects of life and 3) a rejection of any suggestion that
pain is a sign of personal weakness. As cited by Li & Moore (1998), Dembo et al. (1956) referred to acceptance of disability as the process of achieving an acceptance of the losses associated with the disability. In contrast, McCracken (1998) defined acceptance of pain as ‘acknowledging that one has pain, giving up unproductive attempts to control pain, acting as if pain does not necessarily imply disability, and being able to commit one’s efforts toward living a satisfying life despite pain’. Similarly, Jacob et al. (1993) defined pain accommodation as ‘the perceived ability to live a satisfying life despite pain’. McCracken’s (1998) concept of acceptance has been the most empirically researched measure of acceptance in the chronic pain literature.

Using the Chronic Pain Acceptance Questionnaire (CPAQ), originally developed by Geiser (1992), McCracken (1998) demonstrated that greater levels of acceptance were associated with reports of lower pain intensity, less pain related anxiety and avoidance, less depression, more daily uptime, less physical and psychosocial disability and better work status in persons seeking treatment for chronic pain. The study had a substantial sample size of 160 patients and was well conducted as it controlled for demographic variables. However, this study provided a limited exploration of the influence of acceptance on outcomes as it merely looked at the total acceptance scale score instead of breaking down the influence of the different aspects of acceptance on different areas of functioning. It also employed a correlation design making it difficult to decipher whether increased acceptance lead to decreased disability or vice versa.

In a later study, McCracken et al. (1999) found that 190 patients, who were classified as dysfunctional, interpersonally distressed or adaptive copers using the Multidimensional Pain Inventory (originally developed by Kerns et al. 1985) could be distinguished from one another on the basis of their acceptance scores. CPAQ acceptance scores successfully classified patients irrespective of their levels of pain severity and depression. In other words, individuals who had higher levels of acceptance of chronic pain were more likely to respond adaptively to pain, irrespective of the influence of depression and pain intensity (McCracken et al., 1999).
In comparing a Dutch version of the CPAQ with the illness cognitions questionnaire (Evers et al., 2001), Viane et al. (2003) found that acceptance of pain was strongly related to engagement in normal life activities and the recognition that pain may not change. Furthermore, this study found that acceptance predicted mental well-being beyond pain severity and pain catastrophizing.

In 2004, McCracken, Vowles et al. produced a revised shortened 20-item CPAQ by excluding items relating to the belief that controlling thoughts leads to the control of pain as they were poorly correlated with the other factors and the overall acceptance score (McCracken, 1999). The aspects of acceptance as measured by the revised CPAQ incorporate both behavioural and mental components (McCracken, Vowles et al. 2004). As mentioned by McCracken et al. (2003) activity engagement despite pain is more than a mental process, it requires the person to actually change their behaviour by engaging in positive activities when experiencing pain. The second aspect of acceptance as measured by the revised CPAQ (pain willingness) also involves both mental and behavioural components. The mental component involves recognising that it is not necessary to avoid or control pain in order to pursue life goals. The behavioural component involves refraining from, searching relentlessly for cures and avoiding pain.

The idea of acceptance within the chronic pain domain first emerged as an important construct in the mindfulness based stress reduction programmes developed by John Kabat Zinn (1985). Through these programs Kabat Zinn (1985) aimed to help patients achieve a detached observation of their pain experience by paying careful non-judgmental attention to both the primary sensations as they occur from moment to moment and the accompanying thoughts of pain in acknowledgement that both these aspects are separate events. The mindfulness approach has since been adopted by many clinicians and researchers in the treatment of borderline personality disorder (Linehan, 1993) and depression (Teasedale et al., 1995). Dryden & Still (2006) noted that recent writers all share the view that the action of attacking symptoms such as thoughts and feelings can be unproductive, while taking a non-judgmental accepting approach to symptoms can free the person up to pursue meaningful activities. To this end, Acceptance and Commitment
Therapy's (ACT) main focus is on increasing patients acceptance by helping people get back to the activities that are important to them, rather than focusing on symptom control (Thompson, 2007). Mindfulness based approaches are now part of ACT.

Similar to CBT, ACT considers the impact of environmental, verbal and cognitive influences on an individual's behaviour. However, its main difference with traditional CBT appears to centre on its approach to cognitions (Thompson, 2007). Instead of helping patients change the form or content of their thinking (as is the case in CBT), ACT clinicians help patients think about the function of cognitions in a different way (i.e. to notice thoughts as thoughts and not reasons for action).

Experimental studies cited by McCracken (2005), showed that participants who engaged in the acceptance based approach (i.e. noticing thoughts, feelings, perceptions without acting upon them) had greater pain tolerance than those participants who were asked to control thoughts and feelings by vividly imagining a pleasant scene. However, in a clinical study conducted by Geiser (1992) comparing ACT with CBT for chronic pain patients, no differences were found in the outcome measures following treatment (cited by McCracken, 2005). Both groups showed significant improvements in terms of physical and psychosocial disability, depression and daily activity. Most interesting was the finding that both groups showed increased acceptance to an equal degree. This suggests that it may have been initially important for patients to learn some degree of control over pain before they could begin to accept pain and thereby stop focusing on the struggle to control it (McCracken, 2005). This also may suggest that, some degree of belief in one's own personal control is important for acceptance.

A recent study by Nicholas & Asghari (2006), suggested that McCracken's view of acceptance may be wider than he originally predicted. In their study, when catastrophizing, self efficacy beliefs and fear of movement and re-injury beliefs were controlled for, acceptance as measured by the CPAQ, was not as predictive of physical disability as expected. Nicholas & Asghari (2006) go onto suggest the use of multiple measures that incorporate the assessment of beliefs in expanding our understanding of
acceptance. Using the definition of acceptance proposed by Dembo (1956) as cited by Li & Moore (1998), Rankin (2001) found that patients' acceptance increased through participation in a CBT based pain management programme. In expanding our understanding of the components of acceptance, Rankin & Holttum (2003) found that lower acceptance was related to beliefs that pain was associated with many symptoms and to the belief that pain entailed serious consequences. In contrast, Rankin & Holttum (2003) did not find a link between greater acceptance and perceived chronic timeline. Acceptance was also not found to be related to beliefs about the control or cure of chronic pain. This suggests that beliefs about control or cure did not influence whether patients acknowledged the losses associated with their chronic pain.

While research by Rankin (2001) and Rankin and Holttum (2003) has provided an initial step in understanding the relationship between acceptance and pain related beliefs, more information is needed using updated measures such as the revised IPQ and other more empirically tested constructs of acceptance such as that based on McCracken's definition (i.e. revised CPAQ).

The rationale for this study

The CSM posits that people form beliefs in response to a health threat (e.g. chronic pain) and that those beliefs will in turn influence how individuals respond and adapt to their condition. Yet, research using this model in the chronic pain literature has been relatively scant. Both catastrophizing and acceptance can be understood as different ways of responding to chronic pain. Both of these constructs have been found to change on CBT based PMP's and to be particularly important determinants of psychological adjustment in chronic pain. However, more research is needed to extend our understanding of catastrophizing by exploring its relationships with beliefs (Hobro et al., 2004). McCracken & Eccleston (2005) also suggested that work was needed to "assess the psychological processes that fall under the heading of acceptance". Furthermore, research in this area, would go some way in answering the call for further research to explore the mechanisms of change in a CBT based PMP and to identify baseline patient characteristics that predict outcome.
Although Rankin (2001) looked at changes in acceptances and pain related beliefs and the relationship between these variables for patients undertaking a CBT based pain management programme (Rankin & Holtum, 2003). Additional research is needed to investigate these factors using updated quantitative assessments of beliefs such as the revised IPQ and a measure of acceptance, which has been subjected to much empirical assessment in the chronic pain literature such as the revised CPAQ. As the re-injury belief has been considered important in the pain literature, this belief will also be examined. It is hoped that the findings of this study will be used to facilitate refinement of theoretical models and to improve upon the effectiveness of interventions by targeting those beliefs specifically related to catastrophizing and acceptance.
Hypotheses

Hypothesis 1: Exploring baseline relationships

In line with previous research, a greater tendency to catastrophize will be associated with a strong pain identity (i.e. high number of symptoms associated with pain), a weak sense of personal and treatment control, a lack of understanding of pain, a high level of perceived consequences, a high level of emotional reactions, and a belief that pain will be acute and constant as opposed to cyclical and chronic in nature.

Pain related beliefs will be significantly related to acceptance. Specifically, acceptance will be positively correlated with a coherent understanding of pain, a strong sense of personal and treatment control and a belief that pain will be chronic and cyclical in nature. Acceptance will be negatively correlated with beliefs about severe perceived consequences, strong emotional reactions and strong pain identity.

Hypothesis 2: Baseline predictors of outcome

Baseline beliefs will independently predict catastrophizing and acceptance levels at the end of the intervention.

Due to the exploratory nature of this hypothesis no specific predictions will be made.

Hypothesis 3: Impact of the PMP.

From baseline to the end of the PMP, participants’ levels of acceptance will increase, while their levels of catastrophizing will decrease.

In line with the theoretical approaches of CBT, patients will experience a change in their pain related beliefs from baseline to the end of the intervention. Specifically, patients will perceive a weaker pain identity, less severe consequences, a greater sense of personal and
treatment control over their pain, a greater level of illness coherence, a more chronic timeline and fewer emotional reactions to their illness.

Changes to outcome measures will be as follows: a decrease in anxiety, depression and avoidance and an increase in the distance walked in 5 minutes.

**Hypothesis 4: Mechanisms of change**

Changes in beliefs will be associated with changes in catastrophizing and acceptance.

Due to the exploratory nature of this hypothesis, specific predictions will not be made.
Method

Design

A prospective design was used in this study.

Inclusion Criteria

All patients who enrolled on the PMP were invited to take part in the study. The inclusion criteria for the PMP and the study were as follows: be 18 years or older; have chronic pain for at least 6 months in duration; have all medical treatments and investigations completed; have a basic understanding of the English language; have a willingness to participate in a group based intervention; and no current co-morbid severe and acute psychiatric diagnoses or current alcohol/drug abuse problems.

Participants

Invitees to this research were 97 patients referred to a 3-week PMP over a 10-month period. Of the 97 invited to take part, 66 completed a questionnaire at least once, giving a 68% response rate. Of the 66 participants, 16 completed questionnaires at baseline only, 43 completed questionnaires at both baseline and at the end of the intervention, and 7 completed questionnaires at the end of the intervention only.

Background Information

As illustrated by Table 1, the sample consisted of marginally more females than males (59% vs. 41%) whose ages ranged from 19 to 74 years. A substantial proportion of the sample (44%) described themselves as being either sick or medically retired. In relation to participants' pain, the majority (81%) had received a diagnosis. The mean duration of pain was 9.9 years and patients' pain duration ranged from 1 -57 years. The majority of participants had received no operation for their pain (57%) and back pain (78%) was the most frequently noted site of pain.
Table 1: Participants’ demographic characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Valid Percent</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>27</td>
<td>41%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Female</td>
<td>38</td>
<td>59%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Age (yrs):</td>
<td>62</td>
<td>-</td>
<td>50.63</td>
<td>11.64</td>
<td>19-74yrs</td>
</tr>
<tr>
<td>Employment status:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>16</td>
<td>25%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Unemployed</td>
<td>7</td>
<td>11%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sick/medical retirement</td>
<td>28</td>
<td>44%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Retired</td>
<td>8</td>
<td>13%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Housekeeper</td>
<td>3</td>
<td>5%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Student</td>
<td>2</td>
<td>3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Background pain information</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received a diagnosis for chronic pain:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>48</td>
<td>81%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>19%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Duration of pain (yrs):</td>
<td>63</td>
<td>9.88</td>
<td>11.30</td>
<td>1-57yrs</td>
<td></td>
</tr>
<tr>
<td>0-2yrs</td>
<td>11</td>
<td>18%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>+2-5yrs</td>
<td>20</td>
<td>32%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>+5-10yrs</td>
<td>14</td>
<td>22%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>+10-20yrs</td>
<td>8</td>
<td>13%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>+20-57yrs</td>
<td>10</td>
<td>16%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Number of operations:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>35</td>
<td>57%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>26%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>8%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3+</td>
<td>6</td>
<td>10%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pain sites:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back</td>
<td></td>
<td>78%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lower limbs</td>
<td></td>
<td>44%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Participants who completed a questionnaire at one point in time were compared against those who completed questionnaires at baseline and at the end of the programme. Participants who completed two questionnaires did not differ significantly from those who completed questionnaires at one time point with respect to age, duration of pain, reported pain intensity, anxiety, depression, beliefs, acceptance, catastrophizing and avoidance. Therefore, the participant attrition did not appear to be systematic in relation to the study and demographic variables.

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
<th>-</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head/neck/shoulders</td>
<td>30%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pelvic region</td>
<td>16%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Upper limbs</td>
<td>13%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Thoracic region</td>
<td>8%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>All over</td>
<td>8%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Measures

**Main measures**

Table 2: Internal reliability of measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Previous research</th>
<th>Current study Baseline</th>
<th>Current study End of PMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPAQ</td>
<td>McCracken et al. (2004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity engagement</td>
<td>.82</td>
<td>.82</td>
<td>.86</td>
</tr>
<tr>
<td>Pain willingness</td>
<td>.78</td>
<td>.65</td>
<td>.78</td>
</tr>
<tr>
<td>Total scale</td>
<td>.78</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>PCS</td>
<td>Sullivan et al. (1995)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnification</td>
<td>.66</td>
<td>.90</td>
<td>.90</td>
</tr>
<tr>
<td>Rumination</td>
<td>.87</td>
<td>.89</td>
<td>.89</td>
</tr>
<tr>
<td>Helplessness</td>
<td>.78</td>
<td>.89</td>
<td>.88</td>
</tr>
<tr>
<td>Total scale</td>
<td>.87</td>
<td>.94</td>
<td>.94</td>
</tr>
<tr>
<td>IPQ-R</td>
<td>Moss-Morris et al. (2002)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timeline acute/chronic</td>
<td>.89</td>
<td>.78</td>
<td>.85</td>
</tr>
<tr>
<td>Timeline cyclical</td>
<td>.79</td>
<td>.81</td>
<td>.73</td>
</tr>
<tr>
<td>Personal Control</td>
<td>.81</td>
<td>.80</td>
<td>.74</td>
</tr>
<tr>
<td>Treatment Control</td>
<td>.80</td>
<td>.70</td>
<td>.69</td>
</tr>
<tr>
<td>Consequences</td>
<td>.84</td>
<td>.70</td>
<td>.70</td>
</tr>
<tr>
<td>Illness Coherence</td>
<td>.87</td>
<td>.87</td>
<td>.93</td>
</tr>
<tr>
<td>Emotional</td>
<td>.88</td>
<td>.80</td>
<td>.84</td>
</tr>
<tr>
<td>Representation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HADS</td>
<td>Bjelland (2002) review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.68 to .93</td>
<td>.82</td>
<td>.84</td>
</tr>
<tr>
<td>Depression</td>
<td>.67 to .90</td>
<td>.74</td>
<td>.79</td>
</tr>
</tbody>
</table>

1 This figure represents Cronbach’s Alpha of the revised magnification scale
2 This figure represents Cronbach’s Alpha of the revised total scale

20-item Chronic Pain Acceptance Questionnaire (CPAQ) (McCracken, Vowles et al., 2004).

