‘Do Implementation Intentions Increase Adherence to Medication in Non-Adherent Patients Currently Taking Cholesterol Lowering Medication?’

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Volume 1

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TABLE OF CONTENTS:

Introduction to the Portfolio Volume 1:  Page 6

ACADEMIC DOSSIER:

Academic Dossier Overview  Page 7

- Adult Mental Health Essay
  Adult Mental Health Essay - main text  Pages 8-23
  Adult Mental Health Essay - references  Pages 23-26

- People with Learning Difficulties Essay
  People with Learning Difficulties Essay - main text  Pages 27-40
  People with Learning Difficulties - references  Pages 41-43

- Child and Family Essay
  Child and Family Essay - main text  Pages 44-57
  Child and Family Essay - references  Pages 58-61
  Child and Family Essay - appendices  Pages 62-71

- Older Adults Essay
  Older Adults Essay - main text  Pages 72-85
  Older Adults Essay - references  Pages 86-90

Clinical Dossier Overview  Page 91

- Summaries of all Placements:
  - Core Adult Mental Health Placement Summary  Page 92
  - Core People With Learning Disabilities Placement Summary  Page 92
  - Core Child and Family Placement Summary  Page 93
  - Core Older Adults Placement Summary  Page 93-94
  - Specialist Placement In Pain Management Summary  Page 94
  - Specialist Placement in Child and Family with HIV  Page 94

- Summaries of Five Case Reports:
  - Adult Mental Health Case Report Summary  Page 95-96
  - People With Learning Disabilities Case Report Summary  Page 97-98
  - Child and Family Case Report Summary  Page 99-100
  - Older Adults Case Report Summary  Page 101-102
  - Pain Management Case Report Summary  Page 103-104
RESEARCH DOSSIER:

Research Dossier Overview

- Research Log Book

- Service Related Research Project: Long term follow-up of the effectiveness of an eight-week outpatient Cognitive Behavioural Therapy (CBT) group for pain management.

Contents page
Acknowledgements
Abstract
Introduction
Aims and Hypothesis
Method
Results
Discussion
Conclusion
Applicability to Service
References
Appendices

Feedback to service

- Major Research Project: ‘Do Implementation Intentions increase adherence to medication in non-adherent patients currently taking Cholesterol lowering medication?’

Contents Page
Abstract
Introduction
Method:
Participants/Design
The Intervention
Measures
Procedure
Data Analysis/Reliability analysis/normal distribution/analysis

Results:
Initial Description of General Sample
Correlations in the General Sample
Adherent and Non-adherent Participants
Non-adherent population
Time 1 – Time 2

Discussion
Overview of Sample
Initial Exploration
Adherence and Medications
Exploration of the Adherent and Non-adherent Groups
main Hypothesis ‘the Intervention’
Critique
Future Research and Clinical Applications

References
Appendices
INTRODUCTION TO THE PORTFOLIO - VOLUME 1

This portfolio contains a selection of work completed as part of the PsychD in Clinical Psychology, 2000-2003. Volume 1 comprises the academic dossier, which contains four core essays; the clinical dossier which comprises descriptions and summaries of all placements undertaken and summaries of five clinical case reports; and the research dossier, which consists of a research log book, the service related research project completed in year 1 and the major research project completed in year 3.

Volume II comprises the Clinical Dossier of work completed during the PsychD in Clinical Psychology. This volume contains five case reports covering the four core placements, and a specialist placement. Placement summaries, contracts and relevant documentation; such as log books of clinical experience and placement evaluation forms are incorporated. This volume will be kept in the Psychology Department within the University of Surrey due to the confidential nature if the material.
ACADEMIC DOSSIER

OVERVIEW

This section contains four essays from the core client groups worked with and studied throughout the first two years of training. These essays critically examine the theory and practice of a range of psychological approaches with regard various issues across the life span.
ADULT MENTAL HEALTH ESSAY

Compare and Contrast Cognitive Behavioural and Psychoanalytic Concepts of Depression in Adults and Evidence Underlying Each of these Models.
Compare and Contrast Cognitive Behavioural and Psychoanalytic Concepts of Depression in Adults and Evidence Underlying Each of these Models.

Depression will initially be operationalised. Cognitive-Behavioural and Psychoanalytic models will then be described in turn examining their development and more specifically their understanding of depression. Evidence will be provided for the rationales they give. These will be confined to an adult population. Comparisons will then attempt to be drawn between the models. The main ideas will then be summarised.

Depression:
Before any understanding surrounding depression can be achieved, it must be made clear what is meant when talking of depression in a clinical context. The word ‘depression’ is frequently used in everyday language such as ‘I feel depressed today,’ or ‘Isn’t the weather depressing?’. Therefore depression is used in lay terms to describe a transient fluctuation in mood often mild, yet can also describe an extremely impairing disorder.

For the purpose of this work, the focus shall be conditions that can be diagnosed as a syndrome of depression using the Diagnostic and Statistical Manual (DSM-IV; American Psychiatric Association, 1994). Our interest will be on those meeting criteria for Major Depressive Episode, see table 1. Other aspects include: symptoms not meeting criteria for a mixed episode; symptoms not being due directly to physiological effects or a general medical condition and the symptoms not being better accounted for by bereavement. The symptoms should also cause significant impairment or distress in functioning.

Table 1: Diagnostic Criteria for Major Depressive Episode.
Diagnostic and Statistical Manual (DSM-IV; American Psychiatric Association, 1994).

<table>
<thead>
<tr>
<th>Major depressive episode</th>
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<tr>
<td>A Five or more of the following symptoms during the same 2-week period; at least one of the symptoms is depressed mood or loss of interest or pleasure.</td>
</tr>
<tr>
<td>a) depressed mood most of the day, nearly every day (as indicated by subjective report or observation by others).</td>
</tr>
<tr>
<td>b) markedly diminished interest or pleasure in all or almost all activities most of the day, nearly every day (as indicated by subjective account or observation by others).</td>
</tr>
<tr>
<td>c) significant weight loss when not dieting or weight gain (e.g. a change of more than 5% body weight in a month), or decrease in appetite nearly every day.</td>
</tr>
</tbody>
</table>
d) insomnia or hypersomnia nearly every day.
e) psychomotor agitation or retardation nearly every day (observable by others).
f) fatigue or loss of energy nearly every day.
g) feelings of worthlessness or excessive or inappropriate guilt nearly every day.
h) diminished ability to think or concentrate, or indecisiveness, nearly every day (either subjective or observed by others).
i) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

Other types of mood disorders that shall not be included for our purposes are identified as ‘dysthymic disorder’ and ‘depression not otherwise specified.’ The former comprises depressed mood of insufficient severity to meet the criteria for major depressive episode. It is characterised by low mood most of the day, for more days than not for at least two years. The latter includes pre-menstrual dysphoric disorder, minor depressive disorder and recurrent brief depression.

Major Depressive Episode is most widespread of all mood disorders. It is estimated that six to eighteen percent of the general population will experience at least one episode during their lifetime (Kessler, McGonagle, Swartz & Blazer, 1993). Over 80 percent of depressed patients have more than one depressive episode (Belsher & Costello, 1988). Women are said to be more prone to depression than men, with a ratio of two to one (Brown & Harris, 1978). As the ‘common cold of psychiatry’ (Seligman 1975), depression has been investigated from many perspectives and now two of these shall be examined in some detail.

**Cognitive Behavioural Theory**

Cognitive Behavioural theory stems back to the early part of the century with the work surrounding classical conditioning. This highlighted that responses can be learned. This was then extended to conditioned fear, relating this to humans. The prime example being ‘Little Albert’ (Watson & Raynor, 1920). Here a small child was conditioned to fear a white rat as it was paired with a loud noise. As fear is an aversive reaction, avoidance is sought to reduce it. This maintains the cycle, as the reality of the situation is never tested and confidence reduced. Therefore the therapy emerged focusing on exposure. By the 1970’s there was full emergence of behaviour therapy. The turning point came as psychological problems began to not only be conceptualised in terms of behavioural and physiological aspects but cognitive processes too.
This led to the development of perhaps the most dominant theory and subsequent therapy today, by Aaron Beck (1987, 1991). Beck trained psychoanalytically but was struck by patients negative thinking patterns, which he observed to be distortions of reality and highly dysfunctional. Thus he formulated the Cognitive Model to describe depression. Beck postulated that throughout childhood, attitudes and assumptions are formed and that these leave individuals vulnerable to certain events. If such an event occurs this will lead to the production of negative automatic thoughts. These thoughts will in turn effect and lower mood, which will increase the production of negative thoughts. A viscous cycle begins. This manifests itself in the cognitive triad comprising negative thoughts about the self, world and future. Cognitive distortions then extend over the person's daily functioning. Other cognitive changes may subsequently occur such as faulty information processing whereby the person selectively attends to information and events that confirm their negative views. The treatment rationale therefore is to help the person recognize such patterns of distorted thinking and any dysfunctional behaviour. Through collaborative systematic patient-therapist discussion and structured behavioural assignments, the patient will try to evaluate and modify them.

Other Cognitive models have emerged such as Seligman's learned helplessness model (1975). Proposing that when an individual believes no control is possible, (s)he will subsequently fail to take action and depressive symptoms will in turn be experienced. Thus the salient cognition as defined in 1989 by Abramson, Metalsky & Alloy is 'hopelessness.' Other models include Rehm's 1977 Self-Control Theory, depression occurring when one has deficits in aspects of self-regulation. Nezu (1987) focuses on problem solving deficits. Depression occurring and perpetuated by ineffective problem solving skills to cope with the stressful life event that is occurring.

For the purposes of this work the emphasis will be on Beck's Cognitive Theory. The main concepts being that negative thoughts effect mood. For the therapy to be effective evidence is needed that working on the thoughts will effect the depressed mood and therefore is an appropriate point of intersection in the cycle. More specifically, it is important to know whether there are thoughts specific to depression. Beck postulated that these surround loss and failure. Beck also proposed faulty information processing, so attention and memory in depression need investigation. Beck more recently elaborated on more causal interpretations and vulnerability to depression. These explanations include maladaptive beliefs/dysfunctional
attitudes that are latent until activated by a precipitating life event and vulnerable personality characteristics.

The following work will aim to look at research conducted to test these concepts and in effect aim to provide evidence for the Cognitive-Behavioural model of depression in adults.

**Evidence for the Cognitive-Behavioural Model**

Each of the components above will be investigated in turn with research pertaining to each concept discussed. The first and perhaps central theme within Beck’s model of depression is the reciprocal relationship between thoughts and mood. Thus the centrality of thoughts is perhaps at the crux of the cognitive behavioural model. The therapy, which stems from the theory, recognises and attempts to modify these thoughts. Therefore the descriptive claims of Beck surrounding thinking patterns in the depressed are central to Cognitive Behavioural Therapy (CBT). Evidence supporting these concepts is therefore imperative.

**Thoughts and mood**

There has been considerable empirical support for the relationship between thoughts and mood in clinical and non-clinical populations and some of these will be now be elaborated upon.

Blackburn, Jones & Lewin (1986) extended Wilkinson & Blackburn’s (1981) research. This had measured the negative interpretation for both pleasant and unpleasant situations. These situations related to the core components of Beck’s negative triad: the self, world and future. The depressed group had significantly more negative cognition’s surrounding these components that the non-depressed controls and recovered depressed group. The latter study extended this using five groups: depressed, anxious, normal controls, recovered depressed and recovered anxious. None had previously had Cognitive Therapy and all assessments were completed before start of treatment. Well validated and reliable measures were used to measure depression, anxiety and cognitive functioning. Findings differentiated the groups on all three of the severity measures. The depressed group were more depressed and more anxious than the other groups including the anxious group. The depressed scored the highest and therefore the most poorly on all measures. They were more hopeless and had more negative automatic thoughts and more dysfunctional attitudes than all other groups. Self-rated depressed mood was significantly associated with depressed thinking. Therefore this study
highlights a strong association between thinking and mood providing support for the Cognitive Behavioural Model in the understanding of depression.

On the whole evidence assuming a relationship between thoughts and mood appears to be consistent. However it is important to note, that evidence for negative thinking does not mean it occurs in the absence of positive cognitions. Kendall, Howard & Hays (1989) found that in a week, for every two positive thoughts, a depressed person had three negative ones. One also cannot assume causation or even vulnerability for negative thinking or dysfunctional attitudes from this information; this must be taken at purely a descriptive level. These studies also rely heavily on self-report questionnaires and this may lower their reliability. For the purposes of this work, evidence supporting one of the main concepts from Beck’s Cognitive model explaining depression in adults has been highlighted.

**Depression specific cognition’s**

The second main inference from Beck’s theory was that within depression the thoughts are characterised by loss and failure. In a study by Clark, Steer, Beck & Snow (1996), psychiatric patients, chronically ill patients and normal controls were investigated for loss and threat cognitions and anxiety and depressive symptoms. A strong relationship emerged between cognition and symptom, with loss being associated with depression and threat with anxiety. Content specificity also varied with level of symptom severity.

Westra & Kuiper (1997) used the information processing dot probe technique, which involves pairs of words appearing on a screen and then disappearing. On a third of the trials, a small dot will appear. The participant is required to press the button when they see it. It will be in the spatial location of one of the words presented. This then assumed that the reaction time would be quicker if the dot is presented where attention had been directed. There were four groups covering different domains of maladjustment (depression, anxiety, bulimia and Type A personality). Support for the content specificity was gained, with depressed patients allocating their attention more towards stimuli related to themes of loss and hopelessness. Watkins, Mathews, Williamson & Fuller (1992) also showed depressed people had increased recall for material that was depression relevant and not for information that was irrelevant such as physical threat. The evidence therefore is consistent with thoughts of loss being associated with depressive symptomatology, but the level of specificity may vary with severity of psychopathology, as noted in Clark et al. (1996). Therefore Beck’s claims have
been supported. However also Seligmans hopelessness cognition's in the depressed have received strong empirical support.

So far evidence for the role of cognition's and content specificity in depression has been illustrated. The final descriptive concept of interest is that of faulty information processing.

**Faulty Information Processing**

According to Cognitive theorists when depressed one attends to or remembers negative information that serves to maintain and exacerbate the depressed mood and subsequent thoughts. More recently and with the adaptation and development of research methodologies from experimental psychology, some good empirical studies have emerged testing these concepts in depression.

McCabe & Gotlib (1993) and McCabe & Gotlib (1995) found evidence for these notions. In the first study using a dichotic listening task, the person was asked to shadow words in the attended ear whilst distracter words (positive, negative or neutral) played in the unattended ear. A button was to be pressed when a light in front of them was illuminated. Results indicated depressed people took longer to press the button when the light appeared during presentation of the negative distracter word. This was not found in the non-depressed controls. It would seem they had fewer attentional resources to devote to this kind of secondary task. Their second study showed that it was perhaps not an emphasis on negative stimuli that characterises depressed persons, but a potential loss of a positive bias that non depressed persons have. This conclusion was drawn from clinically depressed people showing even handed attention to both positive and negative stimuli, but non-depressed demonstrating an attentional bias away from the negative stimuli. Denny & Hunt (1992), found depressed patients recalled significantly more negatively valenced items than positive ones. This was the opposite for the non-depressed controls. Therefore better memory for negative rather than positive stimuli, plus attentional biases appear to have been demonstrated. These again highlight empirical evidence for the concepts outlined by the Cognitive Behavioural Model in conceptualising depression.

However all these concepts, such as cognition's and moods, content specificity and information processing may all be concomitants of the depressed state. Beck however in his theory postulated vulnerability factors in depression. These are harder to investigate because
if the dysfunctional attitudes/schemata are supposed to be latent and below conscious awareness, they will be extremely difficult to research, as are not in the person's awareness. This could partly explain some of the earlier work that has failed to find evidence for vulnerability factors as proposed by Beck's model. Examples are Blackburn & Smyth (1985) who found no significant differences in scores for dysfunctional attitudes between recovered and never depressed controls after mood induction.

Studies implementing more experimental procedures as opposed to self-ratings and ones that include previously depressed and/or longitudinal components would seemingly be more reliable. One such longitudinal study by Brittlebank, Scott, Williams & Ferrier (1993) involved pregnant women rating positive, negative and self-esteem threatening words. Later those who recalled more of the latter were classed as 'vulnerable to depression.' There were no differences with regard's depression levels at this point in time. Three months after delivery those who were in this category and who had experienced a negative life event had elevated levels of depression. All the other groups showed a decrease.

Ingram, Bernet & McLaughlan (1994), using a dichotic listening task with never depressed and previously depressed showed that when negative mood was induced, some of the attentional bias's found in depressed patients might be reinstated. This did not happen to the never depressed group. This provides some evidence for a latent cognitive bias. Therefore implementation of these newer methods has begun to see more evidence underlying the vulnerability hypothesis presented by the Cognitive Behavioural model.

Beck also differentiated personality characteristics. Sociotropic individuals he proposed place emphasis towards positive interactions with others. They show a high need for intimacy and dependency. They are characterised as sensitive and afraid of rejection. The autonomous individual places emphasis on independence and goal attainment. They are particularly sensitive to demands and restrictions especially if these interfere with achievement of their goals. Therefore sociotropic depression is characterised by seeking support and reassurance plus a preoccupation with loss of gratification and sense of social undesirability. Autonomous depression is characterised by withdrawing from others and aiming to maintain autonomy. They are highly self critical and their cognition's centre around personal incompetence and subsequent defeat. These have been investigated and evidence pertaining to the sociotropic personality has had more consistent support than that of the autonomous classification.
Nunn, Mathews & Trower (1997) tested 24 depressed patients and equal matched controls using two selective processing tasks. Performance was related to self-reported autonomous and sociotropic related concerns. Results showed depressed patients with a negative bias favouring all negative self-related information. This bias did not seem proportional to the match between material and self-reported autonomous or sociotropic concerns. Whilst the match between material and personality type did not produce a link with depression, there was an increase in sociotropy concerns with severity of depression. This argues that it is not only when distracting words match the active concerns that interference will be elicited. People with depression appear to be able to elaborate on any word with negative meaning and then relate it to themselves. This did not have to match sociotropic or autonomous concerns. Although sociotropy scores did distinguish the depressed group from the controls.

With depression defined by the DSM criteria for major depressive episode and using an adult population, these studies have so far provided evidence for some of the main concepts of depression as understood by Beck's Cognitive Model. These include a relationship between thought and mood and thoughts specific to depression, such as loss and hopelessness. Also evidence for negative biases in attention and memory. It also tentatively appears that there may be some support for vulnerability factors such as the latent cognitive bias and perhaps personality characteristics. These findings are less consistent.

With the Cognitive Behavioural model able to be operationally defined and empirically tested, it is of great interest to move on to the Psychoanalytic model of depression, investigating its concepts and evidence base for depression.

Psychoanalytic Theory

It is important to highlight before presentation of psychoanalytic theory that depression may not always be assumed as Major Depressive Episode. Many Psychoanalysts would not emphasise the DSM-IV criteria and diagnostic labels. Therefore it is important to note that the Psychoanalytic concepts and subsequent evidence pertaining to depression may be with a slightly different population than those in the Cognitive Behavioural literature.

Psychoanalytic theories have developed through the years giving rise to a number of schools of thought. Freud (1917) compared depression to bereavement, describing the depressed person as responding to a loss much in the same way as a bereaved person. However unlike
the bereaved person whereby nothing about the loss is unconscious, in depression the loss object is withdrawn from consciousness. In melancholia (depression) the relationship to the object is complex mainly due to ambivalence. Therefore the person is experiencing a loss of someone/thing that was not only loved, but hated as well. Identification with the lost object enables the loss to be dealt with. The consequence of this is that the anger toward the lost object as defined through the ambivalence is then turned against the self.

Kleinian thinking developed from this line of reasoning. With a more fluid than phasical approach, it looks at development from birth with the emphasis on object relations. Melanie Klein (1934) explains depression as resulting from the negotiation of the depressive position. She suggests that from birth an infant sees the world as part objects. The infant splits off good from bad, keeping them apart, idealising with the good object and internalising it. The depressive position is reached whereby the infant comes to perceive whole objects. For example there is no longer a separate good and bad breast, but a mother, an individual incorporating both the good and bad aspects. At this point the individual will realise his/her dependence on the caregiver knowing she could leave at any time and jealous of her other relationships. The infant also fears that (s)he has destroyed or damaged the good object through the hatred (s)he had been projecting on to the bad object, now knowing them to be one in the same. The infant also fears (s)he has destroyed the good internal as well as external object. Loss, guilt and hopelessness are experienced. However, this depressive experience mobilises the infant to make reparation and gradual resolution of the depressive anxieties. This occurs with the regaining of an external and internal good object. If this position is never fully worked through, a situation or feelings later in life may reawaken the depressive experience.

From the Kleinian school emerged John Bowlby and attachment theory (1980, 1988) which shall be the focus for this work. Bowlby saw psychoanalysis to date as focusing too heavily on the internal conflict with too little emphasis on environmental factors. He also believed it had not progressed within science and had not established a validated body of research and knowledge. This theory therefore incorporates both intra-personal and interpersonal aspects and has empirical research to highlight many of the theoretical concepts, which for purposes of this work seem therefore, the most appropriate model to adopt.
Attachment theory and depression:
Bowlby proposes humans are innately attachment seeking and that these attachments contribute to species survival and individual satisfaction. Attachment is therefore more than a derivative of feeding as proposed by Freud and is essential in the process of emotional maturation. Attachment bonds to the primary caregiver (usually the mother) insure proximity between her and infant aiding biological survival. With the continuing presence of such an attachment figure, the child forms a secure base from which to explore the environment around him/her. The base is known as the 'internal working model' that incorporates representations of others and of the self and the relationships between the two. Therefore our experiences of the environment and ongoing relationships are encoded within this model. Through loss, threat of loss or problematic early attachment experiences, the internal working model may not develop as a secure one and this may impact upon the formation of other attachment bonds. Thus depression may ensue from faulty attachment bonds in childhood.

Evidence for Attachment Theory:
These concepts have been extensively researched, with the most well known investigation conducted by Mary Ainsworth (1969). The 'strange situation' as it was known, comprised a mother, her baby and an experimenter together in a room. The mother left and reactions of baby and mother noted upon leaving and subsequent return. Three main types of attachment pattern were identified. The first being the 'securely attached,' this group was upset by the separation and demanded and subsequently received care when the mother returned to the room. The baby once reassured was then able to resume playing. This is compatible with healthy development, with the assurance that the parents will be responsive and available. The other two categories are less secure with first the 'insecure-avoidant' label describing the child who was not excessively distressed by the separation. They ignored the mother upon return, yet were unable to resume play as they acutely watched the mother. This group is said to hold little belief that (s)he will receive comfort and help that is needed. They are likely to be hostile, emotionally insulated and demanding of attention. This may be put down to repeated rejections from the parental figure. The second less secure group was labelled 'insecure-ambivalent.' This group, panicked by the separation, clung to the mother, however on return they fought her off. They too were unable to resume normal play. This has been proposed as being a reaction to inconsistent care giving with the child both tense and demanding but also passive and helpless. Main & Cassidy (1985) took this one stage further and demonstrated that these patterns shown in the first year were relatively stable throughout
the first six years of life. These studies provide evidence for Bowlby's propositions that early care-giving experiences of real or feared loss may create a rather stable individual vulnerability to depression later in life. Through affecting integrated personality development. Constraining the 'strange situation' are the rather discrete categories and lack of attention to individual variation. However the usefulness to think of children as beings who actively process their experiences and the role of attachment and interpersonal relationships are seen as important contributions to the understanding of vulnerability to psychopathology.

Bowlby postulates that relationships of individuals who are depressed would therefore reflect insecure attachments from their childhood. There has been some evidence to support these notions. Hojat (1998) in a study of 928 medical students found that perceived satisfaction with the mother in childhood, was associated with less depression, less loneliness and a less negative view of stressful life events. McCarthy (1999) found women with a secure attachment style were shown to have more positive ratings within love relationships and adult friendships than the two insecure attachment styles (ambivalent and avoidant). The latter was particularly associated with adult love relationship difficulties. The Adult Attachment Interview (AAI: De-Hass, Bakermans-Kranenberg & Van Ijzendoorn, 1996) aims to surprise the unconscious into actually revealing itself, through asking a number of detailed relationship questions. Fonagy, Steele & Steele (1991) using this instrument, found that mother's with secure and autonomous narratives in turn tended to have children who were secure when placed in the 'strange situation.' Dismissive parents on the other hand tended to have insecure-avoidant children.

Therefore these studies tend to highlight that the quality of relationships and early attachments have implications for personality and interpersonal relationships later on. That insecure attachment from real or perceived loss, or inconsistent care giving may predispose an individual to develop a vulnerability to interpersonal problems later on and even to depression. This cycle may continue through generations, as the mother with her own attachment patterns and internal working model may influence security and subsequently her own infant's attachment pattern. However, a distinction needs to be made between attachment pattern as measured by the 'strange situation' and the 'AAI', which defines attachment through description. Therefore the former is on mechanisms and the latter on meaning. Therefore the important factor later in life may not be the attachment experience
itself, but the ability to reflect upon one's own experiences and oneself in relation to others. ('Reflexive self function,' Fonagy, Steele, Higgitt & Target, 1994). Caution is also needed with respect to retrospective recall bias as demonstrated by the use of personality questionnaires such as with the Hojat (1998) study.

In general, Bowlby's attachment theory has made some important contributions to the understanding of interpersonal relationships and personality. This in turn has important clinical implications, such as for depression.

Comparisons Between Cognitive-Behavioural and Psychoanalytic Models of Depression:
Initially it may appear that the two schools of thought regarding depression differ significantly. Broadly speaking these two models do differ somewhat, especially if the traditional concepts of the two are upheld. One model traditionally concentrating on the unconscious and the past and the other on cognition's in the here and now. However when the more recent theories are taken in detail such as with Beck's Cognitive model and Bowlby's attachment theory, there are a number of areas that are explained in a similar way to each other.

Both do not see the child as a passive recipient of information, but activity processing information from its experiences. The Cognitive Behavioural Model explained about schema's that are laid down in childhood that serve as a filter in which the world is viewed and interpreted. Attachment theory similarly sees children as actively processing their experiences. Both these models therefore recognise the importance of early childhood experiences and the effects these may have later in life. The difference may lie in that the Cognitive model looks at these experiences with view to later effects on cognition and views of the self and others, whilst attachment theory links with later interpersonal relationships.

Whilst Cognitive Models are often taken as only reflecting the here and now and all on a conscious level, with the opposite being true for psychoanalytic models, hopefully this black and white distinction has been shown to be inaccurate. The Cognitive model in its causal hypothesis postulates latent schemas and assumptions that are out of conscious awareness. Attachment theory talks of the 'internal working model' similarly built on experiences and serving to shape our perception and experiences as we get older. There are conscious components in both models too. Notably in the Cognitive model with negative thoughts and
the emphasis on distorted thinking patterns, but also in attachment theory as highlighted with the ‘AAI’ and a person’s self understanding and awareness of their experiences.

Bowlby’s ‘insecure-ambivalent’ individual parallels Beck’s ‘dependent/sociotropic’ individual and the ‘insecure-avoidant’ parallels Beck’s ‘autonomous’ personality. Both identify these as vulnerable characteristics predisposing an individual to depression later in life. Bowlby proposes that these attachments and subsequent personality style create specific cognitive biases that increase an individual’s vulnerability to depression. Similarly Beck emphasises cognitive biases and distortions that may continue independently from the situation that may have initially stimulated the response.

Therefore the Cognitive Behavioural and the Psychoanalytic models share many concepts in their understanding of depression. Notably the importance of the childhood experience. The role of the unconscious and the role of the conscious, plus the importance of cognition’s and personality characteristics in creating a vulnerability to depression. Perhaps the major differences lie therefore not so much in the conceptualising but in the treating of disorders such as depression.

Beck’s Cognitive therapy proposes primarily looking at the individuals ‘current’ way of construing the world around them without necessarily focusing on or even investigating its origins. The emphasis being on the negative automatic thoughts, that regardless of causation appear to be present in depression and exerting an influence over mood. Bowlby on the other hand, view’s therapy as reconnecting memories and feelings and trying to help the client to understand the experiences that may have led him/her to feeling depressed. Therefore enabling the client to alter their maladaptive interpersonal relationships. The emphasis is on transference and countertransference to facilitate the understanding of unconscious conflicts, past attachments and experiences through the therapeutic relationship. Whilst both emphasise cognitive distortions, Beck stresses the cognition’s content and Bowlby the structure and the impairment of how caring relationships are mentally represented.

Summary and Conclusions:
The Cognitive Behavioural model as defined by Aaron Beck, has been extensively researched and evidence pertaining to its main concepts in understanding adult depression highlighted. Links between thoughts and mood and depression specific cognitions have been identified.
Evidence supporting notions of selective information processing for negative information has also been provided. More recently causal factors have been proposed and using experimental methodology the results have been more encouraging. Evidence for sociotropic personality as a vulnerability factor has also received some support. The Psychoanalytic model, for our purposes ‘attachment theory’ as defined by John Bowbly, has also been empirically tested. Evidence pertaining to early attachments, their stability, predisposition to later problem interpersonal relationships and subsequent clinical implications has received some consistent support. These two models whilst differing in focus and in their therapies; theoretically and conceptually cover similar ground. Both emphasise the importance of childhood experiences and acknowledge the importance of conscious and unconscious processes. Both theories recognise the role of cognition, whilst personality characteristics and life events are not minimised by either.

Further work is needed in evidencing both models. More work is needed to understand the causal factors from a Cognitive perspective. To date relatively little support has emerged for the autonomous personality style. Within the Psychoanalytic field, recognition of the importance of a father figure and changing structures in society needs attention. Therefore whilst these two models have provided substantial information and subsequent evidence for concepts in depression, further work is still needed. Perhaps if opposing models drew on their shared perceptions a richer understanding of depression could be achieved.
References


PEOPLE WITH LEARNING DISABILITIES ESSAY

Sexually Abused and/or Sexually Abusing: What is the Role of the Clinical Psychologist in Working with People with Learning Disabilities who have been Sexually Abused or who Abuse Others.
Sexually Abused and/or Sexually Abusing: What is the Role of the Clinical Psychologist in Working with People with Learning Disabilities who have been Sexually Abused or who Abuse Others.

'Substantial limitations in present functioning. It is characterised by significantly sub-average intellectual functioning (IQ<75), existing concurrently with related limitations in 2 or > of the following applicable adaptive skills areas: communication, self care, home living, social skills, community use, self-direction, health and safety, functional academics, leisure and work. Mental retardation manifests itself before age 18.'


The above quotation is a definition of learning disabilities, highlighting limitations in adaptive and intellectual functioning. Throughout this work, the term will be taken as synonymous with mental retardation, learning difficulties and mental handicap, which are consistently found throughout the literature.

People with learning disabilities have been found to be particularly vulnerable to sexual abuse, where sexual abuse is defined as:

'Where sexual acts are performed on or with someone who is unwilling or unable to consent to those acts.'


Mathews (1994) moves the focus away from that of consent to:

'Where that person's apparent willingness is unacceptably exploited.'

Sobsey, Gray, Wells, Pyper & Reimer-Heck (1991) postulated that 75 to 80 percent of learning disabled women living in community residences had been sexually assaulted. With figures such as these and now a more public awareness, this complex and highly emotive area has begun to raise much concern and in turn investigations into work being done with regard this vulnerable population, especially concerning prevalence, prevention and treatment. This work will only focus on those abused although there is recognition that many of those abused later go on to be the perpetrators. This work will therefore focus on people with learning disabilities who have been sexually abused with the emphasis on the role a Clinical Psychologist can play within this complex, delicate and multifaceted area.
Whilst highly pertinent, issues regarding ‘what is consent’ and what constitutes abuse or a learning disability will not be focused upon. Instead the focus will be on delineating the role of a Clinical Psychologist within this population. Although recognition as to the complexity of operationalising definitions and in turn the heightened risk in not even recognising and labelling abuse is acknowledged.

This work will present the main roles of a Clinical Psychologist within this client group, plus describe in detail the importance of tackling these areas and the impact of doing so by these specific health professionals.

Clinical Psychologist:

The Management Advisory Service to the NHS in 1989 produced a three-tier model of psychological skills that distinguish a Clinical Psychologist from other health care professionals. The first level describes general psychological skills all health care professionals can possess, such as stress management and counselling techniques, plus creating a therapeutic relationship. The second level illustrates the use of more discrete skills, such as using specific models of treatment often described through a protocol, such as people trained in Cognitive behavioural work only, therefore specific but limited skills. On this level there should also be an awareness of own limitations and when to refer to a Clinical Psychologist who possesses the third level skills. The third level is proposed as that obtained only by the Clinical Psychologist, this level includes a comprehensive psychological knowledge comprising many theories and skills. Working on this level requires flexibility and generic knowledge to be able to work with complicated presenting problems. Thus working at this third level sets them aside from other health care professionals, and delineates their general role and abilities.

Alongside this broad training clinically, Clinical Psychologists also have broad training in research methodology. Psychologists have the benefit of scientifically researched work in the field and can target skills to one area if needed without losing their breadth. Because they have research training they can utilise this and constantly evaluate their work by looking at problems in the light of new emerging evidence and theories.

Psychologists can also be seen as having a number of roles within a team. These include that of a ‘consultant’ by providing advice to other team members in client management. They can
be the 'therapist' carrying out specific detailed work for clients. They can be the 'educator' teaching other professionals/clients/families psychological skills. They can also take the role of the 'advocate' for the client, representing their perspective and rights within the multidisciplinary team and in society. They also can learn from the other professionals about their roles. Therefore Clinical Psychologists have varied roles on many different levels.

Thus from the above delineation of a Clinical Psychologist, it may be seen that they can address the issues in question at a number of levels. These can be classified (Sobsey, 1994) into the 'Macrosystem' addressing beliefs and behaviours people have regarding this client group, the 'Exosystem' looking at the context these individuals live in, therefore looking at protection against abuse, staff guidance and education for all involved. Finally they can also look at the 'Microsystem' and work with supporting the individual. Therefore as mentioned above, taking on many roles and utilising their broad base of training to work in many different ways with different people to deal as holistically with all aspects of sexually abused people with learning disabilities.

These levels that can be addressed by a Clinical Psychologist will be taken further to see how Clinical Psychologists can help those who are learning disabled and have been sexually abused. Therefore not looking only at the individual level and the therapeutic involvement, but the wide range of skills a Psychologist has and the wide effect of sexual abuse within this client group and the far reaching effects and issues that need addressing. Useful ways a Clinical Psychologist might work with this population can be classified into two broad areas, that of interventions which address the social, emotional and physical context the person lives in, which could be seen to incorporate the macrosystem and exosystem. Then the second, which addresses more specialised interventions on a more individual level (this relates to the microsystem). These will be taken in turn to delineate the role of a Clinical Psychologist working with people who have been sexually abused.

**Level One:**

**Macrosystem**

With increased literature, sexual abuse within this population is becoming recognised. Many Clinical psychologists have been prolific in drawing attention to this delicate area that many people did not want to accept was a reality and therefore addressing the macrosystem and society's views of people with learning disabilities. Within this recognition emerges one of
the most important areas, which is that of 'risk'. In this case, the concept of harm to the individual. Psychologists can begin to help people with learning disabilities who have been abused, by learning from these incidences and recognising the situation and taking into account 'risk' at all times at whatever level of work with these clients. Then feeding this information back into literature and for the general public, then maybe attitudes and interactions can change.

Sobsey et al. (1991) found people with learning disabilities at increased risk for sexual abuse and sexual assault. Davis (1989) placed the figure at 75 to 80 percent of women with learning disabilities living in a variety of community residences having been sexually assaulted. Communication is a risk factor. It is easy to be taken advantage of when the person has no access to a vocabulary to describe their abuse. Often non-verbal communications are ignored, misunderstood or labelled as 'challenging behaviour'. Many people with learning disabilities are dependent on others for support and can easily be taken advantage of. Many also live in a society where they see themselves as 'damaged goods' and have such low self-esteem as to not see the crime in what is being done to them, and that they deserve it somehow. Many also may have learnt to be compliant especially to those in powerful positions, and may not comprehend what is and what is not appropriate. Many myths see people with learning disabilities as less than full members of society, and somehow immune to suffering and pain. They may also be seen as deviant, unpredictable members of society. Clearly environmental attitudes continue to contribute to the vulnerability and disempowerment of this group, and lack of awareness regarding risk to this population. Education not only for society but given to the individual therefore is important as without access to education, there may be a lack of understanding about one's own body and one's rights.

Hence the understanding and recognition of risk, and alerting others to this, is a major step in prevention of those who could be, and recognition of those who have been sexually abused. Certain beliefs, lack of recognition, and not looking at issues of risk, or not believing it, may see a person's environment increasing their risk for abuse. Thus this macrosystem needs to be addressed. The Clinical Psychologist has had training in abuse and also in learning disabilities. They are able to work at a therapeutic and educational level, whilst being aware of the current climate. With skills enabling them to be the researcher, to report findings and to make them public, puts them in a position to address these issues, highlighting risk and educating society.
Exosystem:
Providing evidence, alerting people to the risk and working on this general level then needs to be taken further. Psychologists can do this, primarily through education for the many groups of people involved. Much of the excessive risk can be eliminated through appropriate prevention strategies and through education. Work can also be done to improve awareness of past and present abuse, and help agencies develop their services to support survivors and make them accessible to this client group. These are roles that are undertaken by a Clinical Psychologist and will be looked at now in more detail.

Education for Carers:
Some of the roles of the Clinical Psychologist mentioned earlier were the 'educator' and also the 'consultant'. As mentioned, often abuse goes undetected, maybe by lack of communication verbally and non-verbally. The front line staff are those who can help the people in question get appropriate support, if the abuse is recognised. Therefore helping staff to understand the effects of abuse, and recognise its presentation within this group of clients is a major step in helping those with learning disabilities that have been sexually abused. Clinical Psychologists can play an important role, by firstly helping to make complex models in understanding abuse, accessible to carers and front line staff. The metaphor of a tree has been noted as a useful way of doing just this. The hidden roots can be seen to symbolise abuse, whilst the leaves, the most visible parts represent the behaviours and effects that often are what gets seen and noted. These often distract from what is underneath these, such as the trunk and the branches, which can be seen to represent feelings and emotions experienced by many survivors' of sexual abuse, such as guilt, shame, fear and rage. This metaphor helps people see that behaviours cannot be taken at face value but there is a meaning to behaviours, and there are underlying feelings.

Clinical Psychologists can then help carers and staff, to then try and recognise signs of abuse and improve communication, especially non-verbal. As Fenwick (1994) questioned:

"I cannot help but wonder just how many people with 'challenging behaviour' have been victims of sexual abuse at some time in their lives?"

They also can use their knowledge not only with regards working with the learning disabled, but also their understanding as to the process of abuse. Helping others to be aware of the recovery process, such as initial disbelief/numbness often followed by distress/tearfulness,
and anger/rage, which can then manifest itself through self-harm or aggression. Hopefully as memories are assimilated into their existing belief system, they are able to move on. With increased awareness and communication, hopefully abuse will be more readily identified and not mistaken for ‘challenging behaviour’ and then people with learning disabilities can get access to the help and resources they need.

Illustrating these ideas is a study by Brown, Hunt & Stein (1994). Over three years, they collected comprehensive and detailed data on sexual abuse incidences across the Southeast Thames Regional Health authority. The staff groups served a range of clients with a range of abilities from a variety of settings. Disclosure was the most frequent way in which a response was made to sexual abuse. Most staff knew there were guidelines regarding sexuality in their practice, but only around 43 percent had read them. Of these people, more than 70 percent could not remember the contents. They emphasised the need for training and for clear and simple guidelines. This supports the need for what a Psychologist can provide in terms of education and simple definitions. Also highlighted was the absence of clear policies and guidelines of how to respond within this area, especially in the face of sexual abuse. Therefore they also need procedures for reporting abuse and to how to detect early signs. Unreported and undetected cases will allow more people to be victimised and people to remain at risk of prolonged or repeated abuse.

Therefore the Clinical Psychologist needs to take staff education up to management and policy level, to encourage reporting with safe clear guidelines and boundaries for staff to feel safe to do so, whilst protecting their interests as well as the clients.

Where staff training has been implemented, the results have been encouraging. Hames (1996) offered staff from three day centres sexual abuse training. Attitudes and knowledge about sexual abuse issues were measured before and after training. Findings saw staff groups as aware of the vulnerability of people with learning disabilities to being sexually abused, and were aware of increased risk with increased disability. Training further increased their awareness. In general staff had taken on board information regarding higher vulnerability of people with learning disabilities to sexual abuse. However, they were less successful in raising awareness about risks from familiar people, especially other staff members. Therefore whilst training by Psychologists is highlighted as useful within this area in helping people
with learning disabilities who have been abused. If carers cannot consider colleagues as potential abusers, there is likely to be impairment in recognising abuse when it happens.

Thus from the above information regarding education and training for carers and staff. Clinical Psychologists play an important part. They can utilise their knowledge of people with learning disabilities and their knowledge of abuse, to educate others regarding risk, early detection, communication and reporting of abuse.

**Education for Clients:**

Timmers, DuCharme & Jacobs (1981) looked at two learning disabled adults, with similar levels of sexual experience. Compared to the general population, they had less sexual knowledge and more negative attitudes regarding sex. Simonds (1980) suggested that the combination of decreased cognitive functioning, less experience and little formal education/instruction could result in inappropriate expression of sexuality. In turn creating a risk for abuse, including repeated abuse and negative opinions from society. Therefore education as a preventative measure against abuse within this population, is vital. In absence of information and with inability to make decisions about their bodies and sexuality, they are open to abuse and exploitation. Also, of all the human behaviours, sex-related behaviour is one of the most complex and yet subtle and is a central component of social interaction. Sex education therefore is extremely important for successful integration of people with learning disabilities, as deviations from the norm are not viewed well. Therefore to dispel some of societal myths about people with learning disabilities, we must not facilitate their difference and isolation from the general population, by providing them with the education they need to integrate more efficiently.

Training 'potential' victims to resist or try and avoid abuse has been the standard approach. However it became recognised that in doing this, assigning ultimate responsibility to offenders was not being made. Also sex education needs to be tailored to the individual. Information should go beyond the biological and address emotional components as well, plus information regarding choices, behaviour and risks.

As before, the Clinical Psychologist can play a major role, with an up to date awareness from the literature and skills in using information to inform their practice. They have further skills in human behaviour, communication, sexuality, abuse and people with learning disabilities.
They are not limited to one field or one model or theory to understand the issues from, but have the advantage of having a broad base of knowledge and many different theories to work from and gain a much wider understanding. They can then draw on what they need whether it's direct education for people with learning disabilities or consultation for a team of people, who might be providing the education, or researching and evaluating current programmes. This information can then be used to further inform the general population and health care professionals of client’s needs in this area. Not to mention informing any potential future interventions.

Clinical Psychologists can also address needs such as low self-esteem, which often stem from societal attitudes and previous abuse and can result in the person seeing themselves as unworthy and a less than full member of society. A Clinical Psychologist can employ assertiveness training, plus the facilitation and development of access to sexual and social relationships can be promoted to reduce vulnerability to more abusive ones. It is important to empower individuals, this includes not only improving communication and way of indicating no, but protection includes more choice and more control and more access to support networks.

Miltenberg, Robert, Ellington & Galensky (1999) looked at five unmarried women with mild-moderate learning disabilities, aged 33 to 37 years old. They were trained in sexual abuse prevention skills. A variety of scenarios were developed to assess their acquired skills and knowledge. After the ten week behaviour skills training, they had successfully acquired sexual abuse prevention skills, however these did not fully generalise to all situations, in fact it only did if learnt through naturalistic assessment. However these skills were maintained at one-month follow-up. Therefore as explained, education can work, but there is more to it than the biological, and the emphasis needs to be on more than just prevention of abuse, which carries with it the emphasis on victim blaming. This kind of research is based on a very small sample and as with the majority of the literature in this area, based upon those with mild-moderate learning disabilities, and not those severe or profound. For some, education will not suffice, as McLeod (1992) neatly explains:

"The areas of sexuality and intimate relationships are arguably the most difficult of all human interaction to pursue. For many people with disabilities, they are insurmountable barriers."
Therefore, Clinical Psychologists address the exosystem, primarily in the form of education. However for more education for carers and clients alike, the management and policies mentioned as part of the macrosystem must be in place to facilitate this. If policies are vague, staff unsupported and unsure regarding potential allegations and the law, this will increase the likelihood for abuse and decrease the likelihood of cultivating people with learning disabilities’ sexuality. An awareness of risk and change in public perceptions also must be targeted to facilitate the education and provision of services for people with learning disabilities. Thus this highlights the importance of being able to address these different levels, such as the exosystem and macrosystem and have the flexibility to work within them with a variety of different people, using a variety of different techniques. This emphasises the role therefore of the Clinical Psychologist for working with people with learning disabilities who have been sexually abused, whilst taking into account prevention, whether for first time abuse, or preventing repeated/prolonged abuse.

**Level Two: (The Microsystem):**

With some of the myths as outlined, surrounding negative attitudes toward the learning disabled and the denial of their sexuality and regarding issues of abuse, research and treatment funding for this client group has been a low priority. The prevailing early attitude suggested that people with learning disabilities did not have the ability to change (Azrin & Foxx, 1971). This has begun to be challenged alongside the change in societal attitudes. Sinason (1990) reported that those with mild through to severe/profound learning disabilities showed high levels of success with individual psychoanalytical psychotherapy. Mansell, Sobsey & Calder (1992) provided further support for this and also for the use of cognitive behavioural models of therapy and non-verbal techniques such as art therapy and play therapy. Sysmanski & Tanguay (1980) also proposed that psychotherapy can be helpful, again pointing to the misconceptions that the learning disabled are not bright enough or co-operative enough to benefit from such an intervention. He also mentions the importance of education and awareness of issues previously outlined within level one interventions, comprising the macrosystem and exosystem.

Barber, Jenkins & Jones (2000) conducted group work for people with learning disabilities who had been abused. The aims were to foster assertiveness and improve self-image. The group comprised three women, aged 20 to 33 years old. They all lived in the community, and participants had all been referred to the Clinical Psychology department. Core conditions
comprising unconditional positive regard and total acceptance, with deep, empathic understanding to be communicated, was to provide an environment of trust and acceptance, and respect for patients. All women attended at least eight out of ten sessions, which were for two hours for ten weeks. Findings indicated modest improvements for levels of personal assertiveness and self-esteem. Increased confidence and better communication of needs was suggested through subjective feedback. On the other hand, the group did not perhaps provide enough time to return to themes and look at individual issues in more detail and some disengagement was noted throughout the group. However in all, the group seemed a good experience and highlights the impact interventions with this client group can have and that changes are possible. Group therapy may add to the second level intervention as it provides a peer comparison group for members to share their experiences.

Therefore the needs of learning disabled people who have experienced sexual abuse, should not be fundamentally different from the non-disabled population. Long-term treatment should not concentrate only on sexual behaviour or prevention strategies, but look at the whole needs of the individual. The main message must delivered must be that this was not their fault and they are not bad. Sullivan & Scanlan (1990) highlight similar issues from reviewing sexual abuse literature and incorporating their experience from working with sexually abused learning disabled children. They define the main treatment goals as being able to alleviate guilt, trying to regain the ability to trust, helping to express their anger, helping combat the depression and teaching an affective vocabulary to help label emotions. Teaching about sexuality, abuse and interpersonal relationships is also outlined. Numerous techniques for treatment are advocated, such as counselling, psychotherapy, behaviour therapy, play therapy and psychodrama. The need for acceptance and a positive non-judgemental attitude is highlighted, along with promoting a person’s rights and learning potential.

A Clinical Psychologist can work on this one to one level and in this way. As depicted in the MAS report, they have a broad knowledge base comprising understanding and utilising many treatment models, theories and rationales. Therefore they can are not constrained to one model of treatment, but can be creative and can fit the therapy, drawing on what may best benefit the client, rather the forcing a client to fit a particular theory, being the only one that is known.
There is also the importance of issues such as 'countertransference' which looks at the dynamics between client and therapist. This is important, as there is always the danger of mirroring the abuse dynamics, with the therapist representing the abuser, if being seen in the position of power. Clinical Psychologists are trained to be aware of issues such as this, and have been trained to utilise supervision in which these dynamics should be investigated. Separating therapist feelings from client feelings can then be used to further inform the intervention. Clinical Psychologists can be on the giving or the receiving end of this kind of imperative supervision, taking the consultant, supportive, educator or therapist role. Good supervision is vital, as good interventions depend upon it. Supervision ensures that work is not led by the expectations or feelings of the therapist, carer or other health care professional, but by the individual themselves.

As Mansell et al. (1992), describes the lack of available treatment may be in part due to a lack of professionals who have adequate training, not only theoretically, but also with regard experience working with the learning disabled and/or working with those suffering from sexual abuse. In fact they saw 119 sexually abused people with learning disabilities and indicated access to treatment was very difficult, typically unavailable and often inappropriate. Reasons being mainly due to the paucity of qualified professional in this complex area.

Clinical Psychologists comprise some of the few professionals who are trained to work at such a level and in such a manner with this field. However, with lack of funding and without addressing the exosystem and macrosystem, in other words, society, attitudes and research, the situation will not continue to change and the downward spiral from the past will not be reversed. In the past, lack of awareness, negative attitudes and myths surrounding people with learning disabilities, saw a low priority for research and funding. This fed into a lack of appropriate interventions, professional training and a lack of research, this in turn then feeding back into the original myths and negative attitudes and lack of awareness surrounding sexual abuse of people with learning disabilities. The greater the awareness of the issues, the more research and funding, an increase in appropriate interventions and funding of trained staff, education and supervision, Then the more research back into the area, which will continue to inform and educate society, the government, health authorities, families and staff, creating an upward spiral of awareness, research and improved interventions.
Therefore the role of the Clinical Psychologist is so vital when working with people with learning disabilities who have been sexually abused, because they can not only work on the individual level, which so few professionals have the breath and depth of training for. But can also work at a wider level, addressing, researching and educating others, to raise awareness, encourage funding and better support for this client group.

Summary/Conclusion:

Sexual abuse within the learning disabled population, is an extremely complex and at times contentious area. Even the mere definitions of these terms have generated considerable discussions and disputes. For appropriate action and support to be given to this client group, the macrosystem and exosystem needs to be addressed. Myths, negative attitudes and denial of people with learning disabilities rights and feelings needs to be challenged and often changed. This primarily will be done through education and literature evidence. The Clinical Psychologist has the scientific and the research skills to be able to know the current state of affairs and promote a climate for change. They can take on the role of the educator, helping carers and staff, by raising awareness of risk of those who may have been abused or be vulnerable to abuse. Recognising the signs and symptoms, in turn may help an individual who has been abused be recognised as such and get access to the help and support he or she needs. This kind of awareness may also provide a means of prevention with abuse being recognised and perpetrators being reprimanded. Education of the individual and more knowledge about their own sexuality and rights, plus being given more respect for their sexual needs and no longer being seen as a group of second class citizens who do not experience pain, may reduce the risk of exploitation and abuse. The Clinical Psychologist therefore through generating awareness of risk, plus education, supervision and more literature can address the issues of the learning disabled who have been sexually abuse on this level, primarily using the role of the researcher and educator.

Clinical Psychologists can then address the microsystem, working at an individual level, using their clinical training with people with learning disabilities and with people who have been abused, not to mention their broad and deep knowledge of theories, to provide individual interventions that fit the clients needs. Whether this be Psychotherapy, behavioural work, or art therapy. Knowledge of communication difficulties, the importance of non-verbal communication and transference issues, enable the Clinical Psychologist to be creative and work with the client on their level. Whilst not being constrained by a particular type of
intervention or using only verbal communication. The Clinical Psychologist can take the role of the therapist and/or supervisor. Again the Psychologist can utilise his/her research skills to constantly evaluate their practice and findings, to inform the literature and again the macro and exosystems.

Thus the Clinical Psychologist can have many important roles when working with people with learning disabilities who have been abused and these comprise not only therapeutic interventions. In fact for appropriate therapy to be given, a recognition of risk and awareness of these peoples needs to permeate at the staff and carer level, but most importantly within society as a whole. As noted, the Clinical Psychologist does not work in isolation and just as his or her roles can effect and help utilise others, so can be said for other peoples roles. Therefore more importantly there needs to be a recognition as to each individuals combined and unique contributions and how best these can all be brought together to provide the best holistic care for those people with learning disabilities who have been sexually abused.
References:


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Anxiety Disorders in Childhood are Fundamentally Different from Anxiety Disorders in Adulthood. Discuss with Reference to the Theory and Treatment of two Anxiety Disorders.
'Anxiety Disorders in Childhood are Fundamentally Different from Anxiety Disorders in Adulthood. Discuss with Reference to the Theory and Treatment of two Anxiety Disorders.'

There are a number of anxiety disorders outlined in the Diagnostic and Statistical Manual of Mental Health (DSM-IV; American Psychiatric Association, 1994). Although they are not categorised as 'disorders usually first diagnosed in infancy, childhood and adolescence' this may not necessarily restrict onset and prevalence for some of these disorders solely to adulthood. Over the years, discussions have emerged as to whether in fact the adult disorders are present in childhood and whether presentation and course of illness are the same, which in turn has significance for theory and treatment for these disorders.

This piece of work will look into this discussion, focusing on two anxiety disorders commonly found in adults, Obsessive Compulsive Disorder (OCD) and Panic Disorder (PD). These disorders have received a lot of attention both within child and adult literature and therefore provide a large source of information from which to discuss the area under question. The Cognitive Behavioural models for conceptualising these disorders and their subsequent treatment rationales will be looked at in conjunction with these anxiety disorders to further investigate whether fundamental differences between childhood and adult anxiety disorders exist. Cognitive Behavioural work has a wide research base and effectiveness of Cognitive Behavioural Therapy (CBT) has become increasingly well evidenced (Van Balkom, Van Oppen, Vermeulen, Van Dyck, Nauta & Vorst, 1994; Oei, Llamas & Devilly, 1999). Whilst there is recognition as to other theories and treatments pertaining to these disorders, such as developmental theories which highlight the importance of childhood attachment and early separation in development of anxiety disorders such as Panic Disorder, (Ollendick, Mattis & King, 1994) and pharmacological models and treatments such as the use of Selective Serotonin Reuptake Inhibitors in the treatment of OCD, (Thomsen, 1999), due to restrictions and for consistency, this work shall only focus on Cognitive Behavioural models and treatments.

From focusing on these specific models and treatments for each of these disorders, Obsessive Compulsive Disorder and Panic Disorder will be discussed in turn and evidence pertaining to each analysed with reference to both adults and children. Conclusions will then be drawn as
to whether anxiety disorders in childhood are fundamentally different from anxiety disorders in adulthood.

There is insufficient data within much of the current literature (especially the OCD literature) to permit a consistent distinction to be made between children and adolescents for much of this piece of work. As age ranges vary across studies, children will be taken to be persons under the age of 18 for the purposes of this work, unless specified. In the Panic literature there is more of an opportunity for comparisons to be made between children and adolescents and the distinction will be made where possible.

Obsessive Compulsive Disorder is categorised according to the presence of obsessions, compulsions or both (DSM-IV; American Psychiatric Association, 1994). Obsessions are recurrent and persistent thoughts, images or impulses, experienced as intrusive and inappropriate which cause marked anxiety or distress. The person usually attempts to ignore or suppress the obsessional thoughts, or neutralise them with some other thought or action. The compulsions are performed in response to an obsession and can be repetitive behaviours or mental acts. They are aimed at reducing distress, or preventing some dreaded event or situation occurring. The obsessions and/or compulsions interfere with everyday functioning and cause marked distress (for full diagnostic criteria, see Appendix 1).

It is estimated that Obsessive Compulsive Disorder has a lifetime prevalence of two to three percent (Karno, Golding, Sorenson & Burnan, 1988). Over the years, theorists and researchers have attempted to understand the disorder and to successfully treat it. Hodgson & Rachman (1972) perhaps prepared the backbone of what one sees in treatment today. Obsessionals with concerns over contamination were asked to contaminate themselves, washing (the compulsive act) as predicted was associated with symptom decrease, not increase. Rachman, DeSilva & Roper (1976) exposed 12 obsessional checkers to a situation that provoked the urge to check, those who did not check for one hour began to notice a decrease in anxiety levels, known as ‘spontaneous decay’. This formed the basis of the well-known techniques of exposure and response prevention (ERP) as used today. The rationale being that repeated exposure to situations that trigger the obsessions will result in these thoughts and the associated anxiety. Prevention of the activity that usually leads to the reduction of this anxiety will then allow for the habituation of anxiety to happen. Repeated exposure leads to habituation or decline in anxiety, and with this the obsession becomes less
distressing and in turn so does the frequency that a compulsive response is required. This work was extended and it was demonstrated that content of obsessional thoughts was not distinguishable from normal intrusive thoughts. Salkovskis (1985), built upon these ideas, and utilising Beck’s (1976) notions that anxiety occurs when situations or stimuli are interpreted in a negative way, he developed a sophisticated cognitive model of Obsessive Compulsive Disorder (appendix 3).

The theory proposes that obsessional thinking comprise intrusive cognitions, such as thoughts, images, or impulses which are unpleasant, or unacceptable and are interpreted in a negative fashion. According to this hypothesis, if intrusive cognitions are interpreted as a sign that the person has responsibility for harm or prevention of harm, then persistent obsessional-thinking patterns may occur. This then links the intrusive cognition with the experienced discomfort and compulsive behaviours. Other factors such as increased attention to the intrusions, avoidance and seeking reassurance can all serve to maintain and exacerbate the intrusive thoughts, and the amount of preoccupation with them.

Cognitive Behaviour therapy was then delineated and whilst important that each intervention is tailored to the individual, general strategies can be adopted (Salkovskis, 1999). He proposes that a good therapeutic relationship needs to be established and highlights the need for normalising, so the patients do not see themselves as mad or unusual. Therapy also should aim to generate and modify negative beliefs, which are central to the problem. Behavioural experiments are to be devised to provide evidence and information regarding issues that are discussed in session. Therefore through discussion and behavioural techniques, the client comes to an alternative way of looking at their problem. Exposure and response prevention remain important in helping the client understand how compulsive behaviour serves to maintain their beliefs and that stopping these behaviours is beneficial.

Cognitive Behavioural therapy for Obsessive-compulsive Disorder in adults has received substantial support. Van Oppen, De Haan, Van Balkom, Spinhoven, Hoogduin & Van Dyck (1995) found it to be at least as effective as behavioural treatment alone. Whilst this does not necessarily provide evidence as to the theoretical base, it does not call the theory to be seriously questioned. Van Balkom et al (1994) conducted a meta-analysis of treatments for OCD and concluded that Cognitive Behavioural Therapy was superior to placebo therapy. Exposure and response prevention remain a major component of CBT and the quick
acceptance and good outcome findings may be that this was a well established and researched to be effective treatment already, of which CBT has built upon.

The strongest support emerging implicates dysfunctional appraisals and beliefs regarding inflated responsibility, alongside overestimation of threat and over-importance of controlling one’s thoughts in the pathogenesis of obsessional thinking, (Clark 2000, Clark & Beck, 2000). With this growing body of evidence, this model and subsequent treatment package with reference to OCD, shall be used to discuss whether anxiety disorders in childhood are fundamentally different from anxiety disorders in adulthood.

There is awareness that the model of CBT for adults has not been adequately established for OCD. Whilst there is literature on effectiveness of CBT with OCD, there is no knowledge regarding which specific components of the treatment package are the most effective and how this links with the theoretic base. Therefore it is difficult to draw conclusions on whether OCD in children is fundamentally different to that in adults, when discussed in reference to a CBT theory and treatment that has not itself been fully established. The emphasis may therefore lie on presentation and outcome studies centring on the effectiveness of CBT within these two populations, rather than the specific mechanisms of change.

March & Mulle (1998) ascertain that a large number of children and adolescents do suffer from OCD, and that children with OCD often become adults who present with the illness. Thomsen (1999) collated a variety of studies and concluded that approximately two percent of children and adolescents are estimated to be affected by OCD. Despite CBT’s prevalence and increasing evidence base within the adult literature, there has been relatively little investigation into the specifics associated with CBT and OCD in children.

In a review by Geller, Blederman, Jones, Park, Swartz, Shapiro & Coffey (1998), average age of onset for children with OCD was proposed at being seven years and six months to twelve years and six months. This review also highlighted that the majority of studies showed a gender bias for boys, with a ratio of three: two, boys: girls, which is usually found to be equal in adults (Rasmussen & Eisen, 1992). There was also high comorbidity with specific developmental disorders and disruptive behaviour disorders. Therefore whilst evidence points to the existence of OCD in children, the gender distribution, comorbidity and age of onset appears different in children and adults. This led the authors to conclude that OCD in children
could be fundamentally different to OCD in adults. However, the adult group who formed the basis for comparison, may well have contained adults with child onset and hence may not have been a suitably distinct comparison group. The literature was also mostly self-report and consequently may be prone to distortions. Therefore, whilst highlighting some differences in the presentation of OCD in children, it in itself is not sufficient to conclude that the disorder is significantly different in childhood to adulthood.

It is perhaps inevitable that certain age related differences will exist in childhood OCD and may have important treatment implications, but this does not necessarily highlight fundamental differences that cannot be understood by a particular theory and in turn successfully treated. Perhaps the emphasis is instead on understanding these differences and adapting techniques for children. Some researchers have begun to do this and whilst recognise, understand and treat OCD in children, they do so in a developmentally sensitive manner.

Perhaps the CBT that has done just that and has received the most attention in children and adolescent literature is that outlined and subsequently evaluated by March & Mulle (1998). They propose three stages of treatment, the first surrounding information gathering, the second concentrating on exposure, and the final stage incorporating response prevention supported by homework assignments. The cognitive component throughout focuses on cognitive restructuring, including self-statements to ‘boss back’ or cope with OCD. Parental involvement is promoted for at least two out of the 20 sessions. They showed that when 15 young people (six-eighteen years old) were evaluated after completion of their CBT programme as outlined above, 12 participants (80 percent) showed a 30 percent or more reduction on symptoms of OCD as measured pre-post treatment, on the Children’s Yale -Brown Obsessive Compulsive Scale (CY-BOCS; Goodman, Price, Rasmussen, Mazure, Fleischmann, Hill, Heninger & Charney, 1989). This is one of the only consistent measures of OCD with high reliability and validity (Scahill, Riddle, McSeiggin-Hardin, Ort, King, Goodman, Cicchetti & Leckman, 1997). Nine subjects showed a 50 percent or more reduction on this measure and none relapsed over the 18-month follow up. In the only controlled study for CBT and OCD in children, 22 children were randomly assigned to a Clomipramine (medication condition) or CBT condition (which comprised exposure and response prevention with cognitive restructuring). Both treatment conditions showed
significant improvements, but the CBT condition was significantly more effective in terms of reduction of symptom severity as measured by the CY-BOCS.

Therefore from these accounts, OCD can indeed be seen to be occurring in child and adolescent populations, and the theoretical basis and subsequent treatment protocol of CBT, concerning the importance of cognitions and behavioural work, appears to have high levels of success in understanding and treating this population, similarly to CBT with adults. Perhaps the difference is not one of a fundamentally different disorder, but is qualitative, in that the disorder needs to be understood and subsequently worked on specifically for how it presents in children and incorporating aspects of the child’s environment that are different to adults.

It seems to have proven incredibly difficult to compare specific cognition in childhood presentations of OCD with adults, due to developmental level and lower level of insight. Therefore information on understanding the disorder may be more limited to research into treatment (such as that by March & Mulle) and whether effects of treatment seriously call into question the theoretical base of the model in question. With successful treatment using CBT strategies albeit in qualitatively different ways in children and adolescents, it is difficult to conclude that childhood OCD is fundamentally different from adult OCD.

March & Mulle (1998) also outline some specific variables regarding the process of working cognitive behaviourally with children with OCD. They highlight the importance of externalising OCD, that it’s something outside of them, eradicating blame, and something of which they already have some control. This can enhance motivation and compliance, because therapist, parents and child can then all be seen to be on the same side, battling against the OCD. Predictable and controllable exposure is needed, as children may be less able to articulate specific obsessions and situations and have less insight into these, and so tasks need to be gradual and under the child’s control; the treatment should not be seen as a punishment. Exposure should be rehearsed in the safety of the sessions first (imaginal exposure) before taken into the child’s environment (in vivo exposure). Finally, level of cognitive functioning, social maturity and level of attention should be taken into account before treating children and adolescents. Adolescents for example are unlikely to co-operate if their level of ability and maturity is not accurately considered; for example calling the OCD a nasty nickname will probably not be welcomed.
An important difference between treating child and adolescent OCD compared to adult OCD is the apparent need for family involvement. Knox, Albano & Barlow (1996) reported that training the parents in some of the treatment protocols, such as exposure and response prevention, enhanced a child’s response to treatment and led to improved outcome. Therefore helping the family to understand the situation and help with treatment encourages compliance and motivation and in turns treatment success. Whilst qualitative differences exist in the approach and implementation of the treatment protocol, this does not lend support to the proposition under discussion, that anxiety disorders in children are fundamentally different to those in adults, with reference to CBT in OCD.

Cognitively the relationship between obsessions and cognitions for children may be less clear, but it does not necessarily follow that the understanding of the illness and the actual anxiety disorder in question are fundamentally different in children and adolescents, but instead the way that it is understood and worked with may need adapting for successful interventions to occur.

In summary, it is not possible with the available literature to investigate the specifics regarding responsibility cognitions and the links between obsessional thinking and compulsive acts in children and adolescents, primarily due to their cognitive developmental level and lack of insight. Therefore to directly compare the Cognitive Behavioural theoretical understanding of OCD in children and adults and whether this highlights evidence that OCD is fundamentally different in children is incredibly difficult. There are also no current ‘gold standard’ measures of OCD on which to base valid and reliable diagnostic procedures. What instead can be ascertained, is that there are indeed differences in presentation, such as the predominance of male children with OCD. However, utilising the CBT approach in treatment, there seems emerging evidence of success with understanding and treating OCD in this way for children and adolescents, similar to findings in the adult population. The basic concepts are the same, but the qualitative manner in which it is implemented is different, such as with the emphasis on externalisation and the involvement of the family. Thus CBT can be seen as an appropriate method for understanding and treating childhood OCD in much the same way as it can for adults, and therefore does not lend support that these anxiety disorders are fundamentally different.
Panic Disorder is the second anxiety disorder that will be discussed with regards whether childhood anxiety is fundamentally different in children compared to adults. The main feature of Panic Disorder is the occurrence of panic attacks. These are seemingly sudden feelings of discomfort or fear, with at least four symptoms as described in DSM-IV (appendix 2), some of which are; palpitations, breathlessness, trembling, nausea, chest pain and feeling hot and/or cold. Panic Disorder can occur with or without the presence of agoraphobia, in which situations identified with the panic are avoided. For the purposes of this piece of work, this distinction will not be made and panic disorder will be taken to incorporate literature pertaining to Panic Disorder with and without agoraphobia.

The Cognitive Behavioural model for understanding Panic Disorder again emphasises the importance of negative thoughts (Beck, 1976). The emphasis for this specific disorder is on the tendency to interpret certain bodily sensations catastrophically, thus interpreting bodily sensations as dangerous and perceiving these sensations to be indications of impending mental or physical harm, for example perceiving palpitations as an indicator of an impending heart attack. Clark (1986) built upon these notions, outlining a cognitive model of panic maintaining the centrality of perceived harm from misperception of bodily sensations, (appendix 4). The model incorporates a trigger that is internal or external, such as bodily sensations and thoughts or being in a department store (respectively). These are then interpreted as a sign of danger and subsequently produce a state of apprehension. This state then produces further bodily sensations, which are similarly interpreted as further evidence of impending danger and the cycle continues, culminating in a panic attack. Maintenance can be through hypervigilance to bodily sensations and avoidance, and also safety behaviours such as leaning against a wall when feeling faint. These create a pattern that maintains the belief that there is impending danger and the need to avoid or be careful in situations to prevent it from happening.

Cognitive behavioural treatments therefore aim to identify and change the misinterpretations of bodily sensations. Strategies include psycho-education, relaxation, cognitive restructuring and behavioural techniques which focus upon entering feared situations, to allow patients to disconfirm any negative predictions they may have about the consequences of their symptoms.
A Meta-analysis conducted by Oei et al (1999) evaluated 35 studies published between 1969 and 1996. Results supported CBT as an effective treatment for Panic Disorder. Less consistent was confirmation of the cognitive model and that cognitive behavioural therapy did not seem to produce cognitive change when in isolation from other procedures such as exposure. However, a more recent study by Petterson & Cesare (1996), (not incorporated within the previous meta-analysis) found that CBT produced significant change on affective, cognitive and panic attack measures that did appear to reflect the emphasis from the cognitive behavioural model on the centrality of misinterpretations of bodily sensations.

Therefore it will be extremely difficult to ascertain whether childhood Panic Disorder (PD) is fundamentally different from adult Panic Disorder when formulated in terms of the cognitive behavioural model and treatment for adults, when there is still no conclusive evidence for its propositions for an adult population as yet.

In a review of child and adolescent literature, Olendick, Mattis & King (1994) concluded that Panic Disorder occurred in adolescents and also occurred, albeit less frequently in children. Masi, Favila, Mucci & Millepiedi (2000) administered clinical interviews to 220 children and adolescents aged between seven and 18. They found 23 (ten percent) fulfilled the criteria for Panic Disorder, although only two were children under ten years of age. Fear of dying and depersonalisation were more frequent among this sample, whereas other cognitive symptoms commonly found in adults, such as derealisation and fear of going crazy were less common. These studies do not lend support to the notion that anxiety disorders, such as Panic Disorder in this instance are fundamentally different in children and adolescents, as the DSM-IV criteria is being met and evidence for the cognitive model is being borne out.

One reason Panic disorder may be thought not to be present or to be fundamentally different in younger members of the population as compared to adults, could be that children and adolescents are less likely to seek treatment for their problems and hence the prevalence of the disorder is thought to be negligible in children. King, Ollendick, Mattis, Yang & Tonge (1997) studied 649 Australian youths aged between 12 and 17 years old, of which 16 percent reported at least one full blown panic attack in the lifetime. Approximately 21 percent indicated these occurred out of the blue, and cognitive symptoms were reported, although less frequently than somatic ones. Surprisingly frequency and intensity of panic and related symptomatology, such as fear and depression were not disturbing enough for them to seek
treatment, unlike in the adult population where frequency and intensity of attacks are directly related to seeking treatment (Telch, Lucas & Nelson, 1989). It seemed that for these adolescents, it was not until agoraphobic avoidance developed that treatment was sought. Therefore there may well be an underestimation of children and adolescents with panic disorder as treatment is not sought and the problem remains unnoticed and unaccounted for. This may well have contributed to the ideas that anxiety disorders are fundamentally different in children than adults, but the difference may be more a lack of treating seeking, than fundamental distinction.

Ollendick (1995) treated four adolescents who had met criteria for Panic disorder, using sessions of CBT. These clients initially showed high levels of anxiety sensitivity, which is a measure of the tendency to interpret symptoms of anxiety as dangerous and fearfully react to bodily sensations. Therefore these symptoms appear to support the notions specified in the cognitive model of panic (Clark, 1986). Subsequent treatment was based on Cognitive Behavioural therapy, but was applied flexibly and was sensitive to developmental issues. The first part consisted of skills training, such as breathing, relaxation and cognitive coping strategies. Planning for in vivo exposure followed and a hierarchy for exposure jointly developed much in the same way as outlined with CBT treatment for OCD. Treatment gains were noticeable, with panic attacks eliminated and agoraphobic avoidance reduced. Self-efficacy and coping were enhanced as a result of treatment and these gains were maintained at six-month follow-up.

Therefore for adolescents, it would seem that Panic Disorder presents in much the same way as it does for adults, and can be understood and successfully treated following the CBT model and treatment rationales, but as with OCD needs to be implemented in a more flexible manner. In all cases the adolescents reported that panic attacks had occurred first, but as hypothesised by King et al (1997) these were not reported and treatment not sought until agoraphobic avoidance had begun to interfere with their daily lives. This has implications, in that Panic Disorder (without agoraphobia) may well have been present at a much younger age, but was not reported and subsequently has fed into notions that childhood anxiety is fundamentally different to adult anxiety.

Given this information, it is not surprising that literature is less well established in the area of child panic. With the previous studies already outlined and further reports from adolescents
and adults, there is a strong indication that panic does occur in childhood. However, the question is whether this is fundamentally different to adult anxiety and whether the panic is spontaneous and is characterised by catastrophic misinterpretations of somatic symptoms as described by the Cognitive model.

Nelles & Barlow (1988) hypothesise that spontaneous panic is rare if not non-existent in children. They conclude children do not have the cognitive ability to catastrophically misinterpret bodily symptoms and that until adolescence, children’s cognitive responses are dominated by external causation. Hence it is not until they reach adolescence that they would be able to make the internal catastrophic misinterpretations that are characteristic of Panic Disorder. Hayward, Killen, Hammer, Litt, Wilson, Simmonds & Taylor (1992) evidenced this further showing a striking correlation between rates of panic attacks with higher developmental stage. In effect, the different cognitive developmental levels of children might then preclude the use of cognitive behavioural strategies consistently found useful in adults and adolescents. This then highlights fundamental differences in understanding childhood anxiety and adult anxiety, as understood by the cognitive behavioural model and subsequent treatment (Clark, 1986).

Bibace & Walsh (1980) take these notions further. They propose a sophisticated level of illness explanation they term ‘psychophysiological’ where the person can identify internal structures and processes as a source of illness, but can recognise the importance of psychological factors such as feelings and thoughts. Nelles & Barlow reasoned that because children rely on external causality, they are not capable of reaching this level in conceptualising illness, and this stage cannot be reached until adolescence.

However, Bibace & Walsh found that in a study of 11 year olds, eight percent demonstrated the psychophysiological level of illness conception, differentiating internal and external causality. Similarly, Mattis & Ollendick (1997) in a study of eight, 11 and 14 year olds and through the use of guided imagery and imagining symptoms of panic, concluded that the majority of each age group reported this higher conception for their somatic symptoms. Therefore these studies do not support the notions that children cannot have spontaneous panic and cannot make catastrophic internal attributions characteristic of Panic Disorder and the Cognitive model of Panic. In effect these studies do not substantiate the statement that anxiety disorders in childhood are fundamentally different to anxiety disorders in adulthood,
with reference in this case, to Panic Disorder and the Cognitive behavioural understanding and treatment of this disorder.

To summarise, this is an area of considerable debate. It does seem that panic attacks are present in children and adolescents. The area of contention arises when the issue of spontaneous panic and internal catastrophic interpretations, are taken into account. Some researchers propose that children simply have not reached the cognitive developmental level for this to be a possibility (Nelles & Barlow), but others have found children do possess the psychophysiological level of illness conception which makes this possible (Bibace & Walsh).

It is also possible that there are other risk factors that are important in determining prevalence of Panic Disorder. Ollendick (1995) found that it was attributional style in response to negative outcomes that was predictive of internal catastrophic thoughts, and that this relationship was similar to that displayed in adolescents. The prevalence of a relative with Panic Disorder or any depressive or anxiety disorder increased the risk of Panic Disorder occurring in the offspring (Moreau, Weissman & Warner, 1989).

Therefore evidence points to the existence of Panic Disorder in children and adolescents, but as with OCD there may be subtle differences and treatment needs to be adapted to take account of developmental stage. There does not seem to be adequate evidence that childhood Panic Disorder is fundamentally different to adult Panic Disorder as the notions that children cannot make catastrophic interpretations of bodily sensations have not been supported and there is evidence to the contrary. Thus the difference may be one of recognition and qualitative distinctions to utilising the cognitive behavioural model in understanding and treating Panic Disorder in this population.

In conclusion, in OCD literature, some differences in prevalence have been noted and there is a predominance of male children with OCD. In the panic literature, researchers have argued that children simply have not reached the cognitive developmental level to be able to make internal catastrophic misinterpretations, (which are necessary if to be understood and treated using the cognitive behavioural model and therapy for Panic Disorder as applied to adults). However, the evidence as a whole appears to be more supportive of the general propositions delineated by the Cognitive Behavioural models and subsequent treatments. Perhaps the important considerations are around qualitative rather than fundamental differences, such as
recognising the importance of developmental stage, family involvement and need for control over treatment as much as is possible for the child. However it seems that generally CBT treatments for OCD and PD within a child population have been successful and do not lend support to the proposition that anxiety disorders in children are fundamentally different to those in adults.

Inferences from the literature must be made with caution as highlighted by a review by Kearney & Silverman (1992). They reviewed studies evidencing Panic Disorder in youngsters and reported many of the studies employed small inpatients samples sizes, evaluated few sources of information and did not always assess panic severity. Therefore from a methodological standpoint, cautious inferences need to be made and perhaps the emphasis should be on initially amending methodological flaws so as to produce quality research on which solid conclusions can be drawn, one way or another. Similar cautions apply to the adult literature where specifics of change using CBT have yet to be established for either OCD or PD. Therefore findings must be interpreted with caution, as the cognitive models and subsequent treatment for childhood anxiety disorders, are being compared to an unsubstantiated body of evidence within the adult population.

Finally it must be highlighted that whilst a distinction was often made between children and adolescents, no further distinctions have been made with regards younger children. Thus caution must be employed in inferring from these findings with regard generalising to all ages of children.

The topic under consideration is an important and highly contentious area, with vast implications with regards clinical practice in diagnosis and treatment of childhood anxiety disorders. Therefore there is a need for further research into this area with quality research on which solid conclusions can be drawn, on whether indeed anxiety disorders in childhood are fundamentally different from anxiety disorders in adults.
References:


APPENDICES:

Appendix 1: DSM-IV Criteria for Obsessive-Compulsive Disorder

Appendix 2: DSM-IV Criteria for Panic Disorder

Appendix 3: Cognitive Model of Obsessive Compulsive Disorder

Appendix 4: Cognitive Model of Panic
Appendix 1

DSM-IV Criteria for Obsessive Compulsive Disorder
DSM-IV Criteria for Obsessive-compulsive Disorder

A. Either obsessions or compulsions:

_Obsessions as defined by (1), (2), (3), and (4):_
1. Recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance, as intrusive and inappropriate, and cause marked anxiety or distress.
2. The thoughts, impulses, or images are not simply excessive worries about real-life problems.
3. The person attempts to ignore or suppress such thoughts, impulses or images, or to neutralise them with some thought or action.
4. The person recognises that the obsessional thoughts, impulses, or images are a product of his or her own mind (not imposed from without as in thought insertion).

_Completion as defined by (1) and (2):_
1. Repetitive behaviours (e.g. hand washing, ordering, checking) or mental acts (e.g. praying, counting, repeating words silently) that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly.
2. The behaviours or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation; however, these behaviours or mental acts are not connected in a realistic way with what they are designed to neutralise or prevent or are clearly excessive.

B. At some point in time during the course of the disorder, the person has recognised that the obsessions or compulsions are excessive or unreasonable. _Note:_ this does not apply to children.

C. The obsessions or compulsions cause marked distress, are time-consuming (take more than 1 hour a day), or significantly interfere with the person’s normal routine, occupational (or academic) functioning, or usual social activities or relationships.

D. If another Axis I disorder is present, the content of the obsessions or compulsions is not restricted to it (e.g. preoccupation with food in the presence of an eating disorder; hair pulling in the presence of trichotillomania; concern with appearance in the presence of body dysmorphic disorder; preoccupation with drugs in the presence of a substance use disorder; preoccupation with having a serious illness in the presence of hypochondriasis; preoccupation with sexual urges or fantasies in the presence of paraphilia; or guilty ruminations in the presence of major depressive disorder).

E. The disturbance is not due to the direct effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition.

Specify if:
With poor insight: if, for most of the time during the current episode, the person does not recognise that the obsessions and compulsions are excessive or unreasonable.
Appendix 2

DSM-IV Criteria for Obsessive Panic Disorder
Appendix 2:

DSM-IV Criteria for Panic Disorder With/without Agoraphobia

A. Both (1) and (2):

(1) Recurrent unexpected Panic Attacks
(2) at least one of the attacks has been followed by 1 month (or more) of one (or more) of the following:

(a) persistent concern about having additional attacks
(b) worry about the implications of the attack or its consequences (e.g. losing control, having a heart attack, 'going crazy')
(c) a significant change in behaviour related to the attacks

B. Absence of Agoraphobia (or Presence of Agoraphobia if meeting criteria for panic disorder with agoraphobia).

C. The Panic Attacks are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism).

D. The Panic Attacks are not better accounted for by another mental disorder, such as Social Phobia (e.g., occurring on exposure to feared social situations), Specific Phobia (e.g., on exposure to a specific phobic situation), Obsessive-Compulsive Disorder (e.g., on exposure to dirt in someone with an obsession about contamination), Post-traumatic Stress Disorder (e.g., in response to stimuli associated with a severe stressor), or Separation Anxiety Disorder (e.g., in response to being away from home or close relatives).

Panic Attacks are defined as:
A discrete period of intense fear or discomfort, in which four (or more) of the following symptoms developed abruptly and reached a peak within 10 minutes:

(1) palpitations, pounding heart, or accelerated heart rate
(2) sweating
(3) trembling or shaking
(4) sensations of shortness of breath or smothering
(5) feeling of choking
(6) chest pain or discomfort
(7) nausea or abdominal distress
(8) feeling dizzy, unsteady, light-headed, or faint
(9) derealization (feelings of unreality) or depersonalisation (being detached from oneself)
(10) fear of losing control or going crazy
(11) fear of dying
(12) paresthesias (numbness or tingling sensations)
(13) chills or hot flushes
Agoraphobia is defined as:

A. Anxiety about being in places or situations from which escape might be difficult (or embarrassing) or in which help may not be available in the event of having an unexpected or situationally predisposed Panic Attack or panic-like symptoms. Agoraphobic fears typically involve characteristic clusters of situations that include being outside the home alone; being in a crowd or standing in a line; being on a bridge; and travelling in a bus, train, or automobile.