This is a 20-item questionnaire designed to provide an empirical measure of acceptance of pain. It includes two subscales, activity engagement and pain willingness. These subscales assess the patient’s willingness to perform activities in the presence of pain and to relinquish attempts to control or avoid pain, respectively. Participants rated each item

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5 See Appendix I for copy of the questionnaire administered to participants which is edited to include the titles of all the questionnaires used.
on a scale of 0 (never true) to 6 (always true). This scale is a revised version of the Chronic Pain Acceptance Questionnaire (CPAQ), originally developed by Geiser (1992). Furthermore, Hayes et al. (2003) noted that Geiser (1992) derived the original CPAQ by adapting the acceptance and action questionnaire. The 20-item CPAQ is based on the definition of acceptance that incorporates both behavioural and cognitive components. McCracken, Vowles et al. (2004) and McCracken, Carson et al. (2004) described acceptance as an active process, whereby the person gets on with the business of living despite the pain experience and relinquishes attempts to actively control or avoid pain sensations.

Using this revised version, McCracken & Eccleston (2005) re-established the link between acceptance and patient functioning with a prospective design. McCracken, Vowles et al. (2004) found the revised scale to have adequate validity through moderate to high correlations with measures of distress, healthcare and medication usage and physical and work-related functioning. McCracken, Vowles et al. (2004) demonstrated adequate internal reliability as did the current study (see Table 2).

Pain Catastrophizing Scale (PCS: Sullivan et al., 1995)
The Pain Catastrophizing Scale (PCS; Sullivan et al., 1995) is a 13-item scale designed to provide a measure of a person’s tendency to catastrophize when in pain. Catastrophizing has been broadly conceived of as ‘an exaggerated negative “mental set” brought to bear during painful experiences’ (Sullivan et al., 2001). The 13 items reflect different thoughts and feelings that people may have when they are experiencing pain. Participants were asked to indicate the degree to which they experienced each of the 13 thoughts and feelings when ‘in pain’, on a 5 point scale from (0) not at all to (4) all the time. The scale yields a total score and three subscale scores assessing rumination, magnification and helplessness. It has also been demonstrated to have good discriminant validity (Osman et al., 2000). Severeijns et al. 2001 found that catastrophizing was associated with greater pain intensity, greater psychological distress and stronger beliefs about being disabled by pain. In addition, catastrophizing was associated with disability independent of levels of
depression and anxiety experienced by patients (Sullivan et al. 1998). The total scale and subscales have adequate internal consistency (Sullivan et al., 1995) (see Table 2). Additional items were included on this scale in response to a query by Turner & Aaron (2001). Specifically, Turner & Aaron (2001) questioned whether worry about possible worst case scenarios were depicted on the scale. Consequently, 3 items were included in the current study to fully assess this dimension and possibly increase the face, content and construct validity of the catastrophizing construct. These items were added to the magnification scale and were incorporated into the total PCS score. The magnification scale was renamed ‘magnification revised subscale’ and the total PCS scale score was renamed ‘total PCS revised scaled score’. In the current study, the total PCS score and the subscales scores had adequate internal consistency (see Table 2).

*The Revised Illness Perception Questionnaire - (IPQ-R) (Moss-Morris et al., 2002)*

This scale was chosen as it provides a quantitative assessment of the cognitive and emotional components of the representations people form in response to a health threat in accordance with Leventhal’s (CSM) (Moss-Morris et al. 2002). Specifically, this scale assesses peoples’ beliefs in relation to the following; identity or level of symptoms associated with chronic pain, causal beliefs, timeline of pain – acute/chronic or cyclical, consequences on different aspects of life, personal control over chronic pain, treatment control of chronic pain, coherence of a person’s understanding of their chronic pain and the emotional responses generated by chronic pain.

The IPQ-R is divided into three sections. The identity and casual dimensions are presented separately to the other dimensions. For the purposes of this study, the identity and causal dimensions were not used (see Brief Illness Perception Questionnaire below for rationale). The remaining 38 items examined the cognitive representations: timeline acute/chronic, cyclical, consequences, coherence, personal control, treatment control and the emotional representation. Participants were asked to rate the extent of their

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6 The word “Illness” in the original questionnaire was replaced with the word ‘chronic pain’ as directed by Weinman, 1996, see also www.uib.no/ipq/.
agreement/disagreement in relation to statements along a 5 point Likert scale ranging from strongly disagree, disagree, neither agree/disagree, agree to strongly agree.

The IPQ-R was derived from the original Illness Perception Questionnaire (IPQ) (Weinman et al., 1996). The original IPQ was revised so that it provided a more accurate quantitative measure of the different beliefs originally identified by Leventhal et al., (1970) (cited by Leventhal et al. (2003)) and accounted for the feedback from researchers using the original scale. Research has indicated short (3-week) and longer-term (6-month) test-retest reliability and solid discriminant and predictive validity (Moss-Morris et al., 2002). The current study and previous research (Moss-Morris et al., 2002) have confirmed that the subscales have adequate internal reliability (see Table 2).

Fear of movement and re-injury belief adapted from the shortened Tampa Scale for Kinesiophobia (Woby et al., 2005)

The belief that pain signals an injury and movement should be avoided to avert re-injury was assessed in the current study because Vlaeyen et al., (1995) found it to be of central importance to the relationship between catastrophizing and depression and disability. In the current study, the items used to assess this belief were taken directly from the shortened version of the Tampa Scale for Kinesiophobia (TSK) (Woby et al., 2005). Close examination of this scale revealed that it encompasses both the intellectual belief that pain is due to injury and exercise should be avoided to avert re-injury and the emotive aspects of the resulting fear of movement. To avoid overlap with catastrophizing, the five items chosen for this study were exclusively focused on exploring the intellectual belief as opposed to the emotive repercussions of this belief (i.e. fear). To ensure the re-injury belief was adequately assessed, one item was changed from “my body is telling me I have something dangerously wrong” to “having chronic pain means that something is wrong with my body, which prevents movement and exercise”. Measurement of this belief was limited to five items for the benefit of brevity and comparability with IPQ-R subscales, which contained a similar number of items per subscale (see Appendix I).
Similar to the IPQ-R, participants were asked to rate the extent of their agreement/disagreement in relation to statements along a 5 point Likert scale ranging from strongly disagree, disagree, neither agree/disagree, agree to strongly agree.

Although there has not been any research on the five items chosen for this study as a separate measure, Woby et al., (2005) found that the shortened TSK had good test retest reliability, responsiveness, concurrent and predictive validity. According to Woby et al., (2005), the shortened TSK had good internal consistency with Cronbach's alpha coefficient of .79. In the present study, Cronbach's alpha at baseline was .86 and at the end of the intervention was .74, demonstrating good internal consistency for this sample.

**Brief Illness Perception Questionnaire (Broadbent et al., 2006)**

This is a 9-item questionnaire designed to rapidly assess the cognitive and emotional representations of illness/pain (Broadbent et al., 2006), previously assessed by the IPQ-R (Moss-Morris et al., 2002). Each item was developed by forming one question, which summarised the items contained in each subscale of the IPQ-R. For the purposes of this study, one of the dimensions of cognitive representations was assessed using this scale: identity - the number of symptoms they view as being part of their chronic pain. The rationale for choosing this scale to assess this dimension lay in the fact that this item has the following advantages over the IPQ-R: easier and quicker to administer and score (Broadbent et al., 2006).

The item addressing a person’s idea around the identity of their chronic pain was assessed by asking participants to rate ‘how much they experience symptoms from their chronic pain’ on a scale of 0 (no symptoms at all) to 10 (many severe symptoms). A stronger identity is reflected in a higher score.

Although this is a relatively new measure, concurrent validity was established through significant correlations with the IPQ-R (Broadbent et al., 2006). According to Broadbent

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7 The word illness was replaced by Chronic Pain when the item from this questionnaire was used, as recommended by Broadbent et al., (2006).
et al., (2006), the scale also demonstrated good predictive validity, discriminant validity and test retest reliability. As each subscale is assessed by one item, internal consistency was not assessed.

**Potential confounding variables and outcome measures**

The rationale for including measures of anxiety, depression and avoidance in the questionnaire was twofold. Firstly, these variables adequately assess the outcome of PMPs (Rankin, 2001). Secondly, previous researchers documented significant relationships between both catastrophizing and acceptance with avoidance, anxiety and depression (McCracken, 1998; Sullivan & D'Eon, 1990) and these measures were therefore included so that they could be controlled for in the analysis.

**Pain Avoidance Symptom Scale (PASS; McCracken & Dhingra, 2002)**

This is a 20-item version of the original 40-item PASS (McCracken et al. 1992). The avoidance subscale of this measure was used to assess what participants tend to do in response to pain. The avoidance subscale particularly focuses on participants' tendencies to avoid pain by avoiding activities, taking themselves to bed and/or taking medication in response to pain. Participants are asked to rate how often they engage in the activities stated on a Likert scale of 0 (never) to 5 (always). This is a 5-item subscale and items are added to achieve the total subscale score.

McCracken & Dhingra (2002) demonstrated that the overall scale has good internal reliability, an appropriate factor structure, strong correlations with the original subscales and with measures of patient functioning, thereby supporting the validity of the scores as a reflection of pain related anxiety responses. Previous published research by McCracken & Yang (2006) found that the 20-item PASS assessed avoidance adequately. In the current study, the avoidance subscale had good internal reliability, with Cronbachs alpha coefficient at baseline of (.81) and at the end of the intervention of (.80).
Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)

The presence of self-reported anxiety and depression was assessed using the HADS. The HADS is a 14-item questionnaire with two subscales measuring anxiety and depression. Participants are asked to respond to statements reflecting their feelings during the previous week. Each item is scored from 0-3 with higher scores reflecting the presence of the corresponding symptoms of anxiety and/or depression. Anxiety and depression items are summed separately to yield a total score for each subscale ranging from 0-21.

The HADS is specifically designed to detect levels of anxiety and depression within a non-psychiatric medical outpatient population (Johnston et al., 1995). The HADS has been used by Hobro et al. (2004) with a sample of chronic pain patients. In their study, the HADS' anxiety and depression scale scores were found to be significantly correlated with other measures of physical, emotional and social functioning. Although, no studies were found to specifically assess the psychometric properties of the HADS with chronic pain patients, in a review, Bjelland et al. (2002) concluded that the HADS “performed well in assessing the symptom severity and caseness of anxiety disorders and depression in both somatic, psychiatric, primary care patients and the general population”.

In a review of studies, Bjelland (2002) explained that the HADS had adequate discriminant and concurrent validity with correlations with other measures of depression being between .49 and .83. See Table 2, for internal consistency of scales in published research and in the current study.

**Distance walked in 5 minutes**

The 5-minute walk is a frequently used measure of physical functioning in PMP’s (Main & Spanswick, 2000). It involves asking the patient to walk up and down a corridor for 5 minutes, while the distance walked (in metres) is measured by the physiotherapist. Patients have the opportunity to use aids if needed. Harding et al. (1994) found that the 5-minute walk had excellent reliability, was highly correlated with the 10-minute walk and was acceptable to both chronic pain patients and assessors. Alongside, being a useful measure to assess progress on PMP’s, Harding et al. (1994) noted that a further advantage
of this measure is its simplicity, making it a worthwhile clinical tool that patients can use to monitor their own progress. Simmonds et al. (1998) noted that this measure is particularly useful as it measures both endurance and speed and suggested that it may be most sensitive to change in comparison with other measures of physical functioning.

**Other potential confounds**

In line with the unpublished study conducted by Rankin (2001), pain intensity and demographic variables were also monitored, to examine their influence as potential confounds.

**Pain intensity**

A numerical rating scale was used to measure patients' current level of pain intensity. In line with the methods used by Jensen, Turner & Romano (1994b), participants were asked to: “circle the appropriate number that represents how much pain you feel right now”. An 11-point scale was used with 0 representing “no pain” and 10 representing “pain is as bad as it could be”. Jensen, Turner & Romano (1994b) found that an 11-point scale provides a sufficient level of discrimination for chronic pain patients to describe their current level of pain intensity.

**Demographic information (potential confounding variables)**

In line with previous researchers (Hobro et al., 2004; Nicholas & Asghari, 2006; Rankin, 2001), participants' duration of chronic pain from its onset, participants' age, participants' gender, participants' employment status and participants' diagnostic status were measured to control for any possible influences they might have on pain beliefs, acceptance and catastrophizing. In an effort to describe the sample, information was also collected in relation to the number of operations patients previously had and the most frequently reported pain sites.
Ethical approval

Ethical approval was obtained for this study from the local ethics committee (see Appendix II). The university ethics committee (see Appendix III) and the local NHS Trust research office (see Appendix IV) also provided their approval. In line with ethical procedures, participants were given at least 24 hours’ notice to decide if they wished to participate. This was given by posting all potential PMP attendees an invitation letter (see Appendix V) and an information sheet containing details of the study (see Appendix VI). Participants were then approached by the lead researcher on the first day of the PMP and were provided with verbal information about the study. PMP staff were also provided with an information sheet about the study (see Appendix VII).

Procedure

All participants completed a written consent form (see Appendix VIII). Participants were invited to complete a questionnaire at two time points (i.e. baseline measure was taken on the first day of the PMP and the end of intervention measure was taken on the last day of the PMP). Participants completed the questionnaires independently of the researcher on both occasions. The 5-minute walk tests were carried out in the presence of the physiotherapist as per routine (at the start and end of the PMP).

Description of the intervention

Participants enrolled on a 3-week intensive group PMP, specifically designed for patients with long term pain. The intervention was based on cognitive behavioural principles and aimed to teach patients a range of strategies to help them self manage their pain and their associated problems. The intervention was delivered by a multi-disciplinary team including a Clinical Psychologist, a Physiotherapist, an Occupational Therapist and a Nurse.

The Clinical Psychologist’s role focused on the following: helping participants manage distress and improve self esteem through CBT techniques; improving communication
skills; introducing the concept of goal setting; and exploring self-management of pain in an effort to encourage participants to make and maintain changes.

The Occupational Therapist’s input was broadly aimed at helping people carry out routine activities by developing their skills in pacing, prioritising, problem-solving practical problems and maintaining good posture, positioning, seating, moving and handling.

The Physiotherapist’s input encompassed the following: helping participants increase their fitness and stamina and manage their fear of movement through stretches, circuits and hydrotherapy; teaching participants the difference between acute and chronic pain, the Gate Control Theory; and helping them understand their diagnosis and recognise the difference between pain and injury.

The Nurse provided relaxation sessions and advice and support regarding medication use.

**A-priori power analyses**

The power analysis was undertaken using medium effect sizes, as documented by Cohen (1992). For instance for $r=0.3$, two-tailed test, $\alpha = 0.05$, power = 0.8 - sample size was calculated as 82. For a one-tailed test the sample size was calculated as 64. This is a conservative estimate because it is not based on other studies.

To investigate changes in scores from baseline to the end of the PMP, paired t-tests were planned. The power analysis for this calculation was undertaken using tables from Howell (1997) and data from the unpublished study by Rankin (2001). From the unpublished study by Rankin (2001), the difference between means was calculated as 0.5 while the standard deviation was estimated as 1. It was calculated that 31 participants would be needed for sufficient power (i.e. 0.8) in this calculation. For a medium size effect, Howell (1997) documented that 32 participants would be needed to perform this calculation.
Statistical analyses

Hypothesis 3 will be explored using paired t-tests. For Hypotheses 1, 2 & 4; relationships between beliefs and ways of responding to chronic pain (i.e. acceptance and catastrophizing) will be initially examined using Pearson Product Moment zero order correlations. Pearson correlation will also be used to investigate relationships between outcome measures and background variables with acceptance and catastrophizing. Hierarchical multiple regression analysis will then be employed to investigate the predictors of catastrophizing and acceptance (using acceptance and catastrophizing as dependent variables and beliefs, background variables and outcome measures as independent variables). Those beliefs, outcome measures and background variables initially found to correlate with acceptance and catastrophizing will be entered into the regression equation. To control for the influence of related outcome measures (e.g. depression) and background variables (e.g. pain intensity), these will be entered into block one and beliefs will be entered into block two of the equation. Furthermore, it will be investigated if beliefs act as mediators. Beliefs will be considered as potential mediators if the following criteria originally identified by Baron & Kenny (1986) as cited by Tabachnik & Fidell (2007) are fulfilled: 1) the background variable/outcome measure predicts acceptance/catastrophizing 2) beliefs are significantly related to the background variable/outcome measure 3) beliefs still predict acceptance or catastrophizing when the background variable/outcome measure is controlled for 4) the relationship between the background variable/outcome measure and catastrophizing or acceptance is reduced when beliefs are added to the equation.
Results

Analyses were conducted using the Statistical Package for Social Sciences (SPSS) Version 13.