Note: Consider the diagnosis of Specific Phobia if the avoidance is limited to one or only a few specific situations, or Social Phobia if the avoidance is limited to social situations.

B. The situations are avoided (e.g. travel is restricted) or else are endured with marked distress or with anxiety about having a Panic Attack or panic-like symptoms, or require the presence of a companion.

C. The anxiety or phobic avoidance is not better accounted for by another mental disorder, such as Social Phobia (e.g., avoidance limited to social situations because of fear of embarrassment), Specific Phobia (e.g., avoidance limited to a single situation like elevators), Obsessive-Compulsive Disorder (e.g., avoidance of dirt in someone with an obsession about contamination), Post-traumatic Stress Disorder (e.g., avoidance of stimuli associated with a severe stressor), or Separation Anxiety Disorder (e.g., avoidance of leaving home or relatives).
Appendix 3

Cognitive Model of Obsessive Compulsive Disorder (OCD)
Figure 1: Cognitive Model of OCD
(Salkovskis, Forrester, & Richards. 1998).

- Early Experiences
  (making you vulnerable to OCD)
- Critical Incident
  (what started the OCD off)
- Activate
- Assumptions, General Beliefs
  (eg. Not preventing disaster is as bad as making it happen:
  Better safe than sorry.)
- Intrusive Thoughts, Images, Urges, Doubts
- Neutralising Actions
  (rituals, reassurance, mental argument)
- Attention & Reasoning Biases
  (looking for trouble)
- Misinterpretations of Significance of Intrusions.
  - responsibility for action.
- Counterproductive 'Safety' Strategies
  (thought suppression, impossible criteria, avoidance)
- Mood Changes
  (distress, anxiety, depression)
Appendix 4

Cognitive Model of Panic
Figure 2: Cognitive Model of Panic: (Clark, 1986).

Trigger Stimulus
(internal or external)

Perceived Threat

Interpretation of Sensations as Catastrophic

Apprehension

Body Sensations
OLDER ADULTS ESSAY

‘Dementia Cannot be Cured. It Takes it’s Course.’ Critically Evaluate with a Discussion of Known Theories of Causes and Treatment Approaches.
Dementia comes from the Latin root ‘de mens’ indicating an observable decline in one’s mental abilities. The term dementia encompasses an array of symptoms that results in a global loss of cognitive functioning. Dementia is predominantly a disorder of later life, and is estimated to effect approximately five percent of people over the age of 65. The prevalence and incidence rises sharply with advancing age and it is estimated that up to 20 percent of people over the age of 80 are affected by this form of chronic disease (Terry & Katzman, 1983).

Alzheimer’s Dementia (AD) is the most common irreversible dementia and accounts for up to 50 percent of cases (Tobiansky, 1993). Other types of dementia include Vascular dementia, accounting for approximately 20 percent of cases and Lewy-Body type dementia, accounting for between five and ten percent of cases. Other rare dementia’s include; post head-injury dementia, auto-immune deficiency syndrome dementia, frontal lobe dementia and Prion disease (Livingston, 1994).

Early stages of dementia and specific diagnosis seem to be impeded by lack of good standardised measures and clear-cut diagnostic criteria. Therefore whilst not a focus of this piece of work, there is acknowledgement that diagnosis and measurement of change may not always be totally accurate.

Alzheimer’s type dementia with late onset (after 65) will mainly be the focus for this piece of work, due to its predominance. AD’s most prominent features include progressive cognitive deficits, (namely memory loss), behavioural changes and intellectual difficulties. Other symptoms include disorientation, impaired language abilities; personality changes and disturbances of affect (Tobiansky, 1994; Burns, 1996). Some research does not specify the type of dementia and references may be made to work in which the exact category of dementia is not known. When the term dementia is used it will assume AD unless otherwise specified.

This work will aim to look in detail at some of the current theories and treatments available for AD, to determine whether Dementia is incurable and simply takes its course, or whether
certain models of understanding and treatment approaches could effect the course of this disease. This work will concentrate on a selection of approaches and treatments, such as neurochemical, psychodynamic and psychosocial propositions. There is recognition that there are many other theories and treatment rationales even within the same domains, which have not been delineated in this work.

**Neurological and Neurochemical Perspectives:**

Detailed research into the neuropsychology of dementia has provided a wealth of information. Varying degrees of cognitive impairment have been related to underlying neurobiological impairment (Morris, 1996). AD is associated with enlargement of the sulci and ventricles of the brain, which reflects brain shrinkage (Lantos & Cairns, 1994). There are complications as markers of AD can also overlap with the effects of ‘normal’ ageing, as with the development of neurofibrillay tangles, senile plaques and gran vascular degeneration (Esiri, 1991). Perhaps the most important information is derived from the location of changes, which can provide a strong clue as to what neuropsychological changes to expect. For example in AD, neuropathology tends to be seen in areas concerned with high level integration of information, spanning visuo-spatial processing, language and executive functioning. Less affected typically are areas concerned with sensory processing (Bondareff, Raval, Coletti & Hauser, 1988). This then correlates with the relatively poor higher order cognitive processing typical in AD and the relatively preserved low level auditory and visual processing (Nissen, Corkin, Buonanno, Growden, Wray & Bauer, 1985). In AD, neurofibrillary tangles are found in large quantities in some of the hippocampal structures and entorntal cortex, which would explain the profound memory impairment associated with the disease. These propositions substantiate the statement that ‘dementia cannot be cured, it takes it’s course,’ as little has been proposed to effect these progressive, structural changes.

Neurochemical changes have also been implicated in the course of dementia, with notable decreases in neurotransmitter (NTM) activity. One of the most consistent findings is that there are alternations in enzyme systems involved in cholinergic functions, together with a deterioration of cholinergic neurons (Sutherland, Molchan & Zubenko, 1995). Acetycholine is one such important NTM affected and is associated with memory. These findings led to the hypothesis that pharmacological enhancement of acetycholine neurotransmission could potentially alleviate some of the symptoms of AD. Aricept (Donepezil Hydrochloride) is one such acetycholinesterase inhibitor which acts to increase acetycholine from within the
synapses of neurons, which have remained intact in the AD sufferer (Weinstock, 1999). Tacrine (Tetrahyroaminoacridine) was the first such compound which worked in this way. It was found to improve cognitive function in up to 30 percent of people with AD, who were given up to 160mgs a day over a six month period (Conway, 1998). However, a fifth of participants developed side effects and 40 percent had raised hepatic transaminase levels (liver toxicity). The drug therefore was not recommended for use.

Aricept is one of the newer drugs and studies have demonstrated benefits with its use. Rogers, Doody, Mohs & Friedhoff (1998) found that cognitive functioning, activities of daily living and global functioning improved in 473 patients taking five-ten mgs of Aricept, as compared to a placebo. No differences were found between doses. After the six-week washout, improvements had returned to the level of the placebo group.

Thus whilst these medications cannot and do not propose to cure AD, they appear to provide some symptomatic improvement of functioning in sufferers, even if only short-term. Therefore whilst there are no propositions surrounding a potential cure for dementia, perhaps it's course can be impacted upon, even just temporarily, giving the sufferer an improved quality of life for longer. This then lends support to the statement that dementia cannot be cured, but brings into question the inevitability of its course.

Whilst traditionally there was assumed to be a causal relationship between underlying neuropathology and dementia, this fails to take into account the vast individual differences and minimises the complexity of the human experience of dementia. Kittwood (1993) highlights the lack of correlation between dementia as measured in the living person and the nature and extent of neuropathology found post-mortem. This then leads one to question the inevitability of the 'course' of dementia and the influence of psychological and environmental factors with regard patterns of behaviour change and deterioration.

**Malignant Social Psychology:**

Tom Kittwood has been influential in bringing the individual with the dementing illness to the forefront. Kittwood (1993) argued that the presentation of dementia was not simply a manifestation of underlying neuropathology. He hypothesised that the environment surrounding the individual could negatively impact upon the person with dementia, leading to greater dysfunction and disability. He termed this the 'malignant social psychology' which
serves to devalue, dehumanise and depersonalise the individual with dementia. Kittwood therefore suggested that the presentation and accepted course of dementia might appear more impaired than necessitated by actual sustained neurological impairment. Thus whilst neurological impairments are difficult to modify and pharmacological treatments are still in their infancy, there are other factors which could be worked upon, which are more amenable to treatment. Therefore according to his theory, psychosocial interventions could address these factors and the nature and course of dementia could potentially be modified. Kittwood emphasised that whatever psychological approach employed, empathy, imagination and understanding are required to enable the therapist to gain insight into the unique world as experienced by the person with dementia.

This theory does not attempt to deny the incurable nature of dementia and the inevitable endpoint of death. However, it proposes that some of what are classed as aspects of the dementing illness are in fact determinants of the environment and society around the individual and can be positively impacted upon.

These considerations led to the development of 'Individual Programme Planning' (Woods & Britton, 1985), which emphasised the need for individual personalised plans for working with each person with dementia. At the centre should be, as many aspects of the person's life as possible and the person with dementia should be consistently involved. Understanding the individual and his/her strengths and resources, allows interventions to be tailored in relation to each individual and meet their particular needs. The approaches employed are therefore secondary to this individual planning process. Some of these approaches will now be explained in more detail.

**Psychodynamic Interventions:**

Many different psychodynamic explanations have emerged in trying to understand dementia. Generally speaking, it has been proposed that dementia results in weakened ego functioning, with increased dependency and diminished mastery over the environment. Depending on adequacy of the individuals defences, these changes may trigger unresolved psychodynamic conflicts (Soloman, 1982). In the early stages of dementia, it is proposed that the ego tries to protect itself from any further losses, often through utilising defence mechanisms such as denial, withdrawal and projection. As the illness progresses, the individual becomes more dependent as these defence mechanisms fail and the individual often becomes distressed, as
he or she struggles to maintain a sense of self. Agitation, hostility and isolation can then be witnessed. As the dementia continues, the individual relies more heavily on others, which can result in fear of separation and need for constant contact. In the more severe stages of the illness, even the ability to utilise others in this way, as a means to enhance one’s sense of self becomes compromised and often the result is anxiety, confusion and psychotic defences (Sadavoy, 1991).

Therefore in general terms, the rational behind treatment is to provide an accepting therapeutic relationship, where the individual can feel safe and understood (Hausman, 1992). The goals of treatment are primarily to help replace inadequate coping strategies with more adequate ones, reduce emotional distress and reorganise the sense of self to incorporate the dementia. In line with propositions made by Kittwood, the sense of self is maintained through empathic listening, use of the therapeutic relationship in providing a reassuring, supportive and calming presence and in validating remaining competencies.

Evidence for psychodynamic work has been scarce and remains virtually untested. Instead, support tends to come from clinical case vignettes. One study by Akerland & Norberg (1986) compared emotional and cognitive functioning in five demented inpatients after they had initially received reality orientation (RO), followed by psychodynamic group therapy. Sessions lasted an hour and a half, four times a week. Retrospective, qualitative interpretations made by group leaders described the participants as more active and working at a higher cognitive level in the psychodynamic group, than when they had been in the RO group. However, there were no provisions against rater bias and no control groups or standardised measures applied. However, this type of work can be helpful in focusing treatment and understanding the individual intrapsychic experience and meaning of the illness within a person’s sense of self. This then can be extremely helpful in working out specific strategies or utilising other techniques to work with the person with dementia. This approach does not attempt to question whether dementia can be cured, or the inevitability of its course. It does however attempt to understand and work on some aspects of the presentation, which may not necessarily be manifestations of an underlying neuropathology.

**Reality Orientation (RO):**

Reality orientation has been used with dementia sufferers for more than 30 years. It was developed as a means of orientating a person to their environment through the use of continuous stimulation. RO can be applied in two ways; continuous 24 hour RO and
classroom RO. The former involves staff involving the patient in reality throughout the day, making numerous changes to the person's environment, implementing clear sign-posting of locations, memory aids and extensive use of notices. Classroom RO is usually conducted with groups of between three and five patients. Generally they meet for at least two, half hour sessions a week (Holden & Woods, 1995). Classroom RO has been recommended for those who are able to function at a fairly independent level in the community.

The theory behind Reality Orientation, was that the confused state that is often present in a demented individual, could be attributed to more than underlying neuropathology. That confusion could also be due to lack of stimulation, lack of expectations or insistence that normal behaviours could be performed, with the non-reinforcement of desired behaviours when they are performed. Thus some of the confusion could be decreased through social interaction, mental stimulation and adjusting behavioural contingencies (Williams, 1995). It was also proposed that RO could provide the person with an increased self-esteem and improved sense of control.

Gerber, Prince, Snider, Atchison, Dubois & Kilgour (1991) randomly assigned 24 inpatients with dementia to either classroom RO, a recreational activities group or a control (standard hospital care) for an hour a day, four times a week for ten weeks. Language and orientation improved in the treatment groups, but not in the control. However these returned to pre-test levels just ten weeks after treatment ended. Holden & Woods (1995) conducted a major literature review on RO. They noted many differences between studies, with only one third including 24 hour RO. They detailed the different materials and activities used to engage patients with their surroundings. They also highlighted the differences in specificity of diagnosis and different measures used. However even with these differences, the conclusions were remarkably consistent, lending support to the use of RO sessions in increasing scores on verbal orientation, as compared to no-treatment controls.

These findings represent positive effects on some of the symptoms of dementia, especially reduction in confusion, even if only in the short-term. Again this highlights that whilst RO does not constitute a cure for dementia and does not alter it's severity as it progresses, some of the symptoms and states associated with the illness may be effected positively. This then questions the inevitability of all symptoms associated with dementia and encourages one to
look at the heterogeneity of presentation, the individual and environmental influences and not just the underlying disease.

**Reminiscence:**
This method was developed specifically for older adults. Its primary aim was to facilitate the client in recalling past experiences. It aims to promote well being, enhance self-understanding and interpersonal and intrapersonal functioning. It also aims to help someone achieve a sense of meaning to their life (Erikson, 1959). Reminiscence is distinct from life review work, which comprises an evaluation and re-synthesis of experiences of the past, focused on resolving conflicts before one dies (Butler, 1963). When working with the individual with dementia, reminiscence can establish a point of contact, which often can then be used in reality orientation and other therapeutic approaches. Increased communication, socialisation and pleasure are further propositions made by this approach.

The basis for it's utility, stems from the beliefs that remote memories are better preserved in individuals with dementia, and therefore this method can draw on this strength. However, recent investigations have failed to substantiate these notions and show performance is depressed compared with age matched controls, even for remote memory. What in fact is being shown is as with ‘normal’ older adults, older people simply recall more memories from early life, and these are often well rehearsed and have particular personal significance (Morris, 1994). However, it remains a relative strength and supports the theory behind the potential application of reminiscence work.

Reminiscence is usually conducted in group settings. The facilitators play an active role in promoting patient participation. Norberg, Melini & Asplund (1986), investigated the effects of music, touch and objects used to stimulate touch, smell and taste, and found that music alone was the most stimulating. Similar observations have been made by Lord & Garner (1993), who randomly assigned 20 nursing home residents to a half-hour standard recreational group, or a group playing big band music from the 1920's and 1930's. The latter demonstrated better recall of personal information and an increase in interaction and improvement in mood. Woods, Portnoy, Head & Jones (1992) suggested that music triggers are particularly effective for this group of individuals.
Goldwasser, Auerbach & Harkins (1987) conducted a study whereby 27 people with dementia were randomly allocated to a reminiscence group, an attention placebo support group or a no treatment control. Cognitive functioning, activities of daily living and depression were measured. Only measures for depression showed an improvement pre to post group testing in the reminiscence group as compared with the other two. However, this finding had disappeared by follow up. This remains a popular method as it concentrates on the person with dementia as an individual and capitalises on their strengths. As with all methods, the outcome of studies investigating effectiveness depends on what is trying to be achieved, whether this is an improved quality of life, or an improvement in cognitive abilities. What remains clear throughout these methods is the importance of the individual experiencing the disease and not simply the underlying pathology.

Therefore this method impacts only slightly on the presentation and course of dementia, and certainly does not attempt to be a cure. However, it does focus on the individual and their personal experiences, past and present. It can also increase the degree of staff-patient contact and increase carer's knowledge about that individual. Therefore, whilst dementia remains incurable and taking it's inevitable course towards death, again it seems that the exact nature of this course can be impacted upon. Thus certain symptom presentation, such as reduced interaction and depression may not be simply manifestations of an underlying pathology. Instead these could be viewed as partially resulting from the interaction between the individual and their environment, and hence be amenable to modification. Therefore perhaps the only thing that remains certain in dementia, is the inevitability of death. The accompanying symptoms and behaviours may not necessarily be incurable and on such static, predetermined path.

**Cognition Rehabilitation Techniques:**

Cognitive rehabilitation techniques have been successfully used with people with brain trauma for some time (Wilson, 1989). More recently there has been increasing interest in the applicability of these to people with dementia (Arkin, 1997).

Woods (1995) describes three main strategies. The first is concerned with the use of internalised mnemonics, when the person is taught strategies to aid their learning and retrieval, such as the use of visual imagery. These techniques have shown some success, despite the effort required to use mnemonics and the level of cognitive ability, which is
obviously compromised in people with dementia (Clare, Wilson, Breen & Hodges, 1999). The second cognitive rehabilitation technique applied to people with dementia is concerned with decreasing cognitive load. The idea is that if cognitive load is decreased, then any retained abilities can be maximised and used in a more effective way. This can be done, simply by adapting the environment. Careful, clear sign posting can help, whilst distracting stimuli should be kept to a minimum. The environment should tap into familiar associations that the person has learnt well, to decrease effort and cognitive demands. External memory aids have been highlighted as a useful tool in decreasing cognitive load and in enhancing performance (Bourgeois, 1992). Memory aids can be anything from diaries, relevant pictures or watches. Bourgeois, (1990, 1992) studied the effects of memory aids on conversational skills in persons with dementia. The aids consisted of photographs and pictures of people and events, past and present that were important to the individual. People close to the participant were then encouraged to use these aids in communications with the person with dementia. Independent raters assessed quality of conversation and found that through using these aids, more statements of fact were spoken and there was a noticeable decrease in ambiguous utterances. It is important to note that in most of the studies that evaluated memory aids, specific training was required for any cues to be used by the person with dementia. Backman (1992) concludes that for optimal performance, support both at time of learning and at time of retrieval is required. Again, these methods described so far do not aim to cure any element of the dementing illness, or stop the inevitable decline. However, they do suggest ways in which one can tap into a person’s remaining strengths to improve their day to day functioning. Also these findings can challenge some of what are classed as manifestations of the illness, but may actually be determinants of the environment. For example, to what extent is an individuals’ upset and confused state necessarily part of the course of the dementing illness? Instead, to what extent has this state resulted from the cognitive demands placed on an individual, residing in a large ward, with lots of other residents and constantly changing staff? The question remains as to whether the same pattern be seen in an individual residing in a small home, with a few consistent staff members and residents. These notions once again do not question the incurable nature of the illness, but do question the inevitability of the manifestations of the illness and the severity and progression of these.

Woods (2001) draws attention to the encouraging rates of forgetting in patients with dementia. It is thought that once information is adequately stored, the rates of forgetting after the first ten minutes are in fact virtually the same as that in people without dementia.
Therefore the emphasis should be on facilitating the learning of information, and several techniques have been developed to achieve this. Camp, Foss, O’Hanlon & Stevens (1996) describe spaced retrieval, whereby one item at a time is learned. Each item is presented in turn and if successfully recalled the retrieval period is expanded (doubled). If not successfully recalled, then the retrieval time is halved. Eventually this allows the item to be fully registered and subject to the normal rate of forgetting. Camp et al (1996) reported how patients with dementia could successfully be taught to use a calendar (an external memory aid), with the spaced retrieval technique. Sandman (1993) highlights that encoding can be maximised through the use of self-generated cues, which make the event more memorable and distinctive. Patients are often encouraged to develop a routine to decrease cognitive load and use memory aids, alongside encoding and retrieval techniques. However this must not be at the cost of having something worth remembering. Therefore, rich and meaningful experiences will enhance the associated memories. It is worth noting that for many of these techniques to be useful, there needs to be a shared understanding that a memory problem exists and needs working on. It is unclear what proportion of patients would be willing and able to work on their difficulties in this way. Any anxiety about one’s difficulties could well interfere with the learning process (Josephsson, Backman, Borell, Bernspang, Nygard & Ronnberg, 1993). Also, given that the person’s cognitive abilities would be expected to continue to decline, which has not been challenged by any theory presented, how much are heroics being encouraged, that are ultimately hopeless?

The focus must be on the individual and their quality of life, and this requires careful consideration of all techniques. Therefore in view of the question under consideration, again no cure is aspired to and the course of illness still very much taken as impenetrable. However, perhaps some of the symptoms of the illness can be altered or relieved and even some aspects of the illness improved upon in the short-term. Yet other considerations emerge, such as how much of a benefit can there be in focusing on retrieval, if this increases a person’s anxiety. Plus what are the benefits to an individual, if by decreasing cognitive load and creating well learned routines, one takes away the richness and meaning in their everyday experiences and in effect removes anything worth remembering?

**Behavioural Disturbance:**
Disturbances in behaviour can have the greatest impact on caregivers and on decisions regarding pattern of care and placement allocation (Donaldson, Tarrier & Burns, 1998). Some
of the behavioural difficulties commonly associated with dementia include; lack of attention to personal hygiene, restlessness, eating difficulties, sexual difficulties, physical aggression and incontinence (Woods, 2001). In the past these have often been seen as part of an underlying pathology. However, through taking a person centred approach, looking at the interaction of the individual with the environment, this negative irreversible course could potentially be acted upon. As Stokes (1989) proposes, difficulties in dementia may arise, as it becomes increasingly difficult for the person to clearly communicate his/her needs to others. Gilleard (1984) similarly supported these views, commenting that there was a dimension of behavioural disturbance that was independent from the underlying impairment. He advocated understanding the behaviours and looking for alternative explanations within the individuals character and life history and the current environment. For example, he delineates some reasons why various forms of wandering might occur. The first he said could be classed as 'stalking old haunts', whereby a person (usually male) has been used to routine and this habit remains. The difference now, is that success in making and returning from the visits may be compromised by the illness. Another type of wandering could be explained by restless activity seeking, perhaps by someone who is physically fit, but less competent mentally. They may well be typical of a person used to a high level of activity in their past. Understanding behaviour in the wider context could then encourage the use of interventions to modify these behaviours. Bird, Alexopoulos & Adamowitz (1995) reported success from a series of single case studies, whereby a highly individualised approach was adapted to challenging behaviours. Spaced retrieval was implemented in teaching individuals to respond to cues that aimed to prompt appropriate behaviours, such as going to one’s own bedroom, as opposed to that of other residents.

Aggression is commonly reported in people with dementia and often can be seen as the property of the person with dementia or the underlying illness, rather than arising from the interaction of the individual with the care-giving environment. Most frequently these behaviours can be seen as over reactions to frustrations, with their decreasing cognitive ability. Similarly accusations could be understood by the person misinterpreting events and using external sources of blame for their own incompetence. This has been termed ‘adaptive paranoia’ (Lieberman, 1975) as by blaming others, this reduces the distress of recognising one’s increasing difficulties and lack of control over one’s environment. Hussain (1983) reported success in reducing disruptive behaviours, through the identification of environmental cues for behaviour and providing a system of rewards for appropriate
behaviour. Similarly disruptive behaviour could be better understood and then impacted upon, by taking a full history, and trying to understand the individual and their possible needs and what the behaviour is communicating.

Thus the interdependence of the individual and the connections with their environment can help understand more fully the person with the dementia, their needs and behaviours. Whilst cognitive retraining may be useful, these should be tailored and understood with regard each individual. Again, these concepts do not challenge the proposition that dementia cannot be cured, or that it takes its course. Yet again, some of the behavioural manifestations associated with the disease may be seen psychologically as an expression of poorly communicated or unmet needs, and not simply a reflection of the underlying neuropathological impairment.

**Conclusion:**
The term dementia encompasses an array of symptoms that results in a global loss of cognitive functioning. This work aimed to look in detail at some of the current theories and treatments available for dementia, to determine whether this disease is incurable and will simply take it’s course.

Detailed research into the neuropsychology of dementia has provided a wealth of information and proposed that varying degrees of cognitive impairments are related to underlying neurobiological impairment (Morris, 1996). Neurochemical changes have also been implicated in the course of dementia, with notable decreases in neurotransmitter activity. Acetycholine is one such important NTM, which is affected and is associated with memory. Aricept is one of the newer drugs, which enhances acetycholine neurotransmission and studies have consistently demonstrated benefits with its use, but only in the short term (Rogers et al, 1998).

Kittwood (1993) highlighted the lack of correlation between dementia as measured in the living person and the nature and extent of neuropathology found post-mortem. He brought into question the inevitability of the ‘course’ of dementia, and instead indicated the need to look at the influence of psychological and environmental factors with regard patterns of behaviour change and deterioration. In view of this, psychosocial theories and interventions emerged, aimed at effecting the disease, by taking into account the interdependence of the individual and the connections with their environment. Reality Orientation, Psychodynamic
therapy, Reminiscence, Cognitive rehabilitation and Behavioural remediation methods were outlined. Whilst none of these purport to cure dementia and none have been successful in slowing the course of progression of the illness. What has emerged is that some of what have been classed as symptoms and manifestations of dementia, such as inability to learn, disruptive behaviours, confusion and sociability, may not necessarily be manifestations of an underlying pathology. Instead they may be understood as resulting from the interaction of the individual with their environment, and can therefore be positively impacted upon.

In conclusion, it would seem that at this present time, dementia cannot be cured and it will take its inevitable course. However, manifestations of the disease may arise from an interaction between the individual and their environment and their course may not be so predetermined and impenetrable.
References:


CLINICAL DOSSIER

OVERVIEW

This section contains an overview of the clinical experience that has been gained over the course and summaries of the five case reports submitted (four from the core placements and one specialist report). Full details of these reports, along with placement contracts, log books of clinical experience and placement evaluation forms are in Volume 2. This is held in the Psychology Department within the University of Surrey due to the confidential nature of the documents.

N.B: all client names and identifying characteristics have been changed to protect anonymity.
CORE ADULT MENTAL HEALTH PLACEMENT:

Dates: 11th October 2000 - 23rd March 2001  Supervisor(s): Farzeen Huq (Consultant Clinical Psychologist) and Stacia Borenstein (Clinical Psychologist)

NHS Trust: South West London and St. Georges Hospital Trust

Base(s): Springfield Hospital and St George’s Hospital

Summary of Experience:

This placement provided experience in assessment and intervention, working primarily from a Cognitive Behavioural perspective, with a variety of adult mental health problems, such as anxiety, depression, anger, obsessive compulsive disorder, cognitive impairment and body dysmorphic disorder. Clinical work was primarily conducted on a one to one, outpatient basis and working as part of a community mental health team. This placement also provided grounding in psychodynamic concepts and the opportunity to use these in formulation and treatment. There was opportunity to use the BAI, BDI and Raven's Matrices.

Meetings, Seminars, Visits and Research:

I attended weekly community mental health team meetings and case presentations for three months. I attended ward rounds and an open morning at a local day hospital. I met with all members of the team and spent time observing most of them. I also attended a Seminar on Dialectical Behaviour Training (DBT) given by Trudy Chalder.

CORE PEOPLE WITH LEARNING DISABILITIES PLACEMENT

Date: March 2001 - September 2001  Supervisor(s): Dr. Britta Nagel

NHS Trust: Springfield and St Georges NHS Trust  Base(s): Springfield Hospital

Summary of Experience:

This placement provided experience working with adults with learning disabilities using various models of treatment, with an emphasis on psychodynamic thinking. Clinical work comprised one to one interventions, behavioural work with care home staff and neuropsychological assessment, gaining skills using the WAIS-III, Vineland and Leiter.

Meetings, Seminars, Visits and Research:

I attended Valerie Sinason’s psychotherapy supervision group on a weekly basis. I also regularly attended team meetings. I met with many team members, such as the community nurse, speech and language therapist, art therapist and chief occupational therapist. I also had the opportunity to observe a Communication group, Makaton group, sensory stimulation group women’s group. I attended a ‘stamping out abuse’ training day and ‘essential mental health awareness for people working with people with learning disabilities.’
CORE CHILD AND FAMILY PLACEMENT:

Dates: 10th October 2001 - 22nd March 2002

Supervisor(s): Dr. Neil McGibbon

NHS Trust: South West London and St George's Hospital Trust

Base(s): Battersea Adolescent Service

Summary of Experience:

This placement provided experience of being in a multidisciplinary team working with adolescents, but also providing some individual work with younger children on an outpatient basis at St George's Hospital. This placement used a wide range of theories and models to inform psychological work, but psychodynamic thinking was often the preference in formulating. Clinical work comprised: assessment for interviews; neuropsychological assessment (WISC, WORD, WOND, STAXI, BAI and BDI-II); individual work and multidisciplinary work. Experience was gained over a range of presenting problems including depression, self-harm, anxiety, physical abuse, anger, phobias, bereavement, OCD and cognitive impairment. An important part of this placement was the creation and planning of a 'chill out day' for adolescents who have cared for/ are caring for someone with substance misuse problems.

Meetings, Seminars, Visits and Research:

I attended weekly seminars for trainee psychologists covering a variety of clinical areas. I also attended weekly team meetings and CPD for the adolescent service. There was also a Clinical Psychology meeting on a weekly basis and I presented a case at one of the weekly clinical psychology CPD sessions. I also attended a day workshop on Autism and Aspergers organised by Maria Callias.

CORE OLDER ADULTS PLACEMENT:

Dates: 3rd April 2002 - 20th September 2002

Supervisor(s): Carolyn Richardson

NHS Trust: South London and Maudsley NHS Trust

Base(s): Ladywell House, Lewisham

Summary of Experience:

This placement provided experience working eclectically with older adults in hospital outpatient clinics, hospital wards, care homes and the community. Clinical work comprised assessment and intervention with problems such as bipolar affective disorder, depression, challenging behaviour, post-stroke depression, alcoholism and OCD. Neuropsychological assessment was completed using the Wechsler Test of Adult Reading (WTAR), Wechsler Adult Intelligence Test - Third Edition (WAIS-III), Beck Depression Inventory (BDI),
Wechsler Memory Scale (WMS), Graded Naming Test, Trail Making test, and FAS and animals.

Meetings, Seminars, Visits and Research:
I attended a weekly Cognitive Behavioural Group. I also had the opportunity to observe and work alongside an Occupational therapist, Community Psychiatric Nurse, Social Worker, Psychologist and CBT therapist. I attended ward rounds and visited nursing homes and Domus’s in the catchment area.

SPECIALIST PLACEMENT IN PAIN MANAGEMENT:

Dates: 16th October 2002 - 28th March 2003
Supervisor(s): Dr. Rachel Vickers
NHS Trust: Guy's and St Thomas' Hospital Trust
Base(s): 'INPUT' St Thomas' Hospital

Summary of Experience:
This placement provided excellent experience of working with inpatient pain groups, within a multidisciplinary setting, based upon Cognitive Behavioural principles. Clinical work comprised ‘screening’ potential clients for programme suitability, one to one work and running psychoeducational components of the pain programme, with sessions focusing on the impact of thoughts and feelings on coping more effectively with pain and running sessions for family and friends during each programme.

Meetings, Seminars, Visits and Research:
I attended weekly team meetings, weekly diary meetings and weekly staff education meetings, which covered topics such as facial pain, sleep, graded exposure and a trip to the Body Worlds exhibition.

SPECIALIST PLACEMENT WITH CHILDREN AND FAMILIES WITH HIV/AIDS.

Dates: 9th April - September 26th 2003
Supervisor(s): Brigid Hekster
NHS Trust: South London and the Maudsley
Base(s): CASCAID, 307 Borough High St.

Summary of Clinical Experience: This placement involved working with children and families with HIV. Clinical work comprised mainly one to one work with parents (mostly mothers) and some family work. I also sat in a paediatric clinic fortnightly. Clinical work mainly centred around issues of disclosure, difficulties accepting own/child’s diagnosis of HIV, depression, relationship issues and difficulties in the child’s behaviour.

Meetings, Seminars, Visits and Research: I met with most team members and visited social services and local charity groups. I attended a workshop on safeguarding children and also on using CBT for trauma, with children who are asylum seekers or refugees.
SUMMARY OF THE ADULT MENTAL HEALTH CASE REPORT:

‘Assessment and Intervention of a 30 Year Old Female Client With Obsessive Compulsive Disorder, Using Cognitive Behavioural Therapy.’

Main Presenting Problem:
Mrs. L was referred to the Community Mental Health Team by her Occupational Therapist for assessment for Cognitive Behavioural Therapy, for help with her Obsessive Compulsive Disorder. Her obsessional thoughts surrounded death and dying and the compulsive behaviour consisted of crossing in the air with her right hand, every time she had such thoughts. This process was happening around 30 to 50 times a day. She had seen a Psychotherapist for four years, but there had been no shift in her OCD, so she was seeking an alternative form of treatment. She was also concerned that her two-year-old daughter would soon start asking questions about her behaviour.

Assessment Procedure:
- Assessment for Treatment interview, drawing on the Cognitive model of Obsessive Compulsive Disorder (Salkovskis, 1998) and DSM-IV diagnostic criteria for Obsessive Compulsive Disorder.
- Psychometric Tests: the Beck Depression Inventory (BDI) and the Beck Anxiety Inventory (BAI).

Formulation:
Mrs. L’s problems were formulated within the framework of the cognitive model of OCD (Salkovis, 1998). Mrs. L. had thoughts surrounding death and dying, which may in part been due to her not grieving properly for the deaths of some family members in her adolescence and her pregnancy termination. This was compounded by low self-esteem from bullying and sibling rivalry. These thoughts made her anxious and she would cross them out to reduce the anxiety. In the short-term this brought temporary relief, but had become less effective over the years. Reduction in anxiety had been associated with crossing. Avoidance of reading papers or watching television where images or stories on death could be found, had maintained and exacerbated this pattern. The low mood created by her own behaviour served to increase her obsessional thoughts and in turn the rituals. Crossing meant she had never tested the reality of the thoughts she had had and whether she could in fact cope with these.
**Intervention:**
Following assessment, the formulation was shared with Mrs. L and therapeutic goals set. The Cognitive-behavioural intervention focused on reducing her neutralising behaviours (crossing) and managing her intrusive thoughts. Treatment began with education about the cognitive model, anxiety management and cognitive work looking at the meaning of her thoughts and trying to try to modify these beliefs and appraisals that served to maintain OCD. Challenging inaccurate thoughts and demonstrating the relationship between thoughts, affect and behaviour was also undertaken and hoped to facilitate the understanding and coping with the behavioural strategies that were to be employed. Treatment then focused on exposure and response prevention. Exposure was done with a 'loop tape' which she had recorded her worst thoughts on and which she listened to as often as she could. The cognitive strategies and anxiety management helped her face these thoughts without crossing.

**Outcome:**
Mrs. L was seen for ten sessions spanning five months. She eventually began to face her thoughts and uncomfortable feelings that were initially encountered. She became able to cope more effectively with these and through no longer avoiding they no longer 'needed' the ritualistic crossing to deal with them. As the thoughts became less frightening they in turn became less frequent. By the end of treatment, crossing was down to four to five times a day, but was not longer associated with symptom alleviation, but understood as a strong 'habit' resistant to change. Depression and anxiety levels had reduced greatly over the course of treatment. Discomfort and urge to neutralise were also greatly reduced from initial levels. Treatment was to be completed by placement supervisor with the emphasis on relapse prevention.
SUMMARY OF THE PEOPLE WITH LEARNING DISABILITIES CASE REPORT:

'The assessment and Intervention of a 26 Year Old Woman with Moderate Learning Disabilities Using Brief Psychotherapy with a Malan Framework.'

Main Presenting Problem:
Sarah was referred initially for psychological therapies assessment, following a violent incident earlier in the year and concerns regarding some sexualised behaviour. On assessment with a Consultant Psychiatrist and Honorary Consultant Psychotherapist she was seen to have a number of worries and deemed appropriate for psychotherapy intervention. She declined a group and asked to see someone individually. She had good verbal skills and high levels of motivation and this was deemed appropriate. There were current concerns regarding her withdrawn behaviour and that she did not seem happy at home. There was also a suggestion of abuse by male family members in the past and possible abuse by her stepfather.

Assessment Procedure:
- Assessment for treatment had already been completed and therapy was to begin without further assessment for suitability. The Malan framework (1979) was used to inform this piece of work.
- No standardised measures were used in this service.

Formulation:
The Malan framework explains how the person sees themselves in relation to others, their relationships in the past and relationship with the therapist. This provides information about the client’s inner world. The initial formulation proposed that anger and withdrawal, plus anxiety surrounding other feelings, were defences against hidden feelings of sadness and grief, which may underlie and be due to past experiences of loss and potential abuse, with reference to her mother, father and stepfather.

Intervention:
Principles from psychoanalytic psychotherapy informed the therapeutic work, which highlights the importance of the unconscious and how by providing a boundaried space, difficult feelings can begin to be talked about and difficult feelings can be transferred onto the therapist which stem from earlier relationships with significant others. The aim of the
work was to enable Sarah to bring feelings to the conscious surface, to understand an experience them. The sessions provided a safe environment for Sarah to express herself and to use interpretations to help make links between the present and the past and to understand these links and subsequent emotions more fully. The importance of endings was kept in mind from the beginning and interpretation made throughout with regard the therapist as another potentially abandoning or neglectful figure.

**Outcome:**
Sarah was able to experience and make sense of a range of emotions upon completion of sessions, which she had not been able to express when she first entered therapy. She no longer just displayed her emotions, but verbalised them as well, which was a noticeable shift from the start of her therapeutic work. She was also able to express her emotions and know this could be contained and did not ‘damage’ the therapeutic relationship, as she always returned for her following session. There was also a noticeable reduction in her anger especially in duration and ability to link feelings back to the past. She was also able to see the relationship between present behaviours and experiences and those in the past, which then helped her make sense of these and work through them.
SUMMARY OF THE CHILD AND FAMILY CASE REPORT:

'The Assessment and Intervention of a 17 Year Old Female with a Problem Controlling her Temper, using Stress Inoculation Training.'

Main Presenting Problem:
Jenny had referred herself to her GP for help managing her temper. The GP subsequently referred her to a child and family service to in turn forwarded the referral to the adolescent service. Jenny had reported her temper as being a problem at home originally directed toward her younger sister, but more recently now focused upon her boyfriend.

Assessment Procedure:
- Assessment for treatment interview, drawing from a cognitive behavioural perspective.
- Psychometric tests: Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI) and State Trait Anger Expression Inventory (STAXI).

Formulation:
Understood in cognitive behavioural terms, Jenny had come from a family where there had been noticeable expression of anger, especially by her father. These experiences may have laid down assumptions that anger is bad and leads to aggressive behaviour, Jenny subsequently found expression of emotion difficult. These experiences left Jenny vulnerable to stressful and emotive situations. Her Nans death may have been the trigger for her current problems, as this highly emotive time was difficult for Jenny to express. She may have had thoughts surrounding how expressing her anger and emotion is bad and if she did she would be like her father. These thoughts may have lowered her mood and in turn increased her efforts to suppress her emotions, which eventually bubbled over and culminated in anger outbursts. This then confirmed that she could not control her anger, was like her father and must continue to suppress emotion. Thus leading to a vicious cycle, maintaining and exacerbating the problem.

Intervention:
Stress Inoculation Training for anger (Novaco, 1975), is based upon a cognitive behavioural understanding. Thus anger management should focus on the cognitive structuring of each situation and one's appraisals and expectations. Cognitive preparation comprised the first
stage, educating Jenny with regard the model and looking at her physiological arousal and cognitive processes, and subsequent impact on her behaviour. Stage two focused on skill acquisition, such as assertiveness training, self-monitoring and anxiety management techniques, such as diaphragmatic breathing and progressive muscle relaxation. The final concerned application training whereby all these techniques were put into practice.

**Outcome:**

Jenny engaged fully in the treatment process. She became adept at decreasing her arousal, monitoring her cognitions and implementing alternative thoughts where necessary. She began to use assertive communication effectively and after eight sessions and two months free of outbursts she was discharged. On starting treatment Jenny had mild levels of anxiety and depression, these had returned to non-clinical levels as she approached the end of her treatment. Her scores on the Staxi also demonstrated how she was now experiencing much less anger, accompanied by fewer outbursts. Also a reduction of her quick temper and a more appropriate expression of emotion was highlighted, compared with her initial pattern of results.
SUMMARY OF THE OLDER ADULTS CASE REPORT:

‘Neuropsychological Assessment of an 81 Year Old Caucasian Man for Differential Diagnosis Between Depression and Dementia.’