Data screening

All of the data was examined for accuracy of data entry, missing values and fit for the assumptions of parametric statistics. Two cases were excluded from analysis as the questionnaires were deemed to be inaccurately completed.

To obtain the z-scores of skewness and kurtosis, Tabachnik & Fidell (2007) suggest dividing values of skewness and kurtosis by their corresponding standard errors. In line with the published chronic pain study conducted by Keller et al. (1997), critical z-values of 3.29 were accepted as significant skew and kurtosis. As all z-values fell under 3.29, all variables were accepted as meeting the assumption of being normally distributed except for the duration variable, which was log-transformed. (see Appendix IX for details of the skew and kurtosis of all the variables including their corresponding z scores). All data was considered to meet the assumptions for parametric statistics.

To control for Type I error rate when multiple statistics tests are used Bonferroni's correction will be applied (Tabachnik & Fidell, 2007; Field, 2005). However, Bonferroni’s correction will be used with caution to avoid Type II error (Field, 2005) and calculations with significance levels of p ≤ .01 will be accepted as providing strong evidence of a relationship.

Descriptive statistics

In describing the sample of participants; means, standard deviations, ranges and percentages were calculated for participants’ demographic and clinical characteristics. See methods section (Table 1) for demographic information. Clinical characteristics include self-report subjective measures of acceptance, catastrophizing, avoidance,
depression, anxiety, beliefs, pain intensity and an objective measure of distance walked in 5 minutes (see Table 3 below).

Table 3: Clinical characteristics

<table>
<thead>
<tr>
<th>Time</th>
<th>Scale and possible range</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>Total Acceptance (CPAQ) (0-120)</td>
<td>56</td>
<td>44.95</td>
<td>16.38</td>
<td>Low</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>49</td>
<td>53.10</td>
<td>17.43</td>
<td>Low</td>
</tr>
<tr>
<td>Baseline</td>
<td>Catastrophizing (PCS revised) (0-64)</td>
<td>56</td>
<td>37.03</td>
<td>16.15</td>
<td>Medium</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>49</td>
<td>29.14</td>
<td>16.67</td>
<td>Medium</td>
</tr>
<tr>
<td>Baseline</td>
<td>Pain intensity (0-10)</td>
<td>55</td>
<td>7.05</td>
<td>2.25</td>
<td>Medium</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>43</td>
<td>6.41</td>
<td>2.36</td>
<td>Medium</td>
</tr>
<tr>
<td>Baseline</td>
<td>Distance walked in 5 minutes</td>
<td>44</td>
<td>256.48m</td>
<td>79.19</td>
<td>n/a</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>38</td>
<td>297.11m</td>
<td>86.61</td>
<td>n/a</td>
</tr>
<tr>
<td>Baseline</td>
<td>Anxiety from HADS (0-14)</td>
<td>55</td>
<td>11.28</td>
<td>4.69</td>
<td>Clinical anxiety</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>48</td>
<td>8.02</td>
<td>4.45</td>
<td>Borderline</td>
</tr>
<tr>
<td>Baseline</td>
<td>Depression from HADS (0-14)</td>
<td>55</td>
<td>9.61</td>
<td>3.62</td>
<td>Borderline</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>48</td>
<td>7.38</td>
<td>3.91</td>
<td>Normal</td>
</tr>
<tr>
<td>Baseline</td>
<td>Avoidance subscale of PASS (0-25)</td>
<td>56</td>
<td>16.32</td>
<td>5.63</td>
<td>Medium</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>47</td>
<td>14.91</td>
<td>6.16</td>
<td>Medium</td>
</tr>
<tr>
<td>Baseline</td>
<td>Timeline acute/chronic (IPQ-R) (6-30)</td>
<td>58</td>
<td>24.19</td>
<td>3.65</td>
<td>High/chronic</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>50</td>
<td>22.81</td>
<td>5.13</td>
<td>High</td>
</tr>
<tr>
<td>Baseline</td>
<td>Timeline cyclical (IPQ-R) (4-20)</td>
<td>59</td>
<td>13.60</td>
<td>3.83</td>
<td>Medium</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>48</td>
<td>14.74</td>
<td>3.10</td>
<td>High</td>
</tr>
<tr>
<td>Baseline</td>
<td>Consequences (IPQ-R) (6-30)</td>
<td>58</td>
<td>24.01</td>
<td>3.21</td>
<td>High</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>50</td>
<td>21.92</td>
<td>4.05</td>
<td>Medium</td>
</tr>
<tr>
<td>Baseline</td>
<td>Personal Control (IPQ-R) (6-30)</td>
<td>58</td>
<td>19.45</td>
<td>4.57</td>
<td>Medium</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>50</td>
<td>20.81</td>
<td>4.36</td>
<td>Medium</td>
</tr>
<tr>
<td>Baseline</td>
<td>Treatment Control (IPQ-R) (5-25)</td>
<td>58</td>
<td>15.44</td>
<td>2.85</td>
<td>Medium</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>48</td>
<td>15.51</td>
<td>3.37</td>
<td>Medium</td>
</tr>
<tr>
<td>Baseline</td>
<td>Illness coherence (IPQ-R) (5-25)</td>
<td>56</td>
<td>14.99</td>
<td>4.84</td>
<td>Medium</td>
</tr>
<tr>
<td>End</td>
<td></td>
<td>48</td>
<td>17.77</td>
<td>5.13</td>
<td>Medium</td>
</tr>
</tbody>
</table>
In describing the sample, participants’ scores were assigned a qualitative rating in accordance with the position the mean fell on the scale when taking the number of items and level of items into account. For example, for the IPQ-R, participants’ scores for each item ranged from 1 (strongly disagree) to 5 (strongly agree). The emotional representation subscale is a six item scale with participants’ possible range of responses varying from six to thirty. On this basis, the mean was considered to be in the low range if it was $\geq 6$ and $<14$, medium range if it was $\geq 14$ and $<22$ and it was considered to be within the high range if it was $\geq 22$ and $\leq 30$. As shown by Table 3, at baseline participants were deemed to have high scores on timeline acute/chronic, consequences, emotional representation, identity and re-injury beliefs. This indicated that at baseline, participants’ had strongly held beliefs about the chronicity of their pain, the negative consequences associated with their pain, the extent to which they had strong emotional responses to their pain, the number of symptoms attributed to their chronic pain and that pain signified an injury and exercise needed to be averted as a result. Participants had medium level beliefs in timeline cyclical, personal control, treatment control and illness coherence. This implies that participants had less strongly held beliefs in the cyclical nature of their pain, in the degree of personal and treatment control over their pain and in terms of their personal understanding of their pain. Furthermore, re-injury beliefs, emotional representation beliefs and consequences beliefs reduced from high to medium and timeline cyclical beliefs increased from medium to high, from baseline to the end of the intervention.
Relationships between baseline demographic variables and baseline acceptance and catastrophizing

Pearson correlations and mean comparisons were undertaken to determine whether any of the demographic variables were significantly related to baseline acceptance and catastrophizing.

Catastrophizing and acceptance were unrelated to participants’ age, gender, employment status, duration of chronic pain and diagnostic status. Participants who received a diagnosis appeared to have fared more positively on all the measures in comparison to those who had not received a diagnosis but did not differ significantly on measures of acceptance and catastrophizing (see Appendix X).

Exploring baseline acceptance, catastrophizing and beliefs

Table 4 presents Pearson correlations investigating the relationship between catastrophizing and acceptance with avoidance, pain intensity, anxiety and depression.

Acceptance

As evidenced by Table 4 below, acceptance appeared to be unrelated to pain intensity and anxiety but it was significantly related to depression and avoidance, with medium effect sizes.

Catastrophizing

Participants' level of catastrophizing was unrelated to their pain intensity. However, participants' level of catastrophizing was significantly related to avoidance, anxiety and depression levels with high effect sizes (see Table 4).

All effect sizes for Pearson Product Moment correlations were judged using parameters set by Cohen (1992): small effect size = .1, medium effect size = .3, large effect size = .5.
Table 4: Correlation matrix assessing covariate relationships

<table>
<thead>
<tr>
<th></th>
<th>Avoidance</th>
<th>Pain Intensity</th>
<th>Anxiety</th>
<th>Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>p*</td>
<td>r</td>
<td>p*</td>
</tr>
<tr>
<td>Catastrophizing</td>
<td>.51</td>
<td>.000*</td>
<td>.23</td>
<td>.105</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.43</td>
<td>.001*</td>
<td>.05</td>
<td>.731</td>
</tr>
</tbody>
</table>

* Bonferroni adjusted significance level, p ≤ .05/8 = .006.

a Two-tailed significance test.

Beliefs

Interrelationships between beliefs were also explored (see Table 5). The belief that chronic pain entailed serious consequences was positively related to chronic timeline beliefs, emotional representation beliefs and re-injury beliefs. Emotional representation beliefs were also positively related to re-injury beliefs and negatively related to illness coherence beliefs. Personal control beliefs were positively correlated with treatment control beliefs and negatively correlated with strong pain identity. Similarly, treatment control beliefs were negatively correlated with strong pain identity. The evidence to support a negative relationship between treatment control and re-injury and chronic timeline beliefs was not as strong with medium and low effect sizes respectively, significant at p ≤ .05. There was a positive relationship between illness coherence beliefs and treatment control beliefs but this was also a medium effect size that was significant at p ≤ .05.
### Table 5: Correlation matrix exploring interrelationships between beliefs

<table>
<thead>
<tr>
<th></th>
<th>Timeline (chronic)</th>
<th>Timeline cyclical</th>
<th>Consequences</th>
<th>Personal Control</th>
<th>Treatment Control</th>
<th>Illness Coherence</th>
<th>Emotional Representation</th>
<th>Re-injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeline cyclical</td>
<td>r 0.15</td>
<td>p 0.277</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>r 0.42</td>
<td>p 0.001***</td>
<td>0.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consequences</td>
<td>r 0.27</td>
<td>p 0.974</td>
<td>0.08</td>
<td>-0.24</td>
<td>0.59</td>
<td>0.000***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal control</td>
<td>r 0.00</td>
<td>p 0.426</td>
<td>0.06</td>
<td>-0.23</td>
<td>0.23</td>
<td>0.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Control</td>
<td>r -0.27</td>
<td>p 0.540</td>
<td>0.075</td>
<td>0.037*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illness Coherence</td>
<td>r 0.11</td>
<td>p 0.463</td>
<td>0.638</td>
<td>-0.23</td>
<td>0.23</td>
<td>0.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Representation</td>
<td>r 0.00</td>
<td>p 0.978</td>
<td>0.116</td>
<td>0.56</td>
<td>-0.19</td>
<td>-0.18</td>
<td>-0.53</td>
<td></td>
</tr>
<tr>
<td>Re-injury</td>
<td>r -0.01</td>
<td>p 0.960</td>
<td>0.941</td>
<td>0.36</td>
<td>-0.15</td>
<td>-0.13</td>
<td>-0.32</td>
<td>0.59</td>
</tr>
<tr>
<td>Identity</td>
<td>r 0.07</td>
<td>p 0.602</td>
<td>0.135</td>
<td>0.274</td>
<td>0.008**</td>
<td>0.001***</td>
<td>0.433</td>
<td>0.866</td>
</tr>
</tbody>
</table>

*** Significant at p ≤ 0.001: Bonferroni adjusted significance level – 0.05/35 = 0.001

** Significant at p ≤ 0.01

* Significant at p ≤ 0.05
Investigating Hypothesis 1: At baseline, pain related beliefs will be significantly related to acceptance and catastrophizing

Pearson correlations were undertaken to investigate this hypothesis (see Table 6).

Table 6: Correlations between catastrophizing, acceptance and beliefs.

<table>
<thead>
<tr>
<th></th>
<th>Catastrophizing</th>
<th>Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong></td>
<td><strong>r</strong></td>
<td><strong>Sig. (1 tail)</strong></td>
</tr>
<tr>
<td>Timeline acute/chronic</td>
<td>.15</td>
<td>.143</td>
</tr>
<tr>
<td>Timeline cyclical</td>
<td>.01</td>
<td>.478</td>
</tr>
<tr>
<td>Consequences</td>
<td>.42</td>
<td>.001***</td>
</tr>
<tr>
<td>Personal control</td>
<td>-.39</td>
<td>.001***</td>
</tr>
<tr>
<td>Treatment control</td>
<td>-.39</td>
<td>.002***</td>
</tr>
<tr>
<td>Illness coherence</td>
<td>-.38</td>
<td>.002***</td>
</tr>
<tr>
<td>Emotional representation</td>
<td>.64</td>
<td>.000***</td>
</tr>
<tr>
<td>Identity</td>
<td>.43</td>
<td>.000***</td>
</tr>
<tr>
<td>Fear of movement/re-injury</td>
<td>.58</td>
<td>.000***</td>
</tr>
<tr>
<td>Catastrophizing</td>
<td>.42</td>
<td>.001***</td>
</tr>
</tbody>
</table>

*** Bonferroni adjusted level, 0.05/19 = p ≤ .003.
** Significant at p ≤ .01
* Significant at p ≤ .05

**Acceptance**

As illustrated by Table 6, the predictions that acceptance would be negatively correlated with consequences beliefs, re-injury beliefs and emotional representation beliefs were upheld. Support for the hypothesis that personal control was positively related to acceptance was not very strong. This relationship had a low effect size and was significant at p ≤ .05. The hypotheses that timeline acute/chronic and identity would be negatively correlated with acceptance were not supported. Furthermore, the predictions
that treatment control, illness coherence and timeline cyclical would be positively correlated with acceptance were not upheld.

**Predicting baseline acceptance using hierarchical regression**

Related outcome measures were entered in the first and second block and beliefs were entered in the third block. The resultant regression equation predicted 38% of the variance in baseline acceptance ($R^2 = .38$). As illustrated by Table 6a, depression predicted 23% of the variance in acceptance. Avoidance predicted 9% of the variance and although beliefs added 6% to the variance in acceptance; this influence was not significant. In terms of beliefs, consequences belief appeared to be the only belief approaching significance when avoidance and depression were accounted for.

**Table 6a: Hierarchical regression using acceptance as the dependent variable**

<table>
<thead>
<tr>
<th>Block</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>65.92</td>
<td>5.69</td>
<td>11.58</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>-2.18</td>
<td>0.56</td>
<td>-0.48</td>
<td>-3.93</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>76.28</td>
<td>6.83</td>
<td>11.16</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>-1.74</td>
<td>0.56</td>
<td>-0.39</td>
<td>-3.13</td>
</tr>
<tr>
<td></td>
<td>Avoidance</td>
<td>-0.89</td>
<td>0.36</td>
<td>-0.31</td>
<td>-2.49</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>105.17</td>
<td>14.79</td>
<td>7.11</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>-1.22</td>
<td>0.62</td>
<td>-0.27</td>
<td>-1.98</td>
</tr>
<tr>
<td></td>
<td>Avoidance</td>
<td>-0.84</td>
<td>0.39</td>
<td>-0.29</td>
<td>-2.15</td>
</tr>
<tr>
<td></td>
<td>Consequences beliefs</td>
<td>-1.40</td>
<td>0.74</td>
<td>-0.27</td>
<td>-1.90</td>
</tr>
<tr>
<td></td>
<td>Emotional Representation beliefs</td>
<td>0.10</td>
<td>0.66</td>
<td>0.03</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>Re-injury beliefs</td>
<td>-0.19</td>
<td>0.50</td>
<td>-0.05</td>
<td>-0.38</td>
</tr>
</tbody>
</table>

Note: Model: $R^2 = .38$.