Main Presenting Problem:
Mr. James had been referred to a falls clinic, after he had presented in A & E following a probable mechanical fall. All physical examinations were unremarkable, but whilst in the clinic Mr James reported that he had been experiencing gradual memory loss and low mood over the past three years. The clinic subsequently referred him to the Mental Health Team requesting an assessment to try to differentiate between depression and dementia, and to establish whether he had the early stages of dementia with co-morbid depression or whether this was a picture of pseudo-dementia.

Assessment Procedure:
Information gathering was conducted around Mr James, with regard his medical, developmental and social history. His nephew was contacted and reported that the memory difficulties dated to a few years ago and were worsening gradually. This corroborated information given by Mr James. A hypothesis was developed to guide the assessment which was for ‘Dementia of the Alzheimer’s type’. The following tests were administered:
- Beck Depression Inventory (BDI)
- Wechsler Adult Intelligence Scale - Third Edition (WAIS-III)
- Wechsler Test of Adult Reading (WTAR)
- Parts of the Wechsler Memory Scale - Third Edition (WMS-III)
- Trail Making Tests
- Graded Naming Test
- Verbal Fluency - FAS and Animals

Formulation:
Due to Mr. James’ complaints about his low mood, confusion, reported memory problems and losing track of conversation, assessment needed to focus around differentiating dementia and depression. Due to the reported low mood, but lack of somatic complaints and psychiatric history, alongside a slow and chronic progression, symptoms appeared to be consistent with a real dementia and not a picture of pseudo-dementia. Mr. James’ reported symptoms also did
not appear to meet criteria for major depressive episode, nor any of the mood disorders in DSM-IV. Therefore his presentation appeared consistent with a dementia, the specific kind of which could be hypothesised to be of the Alzheimer’s type, due to the reported slow, progressive nature of symptoms and the lack of cerebrovascular disease, physical health problems or history of substance misuse.

**Intervention:**
For my part the intervention was solely comprised of the testing, which was conducted over two days, three days apart and lasted approximately two hours each time. Results of the assessment were shared with the supervising Clinical Psychologist who arranged to feedback the results to Mr James as soon as possible and to work on the proposed recommendations.

**Outcome:**
The outcome of my work centred around interpreting the test results and making recommendations to the service and the Psychologist taking over care of Mr. James. In conclusion, it was highly likely that there was an underlying dementia, however this was within the context of low mood. It was recommended that Mr. James be reassessed after his low mood had been resolved. Recommendations centred around Mr. James receiving some help with his low mood, even if not meeting full criteria for a major depressive episode. This was suggested to be in the form of anti-depressant medication, but it was pointed out that Mr. James could also benefit from a form of psychological therapy, to work through the diagnosis and impact of dementia and help increase his confidence and self-esteem. He was also thought to be able to benefit from some practical help, setting up cues, making plans and problem solving. It was thought that Mr James’ improved recognition with visual cues as highlighted through assessment could be utilised in his environment to enhance his day to day functioning.
SPECIALIST CASE REPORT:

'A Four Week Inpatient Pain Management Programme for People suffering from Chronic Pain Conditions.'

Main Presenting problem:
All patients in the pain programmes present with a chronic pain condition. It must be satisfied that all reasonable attempts to relieve the pain have been offered to the patient. It is then clearly explained that there is no doubt as to the reality of the pain, but that the emphasis will now be that of management and increasing function.

Assessment Procedure:
Information is gathered from the Doctor with regards medical history, treatments and patient’s beliefs about the meaning of pain and given diagnosis. The Psychologist will focus on the array of difficulties the patient has experienced, methods of coping, mood, relationships, previous psychological/psychiatric contact and goals for the future. Links are made between how some of the often difficult feelings and beliefs may impact upon the pain and ability to cope with it effectively. There are a number of inclusion and exclusion criteria, which are followed.

Psychological Measures included:
- Beck Depression Inventory (BDI)
- Pain Catastrophising Questionnaire (PCS)
- Pain Self Efficacy Questionnaire (PSEQ)
- Tampa Scale of Kinesophobia (TSK)

Formulation:
Chronic pain is characterised by persistent pain, which outlasts the normal duration of healing. This in turn may lead to a disabled state, with difficulties coping with the pain and associated social and psychological problems (Fordyce, 1976). Thus approaches have emerged to address the patients distress and dysfunction rather than attempting to identify and cure the cause of the pain. Experience of pain and level of disability may then partly be explained by the meanings ascribed to the pain, the interpretations made and the way the patient reacts/copes with it (Keefe, Brown, Wallston & Caldwell, 1989). Thus cognitive behavioural treatments address the factors which may be maintaining the maladaptive beliefs,
thought patterns and subsequent behaviours. In multidisciplinary programmes, movement and physical fitness are re-introduced as the cognitive changes are being made to begin redressing the secondary effects that have resulted from reduced activity.

A systematic review and meta-analysis of 25 randomised controlled trials of cognitive behavioural treatments for chronic pain (Morely, Eccleston & Williams, 1999) found that when cognitive behavioural treatments were compared to controls, significant effect sizes were noted on all domains of measurement. In a study by Williams, Richardson, Nicholas, Pither, Harding, Ridout, Ralphs, Richardson, Justins and Chamberlain (1996), the inpatient group made greater gains that were maintained better at one year than the outpatient group. They also used less healthcare over this period of time.

**Intervention:**

This programme was a four-week inpatient multidisciplinary pain management programme. Two patients left after the second day. The programme consisted of medical talks, exercise/stretch, activities/goal setting, medication withdrawal, relaxation, sleep reduction and psychology sessions. There were eight psychology sessions, led by the Trainee Psychologist under observation of the Team Psychologist. Patients were shown to link their thoughts with their moods and subsequent behaviours. Specific topics covered were: fear-avoidance; expectations; depression; anger; flare-ups and preparation for leaving the programme.

**Outcome:**

The two patients who had high scores on the measures of catastrophising, kinesephobia and low self-efficacy were the two who left the programme in the first couple of days. One of these patients also had a high score for depression. Overall however for the six patients who completed the programme, measures taken at time two were improved to those upon entering the programme. Overall the scores on the psychological measures taken on the first and last days of the programme indicated reductions in depressive thinking, increases in self-efficacy, reductions in catastrophic thinking and reductions in pain related fear. This is in line with verbal feedback from the patients who expressed their gains in control and management over their pain and secondary effects.
RESEARCH DOSSIER

OVERVIEW

This Section Comprises a Log Book of Research Experience, the Service Related Research Project Completed in Year 1 and the Major Research Project Completed in Year 3
## LOG OF RESEARCH EXPERIENCE

<table>
<thead>
<tr>
<th>Research Skill/Experience</th>
<th>Description of How Research Skill/Experience Acquired</th>
<th>Date Research Skill/Experience Acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct a Literature Search</td>
<td><strong>SRRP</strong>: Searched using psychinfo and clinpsych for keywords: chronic pain, long term gains, follow-ups, out/inpatient groups, pain management, pain measurement. First search generated many articles, the second search was more specific to areas that I felt had gaps in information, or from information that had emerged from the first search and felt needed more detail. Keywords for the further searches included: Gate Control Theory, Melzack and Wall, Cognitive-behaviour therapy and pain, psychology and pain management. <strong>Major Research Project</strong>: Searched using psychinfo and medline for keywords: cholesterol lowering medicines, Statins, high cholesterol, adherence, non-adherence, compliance, non-compliance, health behaviour, changing behaviour, implementation intentions. More detailed searches followed on specific theories and researchers emergent from the initial articles and discussions with supervisor, keywords included: Theory of Reasoned Action, Theory of Planned Behaviour, Ajzen, Leventhal, Self-regulatory model of illness, illness perceptions, medication beliefs, Horne, BMQ, IPQ, Haynes reviews, adherence and high cholesterol.</td>
<td>October 2000, November/December 2000, February 2002, March/April/May 2002</td>
</tr>
<tr>
<td>Critically Review the Literature</td>
<td>For all research, I looked for recent, up to date articles. I tried to find reviews of major articles and reviews around the topics of interest. I looked for names prolific in the area being researched. Spoke to tutors, looked for recurring names in the area of interest and looked for whose work was influential in the area under investigation. I looked at the original articles and looked for use of reliable and valid measures, randomised groups, controls and reasonable number of participants and studies obtaining power. I looked at whom the article was intended for and what its aims of research were.</td>
<td>October-December 2000, January 2001, February-June 2002, October-December 2002</td>
</tr>
</tbody>
</table>
| **Formulate a Specific Research Question** | **SRRP:** Chose an area of interest, where participants would be available. Conducted literature search (see above), this was to be on chronic pain and looking to follow up patients after their participation in an outpatient group. Met with field supervisor to share ideas and define the specific question to be studied. The question formulated was 'Long term follow up for the effectiveness of an eight-week outpatient Cognitive-Behavioural Therapy (CBT) group for pain management.'  

**MRP:** Chose to research an area of health psychology, as this was of major interest. Approached one of the research tutors, who was also a health psychologist. We talked about gaps in current research and specifically the topic of medication adherence. Through her knowledge in the field and findings from her current research on people with high cholesterol, alongside literature reviews (see above) the specific question to be studied was defined this was 'Do Implementation Intentions increase adherence to medication in non-adherent patients currently taking cholesterol lowering medication?' | **December 2000.**  

**December 19th 2000.**  

**January-April 2002** |
| **Write a Brief Research Proposal** | **SRRP:** Defined the population to be sampled. Decided upon the last 2 years of chronic pain patients who had attended the outpatient group in the hospital. This would then provide a large enough sample. Decided upon the measures that were to be used. Decided to use ones already administered throughout the course of the group, so they were comparable and were reliable and already validated. Decided upon doing postal questionnaires. All aspects were discussed in detail with field supervisor and research supervisor and a proposal of these ideas composed.  

**MRP:** Prepared a brief research proposal initially on the area of loss of a perfect child when having a child with learning disabilities. Through writing the proposal it seemed it would be difficult to recruit participants and ethically a difficult area to investigate, there were also difficulties finding a field supervisor. This was then abandoned and replaced with the current MRP which was of greater interest, more structured with easy access to participants and supervision. This proposal of studying patients at cholesterol clinics whilst waiting for appointments was not met with any potential difficulties. | **December 2000**  

**December 2001/January 2002** |
<p>| <strong>Write a Detailed Proposal/Protocol</strong> | A detailed proposal was written for University for MRP, it explained the potential participants, who were currently attending two cholesterol clinics. It outlined the use of already validated questionnaires and explained the intervention, which consisted of an implementation intention for half the participants. There would then be a follow-up questionnaire to see whether this intervention had made any difference to adherence. Field supervisors were to be two Consultant Chemical Pathologists and Lipidologists who ran the two clinics. The proposal was run by them and the University and did not meet resistance. As the clinics ran on some University days and placement days, there was some concern as to who would hand out the initial questionnaires, of which a large number was needed to reach power calculations. It was decided that where possible I would hand them out, but on occasion the consultants or their administrators would do so. | January 2002 - March 2002 |
| <strong>Obtain Appropriate Supervision/Collaboration for Research</strong> | <strong>SRRP</strong>: Approached head of physical health, which was the area I was interested in regarding whether there would be the possibility of research. Arranged a meeting and defined a suitable SRRP and subsequent supervision. Also approached member of the course team at university with a known interest in the area of physical health and enquired and subsequently obtained her supervision for my SRRP. <strong>MRP</strong>: Approached member of the course team who was a research supervisor and also a health psychologist and subsequently obtained her supervision for the MRP. She directed me to two Consultants in the field who may be able to offer supervision and whose clinics would be a good place to conduct the research. I subsequently contacted and met with both Doctors and they agreed to be part of the research and that I could use their clinics to obtain participants for the research. | November 2000 - January 2001. Approached research supervisor in January 2002. Met with field supervisors in March and April 2002. |
| <strong>Write a Participant Information Sheet and Consent Form</strong> | <strong>SRRP</strong>: Wrote a covering letter and information sheet, explaining who I was and the purpose of the research. Contact details and assurance of confidentiality was provided. <strong>MRP</strong>: Wrote a detailed information sheet that described the purpose of the study, what taking part involved and how information would be kept confidential. Contact details for myself and research supervisors were provided should there be any queries. Two copies of the consent form were provided for each participant, one, which was to be returned, and one, which could be kept by the participant. Both information sheet and consent form were thoroughly checked by research supervisor. | December / January 2001 February / March 2002 |</p>
<table>
<thead>
<tr>
<th>Judge Ethical Issues in Research and Amend Plans Accordingly</th>
<th>The SRRP was a form of audit work, simply sending a questionnaire out after completion of a group. No direct contact would be made with participants. The first MRP proposal, which was to look at parent's experiences of loss, due to having a child with a learning disability, was thought to be a difficult area to investigate and thought that it could be potentially difficult to obtain ethical approval. Approaching parents after a birth or at a distressing time could be ethically inappropriate. The only ethical considerations with the final MRP were with regards withholding of information. If participants were made aware that adherence was primarily being investigated and that implementation intentions were being given to half the people so see if this increased adherence, this could alter the results. Therefore participants were only told that the study was to look at how people take their medicines and what their thoughts are about having high cholesterol and taking medicines were.</th>
<th>February/March 2002</th>
</tr>
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<tbody>
<tr>
<td>Collect Data From Research Participants</td>
<td>SRRP: Sent out postal questionnaires along with the covering letter and information sheet. The questionnaires included the Hospital Anxiety and Depression Scale (HADS), the Dysfunctional Attitudes Scale (DAS) and the McGill Pain Questionnaire. I also composed a satisfaction questionnaire and some general questions around current life circumstances since completing the pain groups. Enclosed was a prepaid envelope for questionnaire return. A second post was sent out a month later. Data collection ended a month after second posting. All participants were given a number; questionnaires were then numbered, as was the data file, the matching names were kept away from the returned data. This was to maintain confidentiality.</td>
<td>1st post = February 2001, 2nd post = March 2001.</td>
</tr>
<tr>
<td>Collect Data From Research Participants</td>
<td>MRP: Gave out questionnaires for six months in the two cholesterol clinics. Questionnaires included a sheet for patient details, questions from the Illness Perceptions Questionnaire (IPQ), the Beliefs about Medicines Questionnaire (BMQ), the Hospital Anxiety and Depression Scale (HADS) and the Medication Adherence Report Scale (MARS-5). Half of the questionnaires also contained the intervention. Alongside each questionnaire booklet was given an information sheet, two consent forms and freepost envelope for questionnaire return. I approached people in the clinic and explained the research. They were then given the above material if they agreed to take part. Alternate people had the intervention in their questionnaire booklet. The returned questionnaires were analysed and those who were at some level non-adherent, were sent another questionnaire a month later to see whether receiving the intervention had increased their adherence levels. This was sent with a covering letter and another freepost envelope for its return. All participants received a numbered questionnaire and names and addressed were not kept with corresponding data.</td>
<td>Initial Questionnaires Given out October 2002 - April 2003. Follow-up Questionnaires Given out November 2002 - May 2003.</td>
</tr>
<tr>
<td>Set up a Data File</td>
<td>SRRP: Opened up SPSS and opened a data file that already had data on the measures completed by the participants when they were in the outpatient group. I added further columns for their new data following their participation in the research project. Numbers replaced participant’s names. MRP: Set up new SPSS data file for all variables being investigated and for all potential questionnaires that had been given out. Once all data had been obtained, the questionnaire numbers that had not been returned were removed from the file. This file formed the basis of the initial analysis A new file was also created for those who had received and sent back the follow-up questionnaire. This formed the basis for hypothesis testing.</td>
<td>January 2001 Set up file in September 2002. Analysis Completed by May 2003.</td>
</tr>
<tr>
<td>Analyse Quantitative Data</td>
<td>SRRP: Used SPSS to analyse the data. Initially looked at frequencies to give general trends, and then moved on to look at areas in more detail. Data was not normally distributed and non-parametric tests were used. Friedman and Wilcoxon post hoc tests were used. Means were calculated to help provide direction. Percentages were used to quantify satisfaction with different areas of the course.</td>
<td>April/May 2001</td>
</tr>
<tr>
<td>Analyse Quantitative Data</td>
<td>MRP: Used SPSS to analyse the data. Internal consistency of all sub-scales was assessed using Chronbach’s alpha statistic. Any item not a reliable indicator for the construct in question was removed. Normality was assessed using the Kolmogorov-Smirnov statistic. Where assumptions of normality had been violated, non-parametric tests were used. Descriptive statistics were used to describe the general sample and correlations used to investigate the variables. Comparisons were then made between those who were at some level non-adherent with those fully adherent; this was done using T-tests and Mann-Whitney U tests. The non-adherent people who had received and returned the follow-up questionnaire were investigated with descriptive statistics and T-tests/Mann-Whitney U tests, to look for similarities and differences between those who received and did not receive the intervention. The main hypothesis was then tested with these tests to see whether the intervention had effected adherence levels.</td>
<td>April-June 2003</td>
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<tr>
<td>Analyse Qualitative Data</td>
<td>There was no qualitative analysis in the SRRP or MRP. Although a qualitative research project enabled skills in qualitative analysis to be obtained. I used Interpretative Phenomenological Analysis (IPA) to look at people’s changing perceptions of their body image over time and the influence of those around them. Main questions were agreed upon within our group of researchers. Each researcher then interviewed one participant. Interview was recorded and transcribed. Each researcher attempted to categorise their transcript according to emergent themes. The researchers then met and compared themes across the interviews. A list of main and subsidiary themes was finally agreed upon.</td>
<td>January-April 2002</td>
</tr>
<tr>
<td>Summarise Results in Figures/Graphs</td>
<td>SRRP: Used tables to display findings. Significant results, non-significant results and means were all displayed in tables as they all highlighted the trends emergent from participating in the pain groups. MRP: Tables were used to display the majority of results, including actual test statistics, alongside means and standard deviations. One graph was used to further illustrate investigations around the main hypothesis.</td>
<td>May/June 2001</td>
</tr>
<tr>
<td>Interpret Results from Data analysis</td>
<td>SRRP: Interpreted results with reference to initial hypothesis. Anxiety was significantly reduced on group completion but not maintained at follow-up. The dysfunctional attitude of ‘approval’ was more improved at end of group, but not maintained at follow-up. Means showed a positive change from start to end of group, and people had generally improved further still at follow-up. General feedback showed the group experience to be very positive.</td>
<td>May/June 2001</td>
</tr>
<tr>
<td>Interpret Results From Data Analysis</td>
<td><strong>MRP</strong>: No support for main hypothesis, that implementation intentions increase adherence to cholesterol lowering medication. In fact there was a significant increase for those who had not received the intervention across time. However males had predominantly received the intervention whilst females had not, this difference in distribution was significant and any findings could therefore represent a gender difference. Anxiety was higher for those who were initially non-adherent and the belief that poor medical care in the past was a cause of their condition also separated those who were initially non-adherent from those who were fully adherent.</td>
<td>May-July 2003</td>
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</table>
| Present Research Findings/Plans to an Audience | **SRRP**: Presented Service related research findings to the new Head of Chronic Pain in the department from which the research was conducted. Also presented findings to field supervisor (previous acting head of physical health department) who had left the service by the time the report was complete.  

**MRP**: Presented research plans to second year trainees and research tutors, in the form of a formal presentation lasting ten minutes. Findings presented to field supervisors through informal discussions and providing copies of final write up. |

**SRRP**: The report was written in stages. Each section first the introduction and method, then the results and then the discussion were written and submitted to research supervisor. Feedback was given and a final report put together.  

**MRP**: The report was written in stages. First to be completed was the introduction and method sections. These were then given to research supervisor for feedback. Alterations were made predominantly to the lay out and resubmitted later with the results section. These were then commented upon and further statistics suggested and changes to layout and any omissions highlighted. The first draft of the discussion and the amended previous sections were then given to supervisor, alongside appendices, contents page and abstract. Feedback was acted upon and final report compiled. | July 10th 2001  
October 2002  
August 2003 |
| Produce a Written Report on a Research Project | **SRRP**: The report was written in stages. Each section first the introduction and method, then the results and then the discussion were written and submitted to research supervisor. Feedback was given and a final report put together.  

**MRP**: The report was written in stages. First to be completed was the introduction and method sections. These were then given to research supervisor for feedback. Alterations were made predominantly to the lay out and resubmitted later with the results section. These were then commented upon and further statistics suggested and changes to layout and any omissions highlighted. The first draft of the discussion and the amended previous sections were then given to supervisor, alongside appendices, contents page and abstract. Feedback was acted upon and final report compiled. | June 2001.  
December 2002- July 2003 |
| Defend Research Project at an Oral examination | This was to be done in the Viva examination in September 2003 | September 2003 |
| Submit Research Report for Publication in a Journal/Book | **MRP**: Whilst the main hypothesis was not statistically significant, findings will be discussed with regard writing for publication at a later date, after completion of Doctorate. | Proposed for October 2003. |
| Apply Research Findings to Clinical Practice (give examples of 3 papers published during your training, which influenced your practice). | A paper by Brewer, Gretchen, Chapman, Brownlee and Leventhal, (2002) highlighted that when patients with hypertension saw their illness as chronic, asymptomatic and requiring long-term treatment, they were more likely to adhere to medication. I have used this understanding when working with adherence in patients with HIV, helping patients see their condition as a chronic condition which can now be managed, and often there will be no symptoms and yet long-term treatment is required to manage the condition over time. A paper by Summerfield (2001) which is entitled ‘The invention of post-traumatic stress disorder and the social usefulness of a psychiatric category.’ This paper draws attention to the medical discourse in Western culture and how this may not necessarily be applicable to other societies. I have kept this in mind when working with patients from different ethnic groups and trying to understand each patient’s experience in the context of their culture and the language they may have to describe their situation. This is instead of trying to apply my terms and descriptions onto their experiences, which stem from my own Westernised viewpoint. A study by Onwumere, Holttum & Hirst (2002) entitled ‘Determinants of quality of life in black African women with HIV living in London.’ This research identified these women to have a lower quality of life, than that of women with other chronic illnesses. Differences in the ethnic composition, compared to other groups of women may have implications in terms of relationship status, employment, immigration and discrimination, which may then explain some of the variability in distress levels reported. This research increased my awareness to some of the potential extra difficulties that might be facing many of the clients that I saw in the HIV service. | April-September 2003 | September 2002-September 2003 | April-September 2003 |
SERVICE RELATED RESEARCH PROJECT

'Long Term Follow Up for The Effectiveness of an Eight Week Outpatient Cognitive Behavioural Therapy (CBT) Group for Pain Management'

July 2001
Year 1
Acknowledgements
Abstract

Introduction
&
Aims and Hypotheses

Method

Results

Discussion:
&
Conclusion
&
Applicability to Service

References

Appendices:
  Appendix 1-Questionnaires 1-4
  Appendix 2- Covering Letter
  Appendix 3- Information Sheet
  Appendix 4- Letter Confirming
  Feedback to Service
Acknowledgements:

I would like to thank my field supervisor for her help and support.

I would also like to thank my research supervisors for their continued help and constructive comments.

Finally I would like to thank my research tutor for his help with the research methodology and statistics.
Abstract

‘Long Term Follow-up for the Effectiveness of an 8week Outpatient Cognitive-Behavioural Therapy (CBT) Group for Pain Management’.

Cognitive-behavioural treatments have emerged with the understanding that individuals can effect their experience of pain. Morley, Eccleston & Williams (1999) concluded psychological treatments based upon cognitive-behavioural principles were effective. Kelleher, Rennell & Kidd (1998) highlighted the importance of social influence on pain measurements.

This study was a non-randomised follow-up of 12 participants from eight-week outpatient cognitive-behaviour therapy pain management groups over two years. Participants were assessed on the Hospital Anxiety and Depression Scale, Dysfunctional Attitudes Scale and McGill Pain Questionnaire. Questions on life circumstances and satisfaction were also completed.

Analysis using Friedman tests focused on development and maintenance of gains. A significant reduction in anxiety developed, but was not maintained at follow-up. The attitude of ‘approval’ was less dysfunctional on group completion, again not maintained at follow-up. There were no other significant findings.

Non-significant trends showed reductions in depression, pain intensity and severity of experience and development of more functional attitudes. Social context did not appear to influence satisfaction. General feedback concluded group participation to be a positive, useful experience. Generally, the trends support the conclusions by Morley et al. (1999).

With no control, small sample and subjective measures, this work could be extended to further inform the service with regards programme effectiveness.
Introduction:

The cost of chronic pain is immense, not only for the individual in terms of their suffering, but also socioeconomically with increased health care and decreased work functioning.

Theorists and health care professionals have worked to develop a better understanding as to the complexities of pain and in turn developed interventions to help individuals cope more effectively.

Melzack & Wall in 1965 developed the ‘Gate Control Theory’. This offered a multidimensional basis for understanding pain, comprising affective, sensory, motivational, environmental and cognitive components, this encouraged subsequent research into psychological factors.

Cognitive behavioural treatments emerged, building upon the understanding that an individual can effect their experience of pain, focusing on and addressing cognitive and behavioural factors associated with increased distress and disability. The emphasis being, that despite pain, patients can live more satisfying and effective lives. Cognitive Behavioural interventions have begun to tease out some of the complex interactions between mood, external stressors and pain. They aim not to eliminate pain but to enable the patient to gain more control and increase their quality of life. Pain intensity however, may become reduced as a function of the acquired skills, (Turk & Meichenbaum, 1989).

Taking a holistic view and incorporating these notions, pain management programmes have become well established and ideally should comprise ‘physical reconditioning, posture and body mechanics training, applied relaxation techniques, information and education about pain and pain management, medication review and advice, psychological assessment and intervention, graded return to activities of daily living’ (The Pain Society, 1997).

There has been a wealth of research, but mainly focused on specialist multidisciplinary inpatient groups. There is evidence that programmes can effectively teach pain management to patients, with subsequent improvements in pain ratings, mood and interference of pain in daily life. It has however been noted (Flor, Fydrich & Turk, 1992) that evidence regarding the specific components is lacking. Nicholas, Wilson & Goyen (1992) however have shown an
advantage when there is inclusion of psychology in pain management programmes. Only a few studies have focused primarily on the cognitive behavioural components and maintenance of gains, especially in the more affordable outpatient setting.

The most recent meta-analysis and systematic review comes from Morley, Eccleston & Williams (1999). This analysed 25 trials comprising 221 outcome measures, the majority self-ratings, (74 percent). Cognitive behavioural treatments were compared to alternative control conditions and wait list control. Significant changes emerged in the domains of cognitive coping, positive coping measures/appraisal and the pain experience. No significant differences were obtained for mood and negative appraisals. Conclusion being psychological treatments, based upon cognitive behavioural principles were shown to be effective.

Two pieces of research into outpatient programmes are now outlined in more detail. The first by Pilowsky, Spence, Rounsefell, Forsten & Soda (1995), compared an outpatient Cognitive Behavioural Therapy (CBT) group, with Amitriptyline for non-malignant pain. No significant differences were found between conditions after the eight-week group. At six-month follow-up, a small non-statistically significant advantage for CBT was shown.

Basler & Rehfisch (1990) compared a CBT programme in a primary care setting with a wait list control. At six-month follow-up, improvements in anxiety, depression, bodily symptoms and decrease in pain intensity were shown for the treated group.

This research aimed to investigate these trends further, by focusing on CBT outpatient groups and looking at potential maintenance or development of gains over time. This study followed pain group members up to two years post treatment. Qualitative information was also sought in conjunction with statistical findings to help make sense of any results within such a complex area. For example Kelleher, Rennell & Kidd (1998) studied patients suffering Rheumatoid Arthritis. They highlighted differences in ratings between those in hospital and those at home and differences between patients who lived alone and those who lived with partners. They concluded variations in pain scores and intensity may be influenced by social context. Therefore issues such as life events, medication and satisfaction were be sought.

It is reasonable for patients, referrers and purchasers to expect a programme to describe in detail its components and expected outcomes. Evaluation is required and essential to establish
good quality services are available and benefiting the clients. Measuring changes in pain such as by asking patients to provide ratings following programmes are therefore valid to determine service effectiveness (Feine, 2001). Providing evidence based practice, especially being a co-facilitator of the pain groups, reflects a further research aim.

**Aims and Hypothesis:**

Therefore this research aimed to focus on CBT outpatient groups for pain management and investigate maintenance of any gains from this specific intervention. The main hypotheses were:

**Hypothesis 1:**

'Anxiety will decrease on completion of the pain management group and be maintained at follow-up.'

**Hypothesis 2:**

'Depression will decrease on completion of the pain management group and be maintained at follow-up.'

**Hypothesis 3:**

'Dysfunctional attitudes will become more functional on completion of the pain management group and be maintained at follow-up.'

**Hypothesis 4:**

'Intensity of pain will reduce on completion of the pain management group and be maintained at follow-up.'

Analysis will also take into account social context and postulate that those with more life stressors since completing the pain group will appear less satisfied with the programme.

The research will also aim to inform the service and it’s users as to the effectiveness of the programme, in line with providing evidence-based practice.
Method:

Design:
This was a non-randomised follow up of participants from eight week outpatient CBT pain management groups over the past two years. There was no wait list control.

Participants:
Thirty-three adult chronic pain patients who had initially been assessed for group suitability by Clinical Psychologists in Physical Health were approached. They had taken part in a pain group within the last two years, which was when the pain group became manualised and data collection began. They had also completed the group at least six months ago. Participants were excluded if they had received individual therapy sessions following group discharge and also if they had no measures taken on their first and last sessions of the group. This information was gathered from patient files and the database of pain group data, set up in the department. Twelve people were included in the study, it is not possible to give age and gender distributions, as participants did not provide this information.

Measures:
The participants were assessed on the Hospital Anxiety and Depression Scale (HADS; Zigmond & Beck, 1978) for anxiety and depression scores. Internal consistency assessed by Chronbach’s alpha was 0.93 for anxiety and 0.90 for depression (Moorey, Greer, Watson, Gorman, Rowden, Tunmore, Robertson & Bliss, 1991).

They were assessed on the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) for approval, love, achievement, perfectionism, entitlement, omnipotence, autonomy and total score. Dyck (1992) highlighted good concurrent validity.

Finally they were assessed using the McGill Pain Questionnaire (MPQ; Melzack, 1975), which reported adequate concurrent, construct and predictive validity. No data was available on reliability. This contained 20 groups of words, reflecting pain experiences. Participants were assessed for number of words chosen (NWC); sensory experience labelled as Pain Rating Index (PRI) 'sensory'; affective experience 'PRI affective'; evaluative measure 'PRI evaluative'; the miscellaneous class of words 'PRI miscellaneous' and total 'PRI total'. They were also assessed for present pain intensity 'PPI'.
The participants had already completed these measures upon entering the group and upon group completion eight weeks later. Therefore these measures were naturally the ones re-administered for this follow-up, so as comparisons could be made. Measures taken upon entering the group were said to be those from ‘time one’ and those taken on completion were classed as ‘time two’. Measures administered in the follow-up, varying from eight months to twenty-four months from starting the programme, were labelled as ‘time three’ measures.

Some general questions were comprised and completed by participants. These pertained to life events and circumstances since completing the pain group. Medication and evaluation of the pain programme were also investigated. This was to potentially help identify factors that could help understand any statistical findings, such as reasons for significant/non-significant results, relapse or factors involved in maintenance of gains. For all questionnaires see appendix 1.

Ethical approval was not sought due to the research being audit work and in the form of continued evaluation of a psychological group as determined by the relevant health authority.

Procedure:
The 33 participants were sent the questionnaires, which had been collated into a small booklet. Included was a covering letter (appendix 2), information sheet (appendix 3) plus a prepaid envelope for questionnaire return. These were sent out and this first post resulted in 11 returned questionnaires. A month later the questionnaires were sent out again to those who had not returned them, and four more were returned from this second posting. Therefore, of the 33 people deemed suitable for the study, only 15 returned their questionnaires, three of whom did not wish to take part. With missing data excluded, an average of ten people formed the basis for comparisons.

Analysis:
Data was compiled and analysed alongside measures that had been taken on first and last sessions of the group. Data was analysed using Friedman tests. Wilcoxon post hoc tests were performed where applicable. The fourth questionnaire was carefully viewed for dominant themes and summarised. It was then used in conjunction with the statistical results to try and understand the findings more completely.
Time three data contained data from varying times after completion of the programme, from six months to 22 months after completing the pain groups. This data had to be put together for analysis because participants did not indicate on the questionnaire when they had completed the programme and the number of respondents was very small.

Feedback of the findings and recommendations to the service were then made, via a presentation and meeting with field supervisor (see appendix 4).
Results:

(Results of questionnaires one - three)

Data from each returned questionnaire was collated and analysed. Since many of the variables were not normally distributed, non-parametric tests were used. The number of people the results are based on is often less than 12 due to missing data on a question, which then excludes those individuals total scores from analysis.

Friedman tests were conducted on the data. This test looks to see if the scores that emerged for each of the variables tested, are simply random results. It tests whether the time the measure was taken, whether this be upon entering the group, on completion or on follow up has no significant effect on scores obtained. Where significant results are obtained, Wilcoxon post hoc tests are done to show the differences between groups. Any result which is significant at p<0.05 is highlighted in bold demonstrating the results at this point in time are not simply random. It must be noted that due to the large number of tests being carried out, there is increased possibility that any significant results found could be due to chance.

Hypothesis 1: ‘Anxiety will decrease on completion of the pain management group and be maintained at follow up.’

Table 1: Results of Friedman tests testing hypothesis 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean (2dp)</th>
<th>Sd (2dp)</th>
<th>Chi-square</th>
<th>Df</th>
<th>Asymp.sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>12.50</td>
<td>3.60</td>
<td>6.222</td>
<td>2</td>
<td>0.045</td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>10.40</td>
<td>3.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td>10.70</td>
<td>2.31</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results show that scores produced for the ‘HADS anxiety’ are not random, therefore post hoc tests were done to see where the effect was.

Table 1b: Wilcoxon post hoc comparisons for HADS Anxiety:

<table>
<thead>
<tr>
<th>Pairs of Variables</th>
<th>Z</th>
<th>Asymp. Sig (2tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had anxiety (time)2-</td>
<td>-2.636</td>
<td>0.008</td>
</tr>
<tr>
<td>Had anxiety (time)1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had anxiety (time)3-</td>
<td>-1.493</td>
<td>0.135</td>
</tr>
<tr>
<td>Had anxiety (time)1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had anxiety (time)3-</td>
<td>-0.213</td>
<td>0.831</td>
</tr>
<tr>
<td>Had anxiety (time)2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Bonferroni correction: P<0.05/3= 0.016)
This highlighted that the difference in scores was produced between time one and time two. Therefore there was a difference when leaving the group compared to entering. Direction from the means showed a significant ‘reduction’ in anxiety from start of group to it’s completion, supporting hypothesis one, although the statistical effect was not maintained at follow-up.

**Hypothesis 2: ‘Depression will decrease on completion of the pain management group and be maintained at follow up.’**

**Table 2: Results of Friedman tests testing hypothesis 2.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean (2dp)</th>
<th>Sd (2dp)</th>
<th>Chi-square</th>
<th>Df</th>
<th>Asymp.sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS Depression</td>
<td>10</td>
<td>9.70</td>
<td>3.65</td>
<td>3.211</td>
<td>2</td>
<td>0.201</td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>7.50</td>
<td>3.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>7.40</td>
<td>2.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was no support for hypothesis two.

**Hypothesis 3: ‘Dysfunctional attitudes will become more functional on completion of the pain management group and be maintained at follow up.’**

**Table 3: Results of Friedman tests testing hypothesis 3.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean (2dp)</th>
<th>Sd (2dp)</th>
<th>Chi-square</th>
<th>Df</th>
<th>Asymp.sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAS Approval</td>
<td></td>
<td>-2.30</td>
<td>3.71</td>
<td>6.684</td>
<td>2</td>
<td>0.035</td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>0.50</td>
<td>4.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>0.70</td>
<td>4.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAS Love</td>
<td></td>
<td>-1.14</td>
<td>4.26</td>
<td>4.083</td>
<td>2</td>
<td>0.130</td>
</tr>
<tr>
<td>time 1</td>
<td>07</td>
<td>1.57</td>
<td>3.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 2</td>
<td>07</td>
<td>1.00</td>
<td>4.51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAS Achievement</td>
<td></td>
<td>3.11</td>
<td>4.65</td>
<td>0.188</td>
<td>2</td>
<td>0.911</td>
</tr>
<tr>
<td>time 1</td>
<td>09</td>
<td>3.44</td>
<td>3.54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 2</td>
<td>09</td>
<td>3.78</td>
<td>4.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAS Performance</td>
<td></td>
<td>1.13</td>
<td>3.7</td>
<td>0.267</td>
<td>2</td>
<td>0.875</td>
</tr>
<tr>
<td>time 1</td>
<td>08</td>
<td>2.00</td>
<td>2.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 2</td>
<td>08</td>
<td>1.88</td>
<td>4.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results showed that scores produced for ‘DAS approval’ were not random, therefore post hoc tests were done to see where the effect was lying.

Table 3b: Wilcoxon post hoc comparisons for DAS Approval:

<table>
<thead>
<tr>
<th>Pairs of Variables</th>
<th>Z</th>
<th>Asymp. Sig (2tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Das approval (time2)- Das approval (time1)</td>
<td>-2.932</td>
<td>0.003</td>
</tr>
<tr>
<td>Das approval (time3)- Das approval (time1)</td>
<td>-1.838</td>
<td>0.066</td>
</tr>
<tr>
<td>Das approval (time3)- Das approval (time2)</td>
<td>-0.154</td>
<td>0.878</td>
</tr>
</tbody>
</table>

(Bonferroni correction: P<0.05/3= 0.016)

This highlighted that the difference in scores was produced between time one and time two. Therefore there was a difference when leaving the group compared to entering. Direction from the means showed a significantly more functional attitude at the end of the group compared to the start. This partially supports hypothesis three as this result is not maintained at follow up and is only significant for one out of the seven dysfunctional attitudes.

**Hypothesis 4:** ‘Intensity of pain will reduce on completion of the pain management group and be maintained at follow up.’

Table 4: Results of Friedman tests testing hypothesis 4.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean (2dp)</th>
<th>Sd (2dp)</th>
<th>Chi-square</th>
<th>Df</th>
<th>Asymp. sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPQ NWC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>11.00</td>
<td>6.18</td>
<td>1.086</td>
<td>2</td>
<td>0.581</td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>11.80</td>
<td>5.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td>10.10</td>
<td>5.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>N</td>
<td>Mean (2dp)</td>
<td>Sd (2dp)</td>
<td>Chi-square</td>
<td>Df</td>
<td>Asymp.sig</td>
</tr>
<tr>
<td>-------------------</td>
<td>----</td>
<td>------------</td>
<td>----------</td>
<td>------------</td>
<td>----</td>
<td>-----------</td>
</tr>
<tr>
<td>PRI Sensory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>16.50</td>
<td>9.10</td>
<td>0.974</td>
<td>2</td>
<td>0.614</td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>16.50</td>
<td>6.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td>14.80</td>
<td>7.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRI Affective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>5.10</td>
<td>4.93</td>
<td>2.966</td>
<td>2</td>
<td>0.227</td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>4.30</td>
<td>4.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td>3.50</td>
<td>4.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRI Evaluative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>2.60</td>
<td>2.01</td>
<td>0.452</td>
<td>2</td>
<td>0.798</td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>2.20</td>
<td>1.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td>2.00</td>
<td>1.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRI Miscellaneous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>3.90</td>
<td>2.73</td>
<td>1.613</td>
<td>2</td>
<td>0.446</td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>4.60</td>
<td>2.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td>3.80</td>
<td>3.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRI Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>10</td>
<td>28.10</td>
<td>15.57</td>
<td>1.282</td>
<td>2</td>
<td>0.527</td>
</tr>
<tr>
<td>time 2</td>
<td>10</td>
<td>27.80</td>
<td>13.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>10</td>
<td>24.10</td>
<td>15.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 1</td>
<td>09</td>
<td>2.33</td>
<td>0.87</td>
<td>0.069</td>
<td>2</td>
<td>0.966</td>
</tr>
<tr>
<td>time 2</td>
<td>09</td>
<td>2.22</td>
<td>1.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>time 3</td>
<td>09</td>
<td>2.22</td>
<td>0.97</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was no support for hypothesis four.

Whilst there were only two statistically significant results overall, probably due to such a small number of participants responses, it can be useful to look at all the means to give an overall picture of direction. For the majority of items, a more positive picture after group completion and at follow-up is highlighted (see means in tables 1-4).

Results of questionnaire four- 'satisfaction':

Results of the general questions from the fourth questionnaire were then summarised into table 5. This then gives the percentage of people who were or were not satisfied with certain aspects of the pain group.
Table 5: Satisfaction with elements of the pain programme: (% to 2 decimal places)

<table>
<thead>
<tr>
<th>Were you satisfied with...?</th>
<th>Yes (%)</th>
<th>Positive Comments</th>
<th>No (%)</th>
<th>Negative Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group facilitators</td>
<td>11/11 (100)</td>
<td>“Helpful &amp; useful provision of information.” “Approachable &amp; non-rejecting.”</td>
<td>00/11 (0)</td>
<td>No comments</td>
</tr>
<tr>
<td>Groups members</td>
<td>09/12 (75)</td>
<td>“Useful to see how others coped.” “Other members ‘cordial &amp; co-operative’.” “Others were varied &amp; helpful in explanations when asked questions.”</td>
<td>03/12 (25)</td>
<td>“Repetitive conversation.” “Difficulty mixing with people of different abilities.” “People not completing the course.”</td>
</tr>
<tr>
<td>Group size</td>
<td>11/12 (91.67)</td>
<td>No comments</td>
<td>01/12 (08.33)</td>
<td>No comments</td>
</tr>
<tr>
<td>Group length</td>
<td>12/12 (100)</td>
<td>No comments</td>
<td>00/12 (0)</td>
<td>No comments</td>
</tr>
<tr>
<td>Group content</td>
<td>09/10 (90)</td>
<td>“Interesting.” “Provided useful handouts.”</td>
<td>01/10 (10)</td>
<td>“Cancer person did not mix with those with back problems.”</td>
</tr>
</tbody>
</table>

People rated their overall satisfaction with the pain group, the percentage is given in table 6 below:

Table 6: Satisfaction with pain programme overall: [0 = not at all useful → 100 = extremely useful]

<table>
<thead>
<tr>
<th>Raw Scores</th>
<th>Mean (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10, 75, 80, 80, 90, 100, 100, 100</td>
<td>635/8 (79.38)</td>
</tr>
</tbody>
</table>

People described what they found to be the most useful aspects of the course; these are summarised as follows:

Table 7: Most useful aspects of the course:

<table>
<thead>
<tr>
<th>Useful Aspect of Course:</th>
<th>Number of people making comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being with other pain sufferers/ listening &amp; sharing experiences.</td>
<td>5</td>
</tr>
<tr>
<td>Pacing</td>
<td>4</td>
</tr>
<tr>
<td>Relaxation</td>
<td>4</td>
</tr>
<tr>
<td>Imagery</td>
<td>1</td>
</tr>
<tr>
<td>Goal setting</td>
<td>1</td>
</tr>
<tr>
<td>Reducing the focus on pain.</td>
<td>1</td>
</tr>
</tbody>
</table>

Few negative comments were made about the group, but they are summarised in table 8:
Table 8: Negative aspects of the course.

<table>
<thead>
<tr>
<th>Negative Remark</th>
<th>Number of people making comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not liking form completion</td>
<td>1</td>
</tr>
<tr>
<td>Difficulties using assertiveness techniques</td>
<td>1</td>
</tr>
<tr>
<td>Difficulty obtaining work</td>
<td>1</td>
</tr>
<tr>
<td>Inability of group to cure pain</td>
<td>1</td>
</tr>
<tr>
<td>Need for follow up groups</td>
<td>1</td>
</tr>
<tr>
<td>Wish for course to be made available earlier in one's life.</td>
<td>1</td>
</tr>
</tbody>
</table>

**Life stresses:**

It was hypothesised that life stresses may influence effects of the group. It was found that six of the eight, who rated overall usefulness of the programme, also reported life stresses since completing the group. The mean rating for group usefulness by these people was **eighty-nine percent** (nearest percent). Life stresses included: mother in hospital, bereavement, moving house, new job and unspecified family difficulties. This does not support the idea that those with life stresses since group completion would appear less satisfied with the programme.

**Medication:**

In the majority there was no change in medication from time of the group to present day, although two had increased and three had decreased medication.

**Work status:**

Generally work status had remained constant. Five were retired and one was a housewife upon entering the group, this stayed the same. Of the remaining four who responded, two were unemployed and one on incapacity benefit. This was consistent with their work status at the time of the group. Only one had returned to work full time. One person who was unemployed, specified an increase in quality and quantity of voluntary work.
Discussion:

With regards mood (HADS), results indicated a significant decrease in anxiety from measures taken upon entering the group to completion, although this was not maintained at follow-up. Whilst non-significant, means indicate a reduction in depression across the three points in time, see table 2. This supports the findings of Basler & Rehfisch (1990).

From the DAS, a significant shift in 'approval' was obtained from beginning to end of the group. This was not maintained at follow-up. However the attitude was still more functional at the follow-up, than had been upon entering the group. No other attitudes produced significant findings, however for four of remaining six items, a more functional attitude was displayed upon follow up than upon entering the group (see table 3).

The McGill Pain Questionnaire produced no significant results. However a non-significant trend was highlighted (table 4) on all items showing a reduction in intensity from start of group to follow-up. In each case except the miscellaneous category, there was a reduction from entering the group to completion and again from completion to follow up. Pain intensity also displayed a non-significant reduction upon group completion and was maintained at follow up. This highlights as mentioned by Turk & Michenbaum (1989), how pain intensity may become reduced as a function of the acquired skills.

Therefore only two measures produced significant effects from attending the pain group. Caution must even be taken with the significant reduction in anxiety, as upon entering a group, people's anxiety levels may be increased, this then producing an increased baseline measurement. Perhaps non-significant results are not entirely surprising given that eight weeks to implement so many changes after suffering chronic pain for years seems unlikely to yield significant shifts on many measures. From the feedback received (questionnaire 4), many life events took place after ending the group and therefore significant change or maintenance of gains to a significant level may have been difficult to obtain. However, the non-significant trends for such a small sample are very encouraging. Generally these findings hint towards supporting the notions of Morley et al (1999), for the effectiveness of cognitive behavioural psychological treatments.
Feedback from questionnaire four was extremely positive, even if not reflected through statistical significance. Of the eight people who rated usefulness of programme the mean was 79 percent (nearest percent), indicating people who answered the question found the group very useful indeed. Few negative comments were made about the group, see table 8. Also with regard satisfaction, as collated in table 5, feedback on elements comprising the pain programme were generally very positive. This is in contrast to the non-significant results in terms of reduction of pain, depression and most of the dysfunctional attitudes. One likely reason is the low number of subjects since the majority of scores show a trend in the hypothesised direction.

It was hypothesised that life stresses may influence effects of the group, this was found not to be the case, with the mean rating for group usefulness by these people being 89 percent (nearest percent). In fact six out of eight of those who rated overall usefulness of the group were people who had significant life stresses upon group completion. These included as mentioned previously, bereavement, moving house, mother in hospital and unspecified family difficulties.

**Critique:**

The sample was very small, with an average of ten people forming the basis for comparisons. This may not be representative of all those who took part in the pain programmes. Not only has the analysis excluded those who did not complete measures at the beginning to end of the group, but also those who had individual treatment following the group, plus those who could not be located, and those who did not complete the questionnaires. In effect it is hard to make conclusions made on such a small percentage of participants of pain programmes over the past two years.

There was no wait list control and only subjective measures were taken. No account was made as to time between participation in the pain group and follow-up. Time three data contains data from varying times after completion of the programme, from six months to 22 months after completing the pain groups. This data had to be put together for analysis because participants did not indicate on the questionnaire when they completed the programme and the number of respondents was very small. Time since completing the pain group could be an important factor regarding maintenance of gains.
Caution must also be employed when interpreting the fourth questionnaire, as this may reflect only those who returned the questionnaire. They may have returned the questionnaires because they had had the most positive experiences from the group. With a co-facilitator conducting the research, perhaps the more positive responses comprised the ones returned. Therefore these findings need also be interpreted with caution.

The measures were chosen by previous group facilitators and for a follow up naturally the same measures had to be used. Current literature shows that maybe the measures employed may not now be the measures of choice. The Pain Discomfort Scale (PDS; Jensen, Kardy & Harris, 1991) is a more recent development of a verbal scale assessing the affective intensity of pain and the Modified Somatic Perception Questionnaire, (MSPQ; Main, 1983) has also been recommended to best assess anxious preoccupation.

**Conclusion:**

It is not possible to make any firm conclusions based on such a small sample, with no control group and using purely subjective measures. Tentatively however the significant results show that anxiety levels taken upon entering the group had reduced upon leaving the group, though this was not maintained at follow up. The attitude of ‘approval’ was less dysfunctional upon leaving the group than when entering, again not maintained at follow up. These were however the only two significant results and no firm conclusions can be drawn for the service.

Non-significant trends however showed a reduction in depression, more functional attitudes and decreased pain intensity and severity of pain experiences. Whilst non-significant, generally the trends are showing support for the initial hypotheses.

General feedback concluded participating in the group to be a positive, useful experience, even if not reflected statistically. The research trends support the general conclusion made by Morley et al. (1999), for the effectiveness of psychological treatments based upon cognitive behavioural principles.

Social context did not appear to influence satisfaction although could represent only those who returned the questionnaire.
Applicability of research to service

Whilst tentative to draw conclusions on the effectiveness of the service, based upon an average of ten people's data, it may be more useful to note that for the majority of people who took part in the follow-up, the experience seemed to be a good one. The skills, whether put into practice all the time, appear learnt and not forgotten. Each person seemed to take something away from the course.

With positive trends emerging even with such a small sample, data collection and analysis should be continued to investigate these trends further and a much larger sample is needed. Measurement needs to be consistent and perhaps explained thoroughly beforehand to minimise missing data. Originally the three questionnaires were given out separately which came across as quite daunting and was often felt to be too much. This may well have put people off completing them fully in the first place and wanting to repeat them for this follow up piece of work. The combined questionnaire booklet made for this research is smaller, more compact and probably less anxiety provoking than the separate ones. This has been given to the service who has agreed to implement this as their tool instead.

The measures should also be reviewed in line with current literature, although this will make analysis from previous programmes difficult. Hopefully this will then continue to inform and improve the service provided and enable comparisons with similar services.
References:


Appendices:

Appendix 1: Questionnaires 1-4

Appendix 2: Covering Letter

Appendix 3: Information Sheet

Appendix 4: Letter Confirming Feedback to Service.
APPENDIX 1

Questionnaire One to Four.
**Questionnaire 1:**

Read each item and underline 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 answer every question.

<table>
<thead>
<tr>
<th>I feel tense or ‘wound up’:</th>
<th>I still enjoy the things I used to enjoy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the time</td>
<td>Definitely as much</td>
</tr>
<tr>
<td>A lot of the time</td>
<td>Not quite so much</td>
</tr>
<tr>
<td>From time to time</td>
<td>Only a little</td>
</tr>
<tr>
<td>Not at all</td>
<td>Hardly at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I get a sort of frightened feeling as if something awful is about to happen:</th>
<th>I can laugh and see the funny side of things:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very definitely and quite badly</td>
<td>As much as I always could</td>
</tr>
<tr>
<td>Yes, but not too badly</td>
<td>Not quite so much now</td>
</tr>
<tr>
<td>A little, but it doesn’t worry me</td>
<td>Definitely not so much now</td>
</tr>
<tr>
<td>Not at all</td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Worrying thoughts go through my mind:</th>
<th>I feel cheerful:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A great deal of the time</td>
<td>Not at all</td>
</tr>
<tr>
<td>A lot of the time</td>
<td>Not often</td>
</tr>
<tr>
<td>From time to time but not too often</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Only occasionally</td>
<td>Most of the time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I can sit at ease and feel relaxed:</th>
<th>I feel as if I am slowed down:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely</td>
<td>Nearly all the time</td>
</tr>
<tr>
<td>Usually</td>
<td>Very often</td>
</tr>
<tr>
<td>Not often</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Not at all</td>
<td>Not at all</td>
</tr>
<tr>
<td>I get a sort of frightened feeling like ‘butterflies’ in the stomach:</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
</tr>
<tr>
<td>Occasionally</td>
<td></td>
</tr>
<tr>
<td>Quite often</td>
<td></td>
</tr>
<tr>
<td>Very often</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I have lost interest in my appearance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely</td>
</tr>
<tr>
<td>I don’t take as much care as I should</td>
</tr>
<tr>
<td>I may not take quite as much care</td>
</tr>
<tr>
<td>I take just as much care as ever</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I feel restless as if I have to be on the move:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very much indeed</td>
</tr>
<tr>
<td>Quite a lot</td>
</tr>
<tr>
<td>Not very much</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>I look forward with enjoyment to things:</th>
</tr>
</thead>
<tbody>
<tr>
<td>As much as I ever did</td>
</tr>
<tr>
<td>Rather less than I used to</td>
</tr>
<tr>
<td>Definitely less than I used to</td>
</tr>
<tr>
<td>Hardly at all</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>I can enjoy a good book or radio or T.V. programme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Often</td>
</tr>
<tr>
<td>Sometimes</td>
</tr>
<tr>
<td>Not often</td>
</tr>
<tr>
<td>Very seldom</td>
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</tbody>
</table>

Now check you have answered all the questions.
**Questionnaire 2:**

Indicate how much you agree or disagree with each attitude, by ticking the column that represents your estimate of how you think most of the time. Be sure to choose only one answer for each attitude. Because we are all different there is no 'right' or 'wrong' answer to any statement. *Recall how you look at things most of the time. Please answer all the questions.*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree Strongly</th>
<th>Agree Slightly</th>
<th>Neutral</th>
<th>Disagree Slightly</th>
<th>Disagree Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Criticism will obviously upset the person who receives the criticism.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. It is best to give up my own interests in order to please other people.</td>
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<tr>
<td>3. I need other people’s approval in order to be happy.</td>
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<tr>
<td>4. If someone important to me expects me to do something then I really should do it.</td>
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<tr>
<td>5. My value as a person depends greatly on what others think of me</td>
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<tr>
<td>6. I cannot find happiness without being loved by another person.</td>
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<tr>
<td>7. If others dislike you, you are bound to be less happy.</td>
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<tr>
<td>8. If people whom I care about reject me it means there is something wrong with me.</td>
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<tr>
<td>9. If a person I love does not love me, it means I am unlovable.</td>
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<tr>
<td>10. Being isolated from others is bound to lead to unhappiness.</td>
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<tr>
<td>11. If I am to be a worthwhile person I must be truly outstanding in at least one major respect.</td>
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<tr>
<td>Statement</td>
<td>Agree Strongly</td>
<td>Agree Slightly</td>
<td>Neutral</td>
<td>Disagree Slightly</td>
<td>Disagree Very Much</td>
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<tr>
<td>----------------------------------------------------------------------------</td>
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<tr>
<td>12. I must be a useful, productive, creative person or life has no purpose.</td>
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<tr>
<td>13. People who have good ideas are more worthy than those who do not.</td>
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<tr>
<td>14. If I do not do as well as other people it means I am inferior.</td>
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<tr>
<td>15. If I fail at my work then I am a failure as a person.</td>
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<tr>
<td>16. If you cannot do something well there is little point doing it at all.</td>
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<tr>
<td>17. It is shameful for a person to display his or her weaknesses.</td>
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<tr>
<td>18. A person should try to be the best at everything he or she undertakes.</td>
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<tr>
<td>19. I should be upset if I make a mistake.</td>
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<tr>
<td>20. If I don’t set the highest standards for myself I am likely to end up a second rate person.</td>
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<tr>
<td>21. If I strongly believe I deserve something I have reason to expect I should get it.</td>
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<tr>
<td>22. It is necessary to become frustrated if you find obstacles to getting what you want.</td>
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<tr>
<td>23. If I put other people’s needs before my own, they should help me when I need something from them.</td>
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<tr>
<td>24. If I am a good wife/husband/partner then my partner is bound to love me.</td>
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</tr>
<tr>
<td>Statement</td>
<td>Agree Strongly</td>
<td>Agree Slightly</td>
<td>Neutral</td>
<td>Disagree Slightly</td>
<td>Disagree Very Much</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
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<tr>
<td>25. If I do nice things for someone I can anticipate that he or she will respect and treat me just as well as I treat them.</td>
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<tr>
<td>26. I should assume responsibility for how people feel and behave if they are close to me.</td>
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<tr>
<td>27. If I criticise the way someone does something and he or she becomes angry or depressed, this means I have upset him or her.</td>
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</tr>
<tr>
<td>28. To be good, worthwhile, moral person, I must try to help everyone who needs it.</td>
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<tr>
<td>29. If a child is having emotional or behavioural difficulties, this shows that the child's parents have failed in some important respect.</td>
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<tr>
<td>30. I should be able to please everybody.</td>
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<td></td>
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</tr>
<tr>
<td>31. I cannot expect to control how I feel when something bad happens.</td>
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</tr>
<tr>
<td>32. There is no point in trying to change upsetting emotions because they are a valid and inevitable part of daily living.</td>
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</tr>
<tr>
<td>33. My moods are primarily created by factors that are largely beyond my control, such as past, body chemistry, hormone cycles, biorhythms, chance or fate.</td>
<td></td>
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<tr>
<td>34. My happiness is largely dependent on what happens to me.</td>
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<tr>
<td>35. People who have the marks of success (good looks, social status, wealth or fame) are bound to be happier than those who do not.</td>
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</tbody>
</table>
**Questionnaire 3:**
What Does Your Pain Feel Like? Some of the words below describe your present pain. Circle **ONLY** the words that best describe it. Leave out any category that is not suitable. Use maximum of a single word from each category.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flickering</td>
<td>Jumping</td>
<td>Pricking</td>
<td>Sharp</td>
<td>Pinching</td>
</tr>
<tr>
<td>Quivering</td>
<td>Flashing</td>
<td>Boring</td>
<td>Cutting</td>
<td>Pressing</td>
</tr>
<tr>
<td>Pulsing</td>
<td>Shooting</td>
<td>Drilling</td>
<td>Lacerating</td>
<td>Gnawing</td>
</tr>
<tr>
<td>Throbbing</td>
<td>Stabbing</td>
<td>Stabbing</td>
<td>Cramping</td>
<td>Cruising</td>
</tr>
<tr>
<td>Beating</td>
<td>Laninating</td>
<td>Beating</td>
<td>Pulsating</td>
<td>Shooing</td>
</tr>
<tr>
<td>Pounding</td>
<td>Pounding</td>
<td>Beating</td>
<td>Pounding</td>
<td>Pounding</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Tugging</td>
<td>Hot</td>
<td>Tingling</td>
<td>Dull</td>
<td>Tender</td>
</tr>
<tr>
<td>Pulling</td>
<td>Burning</td>
<td>Itchy</td>
<td>Sore</td>
<td>Taut</td>
</tr>
<tr>
<td>Wrenching</td>
<td>Scalding</td>
<td>Smarting</td>
<td>Hurting</td>
<td>Raspings</td>
</tr>
<tr>
<td>Searing</td>
<td></td>
<td>Stinging</td>
<td>Aching</td>
<td>Splitting</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Tiring</td>
<td>Sickening</td>
<td>Fearful</td>
<td>Punishing</td>
<td>Wretched</td>
</tr>
<tr>
<td>Exhausting</td>
<td>Suffocating</td>
<td>Frightful</td>
<td>Gruelling</td>
<td>Blinding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Terrifying</td>
<td>Cruel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vicious</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Killing</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Annoying</td>
<td>Spreading</td>
<td>Tight</td>
<td>Cool</td>
<td>Nagging</td>
</tr>
<tr>
<td>Troublesome</td>
<td>Radiating</td>
<td>Numb</td>
<td>Cold</td>
<td>Nauseating</td>
</tr>
<tr>
<td>Miserable</td>
<td>Penetrating</td>
<td>Drawing</td>
<td>Freezing</td>
<td>Agonising</td>
</tr>
<tr>
<td>Intense</td>
<td>Piercing</td>
<td>Squeezing</td>
<td>Dreadful</td>
<td>Dreadful</td>
</tr>
<tr>
<td>Unbearable</td>
<td></td>
<td>Tearing</td>
<td>Torturing</td>
<td></td>
</tr>
</tbody>
</table>

**How strong is your pain?**

The 5 words below represent pain of increasing intensity. They are:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>Discomforting</td>
<td>Distressing</td>
<td>Horrible</td>
<td>Excruciating</td>
</tr>
</tbody>
</table>

Write the number of the most appropriate word in the space beside the question:

**Question:** Which word best describes your pain right now?  Number ..........
Questionnaire 4:

Age ______________________

Marital Status ____________________

No. of years with Chronic pain ____________________

Medication

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

When took part in pain group ________________________________________________________________________

Please answer the following questions as fully as you can:

1). Please give some information surrounding your work status at present and since completing the chronic pain programme. (E.g. employed; full time/part time, unemployed, retired etc. Is this different from when you were in the group?).

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

2). Are there now, or have there been since the pain group, any additional stresses in your life apart from chronic pain. (E.g. moving house, bereavement, relationship/family difficulties etc.).

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

3). Have you changed your medication since you were in the pain group?

Please clarify:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

4). How useful do you think the pain management programme was? Rate from 0-100, (0 = not at all useful, 100 = extremely useful). Please explain your answer.

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
5). What have you found to be the most useful part(s) from the pain management programme?


6). What have you found to be the least useful part(s) from the programme?


7). Were you satisfied with: (please tick):

The group facilitators.  
(please explain your answer)  


The group members.  
(please explain your answer)  


The size of the group.  
(please explain your answer)  


The length of the group.  
(please explain your answer)  


The content of the group.  
(please explain your answer)  


Thank you again for your co-operation, please do not hesitate to contact me should you wish to discuss any part of the study.
APPENDIX 2

Covering Letter.

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

Re: Chronic Pain Group

My name is ................., you may remember me as one of the facilitators of the pain management programme you took part in at .....................Hospital.

I am currently a Trainee Clinical Psychologist at the University of Surrey. I am conducting some research evaluating the chronic pain group you attended.

This research will allow us to look at long term effects of participation in such a programme and will help us to see how the service is running and to make it more effective. Your co-operation will enable the service to continue to develop and improve.

I would be really pleased if you would agree to take part in this research. If you do please read the information sheet and then complete the questionnaire.

Thank you so much for your time.

Yours Sincerely,

..............................

Trainee Clinical Psychologist.
APPENDIX 3

Information Sheet.
Information Sheet:

I am a Trainee Clinical Psychologist from the University of Surrey. I am interested in evaluating the 8-week outpatient psychology pain group you once participated in. I am especially concerned with long term effects by following up past patients.

The questionnaire to complete comprises mainly questions that were administered prior to the group and on the first and last sessions. There are a few general questions included at the end.

The questionnaires are **strictly confidential** and are identifiable only to me, through numbers, which represent each participant in the study. The corresponding names are secure and kept separate from the data.

Please feel free to ask any questions concerning the research, by telephoning me on ..................(the psychology department at .................... Hospital). If I am unavailable, please leave a message and I will get back to you as soon as possible.

Thank you for your time,

.........................

Trainee Clinical Psychologist.
APPENDIX 4

Letter Confirming Feedback To Service.
12th July 2001

Dear

Thank you very much for coming to present your research on the long-term effectiveness of our out-patient Pain Management Programme. This research will prove very useful to me in the further development of the service.

Wishing you all the best for the future.

Yours Sincerely

Lead Clinical Psychologist
to pain Management Service
‘Do Implementation Intentions Increase Adherence to Medication in Non-Adherent Patients Currently Taking Cholesterol Lowering Medication?’
## CONTENTS PAGE:

### Abstract

### Introduction:
- Outline
- Adherence to Medication
- Theory of Reasoned Action and Planned Behaviour
- Self-Regulatory Model of Illness
- Illness Representations/medication Beliefs and Adherence
- Interventions to Increase Adherence
- Implementation Intentions
- High Cholesterol Conditions
- Aims and Hypothesis

### Method:
- Participants
- Design
- Intervention
- Measures
- Procedure
- Data Analysis
- Reliability Analysis
- Normal Distribution
- Analysis

### Results:
- Initial Description of Sample
- Correlations In the General Sample
- Adherent Vs. Non-adherent Participants
- Non-adherent Population
- Time 1 to Time 2

### Discussion:
- Overview of Sample
- Initial Exploration
- Adherence and Medications
- Exploration of the Adherent and Non-adherent Groups
- Main Hypothesis ‘The Intervention’
- Critique
- Future Research
- Clinical Applications

### References:

### Appendices:
- **Appendix 1:** G-Power Printout
- **Appendix 2:** Revised Illness Perceptions Questionnaire
- **Appendix 3:** Hospital Anxiety and Depression Scale
- **Appendix 4:** Beliefs About Medicines Questionnaire
- **Appendix 5:** Medication Adherence Report Scale
- **Appendix 6:** Combined Questionnaire Booklet
- **Appendix 7:** Hospital Ethical Approval
- **Appendix 8:** University Ethical Approval
- **Appendix 9:** Patient Information Sheet
- **Appendix 10:** Patient Consent Form
- **Appendix 11:** Covering Letter for Follow-up Questionnaire
- **Appendix 12:** Follow-up Adherence Questionnaire
- **Appendix 13:** Information Sheet for all Patients After Data Collection

---

Page 156

Pages 157-170

Page 157

Pages 157-159

Page 159-162

Pages 162-163

Pages 163-164

Pages 164-167

Pages 167-170

Page 170-171

Pages 172-178

Page 172

Pages 172-173

Pages 173-175

Pages 175-176

Page 176

Pages 176-177

Page 177

Pages 177-178

Pages 179-199

Pages 179-184

Pages 184-190

Pages 190-192

Pages 192-195

Pages 196-199

Pages 200-209

Page 200

Pages 200-202

Page 202

Pages 202-204

Pages 204-206

Pages 206-208

Pages 208

Pages 208-209

Pages 210-215

Pages 216-259

Page 217-218

Pages 219-224

Pages 225-227

Pages 228-230

Pages 231-232

Pages 233-244

Page 245-246

Page 247-248

Pages 249-251

Page 252-253

Page 254-255

Page 256-257

Pages 258-259
ABSTRACT:

Objectives: To investigate whether implementation intentions increased self-reported adherence to cholesterol-lowering medication, in patients currently attending a lipid clinic and reporting some level of non-adherence. Further aims were to explore the adherent and non-adherent participants and those who received and did not receive the intervention on a number of outcome measures.

Design: Prospective experimental study, with experimental and control groups determined by sequential allocation, with alternate participants receiving the intervention.

Setting & Participants: Sixty-four adults currently taking some form of cholesterol lowering medication and attending a lipid clinic in one of two hospitals in Southeast England.

Outcome Measures: All participants were measured on the Illness Perception Questionnaire (IPQ-R; Weinman, Petrie, Moss-Morris & Horne, 1996), Beliefs about Medicines Questionnaire (BMQ; Horne, Weinman & Hankins, 1999), Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) and Medication Adherence Scale (MARS-5; Horne & Weinman, 1999). Those not fully adherent were given the MARS-5 a month later to investigate change in adherence levels.

Results: No support was found for the main hypothesis. In fact there was a small significant increase in adherence over time, for those who did not receive the intervention. Anxiety was found to be greater in the initially non-adherent population.

Conclusions: This study used reliable and valid measures, albeit self-report and despite attempts, power was not achieved. Predominantly males received the intervention and thus findings could reflect a gender difference. There is further to go in understanding the complexity of health behaviours and even further to go in changing them.
‘Do Implementation Intentions Increase Adherence to Medication in Non-Adherent Patients Currently Taking Cholesterol Lowering Medication?’

INTRODUCTION

Outline:
This review initially looks at the problem of adherence to medication. Models, which have attempted to account for this behaviour, are then explained, with evidence and shortcomings pertaining to each discussed. Interventions to increase adherence are analysed and are extended to the specific area of high cholesterol conditions and subsequent medication adherence. A summary is presented illustrating the main ideas postulated and the main hypothesis for this study outlined.

Adherence to Medication:
In the twentieth century, there has been a noticeable growth in the number of effective drug treatments. Prescription of medicine has become one of the most familiar medical interventions utilised. However whilst appropriate use of medication has been stated as one of the keys to self-management, it is thought that 30 percent of prescribed medication is not taken as directed (Meichenbaum & Turk, 1987). This can be seen as a waste of health resources and a potential lost opportunity for health gain, if the prescription was appropriate. Non-adherence can be split into two categories, the first being unintentional non-adherence, such as occasional forgetting, or inability to follow instructions for treatment because of physical problems, such as poor eyesight, or poor understanding. The other category is ‘intentional’ non-adherence whereby it is the patient’s decision not to take the medication as has been instructed and this may be the result of an elaborate decision making process (Weintraub, 1990). Non-adherence has been seen as a particularly complex behaviour, which has continued to challenge researchers and practitioners. A number of theories have been used to try and explain the process, but few have managed to completely account for this behaviour. These theories are now considered.

Theory of Reasoned Action and Planned Behaviour:
Over the years theorists have attempted to understand what influences and guides people to behave in certain ways. Understanding the mechanisms by which human beings behave could help understand how behaviour, especially non-desirable behaviour, could be changed, such as that of non-adherence. Perhaps two of the most prominent theories to date are the theory of
Reasoned Action (TRA; Fishbein & Ajzen, 1980) and the Theory of Planned Behaviour (TPB; Ajzen, 1991), which expanded upon the earlier model. These social cognition models (SCM's) posit that a person's 'intention' to perform behaviour is the best predictor of behaviour performance. It then specifies two important determinants of a person's intention to perform behaviour, which are the 'attitude' held towards the behaviour and 'subjective norm'. The former refers to both positive and negative evaluations of performing the given behaviour and the latter incorporates people's perceptions of social pressure to perform the behaviour, multiplied by the extent the person is motivated to comply with this perceived social pressure. Accumulated evidence has shown that both these factors are good predictors of intentions and in turn intentions are good predictors of performing behaviours (Sheppard, Hartwick, & Warshaw, 1988). This model was extended due to limitations when explaining behaviours over which people may not have complete volitional control. As with the TRA, the central factor of the Theory of Planned behaviour, remained a person's 'intention' to perform the given behaviour, which again assumed to capture the motivational factors, that influences behavioural performance. The TPB also posited that sometimes, performance depends at least some degree, on other non-motivational factors, such as opportunity and available resources. Thus whilst performance of a behaviour can be determined by motivation (intention) it depends jointly on ability or perceived behavioural control over the behaviour. According to the TPB, Perceived behavioural control (PBC) and behavioural intention can be used directly to predict behavioural achievement. The inclusion of this predictor led to improvements in the predictions of behaviour. The TPB went a step further and attempted to explain the mechanisms by which these constructs were formed. It proposed that underlying these constructs were three sets of beliefs. The 'behavioural beliefs', were postulated to influence attitudes, the 'normative beliefs' to provide the basis for subjective norms and 'control beliefs' which were thought to underlie perceived behavioural control. Whilst results have shown there to be a relationship between beliefs and attitude formation, the magnitude of this has often been disappointing. Inquiries into the role of these beliefs as a foundation of the attitudes towards a behaviour, perceived behavioural control and subjective norm, have been only partly successful, with only moderate correlations emerging (Sutton, 1998). Perhaps this highlights how an alternative model is needed to better describe the relations between beliefs and global constructs and the process by which beliefs combine to form these global responses (Ajzen, 1991). Therefore in conclusion, whilst attitudes, subjective norms and perceived behavioural control can be useful in the understanding and prediction of human behaviour, they still do not fully account for all variance in behaviour. The exact
processes and structures, which underlie these general constructs, have not been adequately explained and still remain uncertain, as do issues regarding past behaviours and ‘habits’. Whilst many constructs of the theory of planned behaviour have been shown to be predictors of behaviour, very few studies have assessed whether changing these beliefs changes behaviour. This topic is complex, variance has only in part been explained, and methodological flaws have been highlighted throughout much of the research alongside many contradicting propositions.

With reference to adherence to medication, these models have been partially helpful and some studies have demonstrated a relationship between perceived barriers, such as beliefs about the extent medication taking will disrupt their normal routines, general attitudes to medication, such as whether it is viewed as helpful or harmful and subsequent adherence (Becker, Radius, Rosenstock, Drachman, Schubert & Teets, 1978). In other studies, it was people’s perceptions of significant others, such as that of relatives or doctors, that were the most significant predictors of adherence (Cochran & Gitlin, 1988). However the limitations of using these social cognition models with adherence research is that there has been little consistency across studies and the proportion of variance accounted for, with regard adherence has been generally small (Marteau, 1995). Additionally it would seem that behaviour such as non-adherence does not arise from one off decisions, but is a far more complex process.

**Self-Regulatory Model of Illness (SRM):**

An important model developing these notions is the ‘self-regulatory model’ of illness, which has been extended to explain adherence, (Leventhal, Meyer, & Nerenz, 1980, Leventhal & Cameron, 1987, and Leventhal, Diefenbach, & Leventhal, 1992). Leventhal and his colleagues postulated that if patients perceive medication and it’s effects as making sense, they would be more likely to engage in taking their medication as directed. Determining this will involve taking account of patient’s experiences past and current symptoms and also their beliefs about illness. The beliefs about illness are said to be structured around five themes; the nature of the condition (identity), cause, consequences, duration (time-line) and potential for control/cure of the illness in question.

As noted previously, the TRA and TRB conceptualised health-related decisions in a rather static manner, whilst the SRM views this as a much more dynamic process. For example, the
selection of a coping procedure is determined by a set of beliefs about the illness threat, this is then followed by an appraisal stage, whereby the patient evaluates the effectiveness of that procedure. If thought to be ineffective, then an alternative strategy might be employed or a change in illness representation might even be seen. With regards adherence, the SRM provides a useful framework in that adherence can be seen as a form of coping procedure, and that decision to follow treatment will be influenced by illness representation and subsequent view of whether the proposed treatment is appropriate. Leventhal emphasises the need for coherence and that a person regulates their response to the illness threat in a way needed to achieve coherence for them. Thus adherence is more likely if the ideas (abstract) and symptoms (concrete) aspects of the illness representation are coherent and if the advice given by the health care professional is in accordance with the patient’s own beliefs and experiences. Therefore the self regulatory model takes us from quite a rigid model based perspective of health decision making, to a more fluid conceptualisation in which behaviour and beliefs interact in a much more dynamic way (Leventhal, Diefenbach & Leventhal, 1992). Support for the theory is provided by evidence that whilst ‘content’ of illness representations, between individual and patient beliefs and health practitioners may vary, the structure of the representations seems to be constant across demographics and illness groups (Skelton & Croyle, 1991).

It has also been suggested that beliefs about medicines prescribed for an illness may play an important part in self-regulation and adherence to the treatment. Bishop (1991) showed that people often hold prototypic beliefs about certain diseases and these will have an important role in illness cognition. Horne (1997) proposed that decisions to take medication are likely to be informed therefore by both beliefs about illness and beliefs about medicines.

Questions were posed as to how these medication beliefs were cognitively organised and whether they were grouped together in themes, as with the illness beliefs from the SRM. There was also the important question of whether beliefs in general could be differentiated from specific beliefs about medicines prescribed for a specific illness. Importantly, more about the relationship between these beliefs and behaviour needed to be determined to specifically identify which beliefs were associated with non-adherence. In a pilot study, the beliefs of 35 patients with a variety of chronic illnesses and receiving regular medication were investigated (Horne & Weinman, 1995). 34 statements were generated which represented common beliefs about medicines. These were separated into beliefs about
medicines in general and beliefs about medicines specific to a condition. These statements were then administered to more than 500 people with a range of diagnoses, who rated their agreement or disagreement with each on a five point Likert scale. The specific and general items were analysed separately and a factor analysis confirmed that beliefs could be organised into four factors. Beliefs about medicines prescribed for a specific condition could be separated into two constructs. The first construct concerned the necessity and efficacy of the specific medicines. The second construct pertained to people's concerns about specific medicines. The beliefs for medicines in general were divided into beliefs about Doctors over-use of medicines and beliefs that medicines in general are harmful, addictive poisons. These then formed the 'Beliefs about Medicines Questionnaire' (BMQ; Horne, Weinman, & Hankins, 1999). Using the BMQ as a standardised tool, these researchers believed that the interplay between patients beliefs about their illness and treatment perceptions could be investigated, which they proposed had been commonly overlooked up until this point. The researchers have demonstrated how these factors are important in understanding and predicting medication adherence. Horne & Weinman (1999) looked at these beliefs in 324 patients across four chronic illness groups (asthma, oncology, renal and cardiac). Whilst there was considerable variation between the groups, some commonalities emerged. Eighty-nine percent of patients believed their prescribed medication was 'necessary' for maintaining their health. Whilst over a third of patients reported strong 'concerns' about adverse effects that medication could produce. The relationship between these two components became apparent, with those with high necessity beliefs and low concerns having higher reported treatment adherence and those with high concerns and lower necessity beliefs having lower adherence to their medication. This varied according to illness group, with asthma and cardiac patients being significantly more likely to perceive the costs of treatment outweighing the benefits, whilst for the oncology and dialysis patients this was reversed. This necessity-concerns differential was the strongest predictor of adherence accounting for nineteen percent of variance in self-reported adherence. Illness type was a large predictor, with the asthmatic and cardiac patients being significantly less adherent. Younger patients were also less adherent, which goes against previous findings of older patients being those less adherent (Griffith, 1990). Gender and number of prescribed medicines were not found to be good predictors of adherence and did not explain a significant amount of the variance. However this study as with most, does have a number of limitations. The information was obtained via self-report methods, and the design was cross-sectional and therefore causality cannot be determined. Thus primarily what can be determined was that beliefs and behaviour were related.
Comorbidity of conditions and medications were not identified and subsequently this potential course of variation not controlled for. However there are clear implications in that patients can be seen as active decision makers and will be more likely to adhere to their medicines if beliefs about it’s necessity outweighs beliefs about potential costs.

Illness Representations/Medication Beliefs and Adherence:
The Illness Perception Questionnaire, (IPQ; Weinman, Petrie, Moss-Morris. & Horne, 1996) taps into the five constructs outlined in Leventhal’s Self-Regulatory Model of Illness. It looks at the constructs of identity, (the symptoms the patient associates with the current illness), cause (personal beliefs about the cause of illness), consequences (beliefs about outcome and effects), timeline (duration of illness) and finally cure/control (beliefs about potential to control or to cure the illness in question). This has been used in conjunction with the BMQ to look at representations of illness and medication together, in trying to understand patterns of medication non-adherence (Horne & Weinman, 1994). Forty-seven hospitalised haemodialysis patients completed these measures and a self-report measure of adherence. Recording the frequency of inter-dialysis weight gain of more than two kilograms, over a three-month period prior to questionnaire administration assessed adherence to fluid/diet restrictions. From the BMQ, the specific category of ‘concerns’ was associated with lower adherence to medication. However concerns about prescribed medication did not relate to lower adherence to fluid and dietary restrictions. Similarly those who thought that fluid/dietary restrictions were too strict were less likely to adhere to them, but were no more likely to be less adherent to medication. Therefore patients can adhere or not to some aspects of the treatment and not others and these differences are associated with certain beliefs about their treatment. From this data, it was also shown that patients with strong illness identity and those who perceived their illness to have more severe consequences, were in fact less likely to adhere to medication. It might be that these patients had a lower level of ‘coherence’ in that they were receiving the message that medication will help, yet the concrete experience was that they still felt unwell even if they did adhere. In the diabetic and asthma groups tested, patients who perceived their condition to have more serious consequences, a more chronic time-line and more symptoms, were more likely to adhere to their medication regime. This may be because of more coherence between the taking the medication and perceived symptomatic benefit. This offers tentative support for the SRM. Overall medication representations correlated with adherence and beliefs about illness and beliefs about medicines seemed to be related in a logical way, even if this sometimes goes against medical
opinion. This suggests the value of the SRM for explaining the behaviour of adherence and how this may be enhanced by the inclusion of beliefs about treatments.

Use of standardised questionnaires for assessing these beliefs has enabled researchers to quantify the prevalence of beliefs and show how these are related to non-adherence. It was particularly interesting that medication non-adherence was not determined by the beliefs that medicines are unnecessary and instead that there is a complex interplay between beliefs and indeed between medication beliefs and illness perceptions. The crucial aspect of the latter being with regards to 'coherence' between the abstract ideas and concrete experiences in determining adherence. These findings have implications for practice and future research, with emphasis on eliciting patient beliefs and addressing these on an individual basis.

As seen, research has attempted to try and understand the complex nature of human behaviour, one aspect being that of non-adherence to medication. The SCM's initially highlighted the importance of attitudes, subjective norms and perceived control in explaining behaviour in general. Whilst alternate research on an active cost-benefit analysis, took into account illness representations and medication beliefs, making links specifically with medication adherence. However whilst interesting findings have emerged with regard explaining adherence behaviours, both these models have not attempted to try and change this behaviour. The next section will therefore focus on interventions that do aim to change adherence behaviour and the development and application of 'Implementation Intentions'.