- Step 1: $R^2 = .232$, $p = .000$.
- Step 2: $R^2$ change = .085, $p = .016$.
- Step 3: $R^2$ change = .064, $p = .195$. 

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In support of Hypothesis 1, catastrophizing was positively correlated with consequences beliefs, emotional representation beliefs, identity beliefs and re-injury beliefs. Furthermore, catastrophizing was negatively related to personal control beliefs, treatment control beliefs and illness coherence. Contrary to predictions, catastrophizing was not related to timeline acute/chronic beliefs and timeline cyclical beliefs (see Table 6).

**Predicting baseline catastrophizing using hierarchical regression**

The regression equation predicted 75% of the variance in baseline catastrophizing. As illustrated by Table 6b, depression and anxiety predicted 34% of the variance in catastrophizing and avoidance predicted 11% of the variance. Beliefs predicted 30% of the variance over and above the influence of anxiety, depression and avoidance. Closer analysis of Block 1 in Table 6b revealed that anxiety, rather than depression was significantly predictive of catastrophizing. Block 2 revealed that avoidance significantly predicted catastrophizing. Block 3 revealed that the relationship between anxiety and catastrophizing is partially mediated by beliefs. Furthermore, identity beliefs, re-injury beliefs and avoidance independently predicted catastrophizing.

**Table 6b: Hierarchical regression with catastrophizing as the dependent variable.**

<table>
<thead>
<tr>
<th>Block</th>
<th>(Constant)</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>11.53</td>
<td>5.49</td>
<td>2.100</td>
<td>.041</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>1.33</td>
<td>0.56</td>
<td>0.39</td>
<td>2.385</td>
<td>.021</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>1.09</td>
<td>0.72</td>
<td>0.24</td>
<td>1.505</td>
<td>.139</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>0.35</td>
<td>6.22</td>
<td>0.057</td>
<td>.955</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>1.13</td>
<td>0.52</td>
<td>0.33</td>
<td>2.174</td>
<td>.035</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>0.78</td>
<td>0.68</td>
<td>0.18</td>
<td>1.155</td>
<td>.254</td>
</tr>
<tr>
<td></td>
<td>Avoidance</td>
<td>1.01</td>
<td>0.33</td>
<td>0.35</td>
<td>3.094</td>
<td>.003</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>-46.26</td>
<td>18.26</td>
<td>-2.534</td>
<td>.015</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>0.79</td>
<td>0.44</td>
<td>0.23</td>
<td>1.796</td>
<td>.080</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>0.01</td>
<td>0.61</td>
<td>0.00</td>
<td>0.021</td>
<td>.983</td>
</tr>
<tr>
<td></td>
<td>Avoidance</td>
<td>0.76</td>
<td>0.26</td>
<td>0.27</td>
<td>2.879</td>
<td>.006</td>
</tr>
</tbody>
</table>
Investigating Hypothesis 2: Baseline beliefs predict end acceptance and catastrophizing.

To test this hypothesis, Pearson correlations were undertaken.

Table 7: Correlation matrix of significant relationships between baseline beliefs and end acceptance and catastrophizing.

<table>
<thead>
<tr>
<th>Baseline Beliefs</th>
<th>Consequences</th>
<th>Personal Control</th>
<th>Emotional Representation</th>
<th>Re-Injury</th>
<th>Identity</th>
<th>Treatment Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance at end of intervention</td>
<td>r</td>
<td>-0.42</td>
<td>0.39</td>
<td>-0.46</td>
<td>-0.46</td>
<td>-</td>
</tr>
<tr>
<td>p</td>
<td>0.005**</td>
<td>0.012*</td>
<td>0.002**</td>
<td>0.002**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N</td>
<td>41</td>
<td>41</td>
<td>42</td>
<td>42</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Catastrophizing at end of programme</td>
<td>r</td>
<td>-</td>
<td>-0.47</td>
<td>0.49</td>
<td>0.524</td>
<td>0.398</td>
</tr>
<tr>
<td>p</td>
<td>0.002**</td>
<td>0.001**</td>
<td>0.000**</td>
<td>0.005**</td>
<td>0.010*</td>
<td>0.005**</td>
</tr>
<tr>
<td>N</td>
<td>-</td>
<td>41</td>
<td>42</td>
<td>42</td>
<td>41</td>
<td>41</td>
</tr>
</tbody>
</table>

**Bonferroni adjusted Significance level = p = .05/7 = p ≤ .007.
* Significant at p ≤ .01.
Acceptance

As illustrated by Table 7 above, acceptance at the end of the intervention was significantly negatively related to baseline consequences beliefs, emotional representation beliefs and re-injury beliefs. Acceptance at the end of the intervention was positively associated with personal controls beliefs at baseline.

Predicting end acceptance using hierarchical regression

Baseline depression and avoidance were entered in the first block as they were found to be significantly related to end acceptance scores, $r = -0.54$, $p < 0.001$ and $r = -0.43$, $p < 0.005$, respectively. Baseline pain related beliefs were entered in the second block.

Baseline factors predicted 52% of the variance in end acceptance levels. As demonstrated by Table 7a, baseline depression and avoidance significantly predict 37% of the variance in acceptance at the end. Although, baseline pain related beliefs predict 15% of the variance in acceptance measured at the end of the programme, they did not add a significant amount of variance to the model ($p = 0.06$). However, the relationship between baseline depression and avoidance with end acceptance is mediated by beliefs. Furthermore, low baseline beliefs in personal control appear to be a significant unique predictor of low acceptance when all the other variables are accounted for (see Table 7a).

Indeed, beliefs predicted 41% of the variance in end acceptance when they were entered into Block One. Again, personal control emerged as a significant predictor, which was only marginally mediated by depression and avoidance (see Appendix XI).
Table 7a: Hierarchical regression using acceptance levels at the end of the programme as the dependent variable.

<table>
<thead>
<tr>
<th>Block</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>B</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>88.42</td>
<td>10.70</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td>8.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>-2.15</td>
<td>-0.45</td>
<td>-3.19</td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td>0.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avoidance</td>
<td>-0.90</td>
<td>-0.29</td>
<td>-2.08</td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td>0.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>95.42</td>
<td>4.97</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td>19.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>-1.27</td>
<td>-0.26</td>
<td>-1.72</td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td>0.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avoidance</td>
<td>-0.75</td>
<td>-0.24</td>
<td>-1.69</td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td>0.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consequences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Belief</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Representation</td>
<td>0.47</td>
<td>0.12</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Re-injury</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Belief</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baseline</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Model: $R^2 = .517$.

Step 1: $R^2 = .365$, $F = 10.35$, $p = .000$

Step 2: $R^2$ change = .152, $F$ change = 2.53, $p = .060$
Catastrophizing
In support of Hypothesis 2, baseline beliefs were related to end catastrophizing. As demonstrated by Table 7, catastrophizing at the end of the intervention was significantly correlated with baseline identity beliefs, emotional representation beliefs, re-injury beliefs, personal control and treatment control beliefs.

Predicting end catastrophizing using hierarchical regression
End catastrophizing was significantly related to baseline anxiety (r = .421, p = .008), baseline depression (.572, p = .000) and baseline pain intensity (r = .430, p =.006). Consequently, baseline pain intensity, depression and anxiety were entered in the first block. The baseline pain related beliefs that were significantly correlated (p < .01) with end catastrophizing were entered in the second block (see Table 7b).

The model predicted 65% of the variance in end catastrophizing. Baseline beliefs significantly predicted 19% of the variance in end catastrophizing after controlling for baseline pain intensity, anxiety and depression. Baseline beliefs appear to be mediating the relationship between baseline pain intensity and end catastrophizing. Both depression and re-injury beliefs appear to independently contribute variance to end catastrophizing levels.
**Table 7b: Hierarchical regression using end catastrophizing as the dependent variable.**

<table>
<thead>
<tr>
<th>Block</th>
<th>Block</th>
<th>End catastrophizing</th>
<th>B</th>
<th>Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Baseline</td>
<td></td>
<td>End catastrophizing</td>
<td>-13.75</td>
<td>8.62</td>
<td>-1.59</td>
<td>.120</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pain intensity</td>
<td>2.69</td>
<td>0.95</td>
<td>0.36</td>
<td>2.83</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anxiety</td>
<td>0.43</td>
<td>0.63</td>
<td>0.12</td>
<td>0.69</td>
<td>.498</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depression</td>
<td>1.98</td>
<td>0.83</td>
<td>0.43</td>
<td>2.39</td>
<td>.022</td>
</tr>
<tr>
<td>2 Baseline</td>
<td></td>
<td>End catastrophizing</td>
<td>-24.14</td>
<td>23.32</td>
<td>-1.04</td>
<td>.309</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pain intensity</td>
<td>1.35</td>
<td>1.12</td>
<td>0.18</td>
<td>1.20</td>
<td>.238</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anxiety</td>
<td>-0.32</td>
<td>0.59</td>
<td>-0.09</td>
<td>-0.55</td>
<td>.585</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depression</td>
<td>1.74</td>
<td>0.75</td>
<td>0.38</td>
<td>2.31</td>
<td>.028</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Re-injury</td>
<td>1.13</td>
<td>0.50</td>
<td>0.31</td>
<td>2.26</td>
<td>.031</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emotional Representation</td>
<td>0.55</td>
<td>0.60</td>
<td>0.14</td>
<td>0.92</td>
<td>.367</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal control</td>
<td>-0.64</td>
<td>0.50</td>
<td>-0.18</td>
<td>-1.28</td>
<td>.212</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment control</td>
<td>-0.19</td>
<td>0.84</td>
<td>-0.03</td>
<td>-0.23</td>
<td>.819</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identity</td>
<td>1.56</td>
<td>1.64</td>
<td>0.14</td>
<td>0.95</td>
<td>.348</td>
</tr>
</tbody>
</table>

Note: Model: $R^2 = .646$.  
Step 1: $R^2 = .453, F = 9.68, p = .000$  
Step 2: $R^2$ Change = .193, $F$ Change = 3.27, $p = .018$.  

**Investigating Hypothesis 3**: Participants will experience significant changes in acceptance, catastrophizing and outcome measures from baseline to the end of the intervention.  
Paired t-tests were employed to investigate this hypothesis (see Table 8).
Table 8: Paired T-Tests

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>t</th>
<th>Sig. (2-tailed)</th>
<th>Effect size r</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Catastrophizing (PCS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catastrophizing (Total revised PCS)</td>
<td>40</td>
<td>5.077</td>
<td>.000***</td>
<td>.63</td>
</tr>
<tr>
<td>Ruminatiion subscale</td>
<td>41</td>
<td>3.822</td>
<td>.000***</td>
<td>.52</td>
</tr>
<tr>
<td>Magnification revised subscale</td>
<td>41</td>
<td>3.217</td>
<td>.003***</td>
<td>.45</td>
</tr>
<tr>
<td>Helplessness subscale</td>
<td>41</td>
<td>4.503</td>
<td>.000***</td>
<td>.58</td>
</tr>
<tr>
<td><strong>Acceptance (CPAQ)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance (Total CPAQ)</td>
<td>40</td>
<td>-3.977</td>
<td>.000***</td>
<td>.54</td>
</tr>
<tr>
<td>Activity Engagement</td>
<td>40</td>
<td>-4.168</td>
<td>.000***</td>
<td>.55</td>
</tr>
<tr>
<td>Pain willingness</td>
<td>41</td>
<td>-2.453</td>
<td>.019*</td>
<td>.36</td>
</tr>
<tr>
<td><strong>Anxiety / Depression (HADS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety (HADS)</td>
<td>38</td>
<td>4.338</td>
<td>.000***</td>
<td>.58</td>
</tr>
<tr>
<td>Depression (HADS)</td>
<td>38</td>
<td>5.342</td>
<td>.000***</td>
<td>.67</td>
</tr>
<tr>
<td><strong>Avoidance subscale of the PASS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td>39</td>
<td>0.840</td>
<td>.406 ns</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Beliefs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timeline acute/chronic (IPQ-R)</td>
<td>42</td>
<td>2.000</td>
<td>.052 *</td>
<td>.31</td>
</tr>
<tr>
<td>Timeline cyclical (IPQ-R)</td>
<td>42</td>
<td>-3.418</td>
<td>.001***</td>
<td>.47</td>
</tr>
<tr>
<td>Consequences (IPQ-R)</td>
<td>42</td>
<td>3.505</td>
<td>.001***</td>
<td>.48</td>
</tr>
<tr>
<td>Personal control (IPQ-R)</td>
<td>42</td>
<td>-2.447</td>
<td>.019*</td>
<td>.36</td>
</tr>
<tr>
<td>Treatment control (IPQ-R)</td>
<td>41</td>
<td>-0.022</td>
<td>.983 ns</td>
<td>n/a</td>
</tr>
<tr>
<td>Illness coherence (IPQ-R)</td>
<td>39</td>
<td>-4.346</td>
<td>.000***</td>
<td>.58</td>
</tr>
<tr>
<td>Emotional representation (IPQ-R)</td>
<td>42</td>
<td>2.604</td>
<td>.013**</td>
<td>.38</td>
</tr>
<tr>
<td>Identity (Brief IPQ-R)</td>
<td>39</td>
<td>1.986</td>
<td>.054*</td>
<td>.31</td>
</tr>
<tr>
<td>Re-injury (TSK)</td>
<td>42</td>
<td>4.576</td>
<td>.000***</td>
<td>.58</td>
</tr>
<tr>
<td><strong>Physiotherapy assessments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance walked in five minutes (metres)</td>
<td>35</td>
<td>-5.47</td>
<td>.000***</td>
<td>.68</td>
</tr>
<tr>
<td>Pain intensity</td>
<td>34</td>
<td>1.617</td>
<td>.115 ns</td>
<td>n/a</td>
</tr>
</tbody>
</table>

***Bonferroni adjusted significance level ≤ .006

* Effect sizes were calculated using r conversions, as directed by Field (2005).
As illustrated by Table 8 above, there were significant changes on many of the variables from the start to the end of the intervention.

In summary, in line with hypothesis 3, there was a significant increase in acceptance, cyclical timeline beliefs, illness coherence beliefs and in distance walked in 5 minutes from the start to the end of the programme. However, there was no significant change in treatment control beliefs and although there was an increase in personal control beliefs, this was significant at $p \leq .05$ level, with a medium effect size. Contrary to predictions that participants' timeline beliefs would increase in chronicity, they actually decreased, albeit marginally ($p \leq .05$, medium effect size).

Predictions regarding a significant decrease in participants' level of catastrophizing, anxiety, depression, consequences beliefs, emotional representation beliefs and re-injury beliefs were upheld. Similarly, whilst there was a decrease in identity beliefs, this decrease showed a medium effect size and was significant at the .05 level. Contrary to predictions made, there was no significant decrease in participants' level of avoidance (see Table 8).

**Investigating Hypothesis 4: Changes in beliefs are associated with changes in acceptance and catastrophizing.**

Pearson correlations were undertaken to investigate associations between belief change scores and acceptance and catastrophizing change scores.
Table 9: Correlation matrix presenting significant relationships between change scores.