**Interventions to Increase Adherence:**

Haynes, McDonald, Garg, & Montague (2002), updated a systematic review summarising the results of randomised controlled trials of interventions, which aimed at helping patients take their medicines as directed. Computerised searches were made and relevant studies determined, based upon ability to report an unconfounded randomised controlled trial to increase adherence and measure both adherence and treatment outcome. The main findings highlighted those only one out of three interventions that had been reported in three of the trials, showed an effect on both of these measures. Of 36 interventions that had been reported from 30 of the trials, 18 showed an improvement in adherence only and only 16 showed improvements in treatment outcome. A range of disorders were evaluated including two acute disorders - acute asthma episodes (Levy, Robb, Allen, Doherty, Bland, & Winter, 2000) and Helicobacter Pylori Infection (Henry & Bately, 1999). The remaining twelve studies which
were added to this review concerned chronic conditions such as hypertension (Girvin, McDermott, & Johnston, 1999) and Schizophrenia (Razali, Hasanah, Khan, & Subramaniam, 2000). Interventions included changes in dosing schedule, such as a reduction from two daily doses to one (Girvin et al, 1999), patient education from specialists (Katon, Rutter, Ludman, Von Korff, Lin, Simon, Bush, Walker, & Unutzer, 2001), drug information leaflets (Henry & Bately, 1999) and psycho-educational programmes (Tuldra, Fumaz, Ferrer, Bayes, Arno, Balague, Bonjoch, Jou, Negredo, Paredes, Ruiz, Romeu, Sirera, Tural, Burger, & Clotet, 2000). The findings were still weak and rigorous trials on adherence are still relatively lacking. Little evidence emerged that adherence to medication could be consistently improved, with the available resources in clinical settings. Many of the interventions were labour intensive and could be difficult to practically apply in everyday non-research settings. Most of the measures were self-report and somewhat imprecise. The inclusion criteria were quite stringent and therefore only represent certain research and findings. Only 11 of the studies to date had enough patients to deem the study powerful enough to detect clinically significant effects. None of the studies measured clinical endpoints, with regard mortality and morbidity and most of the time, follow-ups were relatively short-term, the longest being 24 months. Implications emerged from this review regarding the need for simpler, more practical cost-effective interventions to improve medication adherence in a clinical setting. More information on treatment methods themselves is needed and a better understanding of adherence and non-adherence behaviour still required. Whilst some important notions have been and continue to be proposed to explain variance in adherence, how this then translates into a workable intervention to increase adherence is an often overlooked matter, with limited success to date. Joint working across the disciplines may be important, as there are no findings proposing adherence to medication to be regimen or disease specific. A potentially simple and effective method of improving adherence is discussed below.

**Implementation Intentions:**

A more recent advance in trying to understand the complexities of human behaviour and various actions in differing circumstances has emerged from Gollwitzer (1990). He argued that perhaps the enactment of goal intentions was in fact a two-stage process. The first stage he described as the 'motivational' stage and could be seen as encompassing the main components of Ajzen's Theory of Planned Behaviour'. This stage concerns the costs and benefits of the said behaviour and culminates in the 'intention' (decision) to perform that behaviour. He then described what he saw as a 'cognitive' stage or 'implemental' stage,
which concerned how the intention to behave in a certain way, was to be acted upon. At this second stage people form 'implementation intentions' which specify when and where one will perform the behaviour, in order to achieve the goal intention. In this way, implementation intentions commit a person to a course of action, when conditions in the environment are met and thus facilitate translation of a goal intention into action.

Evidence has begun to emerge on the effectiveness of making implementation intentions. Gilholm, Ettema, Selart, & Garling (1999) asked undergraduates to indicate from a list of activities, which ones they intended to carry out on the following day. In the experimental group, they were also asked to specify the place and time for this activity to be performed. Both the control group and experimental group selected approximately the same number of activities. Many of the activities were ones that may have been habitual which can be seen as a methodological flaw of this study (Ronis, Yates, & Kirscht, 1989). However more of the activities were subsequently performed by those in the experimental group and they had chosen to plan activities other than those they simply indicated they would perform. They were also more likely to carry them out than the control group. In a second study Gollwitzer & Brandstatter (1997) asked students to write a report on how they spent their Christmas and return it in a specified period. Participants in the experimental group were also asked to indicate where and when they would do this piece of work. In the control group, only intention to write the essay was indicated. As predicted more students in the experimental group completed the piece of work (71 percent compared to 32 percent). These reports were also mainly written at the time that had been indicated by their implementation intention. This highlighted a strong link between intended behaviour and specified situational context. It is thought that these links promote the completion of the goal, as the behaviour gets triggered when the specified context is subsequently encountered. Planning was not shown to increase the strength of the intention, but only whether the intention was subsequently implemented. Therefore planning appears to effect intention-behaviour consistency. Knowing if someone has planned how and when to complete an activity improves the possibility of predicting its performance, than having information about intention alone. However, there are limitations to these studies, in that a student population had been used on both occasions, who might not be seen as representative of other groups. The research was also only concerned with single activities that were relatively easy to incorporate into every day activity. The same propositions may not so easily be applied to more complex behaviours.
Other studies have taken these ideas further and investigated more intricate behaviours with different populations. One such study by Mitchie, Dormandy, & Marteau (In Press), looked at a sample of 88 women intending to go for pre-natal screening and the impact of making plans on the implementation of this intention. In the intervention group, i.e. those who made action plans as to when and where they would attend for screening, 84 percent subsequently attended. This was compared to just 47 percent in the control group, where no such plan was devised. There were no differences in the intention to go for screening, just the implementation. When differences between the two groups, such as ethnicity and socio-economic status were controlled for, the differences remained. However only 63 percent of the intervention group completed the action plan and it could be hypothesised that those who completed a plan represented those already more likely to attend for screening. The sample size was also small and the study powered at a medium effect size. Yet unlike other studies, the behaviour in question was not one that was that easy to incorporate into daily activity and not likely to have become routine. This research also used a clinical as opposed to student population.

In another study by Sheeran & Orbell (2000), women registered at the same medical practice were asked to complete measures on the main constructs outlined in the theory of planned behaviour. These included attitudes, subjective norms and perceived behavioural control. Additionally half of the participants were instructed how to form implementation intentions, specifying when, where and how they would make their appointment for cervical screening for cancer. Whilst the variables from the theory of planned behaviour, did act as good predictors of attendance for cervical screening, participants who formed the implementation intentions were much more likely to attend (92 percent compared with 69 percent). Interestingly, forming implementation intentions also impacted upon habit and past behaviour. The correlation between previous delay in going for screening and subsequent attendance was significantly lower for those participants who had formed implementation intentions, compared to those who had not. Orbell, Hodgkins & Sheeran, (1997) attempted to explain these findings; by proposing that the cognitive underpinnings of habit and implementation intentions are similar. They proposed that implementation intentions involve cognitive rehearsal of the link between the behaviour in question and the context of its proposed enactment. This cognitive rehearsal is thought to be the process, which defines a habit. In both, there is an association made between environmental cues and an action schema. As the participant is asked to specify what will be performed and when, previous
tendencies will be suppressed and the new behaviour activated instead. However, there are criticisms of this research, in that the non-respondents had a previously recorded longer delay in attendance than the respondents. Thus those who attended may have over-represented those who attended their appointments regularly anyway. Differences in previous delay could also have reflected differences in perceptions of self-consciousness (Fenigstein, Scheier, & Buss, 1975), social anxiety (Schlenker & Leary, 1982), or even fear of negative evaluation (Leary, 1983), which were not taken into account and may be salient especially for this type of invasive medical examination. Further research is needed to investigate these explanations further and examine whether implementation intentions could be effective in enhancing other health behaviours, such as eating a healthy diet, or adhering to medication. Although further research is needed, these findings suggest that these interventions are a potentially powerful means of changing behaviour, or at least encouraging people who wish to perform the behaviour to enact this intention. It is also cost-effective and easy to implement.

The theory of reasoned action and the theory of planned behaviour have explained a moderate proportion of variance in human behaviour. Illness perceptions and beliefs about medicines have also explained a proportion of variance with regard the specific behaviours involved in adherence to medication. However, little evidence has emerged regarding how these constructs can be applied to change behaviour and with the latter example, to increase medication adherence. Perhaps the emphasis should shift away from the beliefs, constructs and person’s intentions, and as with Gollwitzer’s Implementation Intentions, shift the focus into the environment. This way, the person is committed to a course of action, when conditions in the environment are met and this facilitates the translation of the goal intention into an action. No research to date appears to have looked at using implementation intentions to increase medication adherence, whilst also looking at psychological constructs such as illness perceptions and beliefs about ones specific medicines and medication in general.

**High Cholesterol Conditions:**

Cholesterol is a chemical that is made in the liver, from the fatty foods that have been eaten. Whilst some cholesterol is needed to keep healthy, high cholesterol levels can put a person at increased risk of developing atheroma. Atheroma are plaques of fatty deposits which develop in the inside lining of arteries, making the artery narrower and subsequently reducing blood flow. This can then lead to stroke, heart disease, transient ischaemic attacks and peripheral vascular disease (narrowing of the arteries to the legs). Therefore lowering cholesterol levels
can help reduce the risk of these health problems. Lowering cholesterol can be achieved by taking prescribed medicines and eating a diet that is low in saturated fat. For many people with high cholesterol, taking medicines is the best way of achieving a lower cholesterol level. Current cholesterol-lowering therapies, especially the range of ‘statins’ have been shown to be effective in reducing morbidity and mortality (Shepherd, Cobbe, Ford, Isles, Lorimer, MacFarlane, McKillop & Packard, 1995). Statin drugs are generally well tolerated by patients and reported side effects are mild and transient (Knopp, 1999). Adherence has been found to be higher for statins than for cholestyramine (Erikson, Hadell, Walldius & Kjellstrom, 1998). Possibly this is due to the fewer side effects, less doses and having been shown to be more effective than other medicines in lowering cholesterol. However, Insull (1997) in review of the literature, reported that still up to 50 percent of patients receiving cholesterol lowering medicines will not take their medication as explicitly directed, either in terms of recommended dose or time to be taken.

Very few studies have attempted to investigate the association between adherence and high cholesterol conditions. One study by Kiortis et al (2000) found that in 193 hyperlipidaemic patients, higher self-reported adherence was associated with having a routine way of taking medication, fewer reported side-effects, smoking less, being older and perceiving their treatment as more effective. Perceiving a role for cholesterol in causing cardiovascular disease, mood, stress and perceived risk of oneself for developing cardiovascular disease were found not to be related to self-reported adherence in this study.

In attempting to understand this health behaviour, Brewer, Gretchen, Chapman, Brownlee and Leventhal (2002) conducted a study on 169 patients with hypercholestserolaemia (chronically elevated blood cholesterol levels). These patients are at high risk of coronary heart disease and coronary related disability and death. Therefore non-adherence to medication is an extremely important behaviour to be understood and targeted in this population. Meyer, Leventhal & Gutman (1985) had investigated a specific kind of model with patients with hypertension, stemming from the self-regulatory model of illness, and found that some patients saw it as a chronic asymptomatic condition that required long-term treatment with medication, exercise and diet. Others had a lay-model of the condition, which depicted the disease as acute, with identifiable symptoms and caused by stress and relieved by behaviours such as meditation. Those possessing the lay model were more likely to miss medication and had poorer blood pressure control. Brewer et al (2002), attempted then to
apply this model to hypercholesterolaemia as a similarly chronic, symptomless disease with severe consequences, such as stroke and heart attacks and requiring regular health behaviours, such as taking medication, diet and exercise. They proposed that as with the study by Meyer et al, the expert based mental model might also be related to adherence among this population. Ten survey questions based on the five components of the SRM, were used and patient adherence measured by asking patients whether they were adhering to their medicines and examining blood tests to see whether they were adhering to their LDL cholesterol treatment goals (low-density lipoprotein - most important component of blood cholesterol to be lowered). As predicted it was found that those who possessed the expert model of illness showed improved control and improved adherence. Of the five attributes of patient’s illness as proposed by the SRM, three proved important predictors of cholesterol levels and medication adherence. These were symptoms, consequences and timeline. Therefore those who believed the consequences were that of heart attack and stroke had better report adherence and LDL control. Those who believed that the condition produced physical symptoms showed poorer LDL control. Similarly those who believed the timeline of their condition was stable again were more likely to meet their LDL targets. Cause and cure did not show any relation to adherence or LDL cholesterol control. This study highlights some important ideas concerning understanding people’s perceptions in relation to adherence with this kind of condition. However interventions to increase cholesterol-lowering adherence as outlined previously have shown very low rates of success. This study suggests that educating patients about the consequences, asymptomatic and stable nature of their condition may be effective in promoting the desired behaviours. However, this study was cross-sectional, with the sample comprising predominantly white, well educated males, with a mean age of 67 and therefore caution must be applied in generalisation of findings.

A study by Senior, Marteau, & Weinman (In Press) looked at self-reported adherence to cholesterol lowering medication. Illness perceptions, mood and demographics in 333 patients with familial hypercholesterolaemia were investigated. Overall, 63 percent of participants reported some level of non-adherence. Whilst measures were self-report, biochemical evidence showed those reporting total adherence had lower total cholesterol levels than those reporting partial adherence. Total adherence was found to be more likely with the older patients, those with a history of cardio-vascular disease and those with a lower total cholesterol level. Partial adherence was generally reported to be due to occasional forgetting than intentional deviation from the recommended regimen. Lower perceived risk of raised
cholesterol in the future, having greater control over the condition and perceiving cholesterol and genes to be important determinants of having a heart attack were subsequently associated with increased adherence. There were no differences between genders and neither anxiety nor depression was associated with adherence to medication. There were limitations to this study in that whilst the sample size was good, the population comprised regular attendees from a lipid clinic and all had already agreed to take part in a trial of genetic testing. Thus they were a highly motivated and complaint group, which may not be representative of other samples. The authors suggest that as only small associations were found between behaviour and illness perceptions, in a group like this, where non-adherence would largely be non-intentional, perhaps interventions that help establish routines would be more beneficial than those aimed at challenging beliefs. Thus implementation intentions were recommended by the authors as ways of potentially effecting change and encouraging adherence to cholesterol lowering medication.

The present research aims to introduce implementation intentions to those patients currently non-adherent to some degree with their cholesterol lowering medication regimes. The aim is to investigate whether this specific intervention can change human behaviour within this complex domain. Illness perceptions and beliefs about medicines are also examined, as these have previously explained some variance in adherence behaviours and it will be interesting to see whether Brewer et al’s notions of the expert mental model and adherence are supported with this sample. This may also help identify whether there are certain patients, or certain beliefs that are held which make it more or less likely to be adherent and in turn, who are more or less amenable to behavioural interventions such as implementation intentions.

Aims and Hypotheses:
The aims of this study are to investigate whether there were any differences in patient details, illness perceptions, mood and medication beliefs in those who were initially fully adherent and those who were not.

There will also be an exploration into differences in patient characteristics between those that did and did not receive the intervention, within the non-adherent group who received the follow-up questionnaire. This will help identify any other factors, which could potentially be affecting change in adherence.
The main hypothesis, which will be investigated, is whether:

'Forming Implementation Intentions increases self-reported adherence to cholesterol lowering medication, in patients currently attending a lipid clinic and reporting some level of non-adherence over the past month.'
Method

Participants:
These comprised 64 adults currently taking some form of cholesterol lowering medication, and attending lipid clinics in one of two hospitals in the Southeast of England. Participants were excluded if they did not have an adequate level of English to be able to complete the questionnaires fully, or if they were currently pregnant, as this effects use of medication. They were also excluded if they were new to the clinic and were currently not prescribed any cholesterol lowering medication. Of the 64 participants, 42 were at some level non-adherent and were given the second questionnaire and 41 of these were returned.

In advance of the study, number of participants required had been predicted. This was calculated using the G-power programme, (Faul & Erdfelder, 1992), see appendix 1. Effect size was calculated, using a power of 0.8 and an effect size of 0.5, for an analysis using T-tests. A predicted sample of 102 was required for this research. More data than this needed to be collected, as the main hypothesis was concerned only with those who were at some level non-adherent and could receive the implementation intention. Similarly, there would also be expected to be some people who would not respond to the questionnaire at all. In total 213 questionnaires were given out.

Design:
This was a prospective experimental study, with the experimental and control group determined by sequential allocation, with alternate patients receiving the intervention and the other patients comprising the control group. Only those classed as partially or non-adherent were used to test the main hypothesis, concerning the impact of an implementation intention on adherence.

The Intervention
Participants in the intervention group had the following statements inserted in their questionnaires.

'You are more likely to carry out your intentions to take your cholesterol lowering medication every day for the next four weeks, if you make a decision about when and where you will do so. Decide now, when and where you will take your medication over the next four
weeks. You may find it useful to take a tablet just before or just after something else that you do on a regular basis, such as brushing your teeth.'

'Please write in the space below, when and where you will take your medication, every day for the next four weeks. E.g. In my bedroom at 7.30pm after my evening meal.'

Measures:

Patient Details:
These were gathered by asking some general questions. Gender, age and ethnicity were requested, as was information concerning details of the cholesterol condition for which the current medication was being taken. Information surrounding past and present cholesterol lowering medication and other conditions and related medicines was also sought, through the use of open-ended questions. Length and frequency of attendance at the lipid clinic was determined by asking 'please give the length of time you have been attending this lipid clinic and how often you have appointments?'

Illness Perceptions:
These were assessed using questions from the Revised Illness Perceptions Questionnaire (Appendix 2), which has been shown to have internal consistency, test-re-test reliability and concurrent, discriminant and predictive validity all to be within acceptable limits (IPQ-R, Moss Morris, Weinman & Petrie, 2002). All items on the IPQ-R were rated on five point Likert Scales, (strongly disagree =1, disagree = 2, neither agree not disagree = 3, agree = 4, strongly agree 5). The wording was altered to be specific to patients in this study, with 'illness' and 'medication' changed to 'high cholesterol condition' and 'cholesterol lowering medication'.

Timeline of illness was assessed using questions 1-5 from the IPQ-R.
Consequence of illness was assessed by asking patients to rate how much they believed the statement 'My illness is a serious condition' (item 6 from IPQ-R)
Personal control, treatment control, illness coherence, timeline cyclical and emotional representations were assessed using the corresponding items from the IPQ-R, which were items, 17-25, 26-31, 32-36, 37-42 and 43-50 respectively.

Possible causes of the patient’s high cholesterol condition was assessed using the 18 items from the IPQ-R. Heredity was assessed again with a further item and commonly used term, 'genes'. Again these items were assessed using the same five point Likert Scale.

Perceptions of Risk:
This was assessed with a simple item:
‘How likely do you think you are to have a raised cholesterol level over the next ten years?’
This was rated on a seven point Likert scale, ranging from [0] = ‘not at all likely, to [6] = ‘extremely likely’. This is the same as that used in the study by Senior et al (In Press).

Emotional State:
Anxiety and Depression were assessed using 14 items from the Hospital Anxiety and Depression Scale, see Appendix 3 (HADS; Zigmond & Snaith, 1983). This is a widely used scale with good validity and internal consistency (alpha = 0.93 for anxiety and 0.90 for depression; Moorey, Watson, Gorman, Rowden, Tunmore, Robertson & Bliss, 1991). The items were rated from 0-3, the larger the number corresponding to greater severity of symptoms.

Medication Beliefs:
These were assessed using the two scales of the Beliefs about Medicines Questionnaire, see Appendix 4 (BMQ; Horne, Weinman & Hankins, 1999). They report the two scales to have good test-retest reliability and good criterion related and discriminant validity. Both scales were also reported to have satisfactory internal consistency.

The first scale assesses views about medicines specifically prescribed for the patient, which has 11 items (the final item being a new addition to the scale). Five of these relate to the necessity of taking such medication (Specific-Necessity) and five to concerns about the danger and long-term toxicity and dependence (Specific-Concerns). The second scale is concerned with views on medicines in general and comprises eight items. Four of these assess beliefs that medicines are addictive, harmful poisons (General-Harm) and the remaining four are with regard people’s beliefs about doctors over-prescribing (General-
Overuse). Each item is rated on a Likert scale from five to one (5 = strongly agree, 4 = agree, 3 = uncertain, 2 = disagree and 1 = strongly disagree).

**Adherence:**
Self-reported adherence to medication was assessed using the five-item Medication Adherence Report Scale, see *Appendix 5* (MARS-5; Horne & Weinman, 1999). This has been found to have good test-retest reliability, $r = 0.7$ and good internal reliability, alpha > 0.7 in all but one sample. Validity was also good when compared with other measures of adherence. Convergent validity was also strong and the beliefs about medicines questionnaire (BMQ; Horne, Weinman & Hankins, 1999) strongly correlated in the majority of samples (Horne & Weinman, 1999). Deviation from the prescribed medication regimen was assessed over the past month using five response choices (always, sometimes, occasionally, rarely and never). This was the same scale used to assess adherence as that by Senior et al (In Press) in their study patients with familial hypercholesterolaemia.

The questions were compiled into one booklet for easier completion (*Appendix 6*).

**Procedure:**
Ethical committee permission to conduct this study was sought after and subsequently obtained from the St Thomas' Hospital Research Ethics Committee (*Appendix 7*) and University of Surrey Advisory Committee on Ethics (*Appendix 8*).

Patients attending the two lipid clinics in the study were approached and asked to participate in some research, primarily looking at views about their high cholesterol condition and their medicines that they had been subsequently prescribed. If appropriate, patients were asked as to their ability to read and write English. If possible, new patients, those currently not on medication and pregnant patients were identified as they entered the clinic and not approached to take part. If patients verbally agreed to take part, they were handed a pack containing an information sheet (*Appendix 9*), a consent form (*Appendix 10*), a questionnaire booklet (*Appendix 6*) and a Freepost envelope for questionnaire return. Alternate booklets contained the intervention, which described and encouraged the making of an implementation intention. The investigator remained at the clinic as much as possible so as to answer any queries that might arise. On two occasions the receptionist at one clinic handed out the questionnaires and the level of information given to patients might have varied. At the other
clinic, the two Consultant Chemical Pathologists involved with the research gave out the questionnaires themselves each week. Due to administration difficulties and time constraints, it was not feasible to send out a follow-up questionnaire to remind people to send back their initial questionnaire. Responses were eyeballed and where some level of non-adherence had been indicated (on the MARS-5), a covering letter (*Appendix 11*) and a further questionnaire (*Appendix 12*) were sent a month later. This four week period after receiving the intervention (or not) could then be analysed. This enabled comparisons for whether adherence had changed in the non-adherent group over the month, dependent on whether they were in the intervention or control group and thus had subsequently completed the implementation intention. After data collection was complete, information sheets explaining the importance of medication adherence and the potential benefit of using implementation intentions were placed in the clinics (see *Appendix 13*).

**Data Analysis:**

Data was entered into an SPSS file. Three participant’s data initially had to be removed before analysis could begin, as they were not currently taking cholesterol-lowering medication. The data of the remaining 64 individuals was analysed using SPSS 10 for windows software and statistics package (SPSS Inc., 2000). Internal consistency of all sub-scales was assessed using Cronbach’s alpha statistic. This also enabled one to see whether if there was any item that was not a reliable indicator for the construct in question and could be removed in which to increase reliability. Results of reliability analysis are displayed below. All calculations are displayed to two decimal places throughout.

**Reliability Analysis:**

**Illness Perceptions Questionnaire:**

For the IPQ, certain items from each sub-scale had to be re-coded so all items were reflected the same direction of the scale. For five out of the seven sub-scales: Timeline; Consequences; Personal Control; Coherence and Emotional all had very good reliability above .8 (ranging from .85 to .93). For the sub-scale of treatment control, when item 26 was removed, reliability increased from .65 to .72. Similarly for the sub-scale of timeline cyclical, when item 42 was removed, reliability improved to a very good level at .83, from .66. Thus with the removal of two items, the IPQ showed itself to be a very reliable scale with this sample.
Hospital Anxiety and Depression Scale
For both the anxiety and depression constructs which comprise the HADS, there was very good reliability; .85 and .78 respectively.

Beliefs About Medicines Questionnaire:
Specific Medicines: Concerns .76 Necessity .70
Medicines in general: Overuse .75 Harm .69

As can be seen above, all aspects of the beliefs about medicines questionnaire had good reliability, with only the construct of harm being slightly less reliable than the other scales.

Medication Adherence Scale:
This scale had excellent reliability of .87.

Normal Distribution:
All scales were assessed for normality, using the Kolmogorov-Smirnov statistic. In this study all aspects of the IPQ-R, except ‘IPQ timeline cyclical’, and all aspects of the BMQ except ‘general overuse’ alongside HADS depression total and MARS total at time 1, were found to violate the assumptions of normality and therefore non-parametric tests were used to analyse this data. For IPQ timeline cyclical, HADS anxiety total and BMQ general overuse, as found to be normally distributed, parametric tests could be used on these scales.

Analysis:
The data is initially looked at with regards general descriptions of the sample. This is then extended to look at the sample as a whole, looking at views about raised cholesterol, perceived causes of raised cholesterol and beliefs about medicines. The mood of the sample is also described. This is done by calculating correlation coefficients.

Following on from this, comparisons are then made between those who were initially at some level non-adherent to those fully adherent. General characteristics and behaviours, alongside the main scales of medication beliefs, illness perceptions, mood and perceived causation are also investigated. This is done using T-tests and Mann Whitney Tests, as the Independent variable is categorical (adherent vs. non-adherent).
The analysis then progresses to the less than fully adherent group who received and subsequently returned a follow-up questionnaire. Differences and similarities between those who received and did not receive the intervention are examined. The main hypothesis is then tested.
RESULTS:

In total, 213 questionnaires were handed out at Guys and St Thomas’ Hospital Lipid clinics. Of these, 107 contained an implementation intention and 106 did not.

Of the questionnaires given out, 67 (31.5 %) were returned. Three people’s data had to be excluded from the study, as they were not currently taking cholesterol-lowering medication. Of the remaining 64 people who formed the basis of all analysis 42 (65.5%) indicated some level of non-adherence to their cholesterol lowering medication and received a follow-up questionnaire. Of these, 41 (97.6%) were returned. It was not possible to compare those who did not return their questionnaires at either time.

INITIAL DESCRIPTION OF GENERAL SAMPLE:

Table 1: Frequency with Regard Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>30</td>
<td>46.9</td>
</tr>
<tr>
<td>Female</td>
<td>34</td>
<td>53.1</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

There was almost an even split between males and females completing and returning the initial questionnaire.

Frequency with Regard Age

The mean age of participants in this study was 57.73, standard deviation of 10.72. The youngest participant was 34 and the oldest was 82 years old.

Table 2: Frequency with Regard Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>57</td>
<td>89.1</td>
</tr>
<tr>
<td>Afro-Caribbean</td>
<td>02</td>
<td>3.1</td>
</tr>
<tr>
<td>Asian</td>
<td>04</td>
<td>6.3</td>
</tr>
<tr>
<td>Mixed Race</td>
<td>01</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The majority of people who participated in this research by completing the questionnaire were Caucasian, with very few other ethnic backgrounds represented.
Table 3: Frequencies with regard Statin Use

<table>
<thead>
<tr>
<th>On Statin, or not on Statin?</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other cholesterol lowering medication.</td>
<td>03</td>
<td>4.7</td>
</tr>
<tr>
<td>On Statin</td>
<td>55</td>
<td>85.9</td>
</tr>
<tr>
<td>Don't know</td>
<td>6</td>
<td>9.4</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As can be seen from table 3, more than 85 percent of the people who completed the questionnaires were currently on Statins to reduce their cholesterol. The don’t know category, was for those who could not currently remember the name of their cholesterol lowering medication.

Table 4: Frequency with Regard Use of Other Medication, Other than Cholesterol Lowering Medication

<table>
<thead>
<tr>
<th>Other Medication?</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>12</td>
<td>18.8</td>
</tr>
<tr>
<td>Yes</td>
<td>39</td>
<td>60.9</td>
</tr>
<tr>
<td>Don't Know</td>
<td>13</td>
<td>20.3</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100.0</td>
</tr>
</tbody>
</table>

More than 60 percent of participants were also taking other forms of medication for other conditions aside from high cholesterol.

Table 5: Frequency with regard Time Been a Patient of the Lipid Clinics

<table>
<thead>
<tr>
<th>Time in Clinic</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td>02</td>
<td>3.1</td>
</tr>
<tr>
<td>1-5 years</td>
<td>22</td>
<td>34.4</td>
</tr>
<tr>
<td>5-10 years</td>
<td>14</td>
<td>21.9</td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>21</td>
<td>32.8</td>
</tr>
<tr>
<td>Don't know</td>
<td>5</td>
<td>7.8</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Most people attending these clinics had been doing so for between one and five years, or for more than 10. This variable had to be grouped in categories as displayed above, due to differences in methods of reporting time in the clinics. Some participants gave exact months/years in the clinic, while others were less specific, giving rough periods of time. Thus categories were comprised and no means can therefore be calculated for this variable. There were further difficulties in analysing the frequency of visits to the clinics, as this often changed over the course of time. Patients beginning treatment could be seen every few months, but as their condition stabilised, this could then change to six monthly or yearly
appointments. Thus calculations on frequency of appointments could not be accurately analysed.

Illness Perceptions:
The table below shows the means and standard deviations of the seven sub-scales of the IPQ, each mean has been calculated and divided by the number of items in that scale. This way each sub-scale can be interpreted on a scale from one to five.

Table 6: Means and Standard Deviations of IPQ Sub-scales:

<table>
<thead>
<tr>
<th>IPQ Sub-Scale</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeline</td>
<td>61 (3 missing data)</td>
<td>4.00</td>
<td>0.90</td>
</tr>
<tr>
<td>Consequences</td>
<td>61 (3 missing data)</td>
<td>3.95</td>
<td>0.92</td>
</tr>
<tr>
<td>Personal Control</td>
<td>60 (4 missing data)</td>
<td>2.21</td>
<td>0.71</td>
</tr>
<tr>
<td>Treatment Control</td>
<td>61 (3 missing data)</td>
<td>2.62</td>
<td>0.67</td>
</tr>
<tr>
<td>Illness Coherence</td>
<td>61 (3 missing data)</td>
<td>2.19</td>
<td>0.81</td>
</tr>
<tr>
<td>Timeline Cyclical</td>
<td>56 (8 missing data)</td>
<td>4.28</td>
<td>0.70</td>
</tr>
<tr>
<td>Emotional Representations</td>
<td>60 (4 missing data)</td>
<td>2.53</td>
<td>0.89</td>
</tr>
</tbody>
</table>

High scores for IPQ ‘timeline’ represented people who believed the condition to be more chronic and permanent. Thus with a mean of four, in general, most people perceived their condition in this way.

IPQ ‘consequences’ was a sole item which was ‘My high cholesterol is a serious condition’ With a score of one being least serious perceptions and five being the most serious, with a mean of just under four, people were on average perceiving their condition to be rather serious.

The sub-scale of personal control, reflected people’s perceptions of their control over the condition. High scores represented lower perceptions of control over their illness and low scores indicated people’s perceptions of greater control. With a mean of just over two, people were edging towards perceiving themselves as having somewhat good control over their condition.

The sub-scale of ‘treatment control’ looked at how much people perceived their medication to be effective in controlling their condition. Low scores represented high control with medication and high scores indicating perceptions that medication can not control symptoms
well. A mean of 2.62 showed people on average perceived medication to be quite useful in controlling symptoms of their high cholesterol condition.

High scores on the sub-scale of 'illness coherence' indicated low levels of understanding and low scores indicated high levels of understanding. From table 6 it can be seen that on average, people reported themselves as having quite good perceived levels of understanding about their condition.

High scores on the sub-scale of ‘timeline cyclical’ indicated perceptions of a more fixed condition and lower scores were indicative of more changeable times. With a mean over four, this shows people generally perceived the symptoms of their condition to be very fixed.

This final sub-scale of the IPQ highlighted emotional reactions to the condition. High scores represented higher perceived levels of distress. With a mean of 2.53, people reported moderate levels of distress.

**Perceived Causes of High Cholesterol Condition:**

There were 19 proposed causes of a person's high cholesterol condition. Each one was rated on a five point Likert scale with five being highly agreeing with that perceived cause and one highly disagreeing. The means for each item are listed in table 7.

**Table 7: Mean & Standard Deviations for Perceived Causes of High Cholesterol**

<table>
<thead>
<tr>
<th>Causes:</th>
<th>Mean</th>
<th>Sd</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>My Genes</td>
<td>4.17</td>
<td>1.75</td>
<td>59</td>
</tr>
<tr>
<td>Heredity</td>
<td>3.95</td>
<td>1.12</td>
<td>61</td>
</tr>
<tr>
<td>Diet or Eating Habits</td>
<td>3.62</td>
<td>0.90</td>
<td>60</td>
</tr>
<tr>
<td>My own Behaviour</td>
<td>2.97</td>
<td>1.13</td>
<td>59</td>
</tr>
<tr>
<td>Stress and Worry</td>
<td>2.83</td>
<td>1.13</td>
<td>54</td>
</tr>
<tr>
<td>Ageing</td>
<td>2.63</td>
<td>1.09</td>
<td>60</td>
</tr>
<tr>
<td>Alcohol</td>
<td>2.63</td>
<td>1.10</td>
<td>59</td>
</tr>
<tr>
<td>Smoking</td>
<td>2.63</td>
<td>1.29</td>
<td>59</td>
</tr>
<tr>
<td>Altered Immunity</td>
<td>2.45</td>
<td>0.83</td>
<td>56</td>
</tr>
<tr>
<td>Chance or Bad Luck</td>
<td>2.37</td>
<td>1.07</td>
<td>60</td>
</tr>
<tr>
<td>Overwork</td>
<td>2.36</td>
<td>1.01</td>
<td>59</td>
</tr>
<tr>
<td>My Emotional State</td>
<td>2.34</td>
<td>0.95</td>
<td>58</td>
</tr>
<tr>
<td>Family Problems or Worries</td>
<td>2.24</td>
<td>0.95</td>
<td>59</td>
</tr>
<tr>
<td>My Personality</td>
<td>2.22</td>
<td>0.88</td>
<td>60</td>
</tr>
<tr>
<td>Poor Medical Care in Past</td>
<td>2.12</td>
<td>0.76</td>
<td>60</td>
</tr>
<tr>
<td>My Mental Attitude</td>
<td>2.10</td>
<td>0.96</td>
<td>59</td>
</tr>
<tr>
<td>Pollution in Environment</td>
<td>1.93</td>
<td>0.73</td>
<td>60</td>
</tr>
<tr>
<td>Accident or Injury</td>
<td>1.83</td>
<td>0.67</td>
<td>60</td>
</tr>
<tr>
<td>A Germ or Virus</td>
<td>1.80</td>
<td>0.71</td>
<td>59</td>
</tr>
</tbody>
</table>
Heredity, diet and genes were the three most highly rated causes of high cholesterol, and a
germ or virus, accident/injury and pollution in the environment were the three items rated
lowest overall for causing the participant's conditions.

Mood:
Table 8 below shows that on average people had low levels of both anxiety and depression,
but on average, score lower for depression. A score of seven, indicates approaching clinical
anxiety and thus on average people were approaching having clinical levels of anxiety.

**Table 8: Anxiety and Depression Totals**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS Anxiety Total</td>
<td>7.11</td>
<td>4.20</td>
<td>62</td>
</tr>
<tr>
<td>HADS Depression Total</td>
<td>4.51</td>
<td>3.34</td>
<td>63</td>
</tr>
</tbody>
</table>

This is highlighted again when levels of anxiety and depression are looked at more
specifically.

**Table 9: Anxiety Level**

<table>
<thead>
<tr>
<th>Anxiety Level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not anxious</td>
<td>32</td>
<td>50</td>
</tr>
<tr>
<td>Mild Anxiety</td>
<td>19</td>
<td>29.7</td>
</tr>
<tr>
<td>Moderate Anxiety</td>
<td>8</td>
<td>12.5</td>
</tr>
<tr>
<td>Severe Anxiety</td>
<td>3</td>
<td>4.7</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 10: Depression Level**

<table>
<thead>
<tr>
<th>Depression Level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Depressed</td>
<td>50</td>
<td>78.1</td>
</tr>
<tr>
<td>Mild Depression</td>
<td>9</td>
<td>14.1</td>
</tr>
<tr>
<td>Moderate Depression</td>
<td>3</td>
<td>4.7</td>
</tr>
<tr>
<td>Severe Depression</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

These highlight again, that the majority of people were neither anxious nor depressed.
However nearly a third of participants had mild levels of anxiety, whilst only 14 percent had
mild depression. Very few had moderate levels of depression, yet more than 12 percent had
moderate anxiety. Few had severe levels of anxiety or depression.
Beliefs About Medicines:

The table below shows the means and standard deviations of the four sub-scales of the BMQ, each mean has been calculated and divided by the number of items in that scale. This way each sub-scale can be interpreted on a scale from one to five.

Table 11: Means and Standard Deviations of IPQ Sub-scales:

<table>
<thead>
<tr>
<th>IPQ Sub-Scale</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMQ-specific Concerns</td>
<td>64</td>
<td>2.64</td>
<td>0.71</td>
</tr>
<tr>
<td>BMQ-specific Necessity</td>
<td>64</td>
<td>3.69</td>
<td>0.62</td>
</tr>
<tr>
<td>BMQ-general Overuse</td>
<td>62 (2 missing data)</td>
<td>2.22</td>
<td>0.71</td>
</tr>
<tr>
<td>BMQ-general Harm</td>
<td>63 (1 missing data)</td>
<td>1.79</td>
<td>0.64</td>
</tr>
</tbody>
</table>

A middle score of 2.64 indicates that on the sub-scale of 'concerns' people had on average neither too high or too low concerns about their cholesterol lowering medicines.

With the sub-scale of 'necessity', this time a higher mean highlights that people in average had believe more strongly about the necessity of taking their cholesterol lowering medicines.

Relatively low means for the sub-scales of 'overuse' and especially 'harm' with regards taking medication in general, highlighted that people on average did not tend to believe that Doctors over-prescribed and that medications were harmful.

CORRELATIONS IN THE GENERAL SAMPLE:

Correlations are concerned with describing the direction and strength of relationships between variables. This is expressed as a correlation coefficient, ranging from -1 (perfect negative relationship, through zero (no relationship), through to +1 (perfect positive relationship). Spearman’s Correlations are used when investigating variables where there was a violation of the assumption of normality. Pearson’s Correlations were used when variables were found to be normally distributed as outlined previously.
Correlations Within The IPQ:

Table 12: Correlation Between IPQ Sub-scales

<table>
<thead>
<tr>
<th></th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>F</th>
<th>g</th>
<th>i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeline (a)</td>
<td>.438**</td>
<td>.196</td>
<td>.261*</td>
<td>-.151</td>
<td>.369**</td>
<td>.022</td>
<td></td>
</tr>
<tr>
<td>N=60 N=59 N=60 N=60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consequences (b)</td>
<td>.041</td>
<td>_____</td>
<td>.170</td>
<td>.022</td>
<td>.041</td>
<td>.170</td>
<td>.022</td>
</tr>
<tr>
<td>N=59 N=60 N=59 N=59</td>
<td>.041</td>
<td>_____</td>
<td>.170</td>
<td>.022</td>
<td>.041</td>
<td>.170</td>
<td>.022</td>
</tr>
<tr>
<td>Personal Control (c)</td>
<td>.170</td>
<td>.624**</td>
<td>.087</td>
<td>-0.230</td>
<td>.299**</td>
<td>.299**</td>
<td>.299**</td>
</tr>
<tr>
<td>N=60 N=60 N=60 N=56</td>
<td>.170</td>
<td>.624**</td>
<td>.087</td>
<td>-0.230</td>
<td>.299**</td>
<td>.299**</td>
<td>.299**</td>
</tr>
<tr>
<td>Treatment Control (d)</td>
<td>-.054</td>
<td>-.92</td>
<td>.087</td>
<td>-0.230</td>
<td>.299**</td>
<td>.299**</td>
<td>.299**</td>
</tr>
<tr>
<td>N=60 N=59 N=60 N=56</td>
<td>-.054</td>
<td>-.92</td>
<td>.087</td>
<td>-0.230</td>
<td>.299**</td>
<td>.299**</td>
<td>.299**</td>
</tr>
<tr>
<td>Coherence (e)</td>
<td>-.050</td>
<td>.212</td>
<td>-.007</td>
<td>-.230</td>
<td>-252</td>
<td>-252</td>
<td>-252</td>
</tr>
<tr>
<td>N=55 N=55 N=56 N=56</td>
<td>-.050</td>
<td>.212</td>
<td>-.007</td>
<td>-.230</td>
<td>-252</td>
<td>-252</td>
<td>-252</td>
</tr>
<tr>
<td>Cyclical (f)</td>
<td>.391**</td>
<td>.031</td>
<td>.170</td>
<td>.299**</td>
<td>-252</td>
<td>-252</td>
<td>-252</td>
</tr>
<tr>
<td>N=59 N=59 N=60 N=56</td>
<td>.391**</td>
<td>.031</td>
<td>.170</td>
<td>.299**</td>
<td>-252</td>
<td>-252</td>
<td>-252</td>
</tr>
</tbody>
</table>

** = significant at the 0.01 level
* = significant at the 0.05 level.

Timeline was correlated with consequences, treatment control and timeline cyclical. This was a positive direction and thus the more serious the condition was perceived to be, the less treatment control was perceived and the more fixed the condition was thought to be.

Consequences and emotional representation were positively correlated suggesting that the more serious the condition was perceived to be the higher the affective distress. The more people perceived their medicines to be able to control their condition, the less serious consequences they perceived the condition to have.

Personal control and treatment control also had a significant positive correlation indicating that the more personal control one perceived themselves to have, the more they also perceived the medication to be able to control their condition.