<table>
<thead>
<tr>
<th>Beliefs</th>
<th>Consequences change</th>
<th>Illness coherence change</th>
<th>Emotional representation change</th>
<th>Re-injury change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catastrophizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td>r</td>
<td>p</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.46</td>
<td>.003***</td>
<td>.48</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-.35</td>
<td>.030*</td>
<td>-.54</td>
<td>-.41</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.002***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>39</td>
<td>38</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td>r</td>
<td>p</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-.38</td>
<td>.018*</td>
<td>-.54</td>
<td>-.41</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.000***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>39</td>
<td></td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

***Bonferroni adjusted significance level, p = .05/11 = p < .005.

** p ≤ .01.

* p ≤ .05.

Acceptance

In line with predictions from hypothesis 4, changes in acceptance were significantly related to changes in beliefs. Specifically, increases in acceptances were significantly related to a decrease in emotional representation and re-injury beliefs. The evidence to support the association between changes in acceptance and changes in consequences belief was not as strong. This association had a medium effect size and was significant at p ≤ .05.

Predicting changes in acceptance using hierarchical regression

Hierarchical regression was employed to determine whether belief change scores could predict acceptance change scores when related outcome measures were controlled for\(^{10}\). Changes in depression were significantly correlated with changes in acceptance, \(r = -.433\), \(p = .008\). Consequently, changes in depression were entered in the first block and changes in beliefs were entered in the second block. The model predicted 35% of the variance in

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\(^{10}\) To decrease noise and increase power in the model, only those variables significantly correlated with acceptance at p ≤ .01 were entered.
changes to acceptance. Beliefs significantly predicted 17% of the variance in changes to acceptance after controlling for changes in depression.

Analyses of Table 9a revealed that the relationship between changes to depression and changes in acceptance is mediated by changes in beliefs. Changes to emotional representation beliefs significantly predicted changes in acceptance independent of changes in depression.
Table 9a: Hierarchical multiple regression using changes in acceptance as the dependent variable

<table>
<thead>
<tr>
<th>Block</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-3.74</td>
<td>2.99</td>
<td>-1.25</td>
<td>0.219</td>
</tr>
<tr>
<td></td>
<td>Depression change</td>
<td>-2.08</td>
<td>0.75</td>
<td>-0.43</td>
<td>-2.80</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>-2.85</td>
<td>2.94</td>
<td>-0.97</td>
<td>0.340</td>
</tr>
<tr>
<td></td>
<td>Depression change</td>
<td>-1.00</td>
<td>0.78</td>
<td>-0.21</td>
<td>-1.28</td>
</tr>
<tr>
<td></td>
<td>Emotional Representation belief change</td>
<td>-1.38</td>
<td>0.67</td>
<td>-0.37</td>
<td>-2.06</td>
</tr>
<tr>
<td></td>
<td>Re-injury belief change</td>
<td>-0.47</td>
<td>0.51</td>
<td>-0.15</td>
<td>-0.91</td>
</tr>
</tbody>
</table>

Note: Model: R Square = .352
Step 1: R Square = .187, F = 7.82, p = .008
Step 2: R Square Change = .165, F Change = 4.08, p = .026

Catastrophizing
In support of hypothesis 4, Table 9 shows that changes in beliefs were related to changes in catastrophizing. Specifically, decreases in consequences beliefs and emotional representation beliefs were significantly related to decreases in catastrophizing. There was less strong evidence to support the association between decreases in catastrophizing and increases in the illness coherence beliefs (significant at p ≤ .05 with a medium effect size).

Predicting catastrophizing using hierarchical regression
Changes in depression and anxiety were found to be significantly correlated with changes in catastrophizing, r = .623, p ≤ .000 and r = .563, p ≤ .000, respectively. Furthermore, changes in avoidance were significantly correlated with changes in catastrophizing, r = .423, p ≤ .008. Therefore, anxiety, depression and avoidance were controlled for in the
first block. As illustrated by Table 9b, 54% of the variance in catastrophizing was accounted for by the model. Changes in depression appeared to be the only outcome measure that was significantly influencing changes to catastrophizing. Although, changes in beliefs predicted 9% of the variance in changes to catastrophizing, this did not reach significance. However, closer analysis of Table 9b revealed that beliefs at least partially mediated the relationship between changes in depression and changes in catastrophizing. It would appear that a change in consequences belief may be influencing both changes to depression and changes to catastrophizing as this belief significantly predicted changes to catastrophizing independent of the other variables.

Furthermore, when beliefs were entered in the first block, they significantly predicted 34% of the variance in end catastrophizing. In addition, changes to the belief that pain entailed serious consequences significantly predicted changes in catastrophizing when depression, anxiety and avoidance were accounted for (see Appendix XII).
### Table 9b: Hierarchical regression using change in catastrophizing as the dependent variable

<table>
<thead>
<tr>
<th>Block</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression change</td>
<td>3.51</td>
<td>2.11</td>
<td>1.66</td>
<td>0.106</td>
</tr>
<tr>
<td>Anxiety change</td>
<td>1.70</td>
<td>0.80</td>
<td>0.43</td>
<td>2.14</td>
</tr>
<tr>
<td>Avoidance change</td>
<td>0.45</td>
<td>0.58</td>
<td>0.16</td>
<td>0.78</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression change</td>
<td>2.50</td>
<td>2.05</td>
<td>1.22</td>
<td>0.232</td>
</tr>
<tr>
<td>Anxiety change</td>
<td>1.43</td>
<td>0.77</td>
<td>0.36</td>
<td>1.85</td>
</tr>
<tr>
<td>Avoidance change</td>
<td>0.22</td>
<td>0.55</td>
<td>0.08</td>
<td>0.39</td>
</tr>
<tr>
<td>Consequences change</td>
<td>0.38</td>
<td>0.27</td>
<td>0.19</td>
<td>1.39</td>
</tr>
<tr>
<td>Emotional Representation change</td>
<td>0.85</td>
<td>0.42</td>
<td>0.27</td>
<td>2.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.46</td>
<td>0.45</td>
<td>0.15</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note: Model: R Square = .54.

Step 1: R Square = .449, F = 8.69, p = .000.

Discussion

A brief discussion of baseline explorations of acceptance, catastrophizing and beliefs will be followed by a summary of the findings in accordance with the a priori hypotheses. To determine the clinical utility of the findings, the practical implications will be addressed. This will be followed by an account of the strengths and limitations of the study in an attempt to guide future research.

Initial exploration of the baseline data revealed consistencies with previous research. In line with previous research (McCracken, 1998; McCracken & Eccleston, 2003; McCracken & Eccleston, 2005; McCracken et al, 1999; Nicholas & Asghari, 2006) baseline acceptance scores were related to depression, avoidance and catastrophizing. Furthermore, acceptance was unrelated to pain intensity, reiterating that high acceptance was not simply a function of the subjective experience of low pain levels.

In conflict with previous research (see Sullivan et al., 2001 for a review), catastrophizing was unrelated to pain intensity, suggesting that at the beginning of treatment, participants reported limited associations between catastrophizing and the noxious experience of pain. It is likely that the lack of association was due to the pain intensity measure used (this will be addressed in strengths and limitations section). Instead, catastrophizing was more strongly associated with the psychological and behavioural concomitants of the pain experience as evidenced by its significant relationships with anxiety, depression and avoidance. Indeed, the significant relationships between catastrophizing with avoidance, depression and anxiety indicates partial support for the fear avoidance model developed by Vlaeyen et al. (1995), which posits a link between catastrophizing, avoidance and subsequent depression and disability. This model will be revisited when the a priori hypotheses are explored.

The beliefs assessed by the IPQ-R in the current study at baseline were within one standard deviation of the chronic pain sample reported by Moss-Morris et al. (2002). An
exploration of the interrelationships between the beliefs revealed that, consistent with Moss-Morris et al. (2002), personal control and treatment control beliefs were positively related to each other. As patients who enrolled on this study had done so on the basis that medical treatments had already been completed, perhaps the belief in treatment control was with reference to the self management programme, reflecting a degree of hope in their own ability to learn new skills to manage their pain, which may be suggestive of having an internal sense of control.

Consistent with Moss-Morris et al. (2002), there was an inverse relationship between illness coherence and emotional representation beliefs and there was evidence to support positive relationships amongst the more pessimistic beliefs. For instance, those who believed their pain entailed serious consequences also believed they had negative emotional responses to their pain and that their pain faced a chronic timeline. Moss-Morris et al. (2002) understood identity beliefs in a positive light. However, consistent with Weinman et al. (1996), this study revealed that a strong pain identity had negative connotations as evidenced by its inverse associations with personal and treatment control. This study added to previous research by examining the relationships between the beliefs assessed by the IPQ-R with re-injury beliefs (i.e. pain is due to injury and consequently movement and exercises need to be avoided to avert re-injury). In line with clinical intuition, results indicate that re-injury beliefs were positively related to the belief that pain entailed serious consequences and that pain is accompanied by strong emotional responses.

**Hypothesis 1: Baseline relationships**

*Acceptance*

The current study sought to explore relationships between acceptance and beliefs at baseline. Simple zero order correlations supported some of the predictions. Specifically, low acceptance was related to strong beliefs that chronic pain entailed serious consequences and strong beliefs that chronic pain was accompanied by emotional responses. This concurs with a study conducted by Rankin & Holtum (2003), where low
acceptance was associated with serious perceived consequences. However, baseline regression analysis revealed that beliefs did not significantly predict acceptance when the influence of avoidance and depression were accounted for. The finding that acceptance is unrelated to beliefs, is in line with McCracken's (2005) acceptance conceptualisation. McCracken, (2005) pp. 112 stated that acceptance can be achieved by “people [doing] what they want even if they do not think or believe they can or even if they think that they cannot”.

Catastrophizing

In support of Hypothesis 1, catastrophizing was positively related to negative beliefs such as serious perceived consequences, perceived negative emotional responses, strong pain identity and high re-injury beliefs and negatively related to positive beliefs such as personal control, treatment control and illness coherence. Crisson & Keefe (1988) also found that individuals who believed they had control over their pain had less of a tendency to catastrophize. Interestingly, participants' beliefs about the chronicity of their pain and the cyclical nature of their pain were not related to the tendency to catastrophize. This is in contrast with research conducted by Williams et al. (1994) who found a positive association between catastrophizing and the belief that pain was permanent and mysterious. This may have been due in part to the difference in the measures used or partly to the difference in mean duration of each sample (9.88 years in the current study as compared to 35 months in Williams et al.'s 1994 study). However, it is important to note that the duration of scores was negatively skewed in the present study.

Contrary to early criticisms by Sullivan & D'Eon, (1990) stating that catastrophizing was so similar to depression it should not be examined separately, this study revealed that catastrophizing could be understood as a construct with its own set of predictor variables independent of depression. The belief that a large number of symptoms are associated with chronic pain (identity belief) was found to be a particularly important predictor of baseline catastrophizing alongside avoidance: There was also an indication that the belief that pain is due to injury and exercise should be avoided to avert re-injury (re-injury
belief) was an independent predictor of baseline catastrophizing. This may suggest that the fear-avoidance model (Vlaeyen, et al., 1995), which incorporates the latter belief, could be enhanced by including identity beliefs. However, it is important to note that the identity measure used in this study has limitations (as described in a later section) and therefore, the findings relating to it should be interpreted with caution. The results, however, may also suggest a revision of the part of Vlaeyen’s model that predicts catastrophizing. The revised model may propose that the pain experience, gives rise to avoidance, anxiety and re-injury and identity beliefs, which all contribute to catastrophizing. Furthermore, the relationship between anxiety and catastrophizing was partially mediated by avoidance and beliefs (see Figure 3 below).

Figure 3: Illustration of the relationship between baseline catastrophizing relationships.

Hypothesis 2: Baseline predictors of outcome

Acceptance
There was some support for the hypothesis that baseline beliefs predicted end acceptance levels. Initial correlations revealed that end acceptance levels were related to baseline consequences beliefs, emotional representation beliefs, personal control beliefs and re-injury beliefs. Using regression analysis it was found that whilst baseline depression and avoidance predicted 37% of the variance in end acceptance levels, beliefs did not significantly add to the regression equation. However, we could tentatively conclude that baseline personal control beliefs independently predicted end acceptance when all the variables were accounted for. This may suggest that low beliefs in personal control over
pain at the start of the programme may place patients at risk of having low acceptance levels at the end of the PMP.

Taking this finding together with the finding that personal control beliefs were related to treatment control beliefs at baseline, may suggest that having a degree of personal belief in one's own ability to influence the pain experience may help participants be more open to adopting self-management strategies. Indeed, believing in one's own ability to adopt self-management strategies is particularly important because "patients who perceive themselves to be lacking the capacity to acquire self-management skills might be less persistent, more prone to frustration and more apt to be non-compliant with treatment" (DeGood & Shutty, 1992 as cited by Main & Spanswick, 2000).

Subsequently, openness to adopting self-management strategies is likely to help the individual foster an accepting attitude, whereby they engage in valued activities or exercises despite pain. This finding is somewhat in line with the acceptance based literature, which suggests that a degree of behavioural control is needed for patients to be able to identify actions that they value and be guided by these values as opposed to being guided by moment to moment feelings and thoughts, which may otherwise prevent them from pursuing what they want (Hayes et al., 2004). Furthermore, Sirois et al. (2006) found that when patients maintained the belief that one can control severe tinnitus symptoms, the symptoms were less distressing and patients continued to pursue valued activities in the face of symptoms.

However, Hayes et al. (2004) argued that believing one has control over pain is counterproductive in the development of acceptance, especially when one is faced with pain they cannot influence. It is likely that the above finding not only reflects beliefs about having personal control over pain but also reflects the belief that an individual can exert control over their lives, instead of control coming by chance or from external sources. Future research could explore whether the belief that one can exert control over their lives (internal locus of control) predicts acceptance. It should be noted that the above
finding should be interpreted with caution as this calculation is slightly under powered .75 as opposed to .8, as recommended by Cohen (1992).

**Catastrophizing**

The hypothesis that beliefs at the start of the programme are related to catastrophizing at the end of the programme was supported. Initial zero order correlations revealed that end catastrophizing was negatively correlated with baseline measures of personal control beliefs, treatment control beliefs and positively correlated with identity beliefs, emotional representation beliefs and re-injury beliefs. After controlling for the influence of baseline depression, anxiety and pain intensity, the regression analysis indicated that beliefs predicted 19% of the variance in end catastrophizing levels. The relationship between baseline pain intensity and end catastrophizing was mediated by beliefs. Indeed, there was some evidence to suggest that high depression and strong re-injury beliefs at the start of the PMP, may indicate a risk of having high catastrophizing at the end of a PMP. Klenerman *et al.* (1995) also found that high levels of re-injury beliefs were strong predictors of outcome at 2 and 12 month follow up for patients attending their GP for acute back pain. The finding is also congruent with the plethora of research that has found a link between fear-avoidance beliefs and catastrophizing (e.g. Cook *et al.*, 2006; Vlaeyen & Linton, 2000; Vlaeyen *et al.*, 1995).

Whilst analysing the association between baseline beliefs and end levels of catastrophizing and acceptance may provide an indication of baseline predictors of outcome. It provides limited information in relation to baseline predictors of those who benefit (experience changes in catastrophizing and acceptance) from the programme. The use of change scores rather than end scores may therefore have been a better dependent variable for this hypothesis.

**Hypothesis 3: Impact of the PMP**

The results support the hypothesis that levels of acceptance increased through participation in the programme. This finding is consistent with previous research by
Rankin (2001) who found significant shifts in acceptance through a CBT based multidisciplinary programme, using a measure that focused on the acceptance of loss and a process of changes in values. As cited by McCracken (2005), Geisser (1992) also found that patients who engaged in a CBT multi-disciplinary PMP experienced changes in acceptance to a similar degree to those who engaged in an acceptance-based approach. The finding that acceptance increases with a CBT based PMP is particularly important in light of recent criticism towards traditional CBT. McCracken (2005) expressed concern that the emphasis in CBT on controlling feelings through changing or controlling thinking may be counterproductive to developing acceptance in chronic conditions such as chronic pain which is largely out of the individual’s control. However, as suggested by McCracken (2005) it is likely that to achieve acceptance, patients need to initially experience a degree of control before giving up the struggle for control. The earlier finding that low baseline personal control beliefs predict low acceptance for patients at the end of the PMP also offers support for this notion.

However, if PMPs place comparatively more emphasis on developing skills to control pain or thinking over the development of skills designed to help patients simply notice pain non-judgementally (mindfulness approach), they may run the risk of not increasing patients ability to tolerate pain and hence fail to encourage the development of acceptance. Indeed, closer analysis of the changes in the subscales of the acceptance measure revealed that participants reported significant increases in their engagement in activities despite the experience of pain. However, the evidence for changes to pain willingness (the willingness to experience pain in the relative absence of attempts to avoid or control pain), although significant (p ≤ .05) was not that strong as it yielded a medium effect size compared to the large effect size observed in changes in the other variables. In addition, there was no significant change in patients’ reports of their tendency to avoid pain. Taken together, these findings may suggest one of two things; they may simply suggest that patients take on the advice of the PMP clinicians who encourage them to maintain a balanced level of activities, whilst avoiding pushing into high levels of pain, or they may suggest that the programme is not fully equipping
patients with the skills to relinquish control over pain by noticing it non-judgementally and tolerating it.

The hypothesis that catastrophizing would decrease through participation in the programme was supported. Alongside a significant decrease in full-scale catastrophizing levels, there were significant decreases in the different elements of catastrophizing such as rumination, magnification and helplessness cognitions. Changes in catastrophizing through CBT for chronic pain have also been noted in the literature (Morley et al., 1999; Turner et al., 2007; Jensen et al., 2001).

The hypothesis that beliefs changed through participation in the programme was upheld. In line with previous research (Turner et al., 2007; Jensen et al., 2001) and the expected direction of the results, there were significant decreases in re-injury beliefs and in the belief that pain entails serious consequences. There was some evidence to support the notion that personal control beliefs increased. The results also showed strong evidence to support the idea that at the end of the programme, patients had increased understanding of their pain and believed their pain to take a more cyclical timeline. There was less strong evidence to suggest that participants attributed fewer symptoms to their pain and had less strongly held beliefs about pain being accompanied by negative emotions.

In contrast with the prediction that participants would develop a belief that their pain was chronic in nature, there was some evidence to suggest that participants believed their pain to be slightly less chronic in nature at the end of the programme. This finding may be due to the programme instilling hope in a group of people who already had pain for a long duration (majority had pain for 2-10 years). Unfortunately, believing one’s pain to be more acute in nature, may make the development of acceptance more difficult when the patient has evidence to the contrary (i.e. when their pain is actually chronic). This point is particularly pertinent in light of the finding that acceptance was positively correlated with the belief that pain would not change (Viane et al. 2003).
Changes in beliefs, catastrophizing and acceptance were accompanied by significant changes in outcome measures such as increases in the distance walked in 5 minutes and decreases in anxiety and depression. These changes support previous studies assessing the outcome of CBT based PMPs (Morley et al., 1999; Rankin, 2001; Williams et al., 1993).

**Hypothesis 4: Mechanisms of change**

*Acceptance*

In exploring the mechanisms of change, hypothesis 4 was supported as changes in acceptance were correlated with changes in beliefs. Specifically, an increase in acceptance was associated with a decrease in the belief that pain entails negative emotions and a decrease in the belief that pain signals an injury and that exercise should be avoided to avert re-injury. Furthermore, when changes in depression levels were controlled for, there was some evidence to indicate that changes to beliefs significantly contributed 17% of the variance in changes to acceptance. Specifically, the findings implied that a reduced tendency to believe that pain was accompanied by strong emotional responses may have been associated with an increase in acceptance levels. This may indicate that the move towards acceptance of pain is facilitated by a view that pain is more benign because it is not accompanied by strong emotions. This finding should also be interpreted with caution because the power of the calculation is .66 as opposed to .8 as recommended by Tabachnick & Fiddell (2007).

Whilst the results of Hypothesis 1 suggest that depression and not beliefs predict acceptance for people at the start of the programme, the above finding suggests that when changes start to take place (i.e. relief in depression symptoms through behaviour activation), changes to depression and acceptance are further influenced by changes to beliefs. In order to understand this finding, it is important to revisit the differences between CBT and ACT. Whilst CBT is aimed at modifying the content of beliefs, ACT posits that acceptance is achieved through changing one’s relationship with one’s thoughts or feelings by viewing thoughts as thoughts rather than a reflection of reality or
a reason for action (Hayes et al., 2004). However, this in my view requires a dramatic shift in the content of a patient’s belief system, which is in line with CBT approaches. Specifically, it requires a change in one’s belief that thoughts ‘are’ reasons for action to changing one’s belief that they are ‘not’ reasons for action and ‘are not’ reflections of reality. Although, this shift in one’s belief system is not targeted directly in ACT, it should be acknowledged that it occurs through the process of developing acceptance as defined by ACT.

Indeed, the above findings may offer support for the notion that changes to acceptance can be achieved through changes to the content of one’s beliefs. However, it remains unclear whether changes to the belief that pain is accompanied by negative emotions was targeted directly in the PMP under investigation or indirectly by instigating changes to one’s actual emotional responses to pain. Patients’ emotional responses to pain may actually become less negative because the programme provided patients with the skills to engage in valued activities, thereby resulting in a shift in one’s belief regarding the emotional repercussions of pain. This might indicate that the PMP may not induce changes in acceptance for those patients who already developed the physical skills to manage their pain but still need to process the emotions generated by it. It is also important to acknowledge that 64% of the variance in acceptance was not accounted for in the model and further research could explore the mechanisms of changes to acceptance in greater depth with a larger sample size.

**Catastrophizing**

There was some evidence to support the hypothesis that changes in catastrophizing would be associated with changes in beliefs from the start to the end of the PMP. Correlational analysis showed that decreases in catastrophizing were associated with decreases in the belief that pain entails serious consequences and decreases in the belief that pain is accompanied by negative emotional responses. There was also some evidence to support the view that decreases in catastrophizing were linked with increases in one’s understanding of their chronic pain.
Regression analysis revealed that changes in depression, anxiety and avoidance significantly predicted 45% of the variance in changes to catastrophizing levels. And after controlling for the influence of changes to depression, anxiety and avoidance, changes in beliefs only predicted 9% of the variance in changes to catastrophizing and this was significant at $p = .06$. However when depression, anxiety, avoidance and beliefs were accounted for, we could tentatively conclude that changes to the belief that pain entails serious consequences significantly contributed unique variance to changes in catastrophizing. Furthermore, when beliefs were entered in the first block they predicted 34% of the variance in changes to catastrophizing, and consequences belief emerged again as a unique independent predictor when depression and avoidance were accounted for.

Again, it appears as though the mechanisms of change are different to what we would expect from findings taken at the start of the programme. At baseline, identity beliefs and re-injury beliefs predicted catastrophizing, but changes in these beliefs did not appear to be significantly related to changes in catastrophizing from the start to the end of the PMP. Instead, there was some evidence to suggest that changes in serious perceived consequences beliefs were predictive of changes to catastrophizing. This finding is also in line with clinical intuition. As the programme involves engagement in exercises, it is likely that this allowed patients to see that having chronic pain did not necessarily imply a curtailment of valued activities, which would result in a loosening of the belief that pain entailed many serious consequences. Intuitively, reduction in this belief would in turn decrease the person’s likelihood to engaging in catastrophic interpretations when pain is experienced. It is possible that the belief that pain entails serious consequences is a more global belief that incorporates the view that movement should be avoided. Although previous research has not examined consequences belief using the IPQ-R, it has previously been found that changes to the belief that one is disabled by pain results in decreases in catastrophizing (Turner et al., 2007; Jensen et al., 2001). It should be noted that this finding should also be interpreted with caution as the power of this calculation was below .66 which is below the recommended level of .8 (see Tabachnik & Fiddell,
It is possible that investigation with a larger sample size would yield stronger evidence for the association between changes in consequences belief and changes in catastrophizing.

**Implications for clinical practice**

CBT based multi-disciplinary PMPs are based on the underlying philosophy that challenging a patient's beliefs about their pain will influence how they behave and respond to their pain experience (Main & Spanswick, 2000). While much research has established CBT as efficacious, (Morley et al., 1999), many have argued that further studies are needed to understand the specific processes of change in order to customise pain treatments (e.g. Turk, 1990; Morley, 2004). Consequently, in addressing the relationship between beliefs and functioning in a multi-disciplinary CBT based PMP this study has many practical implications.

The study reiterated the findings of previous research by clarifying that psychological factors such as acceptance and catastrophizing are particularly important features of patients' adjustment to chronic pain. Furthermore, as catastrophizing and acceptance were found to change on a CBT based multi-disciplinary programme, their continued measurement is advised. The analysis also revealed that beliefs are not stable characteristics as suggested by Lau (1982) but are factors that are amenable to change through participation in a 3-week multi-disciplinary CBT based PMP.

It is important to note, however, that there was no change in avoidance of pain through participation in the programme and the evidence for a change in patients' willingness to experience pain while relinquishing control efforts was not as strong as the evidence that patients engaged in more activities despite pain. In addition, patients' timeline beliefs became marginally more acute towards the end of the programme. Taken together, these findings may suggest that whilst the PMP was instilling hope in patients and equipping them with skills to manage their pain, it may have, to a lesser degree been helping patients to relinquish control over pain by simply noticing it non-judgementally and
tolerating it (as in mindfulness practice). The findings may therefore indicate that the inclusion of mindfulness techniques alongside traditional CBT methods would be a useful path to helping patients develop the skills to tolerate pain (see Hayes et al., 2004; McCracken, 2005).

The relationship between beliefs, acceptance and catastrophizing at baseline differed from the mechanisms of change in acceptance and catastrophizing. For instance, although beliefs did not predict acceptance at the start of the programme, the results implied that changes to emotional representation beliefs predicted changes to acceptance through participation in the PMP. Furthermore, whilst identity and re-injury beliefs predicted catastrophizing at baseline, the results provided an indication that changes to consequences belief predicted changes in catastrophizing from the start to the end of the PMP. This finding is clinically relevant as it may suggest that targeting those beliefs specifically linked to catastrophizing or acceptance at the start, may not be particularly important for changing acceptance or catastrophizing levels once patients engage in the multi-disciplinary programme. On the basis of these findings one can also hypothesise that if programmes target patients’ emotional representation beliefs, changes to acceptance may follow. These changes might be achieved through a combination of occupational and physiotherapy skills alongside classic CBT methods such as cognitive restructuring and behavioural experiments that challenge the view that pain is accompanied by negative emotions. For others, who perhaps already developed these skills, longer term work focused on processing its emotional repercussions may be needed before acceptance can be fostered.

In addition, the findings may suggest that targeting the belief that pain entails serious consequences is likely to result in a decrease in patients’ tendency to catastrophize when faced with pain. These findings concur with previous research (Lipchik et al., 1993; Turner et al., 2007; Walsh & Radcliffe, 2002) by offering continued support for the CBT approach, which suggests that changes in beliefs/thoughts are linked with changes in patients’ adjustment to chronic pain.
Furthermore, as suggested by Turner et al., (2007), knowledge about those patient characteristics that predict outcome in CBT programmes could help target the intervention to patients’ characteristics and direct resources to those who would most benefit. There was some evidence to suggest that baseline re-injury beliefs and baseline depression predicted end catastrophizing. Based on these findings it is hypothesised that benefits from the PMP could be maximised if it targeted those patients with high baseline depression levels and re-injury beliefs. Furthermore, the findings offered the tentative conclusion that baseline depression and personal control beliefs predicted end acceptance. This may indicate that professionals could focus on alleviating depression through behavioural activation techniques and fostering a sense of personal control to increase the likelihood of helping those patients with low baseline personal control and high baseline depression levels to adopt self-management strategies and develop acceptance of their pain.

The results of this study also suggest that elements of the CSM can be usefully employed to extend our understanding of the components of catastrophizing and acceptance. The following beliefs emerged as being important determinants of patients’ psychological adjustment; consequences beliefs, re-injury beliefs, identity beliefs, emotional representation beliefs, personal control beliefs and illness coherence beliefs. Although changes to illness coherence, identity beliefs and re-injury beliefs did not independently predict changes in catastrophizing or acceptance, it is likely that changes in these beliefs may produce non-specific changes in associated variables such as changes in avoidance, depression and/or anxiety. Therefore, targeting these beliefs is also considered important.

This research has increased our understanding of acceptance, catastrophizing and beliefs and the mechanisms of change in CBT for chronic pain, as discussed above. In addition, acceptance, beliefs and catastrophizing are of relevance to adjustment in various conditions. Furthermore, CBT is the recommended treatment for many conditions (e.g. anxiety and schizophrenia) (NICE, 2002; 2005). To this end, the findings may have far reaching implications for other conditions in which these concepts are considered.
Strengths, limitations and future research

The main strength of the study lies in its practical utility as described above. Although previous research has established the importance of beliefs and catastrophizing as mediators of change to outcomes, this is the first study to extend our understanding of catastrophizing and acceptance (as measured by the CPAQ) by looking at their associations with beliefs. A major strength of this study also lies in the fact that it used a theoretical background (CSM of self regulation – Leventhal, 1970) to assess the beliefs that people develop in response to pain and this is in contrast to previous pain belief research. The study also utilised a prospective design, which facilitated the analysis of both relationships between variables at one point in time and the mechanisms of change on a multi-disciplinary CBT based PMP. The measures used showed good internal consistency. Another strength lies in the fact that although findings varied in terms of their power, all analyses benefited from at least medium levels of power and medium effect sizes, and in the majority of cases, results yielded strong effect sizes and were adequately powered. In the context of a time and resource limited Major Research Project, this can be viewed as a considerable strength.

However, limitations of the study should be noted. Firstly, given that this study was performed in the context of an existing treatment programme, the inclusion of a control condition was not practical. Furthermore, the questionnaires were administered on the first day of the pain management programme and the last day of the pain management programme. This may limit our view of the changes instigated by contact with PMP professionals, especially since changes begin to occur in the waiting period between the first assessment and the start of the PMP (Rankin, 2001). Furthermore, the absence of follow-up data does not expand our knowledge of long term outcomes, thereby limiting the ecological validity of the study. Further research using pre, post and follow-up measures with control conditions to investigate changes in beliefs using the IPQ-R and changes in acceptance on a traditional CBT based multi-disciplinary programme could be informative.
Demographic measures were taken to assess their relationship with the study variables. However, information about patients' ethnicity was not obtained and it appears to have been overlooked in the majority of previous studies. However, on reflection, taking a measure of ethnicity would have added to the study, especially since pain beliefs are shaped by our social and cultural worlds (Peacock & Wilson, 2004).

As stated earlier, the study failed to find a relationship between catastrophizing and pain intensity and this may have been due to the measure of pain intensity used. To obtain an accurate measure of pain intensity, multiple measures should be taken throughout a time period and averaged (Main & Spanswick, 2000). The measure used in this study required patients to provide a rating of pain intensity at one point in time.

As stated previously, the measure of identity used in this study has possible limitations. The composite measure used in this study required participants to rate "how much [they] experience symptoms from [their] chronic pain" from "no symptoms at all" (0) to "many severe symptoms" (10). Similar to the IPQ-R, the measure used in this study may tap into whether participants attribute a great deal of unrelated symptoms to their chronic pain. On the other hand, however, this measure may be tapping into the severity of one's condition, with those participants who actually have more widespread pain in many parts of their body scoring high on identity. The confusion around this measure was further highlighted by the fact that it appeared to be the only measure that required its meaning to be clarified by the researcher. In recognition that it is difficult to decipher how participants were responding to the identity measure, related conclusions should be interpreted with caution. A replication of the study using the identity measure from the IPQ-R would provide further clarity around the role of identity beliefs in chronic pain.