Coherence was positively correlated with emotional representations, which indicated that the more the condition made sense to a person the less distressed they were.
Correlations Between Illness Perceptions and Mood.

Table 13: Correlations Between IPQ Sub-scales and HADS Anxiety and Depression Totals.

<table>
<thead>
<tr>
<th></th>
<th>Total Anxiety</th>
<th>Total Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timeline</strong></td>
<td>-.121</td>
<td>-.124</td>
</tr>
<tr>
<td></td>
<td>N=60</td>
<td>N=61</td>
</tr>
<tr>
<td><strong>Consequences</strong></td>
<td>.149</td>
<td>.268*</td>
</tr>
<tr>
<td></td>
<td>N=60</td>
<td>N=61</td>
</tr>
<tr>
<td><strong>Personal Control</strong></td>
<td>-.051</td>
<td>.019</td>
</tr>
<tr>
<td></td>
<td>N=59</td>
<td>N=60</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td>.105</td>
<td>.136</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>N=60</td>
<td>N=61</td>
</tr>
<tr>
<td><strong>Coherence</strong></td>
<td>.046</td>
<td>.028</td>
</tr>
<tr>
<td></td>
<td>N=60</td>
<td>N=61</td>
</tr>
<tr>
<td><strong>Timeline Cyclical</strong></td>
<td>-.335*</td>
<td>-.297*</td>
</tr>
<tr>
<td></td>
<td>N=55</td>
<td>N=56</td>
</tr>
<tr>
<td><strong>Emotional Representations</strong></td>
<td>.397**</td>
<td>.428**</td>
</tr>
<tr>
<td></td>
<td>N=59</td>
<td>N=60</td>
</tr>
</tbody>
</table>

** = significant at the 0.05 level.
* = significant at the 0.01 level.

IPQ consequences and HADS depression total were positively correlated. This highlights that worse perceived consequences were associated with higher depression scores.

IPQ ‘emotional representation’ was positively correlated with both anxiety and depression totals from the HADS. The higher the perceived distress, the higher the anxiety and depression levels.

IPQ ‘timeline cyclical’ was negatively correlated with anxiety and depression totals, so that the more the condition is perceived to be fixed and unchangeable the less the distress.
Correlations Between Illness Perceptions and Beliefs About Medicines:

Table 14: Correlation Between IPQ Sub-scales and the BMQ.

<table>
<thead>
<tr>
<th>IPQ:</th>
<th>BMQ: Concerns</th>
<th>BMQ: Necessity</th>
<th>BMQ: Overuse</th>
<th>BMQ: Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeline</td>
<td>-.081</td>
<td>.189</td>
<td>-.170</td>
<td>-.230</td>
</tr>
<tr>
<td></td>
<td>N=61</td>
<td>N=61</td>
<td>N=59</td>
<td>N=60</td>
</tr>
<tr>
<td>Consequences</td>
<td>.153</td>
<td>.202</td>
<td>-.072</td>
<td>-.009</td>
</tr>
<tr>
<td></td>
<td>N=61</td>
<td>N=61</td>
<td>N=59</td>
<td>N=61</td>
</tr>
<tr>
<td>Personal Control</td>
<td>-.074</td>
<td>-.025</td>
<td>-.177</td>
<td>.024</td>
</tr>
<tr>
<td></td>
<td>N=60</td>
<td>N=60</td>
<td>N=58</td>
<td>N=59</td>
</tr>
<tr>
<td>Treatment</td>
<td>-.038</td>
<td>-.206</td>
<td>.076</td>
<td>.133</td>
</tr>
<tr>
<td></td>
<td>N=61</td>
<td>N=61</td>
<td>N=59</td>
<td>N=60</td>
</tr>
<tr>
<td>Control</td>
<td>.490**</td>
<td>-.183</td>
<td>.314*</td>
<td>.420**</td>
</tr>
<tr>
<td></td>
<td>N=61</td>
<td>N=61</td>
<td>N=59</td>
<td>N=60</td>
</tr>
<tr>
<td>Coherence</td>
<td>-.139</td>
<td>-.017</td>
<td>-.171</td>
<td>-.186</td>
</tr>
<tr>
<td></td>
<td>N=56</td>
<td>N=56</td>
<td>N=55</td>
<td>N=55</td>
</tr>
<tr>
<td>Timeline Cyclical</td>
<td>.443**</td>
<td>.141</td>
<td>.277*</td>
<td>.387**</td>
</tr>
<tr>
<td>Emotional Representations</td>
<td>N=60</td>
<td>N=60</td>
<td>N=58</td>
<td>N=59</td>
</tr>
</tbody>
</table>

** = significant at the 0.01 level
* = significant at the 0.05 level.

As detailed in table 14 above, higher scores for coherence were positively correlated with higher scores for concerns about cholesterol lowering medicines. This means that less perceived understanding about the condition was associated with higher concern about cholesterol lowering medicines. Similarly less perceived understanding was also correlated with greater beliefs about harm from medicines in general and overuse of medication by Doctors.

There were significant correlations between emotional representations and ‘concerns’, overuse and harm categories from the BMQ. Thus higher perceived distress was associated with higher concern over the harmful effects of cholesterol lowering medication and greater beliefs about medication overuse by Doctors in general, and also about the harm of medicines in general.

Interestingly, the beliefs that cholesterol-lowering medicines are necessary were not associated with any of the beliefs about the condition.

Correlations Between Anxiety and Depression

Anxiety total and depression total were positively correlated \( r(62)=.639, p<.01, 2\text{-}tailed \) test. Therefore higher anxiety was correlated with higher depression scores.
Correlations Between Mood and Beliefs About Medicines:

As can be seen in table 15 below, anxiety total was correlated with the BMQ-specific variable of 'concern' thus higher anxiety was associated with higher level of concern about cholesterol lowering medicines. A higher anxiety total was also correlated with higher beliefs about harm of medicines in general. Also as displayed in the table below, higher levels of depression were correlated with higher concerns about cholesterol lowering medicines and higher beliefs about its necessity.

Table 15: Correlations Between Mood and the BMQ

<table>
<thead>
<tr>
<th>IPQ:</th>
<th>BMQ: Concerns</th>
<th>BMQ: Necessity</th>
<th>BMQ: Overuse</th>
<th>BMQ: Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety Total</td>
<td>.393**</td>
<td>.185</td>
<td>.227</td>
<td>.291*</td>
</tr>
<tr>
<td></td>
<td>N=62</td>
<td>N=62</td>
<td>N=60</td>
<td>N=61</td>
</tr>
<tr>
<td>Depression Total</td>
<td>.290**</td>
<td>.261*</td>
<td>.180</td>
<td>.182</td>
</tr>
<tr>
<td></td>
<td>N=63</td>
<td>N=63</td>
<td>N=61</td>
<td>N=62</td>
</tr>
</tbody>
</table>

** = significant at the 0.01 level
* = significant at the 0.05 level.

Correlations Between the BMQ Domains:

Table 16: Correlation Between IPQ Sub-scales and the BMQ

<table>
<thead>
<tr>
<th>BMQ: Concerns</th>
<th>BMQ: Necessity</th>
<th>BMQ: Overuse</th>
<th>BMQ: Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-.110</td>
<td>.411**</td>
<td>.675**</td>
</tr>
<tr>
<td></td>
<td>N=64</td>
<td>N=62</td>
<td>N=63</td>
</tr>
<tr>
<td>BMQ: Necessity</td>
<td>---------------</td>
<td>- .308*</td>
<td>-.179</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N=62</td>
<td>N=63</td>
</tr>
<tr>
<td>BMQ: Overuse</td>
<td>-.308*</td>
<td>---------------</td>
<td>.667**</td>
</tr>
<tr>
<td></td>
<td>N=62</td>
<td></td>
<td>N=61</td>
</tr>
<tr>
<td>BMQ: Harm</td>
<td>-.179</td>
<td>.667**</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>N=63</td>
<td>N=61</td>
<td></td>
</tr>
</tbody>
</table>

** = significant at the 0.01 level
* = significant at the 0.05 level.

From table 16, it can be seen that beliefs about medication overuse and harm in general were positively correlated with concerns over harmful effects of specific cholesterol lowering medication. Beliefs about overuse were also positively correlated with beliefs about the intrinsic harmful nature of medicines in general. Beliefs about necessity of taking specific medicines were negatively correlated with beliefs about Doctors over-prescribing. So those who had higher beliefs that medicines were necessary had lower beliefs that Doctors over-prescribed.
Adherence

The MARS adherence scale comprised five items, rated from 1-5 on a Likert scale and a total score, which was the sum of all these items. Any one who did not have a score of 25 and thus full adherence on each item was said to be at some level non-adherent; 65.5% fell into this category. Whilst many people were not fully adherent, to the extent that they did not deviate in any way from the medication regime, it would seem that non-adherence in this sample was primarily a question of occasional forgetting as shown in table 17 below:

Table 17: Means and standard deviations of the MARS sub-scales.

<table>
<thead>
<tr>
<th>MARS Sub-scale</th>
<th>N</th>
<th>Mean (2dp)</th>
<th>Standard Deviation (2dp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forget to take</td>
<td>64</td>
<td>4.22</td>
<td>.81</td>
</tr>
<tr>
<td>Alter dose</td>
<td>64</td>
<td>4.86</td>
<td>.58</td>
</tr>
<tr>
<td>Stop taking for a while</td>
<td>64</td>
<td>4.86</td>
<td>.56</td>
</tr>
<tr>
<td>Decide to miss a dose</td>
<td>64</td>
<td>4.77</td>
<td>.56</td>
</tr>
<tr>
<td>Take less than instructed</td>
<td>64</td>
<td>4.84</td>
<td>.54</td>
</tr>
</tbody>
</table>

Correlations Between the MARS and the IPQ:

The MARS total (the culmination of all the items relating to methods of non-adhering) was negatively correlated with emotional representations from the IPQ, r(64)= -.261, p=<0.05, 2-tailed test. Therefore greater adherence was associated with less emotional distress. His was the only item of the IPQ to be correlated with adherence.

Correlations Between MARS and mood as measured by the HADS:

Total MARS score was negatively associated with anxiety, in that greater adherence was associated with less anxiety, r(62)= -.320, p<0.05, 2-tailed test. There was no association between adherence and depression, r(63)=-.218, p>0.05, 2-tailed test.

Correlations Between MARS and BMQ:

There were no significant correlations between adherence (MARS Total) and any of the four constructs of the BMQ.

Correlations Between MARS and Perceived Causes of Low Cholesterol Condition:

There were no significant correlations between adherence and any of the perceived causes of having a high cholesterol condition.
There was a significant negative correlation between adherence and how likely people thought they would be to have high cholesterol in the next ten years, \( r(61) = -0.315, p<0.05 \), 2-tailed test. Thus the more adherent, the strongly one believed they would have high cholesterol in the future.

**ADHERENT Vs. NON-ADHERENT PARTICIPANTS:**

Table 18: Frequency with Regard Adherence to Medication

<table>
<thead>
<tr>
<th>Adheres to Cholesterol Lowering Medication?</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>42</td>
<td>65.6</td>
</tr>
<tr>
<td>Yes</td>
<td>20</td>
<td>31.3</td>
</tr>
<tr>
<td>Don't know</td>
<td>2</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100.0</td>
</tr>
</tbody>
</table>

If people circled any answer other than ‘never’ to any of the questions around non-adherence on the MARS, they were taken as having some level of non-adherence. It was found that a large proportion of the people who completed the questionnaire were not fully adherent to their cholesterol lowering medication, as can be seen in table 18 above. Where answers had been omitted these were classed as not known answers. The next part of the analysis focuses on the differences between those who were and were not fully adherent.

**Description of two samples:**

Chi-Square tests were used to compare the two samples. No significant differences were found with regard gender, age, ethnicity, statin use, time in clinic and whether on any other medication for other conditions.

**Comparisons Between the Adherent and Non-Adherent Populations:**

Mann Whitney tests were conducted on all of the sub-scales of the IPQ, except the sub-scale of ‘timeline cyclical’ which was normally distributed and where an Independent T-test was conducted instead. Results are displayed below. Means and standard deviations for each group are displayed. Means (and subsequently the standard deviations) have been divided by the number of variables that comprised them, this way each sub-scale can be interpreted on a scale from one to five.
Table 19: Results after comparing adherent and non-adherent participants on the IPQ.

<table>
<thead>
<tr>
<th></th>
<th>Mann Whitney-U</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N (Adherent/Non-adherent)</th>
<th>Adherent Mean &amp; (Standard Deviation)</th>
<th>Non-adherent Mean &amp; (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPQ Timeline</td>
<td>324.0</td>
<td>.358</td>
<td>19, 40</td>
<td>3.84, (0.99)</td>
<td>4.12, (0.85)</td>
</tr>
<tr>
<td>IPQ Consequences</td>
<td>335.0</td>
<td>.552</td>
<td>18, 41</td>
<td>3.94, (1.21)</td>
<td>3.95, (1.80)</td>
</tr>
<tr>
<td>IPQ Personal Control</td>
<td>333.5</td>
<td>.655</td>
<td>18, 40</td>
<td>2.28, (0.74)</td>
<td>2.18, (0.73)</td>
</tr>
<tr>
<td>IPQ Treatment Control</td>
<td>338.0</td>
<td>.607</td>
<td>18, 41</td>
<td>2.54, (0.52)</td>
<td>2.65, (0.75)</td>
</tr>
<tr>
<td>IPQ Coherence</td>
<td>334.6</td>
<td>.566</td>
<td>18, 41</td>
<td>2.09, (0.98)</td>
<td>2.21, (0.72)</td>
</tr>
<tr>
<td>IPQ Emotional Representation</td>
<td>245.5</td>
<td>.078</td>
<td>17, 41</td>
<td>2.13, (0.62)</td>
<td>2.65, (0.94)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level

An independent T-test also found no significant difference on the IPQ sub-scale of 'timeline cyclical' between the two groups, T(52) = -1.582, p=>0.05, 2-tailed test. Means for the adherent and non-adherent group were 4.53(sd=0.62) and 4.20(sd=0.72) respectively. Therefore there are no significant differences between any of the sub-scales of the IPQ and those who are adherent and those who are not.

Anxiety level as measured by the HADS and adherence were found to be related. There seemed to be a significant interaction between anxiety and whether a person was adherent or not. T(58)=2.450, p<0.05, 2-tailed test. When means were explored, it would seem that those who were non-adherent had higher levels of anxiety than those who were fully adherent, 8.02(sd=4.04) and 5.26(sd= 4.11) respectively.

The results from HADS depression total and the BMQ are displayed in table 20 below. The table below also shows the means and standard deviations of the scales, and for the BMQ, each mean has been calculated and divided by the number of items in that scale. This way each sub-scale can be interpreted on a scale from one to five.
Table 20: Results after comparing adherent and non-adherent participants on the HADS and BMQ.

<table>
<thead>
<tr>
<th></th>
<th>Mann Whitney-U</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N (Adherent/non-adherent)</th>
<th>Adherent Mean (Standard Deviation)</th>
<th>Non-Adherent Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS: Depression Total</td>
<td>315.0</td>
<td>.187</td>
<td>19, 42</td>
<td>5.26, (2.52)</td>
<td>5.00, (3.62)</td>
</tr>
<tr>
<td>BMQ: Concern</td>
<td>337.5</td>
<td>.210</td>
<td>20, 42</td>
<td>2.41, (0.82)</td>
<td>2.73, (0.65)</td>
</tr>
<tr>
<td>BMQ: Necessity</td>
<td>363.0</td>
<td>.386</td>
<td>20, 42</td>
<td>3.61, (0.63)</td>
<td>3.73, (0.62)</td>
</tr>
<tr>
<td>BMQ: Harm</td>
<td>338.0</td>
<td>.336</td>
<td>19, 42</td>
<td>1.73, (0.65)</td>
<td>1.83, (0.65)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level

An independent T-test was performed on the BMQ general sub-scale of 'overuse' which produced a non-significant result, T(58)=1.156, p>0.05, 2-tailed test. Means were 2.09(sd=0.73) and 2.27(sd=0.68) for the adherent and non-adherent groups respectively. Therefore there were no significant differences between any of the sub-scales of the BMQ and those who were adherent and those who were not.

For the item ‘How likely do you think you are to have a raised cholesterol level over the next ten years?’ there was found to be no significant difference between the adherent and non-adherent groups: Z(19, 40)=297.5, p>0.05, 2-tailed test. Means were 0.32(sd=0.47) and 4.05(sd=1.75) for adherent and non-adherent groups respectively.

Poor medical care in the past, as a perceived cause of high cholesterol, was found to be significantly different between the adherent and non-adherent groups. Z(18, 40)=254.5, p<0.05, 2-tailed test. When means were explored it was found that the adherent group had a mean of 2.39(sd=0.85) and the non-adherent of 1.95(sd=0.64). Thus those who were fully adherent were likely to also perceive that poor medical care in the past was a cause of their high cholesterol condition than those who were less adherent.

NON-ADHERENT POPULATION:

This population comprised those who reported some level of non-adherence on the initial questionnaire and subsequently received a follow-up questionnaire. 41 out of a possible 42 people returned this follow-up questionnaire. The analysis looked at whether there were any differences in this population between those who received the intervention to increase adherence and those who did not.
Exploring the Non-Adherent Population:

There were 41 people who initially comprised the non-adherent population and who subsequently received a follow-up questionnaire. Whilst there was an even split between males and females, this was not the case for implementation intention distribution.

Table 21: Gender distribution in the non-adherent sample between those who received and did not receive the intervention.

<table>
<thead>
<tr>
<th>Gender:</th>
<th>Given Action Plan?</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>No</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>No</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>21</td>
</tr>
</tbody>
</table>

Gender was significantly associated with being given the action plan, $X^2(1, n = 41) = 5.512$, $p<0.05$. There was a predominance of males who received the intervention and predominance of females who did not. There were no significant differences in this sample with regards age, ethnicity, statin use or whether on any other medication.

IPQ:

There were no significant differences with regard Illness Perceptions for those who did and did not receive the intervention.

Table 22: Results for those in the non-adherent sample, who received the intervention and those who did not on the sub-scales of the IPQ.

<table>
<thead>
<tr>
<th></th>
<th>Mann Whitney-U</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N (Intervention/No Intervention)</th>
<th>Intervention Mean (Standard Deviation)</th>
<th>Non-Intervention Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPQ Timeline</td>
<td>155.5</td>
<td>.349</td>
<td>21, 18</td>
<td>3.95, (0.95)</td>
<td>4.28, (0.72)</td>
</tr>
<tr>
<td>IPQ Consequences</td>
<td>153.5</td>
<td>.215</td>
<td>21, 19</td>
<td>3.81, (0.75)</td>
<td>4.16, (0.83)</td>
</tr>
<tr>
<td>IPQ Personal Control</td>
<td>134.0</td>
<td>.120</td>
<td>20, 19</td>
<td>2.09, (0.81)</td>
<td>2.30, (0.65)</td>
</tr>
<tr>
<td>IPQ Treatment Control</td>
<td>111.5*</td>
<td>.016</td>
<td>21, 19</td>
<td>1.92, (0.74)</td>
<td>2.28, (0.46)</td>
</tr>
<tr>
<td>IPQ Coherence</td>
<td>.979</td>
<td>.979</td>
<td>21, 19</td>
<td>2.18, (0.69)</td>
<td>2.24, (0.80)</td>
</tr>
<tr>
<td>IPQ Emotional Representation</td>
<td>174.5</td>
<td>.503</td>
<td>21, 19</td>
<td>2.79, (1.12)</td>
<td>2.53, (0.71)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level

As shown in table 22, treatment control was significant and means show that those who received the intervention in this initially non-adherent group were more likely to view their
treatment as having more control over their condition than those in the group who did not receive the intervention.

An Independent Test was conducted for the IPQ sub-scale of ‘timeline cyclical’ and was also found to be non-significant. T(38)=-1.213, p>0.05, 2-tailed test. Means for the intervention and non-intervention group were 3.70(sd=0.62) and 3.44(sd=0.69) respectively.

**HADS totals and BMQ sub-scales:**

There were no significant differences between those who received the intervention and those who did not with regard anxiety and depression levels as measured by the HADS, or for any of the sub-scales of the BMQ.

**Table 23: Results after comparing those who received the intervention, from the population who received the follow-up questionnaire, on the HADS depression and BMQ.**

<table>
<thead>
<tr>
<th></th>
<th>Mann Whitney-U</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N (Intervention/non-intervention)</th>
<th>Intervention Mean (Standard Deviation)</th>
<th>Non-Intervention Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HADS: Depression Total</strong></td>
<td>164.5</td>
<td>.232</td>
<td>21, 20</td>
<td>4.48, (3.50)</td>
<td>5.75, (3.68)</td>
</tr>
<tr>
<td><strong>BMQ: Concern</strong></td>
<td>188.5</td>
<td>.572</td>
<td>21, 20</td>
<td>2.77, (0.60)</td>
<td>2.73, (0.70)</td>
</tr>
<tr>
<td><strong>BMQ: Necessity</strong></td>
<td>168.0</td>
<td>.267</td>
<td>21, 20</td>
<td>3.64, (0.58)</td>
<td>3.80, (0.67)</td>
</tr>
<tr>
<td><strong>BMQ: Harm</strong></td>
<td>185.0</td>
<td>.509</td>
<td>21, 20</td>
<td>1.87, (0.53)</td>
<td>1.80, (0.79)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level

Independent T-tests were used for the sub-scales of HADS Anxiety total and BMQ-general ‘overuse’. These results are displayed in table 24 below:

**Table 24: Results after comparing those who received the intervention, from the population who received the follow-up questionnaire, on the sub-scales of HADS anxiety and BMQ ‘overuse’.**

<table>
<thead>
<tr>
<th></th>
<th>T-value</th>
<th>Degrees of freedom</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N (Intervention/Non-intervention)</th>
<th>Intervention Mean (Standard Deviation)</th>
<th>Non-Intervention Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HADS: Anxiety Total</strong></td>
<td>.547</td>
<td>38</td>
<td>.588</td>
<td>20, 20</td>
<td>7.8, (4.20)</td>
<td>8.5, (3.89)</td>
</tr>
<tr>
<td><strong>BMQ: Overuse</strong></td>
<td>-.817</td>
<td>38</td>
<td>.419</td>
<td>20, 20</td>
<td>2.95, (0.66)</td>
<td>2.78, (0.69)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level
A Mann Whitney U test indicated that there was a difference as to whether ageing and 'alcohol' were likely to be seen as causative in people's high cholesterol condition, and whether a person received the intervention or not, \((Z(21, 18) = 97.5, p<0.01, 2\text{-tailed test and } Z(21, 18) = 121.5, p<0.05, 2\text{-tailed test respectively})\). Means are displayed below in table 25 below. Higher scores indicate more belief that the item is causative in one's high cholesterol condition.

**Table 25: Means for perceived causes of high cholesterol condition and whether given the intervention or not.**

<table>
<thead>
<tr>
<th></th>
<th>Alcohol (Mean 2dp)</th>
<th>Standard Deviation (2dp)</th>
<th>Ageing (Mean 2dp)</th>
<th>Standard Deviation (2dp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given Intervention</td>
<td>Yes</td>
<td>2.95</td>
<td>1.16</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2.22</td>
<td>1.06</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Therefore it can be seen that for those given the intervention they had greater beliefs that alcohol and ageing were causes of their high cholesterol condition.

Analysis of the individual adherence items, showed no significant differences in the way in which people were non-adherent, and whether they received the intervention or not.

**Table 26: Adherence Items and Intervention.**

<table>
<thead>
<tr>
<th></th>
<th>Mann Whitney-U Asymp. N Intervention/Non-intervention</th>
<th>Intervention Mean (Standard Deviation)</th>
<th>Non-Adherent Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgot</td>
<td>200.0</td>
<td>0.751</td>
<td>21, 20</td>
</tr>
<tr>
<td>Alter Dose</td>
<td>199.0</td>
<td>0.614</td>
<td>21, 20</td>
</tr>
<tr>
<td>Stop for a while</td>
<td>190.0</td>
<td>0.385</td>
<td>21, 20</td>
</tr>
<tr>
<td>Decide to miss a dose</td>
<td>200.0</td>
<td>0.735</td>
<td>21, 20</td>
</tr>
<tr>
<td>Take less than instructed</td>
<td>190.5</td>
<td>0.408</td>
<td>21, 20</td>
</tr>
</tbody>
</table>

\* = significant at the 0.05 level
TIME 1 to TIME 2

Non-adherent participants as identified by less than full scores on the MARS, were sent another questionnaire four weeks after completion of the first. After this period, and having filled in and sent back the second questionnaire, four participants now reported being fully adherent, two of whom had received the implementation intention and two had not.

Total on the MARS showed an increase from time one (mean=22.83, sd=2.85) and time two (mean=23.29 2dp, sd=1.57) showing a general increase in adherence over time for the whole sample. This however did not reach statistical significance: Z(41)=-1.514, p>0.05, 2-tailed test.

To test the main hypothesis, it was hoped that a mixed between-within subjects analysis of variance could be conducted to see the effects of time on adherence, the intervention on adherence and the interaction between these two variables. However due to violation of normality and of homogeneity of variance, this test could not be conducted. It was also not possible to transform the data to correct for these violations, because the distributions in the two groups were violating these assumptions in different ways. With no non-parametric equivalent, some individual tests were conducted to attempt to explore the hypothesis.

A variable was created which calculated adherence at time two, minus adherence at time one. Thus this variable represented the difference between time 1 and time 2 with regards adherence. A Mann Whitney-U test was performed on this data, looking at any difference between whether someone received the intervention and difference in their adherence scores over time. The results are shown in table 27 below:

Table 27: Mann Whitney-U to test the difference between Intervention and Difference in Adherence over time.

<table>
<thead>
<tr>
<th>Difference in Adherence</th>
<th>Mann Whitney-U</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N (Intervention/Non-intervention)</th>
<th>Intervention Mean (Standard Deviation)</th>
<th>Non-Intervention Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>198.0</td>
<td>.731</td>
<td>21, 20</td>
<td>0.52, (2.79)</td>
<td>0.40, (0.75)</td>
</tr>
</tbody>
</table>

* significant at the 0.05 level.
From table 27 it can be seen that there were no significant differences in adherence at the two points in time and whether the participant received the intervention.

To clarify further, adherence levels were looked at over time, separately for the intervention and non-intervention groups, the following results emerged.

Table 28: Adherence totals from time one - to time two, in both the intervention and non-intervention groups.

<table>
<thead>
<tr>
<th></th>
<th>Wilcoxon Signed Ranks</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N</th>
<th>Time 1 Mean (Standard Deviation)</th>
<th>Time 2 Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 - T2 In Intervention Group</td>
<td>-0.605</td>
<td>0.545</td>
<td>21</td>
<td>22.52, (3.76)</td>
<td>23.05, (1.96)</td>
</tr>
<tr>
<td>T1 - T2 Non-intervention Group</td>
<td>-2.33*</td>
<td>0.020</td>
<td>20</td>
<td>23.15, (1.39)</td>
<td>23.55, (1.00)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level

Thus ‘within’ each group there was an effect for increased adherence for those whom did not receive the intervention. This is illustrated again in figure one below:

**Figure 1: Adherence Totals and Intervention.**

![Figure 1](image-url)
Table 29: Total adherence levels, between the intervention and non-intervention groups at both points in time.

<table>
<thead>
<tr>
<th></th>
<th>Mann Whitney-U</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N (given intervention/ not given intervention)</th>
<th>Intervention Mean (Standard Deviation)</th>
<th>Non-Intervention Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mars Total Time 1</td>
<td>207.5</td>
<td>.942</td>
<td>21, 20</td>
<td>22.52, (3.76)</td>
<td>23.15, (1.39)</td>
</tr>
<tr>
<td>Mars Total Time 2</td>
<td>195.0</td>
<td>.669</td>
<td>21, 20</td>
<td>23.05, (1.96)</td>
<td>23.55, (1.00)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level

Therefore adherence levels were roughly the same at time one for both those given the intervention and those not, and similarly at time two, adherence was roughly the same between the two groups. This then highlights that whilst ‘within’ each of the groups there was a significant difference in adherence from time one to time two for those who did not receive the intervention; there were no significant differences ‘between’ the groups at the two points in time.

Differences in the individual variables that comprised the MARS were also investigated to see whether the type of non-adherence varied between the groups that received and did not receive the intervention over time.

Table 30: Individual variables from the MARS, from time one - to time two, in both the intervention then the non-intervention groups.

<table>
<thead>
<tr>
<th></th>
<th>Wilcoxon Signed Ranks</th>
<th>Asymp. Sig (2-tailed)</th>
<th>N</th>
<th>Time 1 Mean (Standard Deviation)</th>
<th>Time 2 Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Group:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forget to take cholesterol medication</td>
<td>-1.155</td>
<td>.248</td>
<td>21</td>
<td>3.76, (0.83)</td>
<td>3.95, (0.59)</td>
</tr>
<tr>
<td>Alter the dose</td>
<td>-1.633</td>
<td>.102</td>
<td>21</td>
<td>4.67, 4.86</td>
<td>0.97, (0.48)</td>
</tr>
<tr>
<td>Stop taking for a while</td>
<td>-2.72</td>
<td>.785</td>
<td>21</td>
<td>4.76, 4.81</td>
<td>0.89, (0.60)</td>
</tr>
<tr>
<td>Decide to miss a dose</td>
<td>-5.75</td>
<td>.565</td>
<td>21</td>
<td>4.67, 4.57</td>
<td>0.73, (0.68)</td>
</tr>
<tr>
<td>Take less than instructed</td>
<td>-1.633</td>
<td>.102</td>
<td>21</td>
<td>4.67, 4.86</td>
<td>0.80, (0.48)</td>
</tr>
<tr>
<td>Non-intervention Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forget to take cholesterol medication</td>
<td>-1.732</td>
<td>0.083</td>
<td>20</td>
<td>3.90, (0.55)</td>
<td>4.05, (0.60)</td>
</tr>
<tr>
<td>Alter the dose</td>
<td>-1.732</td>
<td>1.000</td>
<td>20</td>
<td>4.90, (0.31)</td>
<td>4.90, (0.31)</td>
</tr>
<tr>
<td>Stop taking for a while</td>
<td>-0.577</td>
<td>0.564</td>
<td>20</td>
<td>4.80, (0.41)</td>
<td>4.85, (0.49)</td>
</tr>
<tr>
<td>Decide to miss a dose</td>
<td>-1.732</td>
<td>0.083</td>
<td>20</td>
<td>4.70, (0.47)</td>
<td>4.85, (0.37)</td>
</tr>
<tr>
<td>Take less than instructed</td>
<td>-0.447</td>
<td>0.655</td>
<td>20</td>
<td>4.85, (0.49)</td>
<td>4.90, (0.31)</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level
Therefore from table 30, it can be seen that there were no significant changes over time for the individual variables of the MARS, in either the intervention or non-intervention groups.

From table 31 below, it can also be seen that there were no differences in type of adherence, from the individual MARS variables between the intervention and non-intervention group, when looked at each point in time. Thus as with total adherence, there was no effect between the groups, and unlike general adherence there was also no difference within each group over time.

Table 31: Separate adherence variables, between the intervention and non-intervention groups at both points in time.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1:</th>
<th>Time 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mann Whitney-U</td>
<td>Asymp. Sig (2-tailed)</td>
</tr>
<tr>
<td>Forget to take cholesterol lowering medication</td>
<td>200.0</td>
<td>.751</td>
</tr>
<tr>
<td>Alter the dose</td>
<td>199.0</td>
<td>.614</td>
</tr>
<tr>
<td>Stop taking for a while</td>
<td>190.0</td>
<td>.395</td>
</tr>
<tr>
<td>Decide to miss a dose</td>
<td>200.0</td>
<td>.735</td>
</tr>
<tr>
<td>Take less than instructed</td>
<td>190.5</td>
<td>.408</td>
</tr>
<tr>
<td>Forget to take cholesterol lowering medication</td>
<td>193.0</td>
<td>.597</td>
</tr>
<tr>
<td>Alter the dose</td>
<td>210.0</td>
<td>1.00</td>
</tr>
<tr>
<td>Stop taking for a while</td>
<td>210.0</td>
<td>1.00</td>
</tr>
<tr>
<td>Decide to miss a dose</td>
<td>168.5</td>
<td>.148</td>
</tr>
<tr>
<td>Take less than instructed</td>
<td>210.0</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* = significant at the 0.05 level.
DISCUSSION:

Overview of sample:
Of the 31.5 percent of people who returned the initial questionnaire, 65.5 percent of these people were at some level non-adherent and subsequently received a follow-up questionnaire; all except one person returned this. Therefore it can be seen that those who completed the first questionnaire were extremely likely to complete another. This could then pose questions about the features of those who did and did not complete the questionnaires and the generalisability of findings to the general population. Of the people who initially returned the questionnaires there was an even split between males and females and a wide age range. However the sample comprised mainly of Caucasian participants and thus is not representative of other ethnic groups.

Initial Exploration:
The study first explored the characteristics of the initial sample and the general trends that emerged from initial questionnaire completion.

Illness Perceptions:
Most people appeared to perceive their high cholesterol condition to be chronic and serious and their medicines useful in controlling symptoms. The majority also perceived themselves as having a good understanding of their condition. As expected, many of the sub-scales of the IPQ correlated well with each other. Leventhal’s self-regulatory model of illness, proposes that beliefs about illness are structured around certain themes and good correlations found in this study between these constructs would seem to lend support to these propositions.

With the notions of illness perceptions being extended to Horne’s (1997) notions of medication beliefs, a large number of correlations were expected between these two scales, but this research found only a few constructs to be associated with each-other. Illness coherence (perceived understanding of the illness), was associated with stronger beliefs about harm of medicines in general, overuse by doctors and concerns specifically about cholesterol-lowering medicines. High distress understandably was related to high concerns over the harmful effects of the medicines under discussion and medicines in general and concerns with regard doctors over-prescribing. Perhaps surprisingly, those who perceived treatment as useful in controlling symptoms had fewer beliefs about the necessity of this medication.
Mood:
Nearly a third of participants had mild levels of anxiety and 10 percent had moderate levels, however this was much lower for depression. High anxiety could however reflect the stress associated with attending the clinic appointment, or anxiety with regard completing the questionnaires.

Perceiving the condition as more serious, was associated with higher levels of depression. Whilst perceiving the high cholesterol condition to be fixed and unchangeable was associated with less anxiety and less depression. Higher anxiety levels were also correlated with higher beliefs about harm from medicines in general and specifically with regard concern about cholesterol lowering medication. Higher levels of depression were correlated with higher concerns about these specific medicines in question and higher beliefs about its necessity. Thus believing the medicine was really necessary was associated with a lower affect.

Higher anxiety was also associated with greater non-adherence overall as measured by the MARS.

Beliefs About Medicines:
Most people believed in the necessity of taking their cholesterol lowering medicines and did not believe that Doctors over-prescribed and that medicines in general were harmful. The sub-scales of the BMQ correlated well with each other.

Causes:
With regard perceived causes of high cholesterol condition, heredity, genes and diet were endorsed as the most likely determinants. Germs/viruses, accident/injury and environmental pollution were seen to be the least likely causes by the initial sample.

This then comprises and an overview of the general sample and is as yet not concerned with exploration of differences between adherent and non-adherent groups, and the effects on health-related behaviour. However it would seem that fewer correlations emerged between illness perceptions and beliefs about medicines, than would have been expected given current literature. Other factors such as mood also appear to be correlated with certain illness perceptions and beliefs about medicines and at present have not been specifically incorporated into such current models of health behaviour. Thus perhaps these models are as
yet still not sufficiently explaining all the complex links in behaviour, as demonstrated with ‘affect’ being important in this study and being correlated with many illness perceptions and medication beliefs. With comprehension of health behaviours still not clear, perhaps successfully changing such behaviour may prove even more difficult to achieve.

**Adherence and Medications:**

This study found just over 65 percent of people taking cholesterol-lowering medication to be at some level non-adherent. This was found to be more a case of occasional forgetting than intentional deviation from the recommended medication regimen. This is in line with the research by Senior et al (In press), where 63 percent of their sample was found to be non-adherent and again most frequently reporting occasional forgetting. Both these studies used participants from the same clinic (although with different diagnosis). Adherence levels from both this and the current study were lower than those found by Insull (1997) who found up to 50 percent of participants displaying some level of non-adherence. Medications in general were shown to have a 30 percent non-adherence rate and thus cholesterol-lowering medication would seem to have an overall poorer figure. Perhaps this could be due to the chronic nature of the condition and lack of symptoms and subsequent symptom relief from taking this long-term medication. Nearly all patients in this study were on Statins and thus findings are assumed only to relate to the taking of this form of medication. However more than 60 percent of patients were also on some form of other medication, but due to lack of specificity and consistency in description, detail of these could not be adequately used in analysis and thus it is impossible to exact the effect of this and co-morbidity of illnesses on medication taking behaviour.

**Exploration of the Adherent and Non-adherent Groups:**

Initial aims of the study highlighted the need to explore differences in patient details, illness perceptions, mood and medication beliefs in those who were initially fully adherent and those who were not. This could potentially help to identify any characteristics, which differentiated those who were at some level non-adherent from those who strictly adhered to their medication regime. This could also then be interpreted with reference to research in this area, to see whether this study produced similar findings to those already delineated.

Descriptive statistics showed very few main differences between the adherent and non-adherent groups of participants. There were no differences in illness perceptions or beliefs
about medicines as might have been expected. Anxiety total and the perceived cause of 'poor medical care in the past' were the only scales that that significantly differentiated those who were adherent from those who initially were not. Therefore, those who had high levels of anxiety were less likely to be adherent to their cholesterol lowering medication. This did not support the study by Senior et al (in Press) who found no associations with anxiety or depression with adherence. However this is not causational and it could be that by being non-adherent this could serve to increase distress and anxiety levels. Or there could be some other mediating factor(s) as yet unidentified in this research. This finding is in conflict with other research such as that by Dimatteo, Lepper & Croghan (2000) who found no consistent relationship between anxiety and adherence in a meta-analysis using data from patients with a variety of chronic conditions. They did however find depressed patients three times more likely to be non-adherent than non-depressed patients. This may then reflect a difference in the nature of the condition under investigation but highlights the need for mood to be looked at more consistently. As mood was initially correlated with aspects of medication beliefs and illness perceptions in this study, perhaps further research is needed to investigate how affect can be understood in connection with these models of health behaviour.

Those who were fully adherent were more likely to perceive poor medical care in the past to be a cause of their high cholesterol condition than those who deviated from the medication regime. Perhaps those who have had negative experiences of medical care in the past take it upon themselves to monitor their conditions and take responsibility of their regimes than those who have not had such experiences in the past and do not perceive this to have contributed to their present condition.

No support was therefore given to the propositions made by the self-regulatory model of illness which postulated that if by perceiving medication and advice to take it as common sense then participants would be more likely to take their medicines as directed. Differences in illness perceptions and leading on from this, medication beliefs between the two groups would then have been expected. Horne & Weinman (1999) proposed that adherent people would score more highly for beliefs about medication necessity and have lower concerns about these medicines, whereas non-adherent persons would have higher concerns and low necessity beliefs. In this study, no evidence was found to support these propositions. This could perhaps be due to the type of condition and medication under investigation. With high cholesterol conditions being chronic and asymptomatic, medication effects may not be so
apparent to be able to be viewed in this cost-benefit way. Thus this may highlight differences in understanding this type of chronic condition and the need for specific research for different conditions and medications. Brewer et al (2002) specifically highlighted issues prominent for those suffering from high cholesterol conditions, and found that an expert-based model of illness, with perceptions of the condition being chronic, symptomless and with severe consequences would be associated with higher levels of reported adherence, however this was also not borne out in this study. However as Senior et al (In Press) highlighted, with non-adherence predominantly in the form of occasional forgetting and with such small associations between illness perceptions and behaviour (in this study no such associations), the rational for needing to establishing routines and establishing environmental contingencies instead of focusing on changing perceptions, was supported.

Main Hypothesis: ‘The intervention’

Thus the rational behind investigating implementation intentions seems to have been borne out in this study, with few differences found between the adherent and non-adherent groups and non-adherence being primarily in the form of occasional forgetting. Thus determining whether the intervention could effect change seems to be a necessary continuation from current research and substantiated again through this piece of work so far.

Initial aims highlighted the need to also explore any differences in patient characteristics between those who did and did not receive the intervention, within the non-adherent group who received the follow-up questionnaire. This was to help identify any other factors, which could potentially be affecting change in adherence. The main hypothesis could then be explored which aimed to see whether:

‘Forming Implementation Intentions increases self-reported adherence to cholesterol lowering medication, in patients currently attending a lipid clinic and reporting some level of non-adherence over the past month.’

Of the initially non-adherent participants, roughly equal numbers received and did not receive the intervention. These two groups within this non-adherent population were similar across most measures, except that those who received the intervention were predominantly male. Those who received the intervention in this initially non-adherent group were also more likely to view their treatment as having more control over their condition than those in the group who did not receive the intervention. No other differences were found between these
groups, although findings must be interpreted whilst bearing in mind that any significant result could represent a gender difference or differences in perception of control from one’s treatment.