In relation to the IPQ-R, the use of the treatment subscale is questionable as the word "treatment" is an ambiguous term and its specificity is likely to be improved upon if the word "treatment" was substituted for the word "self management programme". In addition, the personal control subscale only assesses patients' beliefs about personal
control over pain; further research could investigate if patients’ general beliefs about their own ability to influence their lives (internal sense of control) are related to their level of catastrophizing and acceptance.

To measure re-injury beliefs in this study, five items were taken from the Tampa Scale of Kinesiophobia (Woby et al., 2005). Although the re-injury belief scale used in this study showed high internal consistency and its predicted associations with catastrophizing provide some evidence of its validity, further psychometric assessment of these items would be beneficial to confirm its psychometric properties.

A further limitation was the sample size, which appeared to limit the power of the multiple regressions undertaken in hypothesis 2 and 4. Replication of this study is needed with a larger sample size.

In the main, this study investigated associations between beliefs and the full scale scores of acceptance and catastrophizing. Further research exploring relationships between beliefs and the components of acceptance and catastrophizing would provide more detailed analysis of these constructs. For instance, as some theorists have referred to the components of catastrophizing as primary or secondary appraisals (as cited by Sullivan et al. 2001), an investigation of the relationship between catastrophizing components and beliefs would facilitate refinement of this theoretical stance. The current study only provided a partial test of the CSM, by looking at the relationship between beliefs and responses to pain. Further research could provide a full test of this model’s applicability to the chronic pain field by exploring the mediation effects of catastrophizing and acceptance on the relationships between beliefs and outcomes.
Concluding remarks

The primary aim of this study was to extend our understanding of acceptance and catastrophizing by investigating their relationships with beliefs within the framework of the CSM. Through extending our understanding of these constructs, this research has provided both a unique and important contribution to the chronic pain literature. The study answers important questions of relevance to CBT where changes to beliefs are understood as one of the main mechanisms of change. Indeed, the finding that changes in beliefs are related to changes in acceptance and catastrophizing offers support for the continued application of CBT principles in chronic pain. Not only does this study have many practical implications for chronic pain, its findings could also potentially be of relevance to other conditions where acceptance, catastrophizing, beliefs and CBT are considered.
References


Major Research Project


Appendix I: Questionnaire (edited to include function and title of measures)
Questionnaire

Please fill in the following background details (circle as appropriate)

Age: .............................................. Male / Female

Do you have a diagnosis for your chronic pain? Yes No

If Yes – what is that diagnosis? ___________________________________________

Employment status – please circle

- Full time
- Part time
- Unemployed
- Sick
- Housekeeper
- Student
- Retired
- Medical retirement

Where is your pain? ........................................................................................................

How long have you had your pain for? ........................................................................

No. of operations for this problem? ..............................................................................

Pain Intensity measure

Please circle the appropriate number that represents how much pain you feel right now?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
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</tbody>
</table>

Pain

How frequently do you experience symptoms from your chronic pain?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td></td>
<td></td>
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</tbody>
</table>

All of the time
Identity Measure (Brief Illness Perception Questionnaire)

How much do you experience symptoms from your chronic pain?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No symptoms at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Many severe symptoms</td>
</tr>
</tbody>
</table>

Beliefs about Causes Measure (Brief Illness Perception Questionnaire)

Please list in rank order the three most important factors that you believe caused your chronic pain. The most important causes for me are:

1. ____________________________

2. ____________________________

3. ____________________________

Pain Beliefs Measure (Illness Perception Questionnaire Revised)

We are interested in your own personal views of how you now see your Chronic Pain. Note CP = Chronic Pain.

Please indicate how much you agree or disagree with the following statements about your chronic pain by ticking the appropriate box.

<table>
<thead>
<tr>
<th>Views about CP</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 My CP will last a short time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 My CP is likely to be permanent rather than temporary</td>
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<tr>
<td>3 My CP will last for a long time</td>
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<tr>
<td>4 This CP will pass quickly</td>
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<tr>
<td>5 I expect to have this CP for the rest of my life</td>
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<tr>
<td>6 My CP is a serious condition</td>
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<td></td>
<td>Major Research Project</td>
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<tr>
<td>7</td>
<td>My CP has major consequences on my life</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>My CP does not have much effect on my life</td>
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<tr>
<td>9</td>
<td>My CP strongly affects the way others see me</td>
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<tr>
<td>10</td>
<td>My CP has serious financial consequences</td>
<td></td>
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<tr>
<td>11</td>
<td>My CP causes difficulties for those who are close to me</td>
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<tr>
<td>12</td>
<td>There is a lot which I can do to control my symptoms</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>What I do can determine whether my CP gets better or worse</td>
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<tr>
<td>14</td>
<td>The course of my CP depends on me</td>
<td></td>
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<tr>
<td>15</td>
<td>Nothing I do will affect my CP</td>
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<tr>
<td>16</td>
<td>I have the power to influence my CP</td>
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<tr>
<td>17</td>
<td>My actions will have no effect on the outcome of my CP</td>
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<tr>
<td>18</td>
<td>My CP will improve in time</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>19</td>
<td>There is very little that can be done to improve my CP</td>
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<tr>
<td>20</td>
<td>My treatment will be effective in curing my CP</td>
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<tr>
<td>21</td>
<td>The negative effects of my CP can be prevented (avoided) by my treatment</td>
<td></td>
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<tr>
<td>22</td>
<td>My treatment can control my CP</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>23</td>
<td>There is nothing which can help my CP</td>
<td></td>
<td></td>
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<tr>
<td>24</td>
<td>The symptoms of my CP are puzzling to me</td>
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<tr>
<td>25</td>
<td>My CP is a mystery to me</td>
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<tr>
<td>26</td>
<td>I don’t understand my CP</td>
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<tr>
<td>27</td>
<td>My CP doesn’t make any sense to me</td>
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<tr>
<td>28</td>
<td>I have a clear picture of</td>
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<tr>
<td></td>
<td>Understanding of my condition</td>
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<tr>
<td>29</td>
<td>The symptoms of my CP change a great deal from day to day</td>
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<tr>
<td>30</td>
<td>My CP comes and goes in cycles</td>
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<tr>
<td>31</td>
<td>My CP is very unpredictable</td>
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<tr>
<td>32</td>
<td>I go through cycles in which my CP gets better and worse</td>
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<tr>
<td>33</td>
<td>I get depressed when I think about my CP</td>
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<tr>
<td>34</td>
<td>When I think about my CP, I get upset</td>
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<tr>
<td>35</td>
<td>My CP makes me feel angry</td>
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<tr>
<td>36</td>
<td>My CP does not worry me</td>
<td></td>
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<tr>
<td>37</td>
<td>Having this CP makes me feel anxious</td>
<td></td>
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</tr>
<tr>
<td>38</td>
<td>My CP makes me feel afraid</td>
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</tbody>
</table>

Re-injury belief measure (adapted from Tampa Scale of Kinesiophobia)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>39</td>
<td>Having CP means that something is wrong with my body, which prevents movement and exercise.</td>
</tr>
<tr>
<td>40</td>
<td>I can’t do all the things normal people do because it is too easy for me to get injured.</td>
</tr>
<tr>
<td>41</td>
<td>CP always means I have an injury.</td>
</tr>
<tr>
<td>42</td>
<td>Simply being careful that I do not make any unnecessary movements is the safest thing I can do to prevent my CP from worsening</td>
</tr>
<tr>
<td>43</td>
<td>My CP lets me know when to stop exercising so that I don’t injure myself</td>
</tr>
</tbody>
</table>
**Acceptance Measure (20-item Chronic Pain Acceptance Questionnaire)**

Below you will find a list of statements. Please rate the truth of each statement as it applies to you by circling a number. Use the following rating scale to make your choices. For instance, if you believe a statement is ‘Always True’ you would circle the 6 next to that statement.

<table>
<thead>
<tr>
<th></th>
<th>Never True</th>
<th>Very Rarely True</th>
<th>Seldom True</th>
<th>Sometimes True</th>
<th>Often True</th>
<th>Almost Always True</th>
<th>Always True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I am getting on with the business of living no matter what my level of pain is</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>My life is going well, even though I have chronic pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>It’s OK to experience pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>I would gladly sacrifice important things in my life to control this pain better</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>It’s not necessary for me to control my pain in order to handle my life well</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Although things have changed, I am living a normal life despite my chronic pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>I need to concentrate on getting rid of my pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>There are many activities I do when I feel pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>I lead a full life even though I have chronic pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>Controlling my pain is less important than other goals in my life</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>My thoughts and feelings about pain must change before I can take important steps in my life</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12.</td>
<td>Despite the pain, I am now sticking to a certain course in my life</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13.</td>
<td>Keeping my pain level under control takes</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
We are interested in the types of thoughts and feelings that you have when you are in pain. Listed below are sixteen statements describing different thoughts and feelings that may be associated with pain. Using the following scale, please indicate the degree to which you have these thoughts and feelings when you are experiencing pain.

<table>
<thead>
<tr>
<th>Rating</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning</td>
<td>Not at all</td>
<td>To a slight degree</td>
<td>To a moderate degree</td>
<td>To a great degree</td>
<td>All the time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When I’m in Pain I.......  

1. I worry all the time about whether the pain will end  
2. I feel I can’t go on.  
3. It’s terrible and I think it’s never going to get any better  
4. It’s awful and I feel that it overwhelms me  
5. I feel I can’t stand it anymore  
6. I become afraid that the pain will get worse
7. I keep thinking of other painful events.
8. I anxiously want the pain to go away.
9. I can’t seem to keep it out of my mind.
10. I keep thinking about how much it hurts.
11. I keep thinking about how badly I want the pain to stop.
12. There’s nothing I can do to reduce the intensity of the pain.
13. I wonder whether something serious may happen.

**New items added to the Pain Catastrophizing Scale**

14. I think that I might become paralyzed or more disabled.
15. I think that if my pain gets too severe it will never decrease.
16. I think if this keeps up I’ll be crippled and won’t be able to work or walk.

**Avoidance measure (Avoidance subscale of the Pain Avoidance Symptom Scale)**

We are interested in what you do when you feel pain. Please tick one of the boxes below for each item.

<table>
<thead>
<tr>
<th>Never</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I go immediately to bed when I feel severe pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I will stop any activity as soon as I sense pain coming on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. As soon as pain comes on I take medication to reduce it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

235
Anxiety and Depression Measure (Hospital Anxiety and Depression Scale)

This questionnaire is designed to help us know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have BEEN FEELING IN THE PAST WEEK. Don’t take too long over your replies; your immediate reaction to each item will probably be more accurate than a long thought-out response.

**Please tick only one box in each section**

<table>
<thead>
<tr>
<th>I feel tense or ‘wound up’:</th>
<th>I feel as if I am slowed down:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the time</td>
<td>Nearly all the time</td>
</tr>
<tr>
<td>A lot of the time</td>
<td>Very often</td>
</tr>
<tr>
<td>From time to time, occasionally</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Not at all</td>
<td>Not at all</td>
</tr>
<tr>
<td>I still enjoy the things I used to enjoy:</td>
<td>I get a sort of frightened feeling like ‘butterflies’ in the stomach</td>
</tr>
<tr>
<td>Definitely as much</td>
<td>Not at all</td>
</tr>
<tr>
<td>Not quite so much</td>
<td>Occasionally</td>
</tr>
<tr>
<td>Only a little</td>
<td>Quite often</td>
</tr>
<tr>
<td>Hardly at all</td>
<td>Very often</td>
</tr>
<tr>
<td>I get a sort of frightened feeling as if something awful is about to happen:</td>
<td></td>
</tr>
<tr>
<td>Very definitely and quite badly</td>
<td>Definitely</td>
</tr>
<tr>
<td>Yes, but not too badly</td>
<td>I don’t take as much care as I should</td>
</tr>
<tr>
<td>A little, but it doesn’t worry me</td>
<td>I may not take quite as much care</td>
</tr>
<tr>
<td>Not at all</td>
<td>I take just as much care as ever</td>
</tr>
<tr>
<td>I can laugh and see the funny side of things:</td>
<td>I feel restless as if I have to be on the move:</td>
</tr>
<tr>
<td>As much as I always could</td>
<td>Very much indeed</td>
</tr>
</tbody>
</table>
### Major Research Project

<table>
<thead>
<tr>
<th>Worrying thoughts go through my mind:</th>
<th>I look forward with enjoyment to things:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A great deal of the time</td>
<td>As much as ever I did</td>
</tr>
<tr>
<td>A lot of the time</td>
<td>Rather less than I used to</td>
</tr>
<tr>
<td>From time to time but not too often</td>
<td>Definitely less than I used to</td>
</tr>
<tr>
<td>Only occasionally</td>
<td>Hardly at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I feel cheerful:</th>
<th>I get sudden feelings of panic:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Very often indeed</td>
</tr>
<tr>
<td>Not often</td>
<td>Quite often</td>
</tr>
<tr>
<td>Sometimes</td>
<td>Not very often</td>
</tr>
<tr>
<td>Most of the time</td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I can sit at ease and feel relaxed:</th>
<th>I can enjoy a good book or radio or TV programme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely</td>
<td>Often</td>
</tr>
<tr>
<td>Usually</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Not often</td>
<td>Not often</td>
</tr>
<tr>
<td>Not at all</td>
<td>Very seldom</td>
</tr>
</tbody>
</table>

**END OF PROGRAMME** - Briefly describe in your own words, what has changed for you since the start of the pain management programme?

Thank you for completing this questionnaire, when complete please return it to Bridget Carew or Pain Management Programme staff.

*Version 1 May 2006.*
Appendix II: Letter confirming Ethical Approval from Local Ethics Committee
16 June 2006

Miss Bridget M. Carew
Trainee Clinical Psychologist
University of Surrey
Department of Psychology
School of Human Sciences
Guildford
GU2 7XH

Dear Miss Carew

Full title of study: Using the self regulatory model to explore the relationship between pain related beliefs, acceptance and catastrophising for chronic pain patients undertaking a pain management programme.

REC reference number: 06/Q0806/51

The Research Ethics Committee reviewed the above application at the meeting held on 14 June 2006.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation.

Ethical review of research sites

The Committee agreed that all sites in this study should be exempt from site-specific assessment (SSA). There is no need to complete Part C of the application form or to inform Local Research Ethics Committees (LRECs) about the research. The favourable opinion for the study applies to all sites involved in the research.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The documents reviewed and approved at the meeting were:

<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>5.1</td>
<td>26 May 2006</td>
</tr>
</tbody>
</table>
Research governance approval

You should arrange for the R&D Department at all relevant NHS care organisations to be notified that the research will be taking place, and provide a copy of the REC application, the protocol and this letter.

All researchers and research collaborators who will be participating in the research at a NHS site must obtain final research governance approval before commencing any research procedures. Where a substantive contract is not held with the care organisation, it may be necessary for an honorary contract to be issued before approval for the research can be given.

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

06/Q08065/51 Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

Committee Co-ordinator

Email

Enclosures: List of names and professions of members who were present at the meeting and those who submitted written comments

Standard approval conditions
Appendix III: Letter confirming Approval from University of Surrey Ethics Committee
12 July 2006

Ms Bridget Carew
Department of Psychology
School of Human Sciences

Dear Ms Carew

Using the self regulatory model to explore the relationship between pain related beliefs, acceptance and catastrophising for chronic pain patients undertaking a pain management programme (EC/2006/66/Psych) – FAST TRACK

On behalf of the Ethics Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the submitted protocol and supporting documentation.

Date of confirmation of ethical opinion: 12 July 2006

The list of documents reviewed and approved by the Committee under its Fast Track procedure is as follows:-

<table>
<thead>
<tr>
<th>Document</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>29/06/2006</td>
</tr>
<tr>
<td>Approval Letter from the London-Surrey Borders REC</td>
<td>16/06/2006</td>
</tr>
<tr>
<td>Research Proposal</td>
<td>05/2006</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>05/2006</td>
</tr>
<tr>
<td>Letter to Participants</td>
<td>05/2006</td>
</tr>
<tr>
<td>Information Sheet</td>
<td>05/2006</td>
</tr>
<tr>
<td>Consent Form</td>
<td>05/2006</td>
</tr>
<tr>
<td>Copy of the NHS application</td>
<td>03/2006</td>
</tr>
</tbody>
</table>

This opinion is given on the understanding that you will comply with the University's Ethical Guidelines for Teaching and Research.

The Committee should be notified of any amendments to the protocol, any adverse reactions suffered by research participants, and if the study is terminated earlier than expected with reasons.

You are asked to note that a further submission to the Ethics Committee will be required in the event that the study is not completed within five years of the above date.

Please inform me when the research has been completed.

Yours sincerely

Catherine Ashbee (Mrs)
Secretary, University Ethics Committee
Registry
Appendix IV: Letter confirming Approval from Trust Research Office
29 June 2006

Dear Miss Carew

PROJECT TITLE: Using the self regulatory model to explore the relationship between pain related beliefs, acceptance and catastrophising for chronic pain patients undertaking a pain management programme.

LREC Ref: 06/Q0806/51

This is to confirm that this research project has successfully completed the quality Assurance Procedure in accordance with Research Governance. You have Trust Approval to proceed with your project once we have received a completed copy of the enclosed start form with the correct start date.

HS Trust approval is awarded under the following conditions. All researchers are expected to comply with these conditions, and failure to do so may result in the withdrawal and/or termination of the research project.

CONDITIONS OF TRUST APPROVAL

• It is the responsibility of all researchers and NHS staff to become acquainted with the standards and regulations set out in the Research Governance Framework (2001), and to comply with these. More details can be found on the DH website.
• Researchers must practice in accordance with the Data Protection Act 1998, and all other current and relevant statutory guidance and legislation.
• Non-St. George’s Trust NHS researchers must hold a NHS Trust honorary employment contract before starting research.
• All research projects involving NHS patients and/or staff cannot proceed without approval from a research ethics committee.
• Researchers must report all cases of serious adverse events or suspected misconduct to the R&D Office.
• Researchers are obliged to notify the R&D Office of any changes to their project including status, start and end dates, staff changes, serious adverse events. From April 2004, NHS organisations will report on all systems for research governance as part of the NHS Quality Controls Assurance procedures, and these systems will be open to inspection by the DH, Strategic Health Authority and other external bodies.
• All researchers conducting projects involving NHS patients, staff and/or resources will be expected to regularly submit data to the R&D Office on the progress of their project. They will also be expected to participate in ongoing monitoring and/or auditing of research.

Please do not hesitate to contact the R&D Office should you have any queries. We wish you every success with the project.

Yours sincerely

Director of Research & Development
Appendix V: Invitation Letter
Date:

Dear ........................................,

I am writing to invite you to take part in a research study at the Pain Management Programme. Everyone that attends the Pain Management Programme has been invited to become involved in this research.

For further information about this research, please refer to the information sheet.

Please feel free to ask any questions or talk about any concerns you may have in relation to this research when you come to the Pain Management Clinic. Or contact me via email at the following address:

Yours sincerely,

Bridget Carew (Trainee Clinical Psychologist)
Dr. Victoria Senior (Lecturer – University of Surrey)
Dr. Keren Fisher (Clinical Psychologist – Pain Management Programme)

Appendix VI: Participant Information Sheet
Study title: Pain related beliefs and changes on a pain management programme.

You are invited to take part in this research study. Before you decide, please take the time to read the following information.

What is the purpose of the study?
This study is trying to understand more about people’s experiences with chronic pain and how people benefit from the pain management programme. We are interested in learning more about people’s beliefs about their pain and how beliefs change during the programme. We are also hoping to find out how people’s beliefs are related to how they respond to their chronic pain during the pain management programme. It is hoped that this research will add to our understanding of people’s chronic pain experiences and provide information for health professionals and researchers that could guide future pain management programmes.

Why have I been chosen?
We are currently asking everyone who is undertaking the Pain Management Programme to take part in this research.

Do I have to take part?
It is up to you to decide whether or not to take part. If you decide to take part you are free to withhold any personal information or to withdraw at any time, without giving a reason. This will not affect the care you receive in the pain management programme. Neither will a decision not to participate in the first place.
What would it involve?
You will be asked to complete a questionnaire at the start and the end of the pain management programme. These questionnaires will take approximately 20 to 30 minutes to complete. Also, we will ask for your permission to look at your medical notes to use some of the information taken by the physiotherapist’s assessment at the start and end of the programme. If you would be interested in the results of the study we will be happy to share them with you at a later date.

What will happen next?
When you come to the pain management programme you will be given the opportunity to ask any questions you may have about this research. If you are willing to take part you will be asked to give a signed consent form to programme staff or the researcher. You will then be given the additional questionnaires to fill in.

Will taking part effect my treatment at the pain management programme?
No. The Pain Management Programme requires you to complete questionnaires as part of the assessment procedure. The questionnaires you complete for this study will not be included as part of your assessment and therefore your responses to the questionnaires for this study will not effect your treatment in any way.

What if I become distressed?
In the unlikely event of you becoming distressed as a result of completing the questionnaires, please feel free to speak with one of the programme staff or the researcher.

How confidential will it be?
With regard to the health professionals within the Pain Management Programme The researcher and/or a member of the Pain Management Programme staff team will collect the questionnaires. Your completed questionnaire will be kept separately from your pain management programme records and will not be available to anyone who is not
involved in the research, unless you explicitly request otherwise. Your name and address will not be included on the questionnaire or on the computer when the results of the questionnaires are being analysed. Your responses are held strictly confidential, with one exception: if you say something that leads the researcher to believe that the safety of yourself or someone else is at serious risk, this information will need to be passed on to appropriate individuals. The researcher will speak with you before doing this.

What will happen to the results of the study?
The results of this study will be written-up by July 2007, and submitted to the course being undertaken by Bridget Carew at the University of Surrey in part fulfilment of her doctoral studies in Clinical Psychology. Using the consent form, you can request that a brief account of the results of the study be forwarded to you at a later date. An article about the study may be written and attempts will be made to publish it in a psychology journal. No participant will be identified in any part of the write-up or article.

Who has reviewed the study?
This study has been reviewed by Local Research Ethics Committee and by the Ethics Committee at the University of Surrey who raised no objection to it.

What if I have a complaint
If you have any complaints about your participation in this research, in the first instance please contact the Chief Investigator, Bridget Carew. The usual National Health Service complaints mechanisms should also be available to you. You may wish to seek advice from the Patient Advice and Liaison Service

Contact for further information
If you have any questions or concerns about this study, you should discuss them with: Bridget Carew (Trainee Clinical Psychologist), C/o Department of Psychology, University of Surrey, Guildford, GU2 7XH. Tel: 01483 689441. Email address:

Appendix VII: Information Sheet for Pain Management Programme

Staff
Information Sheet for Pain Management Programme Staff.

Study title: Pain related beliefs and changes on a pain management programme

What is the purpose of the study?
This study is trying to understand more about people’s experiences with chronic pain and how people benefit from the pain management programme. We are interested in learning more about people’s beliefs about their pain and how beliefs change during the programme. We are also hoping to find out how people’s beliefs are related to how they respond to their chronic pain during the pain management programme. It is hoped that this research will add to our understanding of people’s chronic pain experiences and provide information for health professionals and researchers that could guide future pain management programmes.

Who is being recruited to take part?
We are currently asking everyone who is undertaking the Pain Management Programme to take part in this research.

Do patients have to take part?
It is up to them to decide whether or not to take part. If they decide to take part they should be informed that they are free to withhold any personal information or to withdraw at any time, without giving a reason. This will not affect the care they receive in the pain management programme. Neither will a decision not to participate in the first place.

What would it involve?
Participants will be asked to complete a questionnaire at the start and the end of the pain management programme. These questionnaires will take approximately 20 to 30 minutes to complete. Also, we will ask for their permission to look at their medical notes to

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include some of the information taken by the physiotherapist's assessment at the start and end of the programme in the study.

What will happen next?
When patients come to the pain management programme they will be given the opportunity to ask questions about this research. If they are willing to take part they will be asked to give the signed consent form (as enclosed) to programme staff or the researcher. After they have signed the consent form they will be given the questionnaire to fill in.

Will taking part effect patients' treatment at the pain management programme?
No. The questionnaires they complete for this study will not be included, as part of their assessment at the Pain Management Programme and therefore their responses to the questionnaires for this study will not effect their treatment in any way.

What if participants become distressed?
In the unlikely event of participants becoming distressed as a result of completing the questionnaires, please invite them to speak with programme staff or the researcher.

How confidential will it be?
With regard to the health professionals within the Pain Management Programme
The researcher and/or a member of the Pain Management Programme staff team will collect the questionnaires. Participants completed questionnaire will be kept separately from their pain management programme records and will not be available to anyone who is not involved in the research unless they explicitly request otherwise. Participants' name and address will not be included on the questionnaire or on the computer when the results of the questionnaires are being analysed. Participants should be informed that their responses are held strictly confidential, with one exception: if they say something that leads the researcher to believe that their safety or someone else's safety is at serious risk,
this information will need to be passed on to appropriate individuals. The researcher will speak with them before doing this.

What will happen to the results of the study?
The results of this study will be written-up by July 2007, and submitted to the course being undertaken by Bridget Carew at the University of Surrey in part fulfilment of her doctoral studies in Clinical Psychology. Using the consent form, participants can request that a brief account of the results of the study be forwarded to them at a later date. An article about the study may be written and attempts will be made to publish it in a psychology journal. No participant will be identified in any part of the write-up or article.

Who has reviewed the study?
This study has been reviewed by the Local Research Ethics Committee and by the Ethics Committee at the University of Surrey who raised no objection to it.

What if participants have a complaint
Participants should be advised to contact the Chief Investigator, Bridget Carew in the first instance. The usual National Health Service complaints mechanisms should also be available to them. For example, they can be provided with Patient Advice and Liaison Service contact details

Contact for further information
Having read the information sheet, if participants have further questions or concerns about this study that programme staff find difficult to answer, they should be advised to discuss them with the researcher leading the study: Bridget Carew (Trainee Clinical Psychologist), c/o Department of Psychology, University of Surrey, Guildford, GU2 7XH. Tel: 01483 689441. Email address:
Appendix VIII: Consent Form
CONSENT FORM

Patient Identification Number for this research:
Name of Researchers: Bridget Carew, Dr. Keren Fisher & Dr. Victoria Senior.

Title of Project: Pain related beliefs and changes on a pain management programme

Please initial box

1. I confirm that I have read and understand the information sheet (version 1 May 2006) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my medical care or legal rights being affected.

3. I understand that sections of my medical notes from the pain management programme may be looked at by Bridget Carew where it is relevant to my taking part in research. I give permission for Bridget Carew to have access to my records.

4. I understand that the information I provide will be held strictly confidential.

5. I agree to take part in the above study.

6. I would like to have a brief summary of the results of the study at a later date

   Yes  No

(Please circle as appropriate)

Name of Patient  Signature  Date

Name of Person taking consent  Signature  Date
(if different from researcher)

Researcher  Signature  Date

1 copy for participant; 1 copy for researcher site file.
(Version 1 – May 2006)
Appendix IX: Skew and Kurtosis
## Appendix IX: Skew and Kurtosis of data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard Skew</th>
<th>Standard Error</th>
<th>Z Score</th>
<th>Kurtosis Score</th>
<th>Standard Error</th>
<th>Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start of Programme</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain intensity</td>
<td>-0.48</td>
<td>0.32</td>
<td>-1.50</td>
<td>-0.56</td>
<td>0.63</td>
<td>-0.89</td>
</tr>
<tr>
<td>5-minute walk</td>
<td>-0.29</td>
<td>0.36</td>
<td>-0.80</td>
<td>-0.58</td>
<td>0.70</td>
<td>-0.83</td>
</tr>
<tr>
<td>Identity</td>
<td>-0.67</td>
<td>0.31</td>
<td>-2.13</td>
<td>-0.21</td>
<td>0.62</td>
<td>-0.34</td>
</tr>
<tr>
<td>Timeline chronic</td>
<td>-0.66</td>
<td>0.31</td>
<td>-2.10</td>
<td>0.11</td>
<td>0.62</td>
<td>0.17</td>
</tr>
<tr>
<td>Timeline cyclical</td>
<td>-0.56</td>
<td>0.31</td>
<td>-1.80</td>
<td>-0.18</td>
<td>0.61</td>
<td>-0.29</td>
</tr>
<tr>
<td>Consequences</td>
<td>-0.64</td>
<td>0.31</td>
<td>-2.06</td>
<td>0.28</td>
<td>0.62</td>
<td>0.46</td>
</tr>
<tr>
<td>Personal Control</td>
<td>-0.17</td>
<td>0.31</td>
<td>-0.55</td>
<td>-0.17</td>
<td>0.62</td>
<td>-0.27</td>
</tr>
<tr>
<td>Treatment Control</td>
<td>-0.28</td>
<td>0.31</td>
<td>-0.90</td>
<td>-0.10</td>
<td>0.62</td>
<td>-0.16</td>
</tr>
<tr>
<td>Illness Coherence</td>
<td>0.17</td>
<td>0.32</td>
<td>0.53</td>
<td>-0.39</td>
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Appendix X: Independent T-Tests of Differences in accordance with
Presence/Absence of a Diagnosis
### Appendix X: Independent t-tests of differences in accordance with presence/absence of a diagnosis for baseline characteristics

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Appendix XI: Hierarchical Regression Predicting End Acceptance
Appendix XI: Hierarchical regression predicting end acceptance from baseline beliefs with beliefs entered in the first block

| Block | Std. | | | | |
|-------|-----|-----|-----|-----|
|       | B   | Error | Beta | t   | Sig. |
| 1     |     |       |     |     |     |
| (Constant) | 90.85 | 20.41 | 4.45 | 0.000 |
| Consequences | -1.62 | 0.88 | -0.30 | -1.85 | 0.072 |
| Emotional Representation | -0.31 | 0.74 | -0.08 | -0.41 | 0.684 |
| Re-injury Personal Control | -0.95 | 0.61 | -0.25 | -1.56 | 0.128 |
| Control | 1.32 | 0.52 | 0.35 | 2.53 | 0.016 |
| 2     |     |       |     |     |     |
| (Constant) | 95.42 | 19.19 | 4.97 | 0.000 |
| Consequences | -1.36 | 0.87 | -0.25 | -1.56 | 0.129 |
| Emotional Representation | 0.47 | 0.76 | 0.12 | 0.62 | 0.539 |
| Re-injury Personal Control | -0.91 | 0.58 | -0.24 | -1.58 | 0.124 |
| Depression Avoidance | -1.27 | 0.74 | -0.26 | -1.72 | 0.095 |
| Avoidance | -0.75 | 0.44 | -0.24 | -1.69 | 0.100 |

Note: Step 1: R Square = .412, F = 5.96, p = .001
Step 2: R Square change = .105, F Change = 3.49, p = .043
Appendix XII: Hierarchical Regression Predicting Changes in Catastrophizing
Appendix XII: Hierarchical regression predicting changes in catastrophizing with beliefs entered in the first block

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Note; Step 1: R Square = .34, F = 8.65, p = .001
Step 2: R Square Change = .196, F Change = 4.28, p = .013