Over time, no differences were found in adherence totals between the two groups. However when taken separately and adherence over time for each group separately analysed, there was a significant increase in adherence for the group that did not receive the intervention, so ‘within’ this group there was a significant effect. However at both points in time, there was no significant difference ‘between’ the two groups. Whilst significant this then shows that the actual effect was small and spurious as it was not a strong enough effect to differentiate between the two groups. However as previously mentioned, the group that received the intervention was predominantly male and the group who did not receive the intervention was predominantly female and thus this finding could reflect a gender difference. This does not however lend support to the main hypothesis.

With most non-adherent behaviour being due to forgetting rather than intentional deviation from the medication regime, it would have been predicted that implementation intentions should have helped commit a person to a course of action, when conditions in the environment were met. Therefore the intervention would have been thought to help utilise the environment to help trigger the action of medication taking and thus helping with non-adherent behaviour such as forgetting. This was not found to be the case.

The effect of gender cannot be overlooked as previous research into implementation intentions has used primarily student populations (Gilholm et al, 1999; Gollwitzer & Brandstatter, 1997). The more recent attempts to investigate implementation intentions with regard health related behaviour has also been confined to studies on women; such as Mitchie et al’s (In Press) study on implementation intentions and pre-natal screening and the Sheeran & Orbell (2000) study on women attending for cervical screening. Whilst both of these studies lent support for the use of implementation intentions in increasing the implementation of these health related behaviours, this could also be highlighting a gender effect. This current study found the intervention did not have a significant effect, but in this study the intervention group were predominantly male. Gender therefore needs to be investigated further in the future.
The group that received the intervention in this study also had stronger perceptions that
treatment could control their high cholesterol condition better than the group that did not
receive the intervention. Thus lack of effect from the intervention could reflect an already
present perception that their treatment was effective in controlling their condition and why
attempts to alter the method of medication, which was already deemed successful did not
change behaviour.

This then brings into question the basis of implementation intentions, which describe how
they work by committing a person to a course of action, when conditions in the environment
are met, and thus facilitating translation of a goal intention into action (Gollwitzer, 1993).
However this study could perhaps be showing that this is too simplified and that maybe there
are still complex interaction with other areas such as affect, perceptions and patient
characteristics, such as gender which need to be investigated further.

Critique:
This research utilised widely used standardised and reliable measures. Many attempts were
used to achieve power, such as the handing out of more than 200 questionnaires and the
researcher’s presence at the clinics, but unfortunately power was not attained.

The study relied on self-report measures of adherence. Due to time constraints and
administrative difficulties in locating files, no corresponding blood results could be utilised to
see whether reported pill taking corresponded to actual cholesterol levels in the blood at time
of completing first questionnaire. As most participants did not complete the questionnaire in
the clinic, people would have had to come in for specific testing. Also adherence was looked
at a month after initial return of questionnaire and the majority of patients would not have
another appointment until six months after their last visit. Thus conclusive monitoring of
blood was not possible without having specific blood tests provided for this purpose as well.
This simply was not possible without having the available resources. There is ongoing debate over the
accuracy of self-report measures, such as with Stephenson, Rowe, Macharia, Leon & Haynes
(1993) reporting such methods to overestimate adherence. However Senior et al (In Press)
with participants from the same clinic (with a diagnosis of familial hypercholesterolaemia) as
used in this current research, found biochemical evidence for the validity of the self-report
adherence measure used in this study.
There was a low response rate, which could be partially due to handing out questionnaires to people whilst waiting for fasting blood tests, and thus in a potentially stressful situation. This clinic also conducts a lot of research and it could be that many patients did not want to take part in any more. Data collection also took place in the two months leading up to the Christmas holidays and similarly for the few months following this period. Thus this can be a stressful time of year, and a time when adherence may be particularly difficult and people may not wish to disclose the nature of their medication taking behaviour over this time. A follow-up questionnaire to remind people to send back their initial questionnaires would have been potentially useful for increasing response rates, but again due to administration difficulties and time constraints, this was not feasible. A smaller sample than anticipated therefore meant that statistical power was not obtained, despite handing out a large number of questionnaires, having the Doctors re-iterate the importance of the research in their appointments and having the researcher present in the clinic and available to answer any queries.

This sample may also not be completely representative of other patients with high cholesterol, as this sample was predominantly Caucasian and out of those not fully adherent, a majority of males had received the intervention. Whilst an even split between males and females returned the initial questionnaire, out of those who returned the second questionnaire, not an even proportion had received and not received the intervention. This would have probably been evened out with a higher response rate. This study only used one hospital trust and again cannot be generalised to other clinics and patients attending clinics in different parts of the country.

Nearly two thirds of patients were currently taking some other form of medication, exact nature of these conditions and associated medication were not accurately and consistently recorded to enable this to be accounted for in the analysis. Therefore co-morbidity of illnesses and multiple taking of medicines was not accounted for in this research.

Most patients whilst not fully adherent in the form of not deviating in any way from the medication regime, all still generally had high levels of adherence, with occasional forgetting comprising the majority of non-adherent behaviour. No attempt was made to investigate how people were currently taking their medicines and whether they already were using action plans. Therefore intricacies of behaviour and qualitative detail was not obtained around this
area beforehand. With the low level of intentional deviation from medication regimens and still relatively low levels of forgetting, it may have been important to see how the participants were already taking their medicines, before one can draw conclusions as to whether an intervention was successful.

There was no information on those who did not return the questionnaires, and findings can only be interpreted for those who did. It could be that those who were already fully adherent or actively non-adherent were the ones who did not complete the questionnaires and on this there is no data.

Results could be an artefact of doing multiple comparisons, although the Bonferroni correction was not applied as with a small sample, applying this method of correction could have lost important trends.

However despite the limitations, and the lack of support for the self-regulatory model of illness and the application of implementation intentions, these findings can themselves be of use. This research allows more questions to be asked about the complexity of perceptions, adherence and strategies to enable change, and expands on the research to date, beginning to combine several recent understandings and applications with one-another.

**Future Research:**

Future research in this area would aim to use a larger sample and finding methods to achieve a higher response rate. Blood tests would need to be taken at time of initial measuring of self-reported adherence and at any follow-up times. This would enable data to investigate the validity of self-report measures.

Ideally comparisons would be made between those with high cholesterol conditions alone and taking cholesterol lowering medications only, from those with other conditions and taking other forms of medication, to enable comparison with regards co-morbidity and multiple pill taking.

Other services and provisions of care could be looked at, such as other trusts and GP practices. This would enable investigations into the way information and medication is given out and the effects on understanding illness and medication taking behaviours.
Research could start with eliciting people's specific beliefs and behaviours to begin with and there could then be comparisons made between those who are given individually tailored plans versus those who receive general information and interventions.

Mood and gender differences would also need to be systematically taken into account.

**Clinical Applications:**

What is clear from this research is that there is still a long way to go in firstly understanding people's perceptions of their specific illness and then trying to impact upon any unhelpful behaviour. Whilst aspects of illness perceptions, medication beliefs and mood correlate well with each-other, there is still no fully accepted model for understanding the complex links. Even with the progress in this area, this then does not seem to help in adding any considerable understanding to changing certain health related behaviours. Whilst implementation intentions have been shown to have helping shape behaviour, this has yet to have consistent evidence with regard complex health related behaviours in clinical populations, such as found in this study of adherence and gender differences have perhaps been overlooked. Perhaps trying to understand the person on an individual level, looking at their personal belief systems, alongside the environmental contingencies they may already be using, and then by creating individually tailored plans may be the first step into understanding people's complex set of beliefs and behaviours, and beginning to effect change.

Reducing anxiety levels may however be an important element previously overlooked which has emerged from this study and may be effecting medication-taking behaviours. This could perhaps be interfering with a patient's ability to take on board information that is being provided by important health professionals. Indeed these relationship variables are themselves important and deserve future consideration. What is certain is there is still a long way to go in understanding human perceptions, belief systems and behaviours, and an even further way to go in trying to change these.
REFERENCES:


Senior, V., Marteau, T.M. & Weinman, J. (Submitted for Publication). Self-reported adherence to cholesterol-lowering medication in patients with familial hypercholesterolaemia: the role of illness perceptions.


APPENDICES:

Appendix 1: G-Power printout

Appendix 2: Revised Illness Perceptions Questionnaire (IPQ-R)

Appendix 3: Hospital Anxiety and Depression Scale (HADS)

Appendix 4: Beliefs About Medicines Questionnaire (BMQ)

Appendix 5: Medication Adherence Report Scale (MARS-5)

Appendix 6: Combined Questionnaire Booklet

Appendix 7: Hospital Ethical Approval

Appendix 8: University Ethical Approval

Appendix 9: Patient Information Sheet

Appendix 10: Patient Consent Form

Appendix 11: Covering Letter for Follow-up Questionnaire

Appendix 12: Follow-up Adherence Questionnaire

Appendix 13: Information Sheet for All Patients After Data Collection.
Appendix 1

G-Power Printout
Effect size conventions: small = 0.20  medium = 0.50  large = 0.80
Revised Illness Perception Questionnaire (IPQ-R)
YOUR VIEWS ABOUT YOUR ILLNESS

Listed below are a number of symptoms that you may or may not have experienced since your illness. Please indicate by circling Yes or No, whether you have experienced any of these symptoms since your illness, and whether you believe that these symptoms are related to your illness.

I have experienced this symptom since my illness

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Yes</th>
<th>No</th>
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<td>Pain</td>
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<td>Sore Throat</td>
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<td>Nausea</td>
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<td>Breathlessness</td>
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<td>Fatigue</td>
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<td>Sore Eyes</td>
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<td>Wheeziness</td>
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<td>Headaches</td>
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<td>Upset Stomach</td>
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<td>Sleep Difficulties</td>
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<td>Dizziness</td>
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<td>Loss of Strength</td>
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This symptom is related to my illness

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<thead>
<tr>
<th>Symptom</th>
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<td>Pain</td>
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<td>Loss of Strength</td>
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We are interested in your own personal views of how you now see your current illness.

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

<table>
<thead>
<tr>
<th>VIEWS ABOUT YOUR ILLNESS</th>
<th>STRONGLY DISAGREE</th>
<th>DISAGREE</th>
<th>NEITHER AGREE NOR DISAGREE</th>
<th>AGREE</th>
<th>STRONGLY AGREE</th>
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<tr>
<td>i. My illness will last a short time</td>
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<td>ii. My illness is likely to be permanent rather than temporary</td>
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<td>iii. My illness will last for a long time</td>
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<td>iv. This illness will pass quickly</td>
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<td>VIEWS ABOUT YOUR Illness</td>
<td>STRONGLY DISAGREE</td>
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<td>IP25</td>
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<td>I expect to have this illness for the rest of my life</td>
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<td>IP26</td>
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<td>My illness is a serious condition</td>
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<td>IP27</td>
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<td>My illness has major consequences on my life</td>
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<td>IP28</td>
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<td>My illness is easy to live with</td>
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<td>IP29</td>
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<td>My illness does not have much effect on my life</td>
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<td>IP30</td>
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<td>My illness strongly affects the way others see me</td>
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<td>IP31</td>
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<td>My illness has serious financial consequences</td>
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<td>IP32</td>
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<td>My illness strongly affects the way I see myself as a person</td>
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<td>IP33</td>
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<td>My illness causes difficulties for those who are close to me</td>
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<td>IP34</td>
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<td>My illness has a negative impact on me</td>
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<td>IP35</td>
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<td>My illness is not a problem for me</td>
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<td>IP36</td>
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<td>My illness doesn’t bother me much</td>
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<td>IP37</td>
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<td>There is a lot which I can do to control my symptoms</td>
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<td>IP38</td>
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<tr>
<td>What I do can determine whether my illness gets better or worse</td>
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<td>IP39</td>
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<tr>
<td>Recovery from my illness is largely dependent on chance or fate</td>
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<td>IP40</td>
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<tr>
<td>The course of my illness depends on me</td>
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<tr>
<td>IP41</td>
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<tr>
<td>Nothing I do will affect my illness</td>
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<tr>
<td>IP42</td>
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<tr>
<td>I have the power to influence my illness</td>
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<tr>
<td>IP43</td>
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<tr>
<td>My actions will have no affect on the outcome of my illness</td>
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<tr>
<td>IP44</td>
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<tr>
<td>My symptoms are beyond my control</td>
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<td>IP45</td>
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<tr>
<td>My symptoms will be around whatever I do</td>
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<tr>
<td>IP46</td>
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<tr>
<td>My illness will improve in time</td>
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<tr>
<td>IP47</td>
<td></td>
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<tr>
<td>There is very little that can be done to improve my illness</td>
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<tr>
<td>IP48</td>
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<tr>
<td>My treatment will be effective in curing my illness</td>
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<tr>
<td>IP49</td>
<td></td>
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<tr>
<td>The negative effects of my illness can be prevented (avoided) by my treatment</td>
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</tr>
<tr>
<td>VIEWS ABOUT YOUR ILLNESS</td>
<td>STRONGLY DISAGREE</td>
<td>DISAGREE</td>
<td>NEITHER AGREE NOR DISAGREE</td>
<td>AGREE</td>
<td>STRONGLY AGREE</td>
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<tr>
<td>IP30* My treatment can control my illness</td>
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<tr>
<td>IP31* There is nothing which can help my condition</td>
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<tr>
<td>IP32 The symptoms of my condition are puzzling to me</td>
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<tr>
<td>IP33 My illness is a mystery to me</td>
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<tr>
<td>IP34* I don’t understand my illness</td>
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<tr>
<td>IP35* My illness doesn’t make any sense to me</td>
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<tr>
<td>IP36* I have a clear picture or understanding of my condition</td>
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<tr>
<td>IP37 The symptoms of my illness change a great deal from day to day</td>
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<tr>
<td>IP38* My symptoms come and go in cycles</td>
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<tr>
<td>IP39* My illness is very unpredictable</td>
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<tr>
<td>IP40* My illness condition is present all the time.</td>
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<tr>
<td>IP41* I go through cycles in which my illness gets better and worse.</td>
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<tr>
<td>IP42* I experience my illness symptoms pretty much all of the time.</td>
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<tr>
<td>IP43* The symptoms of my illness are distressing to me</td>
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<tr>
<td>IP44* I get depressed when I think about my illness</td>
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<tr>
<td>IP45* When I think about my illness I get upset</td>
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<tr>
<td>IP46* My illness makes me feel angry</td>
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<tr>
<td>IP47* My illness does not worry me</td>
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<tr>
<td>IP48* Having this illness makes me feel anxious</td>
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<td>IP49* I worry a lot about my illness</td>
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<tr>
<td>IP50* My illness makes me feel afraid</td>
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</tbody>
</table>
CAUSES OF MY ILLNESS

We are interested in what you consider may have been the cause of your illness. As people are very different, there is no correct answer for this question. We are most interested in your own views about the factors that caused your illness rather than what others including doctors or family may have suggested to you. Below is a list of possible causes for your illness. Please indicate how much you agree or disagree that they were causes for you by ticking the appropriate box.

<table>
<thead>
<tr>
<th>POSSIBLE CAUSES</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>C1 Stress or worry</td>
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<tr>
<td>C2 Hereditary - it runs in my family</td>
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<td>C3 A Germ or virus</td>
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<td>C4 Diet or eating habits</td>
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<td>C5 Chance or bad luck</td>
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<td>C6 Poor medical care in my past</td>
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<td>C7 Pollution in the environment</td>
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<td>C8 My own behaviour</td>
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<td>C9 My mental attitude e.g. thinking about life negatively</td>
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<td>C10 Family problems or worries caused my illness</td>
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<td>C11 Overwork</td>
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<td>C12 My emotional state e.g. feeling down, lonely, anxious, empty</td>
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<td>C13 Ageing</td>
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<td>C14 Alcohol</td>
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<tr>
<td>C15 Smoking</td>
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<td>C16 Accident or injury</td>
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<td>C17 My personality</td>
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<tr>
<td>C18 Altered immunity</td>
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</tbody>
</table>

In the table below, please list in rank-order the three most important factors that you now believe caused YOUR illness. You may use any of the items from the box above, or you may have additional ideas of your own.

The most important causes for me:-

1. __________________________________________
2. __________________________________________
3. __________________________________________
Items for IPQ-R Subscales

1. Identity (sum of yes-rated symptoms in column 2 on p. 1)
2. Timeline (acute/chronic) items IP1 - IP5
3. Consequences items IP6 - IP16
4. Personal control items IP17 - IP25
5. Treatment control items IP26 - IP31
6. Illness coherence items IP32 - IP36
7. Timeline cyclical IP37 - IP42
8. Emotional representations IP43 - 50
9. Causes C1 - C17
Appendix 3

Hospital Anxiety and Depression Scale (HADS)
Clinicians are aware that emotions play an important part in most illnesses. If your clinician knows about these feelings she or he will be able to help you more.

This questionnaire is designed to help your clinician to know how you feel. Ignore the numbers printed on the left of the questionnaire. Read each item and underline 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.

I feel tense or 'wound up':

- Most of the time
- A lot of the time
- From time to time, occasionally
- Not at all

I still enjoy the things I used to enjoy:

- Definitely as much
- Not quite so much
- Only a little
- Hardly at all

I get a sort of frightened feeling as if something awful is about to happen:

- Very definitely and quite badly
- Yes, but not too badly
- A little, but it doesn't worry me
- Not at all

(continued overleaf)
## Hospital Anxiety and Depression Scale

<table>
<thead>
<tr>
<th>D</th>
<th>A</th>
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<tbody>
<tr>
<td>0</td>
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<tr>
<td>1</td>
<td>1</td>
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<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
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</tbody>
</table>

### I can laugh and see the funny side of things:
- As much as I always could
- Not quite so much now
- Definitely not so much now
- Not at all

### Worrying thoughts go through my mind:
- A great deal of the time
- A lot of the time
- From time to time but not too often
- Only occasionally

### I feel cheerful:
- Not at all
- Not often
- Sometimes
- Most of the time

### I can sit at ease and feel relaxed:
- Definitely
- Usually
- Not often
- Not at all

### I feel as if I am slowed down:
- Nearly all the time
- Very often
- Sometimes
- Not at all

### I get a sort of frightened feeling like "butterflies" in the stomach:
- Not at all
- Occasionally
- Quite often
- Very often

(continued overleaf)
HOSPITAL ANXIETY AND DEPRESSION SCALE

I have lost interest in my appearance:

- Definitely
- I don't take as much care as I should
- I may not take quite as much care
- I take just as much care as ever

I feel restless as if I have to be on the move:

- Very much indeed
- Quite a lot
- Not very much
- Not at all

I look forward with enjoyment to things:

- As much as ever I did
- Rather less than I used to
- Definitely less than I used to
- Hardly at all

I get sudden feelings of panic:

- Very often indeed
- Quite often
- Not very often
- Not at all

I can enjoy a good book or radio or TV programme:

- Often
- Sometimes
- Not often
- Very seldom

Now check that you have answered all the questions

For office use only:

D: ☐ Borderline 8–10
A: ☐ Borderline 8–10


This measure is part of Measures in Health Psychology: A User's Portfolio, written and compiled by Professor Marie Johnston, Dr Stephen Wright and Professor John Weinman. Once the invoice has been paid, it may be photocopied for use within the purchasing institution only. Published by The NFER-NELSON Publishing Company Ltd, Darville House, 2 Oxford Road East, Windsor, Berkshire SL4 1DF, UK. Code 4920 03 4
Beliefs About Medicines Questionnaire (BMQ)
YOUR VIEWS ABOUT MEDICINES PRESCRIBED FOR YOU

- We would like to ask you about your personal views about medicines prescribed for you.
- These are statements other people have made about their medicines.
- Please show how much you agree or disagree with them by ticking the appropriate box.

There are no right or wrong answers.
We are interested in your personal views

<table>
<thead>
<tr>
<th>Views about MEDICINES PRESCRIBED FOR YOU:</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>B81 My health, at present, depends on my medicines</td>
<td></td>
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<tr>
<td>B82 Having to take medicines worries me</td>
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<tr>
<td>B83 My life would be impossible without my medicines</td>
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<tr>
<td>B84 I sometimes worry about long-term effects of my medicines</td>
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<tr>
<td>B85 Without my medicines I would be very ill</td>
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<tr>
<td>B86 My medicines are a mystery to me</td>
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<tr>
<td>B87 My health in the future will depend on my medicines</td>
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<tr>
<td>B88 My medicines disrupt my life</td>
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<tr>
<td>B89 I sometimes worry about becoming too dependent on my medicines</td>
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<tr>
<td>B90 My medicines protect me from becoming worse</td>
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<td>B91 These medicines give me unpleasant side effects</td>
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</table>

YOUR VIEWS ABOUT MEDICINES IN GENERAL

- These are statements that other people have made about medicines in general.
- Please show how much you agree or disagree with them by ticking the appropriate box.

<table>
<thead>
<tr>
<th>Views about MEDICINES IN GENERAL</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>B92 Doctors use too many medicines</td>
<td></td>
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<tr>
<td>B93 People who take medicines should stop their treatment for a while every now and again</td>
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<tr>
<td>B94 Most medicines are addictive</td>
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<tr>
<td>B95 Natural remedies are safer than medicines</td>
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<tr>
<td>B96 Medicines do more harm than good</td>
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<tr>
<td>B97 All medicines are poisons</td>
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<tr>
<td>B98 Doctors place too much trust on medicines</td>
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<tr>
<td>B99 If doctors had more time with patients they would prescribe fewer medicines</td>
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</tbody>
</table>
Medication Adherence Report Scale (MARS-5)
Your cholesterol-lowering medicines

16. Have you been prescribed any medicines (either tablets or powders) to reduce your cholesterol level?

Please tick one statement

☐ Yes
☐ No
☐ Don’t know

• If you answered “yes”, please answer questions 17.
• If you answered “no” or “don’t know”, please go to question 18.

17. Many people find a way of using their cholesterol-lowering medicines which suits them. This may differ from the instructions on the label or from what their doctor has said. Below are a few questions about how YOU use your cholesterol-lowering medicines.

Here are some ways in which people have said that they use their cholesterol-lowering medicines. Thinking about your cholesterol-lowering medicines OVER THE PAST MONTH, please circle a number for each statement.

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I forget to take my cholesterol-lowering medicines</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b. I alter the dose of my cholesterol-lowering medicines</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c. I stop taking my cholesterol-lowering medicines for a while</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d. I decide to miss out a dose</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>e. I take less than instructed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
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Appendix 6

Combined Questionnaire Booklet
Patient Details:  

Please fill in the following information in as much detail as possible.

Please circle appropriate gender .................................................. Male / Female

Please give date of birth ...............................................................................................................

Please give your ethnicity (e.g. White/British, Asian, Afro-Caribbean) ...........................................

Please give details of condition for which you are taking cholesterol lowering medication(s) (when diagnosed/ family history):
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Please give details of cholesterol lowering medication you have taken previously and are currently taking. (Name / Dose / How long taking / Reason for stopping / Side effects etc.)
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Please give details of any other medical conditions and associated medications:
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Please give length of time you have been attending this lipid clinic and how often you have appointments:
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...........................................................................................................................................................
VIEWS ABOUT YOUR HIGH CHOLESTEROL CONDITION:

We are interested in your own personal views of how you see your current high cholesterol condition.

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

<table>
<thead>
<tr>
<th>Statement</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>My high cholesterol condition will last a short time</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>My high cholesterol condition is likely to be permanent rather than temporary</td>
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<tr>
<td>My high cholesterol condition will last for a long time</td>
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<tr>
<td>This high cholesterol condition will pass quickly</td>
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<tr>
<td>I expect to have this condition for the rest of my life</td>
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<tr>
<td>My high cholesterol is a serious condition</td>
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<tr>
<td>There is a lot which I can do to control my symptoms of my high cholesterol condition</td>
<td></td>
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<tr>
<td>What I do can determine whether my high cholesterol condition gets better or worse</td>
<td></td>
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<tr>
<td>Recovery from my high cholesterol condition is largely dependent on chance or fate</td>
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<tr>
<td>The course of my high cholesterol condition depends on me</td>
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<tr>
<td>Nothing I do will affect my high cholesterol condition</td>
<td></td>
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<tr>
<td>I have the power to influence my high cholesterol condition</td>
<td></td>
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<tr>
<td>My actions will have no affect on the outcome of my high cholesterol condition</td>
<td></td>
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</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Agree</td>
<td>Strongly Agree</td>
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<tr>
<td>--------------------------------------------------------------------------</td>
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<tr>
<td>My symptoms of my high cholesterol condition are beyond my control</td>
<td></td>
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<tr>
<td>My symptoms of my high cholesterol condition will be around whatever I do</td>
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<tr>
<td>My high cholesterol condition will improve in time</td>
<td></td>
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<tr>
<td>There is very little that can be done to improve my high cholesterol condition</td>
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<tr>
<td>My treatment will be effective in curing my high cholesterol</td>
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<tr>
<td>The negative effects of my high cholesterol condition can be prevented (avoided) by my treatment</td>
<td></td>
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<tr>
<td>My treatment can control my high cholesterol condition</td>
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<tr>
<td>There is nothing which can help my high cholesterol condition</td>
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<tr>
<td>The symptoms of my high cholesterol condition are puzzling to me</td>
<td></td>
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<tr>
<td>My high cholesterol condition is a mystery to me</td>
<td></td>
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<tr>
<td>I don’t understand my high cholesterol condition</td>
<td></td>
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<tr>
<td>My high cholesterol condition doesn’t make any sense to me</td>
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<tr>
<td>I have a clear picture or understanding of my high cholesterol condition</td>
<td></td>
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<tr>
<td>The symptoms of my high cholesterol change a great deal from day to day</td>
<td></td>
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<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Agree</td>
<td>Strongly Agree</td>
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<tr>
<td>---------------------------------------------------------------------------</td>
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<tr>
<td>My symptoms of my high cholesterol condition come and go in cycles</td>
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<tr>
<td>My high cholesterol condition is very unpredictable</td>
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<tr>
<td>My high cholesterol condition is present all the time</td>
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<tr>
<td>I got through cycles in which my high cholesterol condition gets better and worse</td>
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<tr>
<td>I experience my high cholesterol symptoms pretty much all of the time</td>
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<tr>
<td>The symptoms of my high cholesterol condition are distressing to me</td>
<td></td>
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<tr>
<td>I get depressed when I think about my high cholesterol condition</td>
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<tr>
<td>When I think about my high cholesterol condition I get upset</td>
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<tr>
<td>My high cholesterol condition makes me feel angry</td>
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<tr>
<td>My high cholesterol condition does not worry me</td>
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<tr>
<td>Having this high cholesterol condition makes me feel anxious</td>
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<tr>
<td>I worry a lot about my high cholesterol condition</td>
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<tr>
<td>My high cholesterol condition makes me feel afraid</td>
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</tbody>
</table>
We are interested in what YOU consider may have been the cause of your high cholesterol condition. As people are very different, there is not correct answer for this question. We are most interested in your own views about the factors that caused your high cholesterol condition rather than what others including Doctors or family may have suggested to you. Below is a list of possible causes for your high cholesterol condition. Please indicate how much you agree or disagree that they were causes for you by ticking the appropriate box.

<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
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</thead>
<tbody>
<tr>
<td>Stress or worry</td>
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<td>Heredity- it runs in my family</td>
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<td>A germ or virus</td>
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<td>Diet or eating habits</td>
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<td>Chance or bad luck</td>
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<td>Poor medical care in my past</td>
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<td>Pollution in the environment</td>
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<td>My own behaviour</td>
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<tr>
<td>My mental attitude e.g. thinking about life negatively</td>
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<td>Family problems or worries caused my illness</td>
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<td>Overwork</td>
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<td>My emotional state e.g. feeling down, lonely, anxious, empty</td>
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<tr>
<td>Ageing</td>
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<tr>
<td>Alcohol</td>
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<tr>
<td>Smoking</td>
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<tr>
<td>Accident or Injury</td>
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<tr>
<td>My personality</td>
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</tbody>
</table>
Possible Causes

<table>
<thead>
<tr>
<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>Altered immunity</td>
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<tr>
<td>My genes</td>
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</table>

How likely do you think you are to have a raised cholesterol level over the next 10 years?

Please rate from 0= not at all likely to 6= Extremely likely.

YOUR FEELINGS

Questionnaire 1:
Read each item and underline 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 answer every question.

I feel tense or ‘wound up’:
Most of the time
A lot of the time
From time to time
Not at all

I still enjoy the things I used to enjoy:
Definitely as much
Not quite so much
Only a little
Hardly at all

I get a sort of frightened feeling as if something awful is about to happen:
Very definitely and quite badly
Yes, but not too badly
A little, but it doesn’t worry me
Not at all

I can laugh and see the funny side of things:
As much as I always could
Not quite so much now
Definitely not so much now
Not at all
Worrying thoughts go through my mind:
A great deal of the time
A lot of the time
From time to time but not too often
Only occasionally

I feel cheerful:
Not at all
Not often
Sometimes
Most of the time

I can sit at ease and feel relaxed:
Definitely
Usually
Not often
Not at all

I feel as if I am slowed down:
Nearly all the time
Very often
Sometimes
Not at all

I get a sort of frightened feeling like ‘butterflies’ in the stomach:
Not at all
Occasionally
Quite often
Very often

I have lost interest in my appearance:
Definitely
I don’t take as much care as I should
I may not take quite as much care
I take just as much care as ever

I feel restless as if I have to be on the move:
Very much indeed
Quite a lot
Not very much
Not at all

I look forward with enjoyment to things:
As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all

I get sudden feelings of panic:
Very often indeed
Quite often
Not very often
Not at all

I can enjoy a good book or radio or T.V. programme:
Often
Sometimes
Not often
Very seldom
YOUR VIEWS ABOUT MEDICINES PRESCRIBED FOR YOUR HIGH CHOLESTEROL CONDITION

- We would like to ask you about your personal views about medicines prescribed for your high cholesterol condition.
- These are statements other people have made about their medicines.
- Please show how much you agree or disagree with them by ticking the appropriate box.

There are no right or wrong answers. We are interested in your personal views.

<table>
<thead>
<tr>
<th>Views about MEDICINES PRESCRIBED FOR YOUR HIGH CHOLESTEROL CONDITION:</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My health, at present, depends on my medicines</td>
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<tr>
<td>Having to take medicines worries me</td>
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<tr>
<td>My life would be impossible without my medicines</td>
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<tr>
<td>I sometimes worry about long term effects of my medicines</td>
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<tr>
<td>Without medicines I would be very ill</td>
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<tr>
<td>My medicines are a mystery to me</td>
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<tr>
<td>My health in the future will depend on my medicines</td>
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<tr>
<td>My medicines disrupt my life</td>
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<tr>
<td>I sometimes worry about becoming too dependent on my medicines</td>
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<tr>
<td>My medicines protect me from becoming worse</td>
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<tr>
<td>These medicines give me unpleasant side effects</td>
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</tr>
</tbody>
</table>
YOUR VIEWS ABOUT MEDICINES IN GENERAL

- These are statements that other people have made about medicines in general
- Please show how much you agree or disagree with them by ticking the appropriate box.

<table>
<thead>
<tr>
<th>Views about MEDICINES IN GENERAL:</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors use too many medicines</td>
<td></td>
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<tr>
<td>People who take medicines should stop their treatment for a while every now and then</td>
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<tr>
<td>Most medicines are addictive</td>
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<tr>
<td>Natural remedies are safer than medicines</td>
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<tr>
<td>Medicines do more harm than good</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>All medicines are poisons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Doctors place too much trust on medicines</td>
<td></td>
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<tr>
<td>If Doctors had more time with patients they would prescribe fewer medicines</td>
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</tbody>
</table>

YOUR CHOLESTEROL LOWERING MEDICATION

Have you been prescribed any medicines (either tablets or powders) to reduce your cholesterol level?

Please tick one statement:
YES □ NO □ Don’t know □

If you answered ‘yes’ please answer the next question:

Many people find a way of using their cholesterol-lowering medicines which suits them. This may differ from the instructions on the label or from what their Doctor has said. Below are a few questions about how YOU use you cholesterol-lowering medicines.
Here are some ways in which people have said that they use their cholesterol-lowering medicines. Thinking about your cholesterol-lowering medicines *OVER THE PAST MONTH*, please circle a number for each statement.

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I forget to take my cholesterol-lowering medicines</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b. I alter the dose of my cholesterol-lowering medicines</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c. I stop taking my cholesterol-lowering medicines for a while</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d. I decide to miss out a dose</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>e. I take less than instructed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

*Thank you very much for taking the time to complete this questionnaire.*
Here are some ways in which people have said that they use their cholesterol-lowering medicines. Thinking about your cholesterol-lowering medicines OVER THE PAST MONTH, please circle a number for each statement.

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
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<tr>
<td>a. I forget to take my cholesterol-lowering medicines</td>
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<td>5</td>
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<tr>
<td>e. I take less than instructed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

'You are more likely to carry out your intentions to take your cholesterol lowering medication every day for the next four weeks, if you make a decision about when and where you will do so. Decide now, when and where you will take your medication over the next four weeks. You may find it useful to take a tablet just before or just after something else that you do on a regular basis, such as brushing your teeth.'

'Please write in the space below, when and where you will take your medication, every day for the next four weeks. E.g. In my bedroom at 7.30pm after my evening meal.'

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Thank you very much for taking the time to complete this questionnaire.
Appendix 7

Hospital Ethical Approval
Dear Ms Bergson

EC02/087 Investigation into peoples beliefs about their cholesterol lowering medication

Ms I Bergson, Dr A Wierzbicki, Dr M Crook, Dr V Senior PIS
Patient Consent form, Standard consent form, Questionnaire, Gpower - predicting necessary sample size, questionnaire refs and validation

Thank you for amendments to consent form received by the Research Ethics Committee at its meeting on 30 July 2002. This is satisfactory and I am happy for the study to commence. Approval extends to the Guy's site.

Please note the following conditions to the approval:

• The project number and the principal investigator must be clearly stated on the consent form (if applicable). If approval is given to named investigators only, these names must also be stated on the form.

• In the case of research on patients, a copy of the consent form (if applicable) must be placed in the patient’s medical records, together with a note of the date of commencement of his/her participation in the research. A label must appear on the outside cover of the records when the patient is participating in the research.

• Any amendments to the protocol must be notified to the committee for approval.

• Approval is for the length of time specified in your application. If you require an extension, a letter from the principal investigator to the Chairman, is required to extend the research.

• The committee should be notified of any serious adverse events (please apply for standard SAE report form), or if the study is terminated prematurely.

• The investigators must adhere to the published Guidelines of the Committee and provide the Chairman with annual progress reports and an end of study report. The research should start within 12 months of the date of approval.

This project carries a reference number, noted above, which must be quoted in any future correspondence.

The St Thomas’ Hospital LREC is compliant with the ICH GCP requirements.

Yours sincerely

Dr A Hopper
Co-Chairmen
Research Ethics Committee

Encl.
Appendix 8

University Ethical Approval
Dear Ms Bergson

**Investigation into people’s beliefs about their cholesterol lowering medication (ACE/2002/73/Psych) – FAST TRACK**

I am writing to inform you that the University Advisory Committee on Ethics has considered the above protocol under its ‘Fast Track’ procedure and has approved it on the understanding that the Ethical Guidelines for Teaching and Research are observed. For your information, and future reference, these Guidelines can be downloaded from the Committee’s website at http://www.surrey.ac.uk/Surrey/ACE/.

This letter of approval relates only to the study specified in your research protocol (ACE/2002/73/Psych) - Fast Track. The Committee should be notified of any changes to the proposal, any adverse reactions and if the study is terminated earlier than expected, with reasons.

Date of approval by the Advisory Committee on Ethics: **30 September 2002**
Date of expiry of approval by the Advisory Committee on Ethics: **29 September 2007**

Please inform me when the research has been completed.

Yours sincerely

Catherine Ashbee (Mrs)
Secretary, University Advisory Committee on Ethics

cc: Chairman, ACE
Dr V Senior, Supervisor, Dept of Psychology
Dr M Crook, Co-Investigator, Guys Hospital
Dr A Wierzbicki, Co-Investigator, Guys Hospital
Appendix 9

Patient Information Sheet
Research Information Sheet Investigating Patient's Beliefs About Cholesterol Lowering Medication.

You are being invited to take part in a research study. Before you decide, it is important for you to read the information provided on this sheet, so you fully understand the purpose of the research and what taking part will involve. Please ask us if there is anything that is not clear, or if you would like more information. Entering the study is completely voluntary, you are free to withdraw at any time and this will NOT affect you care you receive.

Purpose of this Study:
This research will look at individual's views of cholesterol lowering medication and how they take their medication. It is hoped this will help us identify ways of understanding what people think of their medicines and how we can help them to take their medicines as recommended. If used correctly, these medicines can help reduce the likelihood of heart attacks at an early age.

What does taking part involved?
After reading this information sheet and if you agree to take part in the research, you will be given a consent form to sign and a questionnaire, looking at your views about your medication.

You will be asked to complete this as fully as possible whilst in the clinic. If this is not possible, you can collect a Free-post envelope so you can complete the questionnaire at home and return it free of charge.

Approximately one month after returning this questionnaire, a second similar questionnaire may be sent out to you, for you to complete. Again a Free-post envelope will be provided for its return.
What are the benefits of taking part?
The study will not directly benefit you, but will be used to develop better services in the future. Your decision to take part will not be disclosed to your physician and will not affect the care you receive.

Will the information be Confidential?
YES: Each patient who agrees to take part will be given a study number. Study numbers and patient details will not be kept together. Consent forms will be detached from questionnaires upon return. Once all information has been collected, patient details will be destroyed and only study numbers will be used. This will keep all information confidential. No one will be referred to by name.

What Should I do Now?
♦ If you have any questions, please feel free to ask the person administering the questionnaires. If you have any further queries please telephone Ingrid Bergson (study co-ordinator) or Dr. Vicky Senior (supervisor) at the University of Surrey on 01483 259441.

♦ Please think about whether you would like to take part in this study. If you do not wish to take part, this decision will not affect your care.

♦ If you are satisfied with the information provided and would like to take part in the study, please sign the consent form attached to the questionnaire and then continue to fill in the questionnaire. (The consent form will be detached from the questionnaire upon completion).

♦ If you are unable to complete the questionnaire in the clinic, please ask for an envelope so you can complete it at home and send it back free of charge.

Thank you for taking the time to read this information. We very much hope that you are interested in this study and that you want to take part.
Appendix 10

Patient Consent Form
Consent Form:

Project: Investigating patient's beliefs about cholesterol lowering medication.

Full Name: ________________________________________________
Address: __________________________________________________

.................................................................................. Post Code: ........
Contact Telephone: .................................................................

I have read the information sheet and hereby consent to take part in the above investigation. Any questions I wished to ask have been answered to my satisfaction. I understand that this research is strictly confidential and no one will be referred to by name. I understand that I may withdraw from the study at any time, without having to give an explanation, and that this will not affect my care as a patient in any way. I give permission for the researchers to access sections of my medical records if needed.

Signed (Volunteers signature) ....................................................
Date ..............................................................................................

Signed (Doctor/Investigator) ......................................................
Date ..............................................................................................

Please sign BOTH copies of the consent form and hand ONE back/send one back with completed questionnaires. (This will be separated and kept apart from questionnaires). The other copy is for you to keep alongside the client information sheet.
Covering Letter for Follow-up Questionnaire
Dear .....................................

Thank you for taking the time to kindly complete the questionnaire that was given to you in the lipid clinic, regarding your cholesterol condition and associated medication. As mentioned initially, there is one more very short questionnaire which I need you to fill in and send back in the free-post envelope provided as soon as possible.

As stated previously, your responses are strictly confidential and your details will be separated from your responses as they are received.

Thank you very much for taking part in the research, full details of which will be made available when the research is complete.

Yours Sincerely,

Ingrid Bergson
Principal Investigator
Follow-up Adherence Questionnaire
Questionnaire time 2:

Many people find a way of using their cholesterol-lowering medicines which suits them. This may differ from the instructions on the label or from what their Doctor has said. Below are a few questions about how YOU use your cholesterol-lowering medicines.

Here are some ways in which people have said that they use their cholesterol-lowering medicines. Thinking about your cholesterol-lowering medicines OVER THE PAST MONTH, please circle a number for each statement.

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I forget to take my cholesterol-lowering medicines</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b. I alter the dose of my cholesterol-lowering medicines</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c. I stop taking my cholesterol-lowering medicines for a while</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d. I decide to miss out a dose</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>e. I take less than instructed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Thank you very much for taking the time to complete this questionnaire.
Information Sheet for all Patients After Data Collection.
You and Your Cholesterol-lowering Medicines

High cholesterol remains one of the major risk factors for Coronary Heart Disease, which is still the leading cause of death in the UK. Lowering your cholesterol can help to reduce your risk of having heart disease. Lowering cholesterol can be achieved by taking medicines prescribed by your doctor and eating a diet that is low in saturated fat. For many people with high cholesterol taking medicines is the best way of achieving a lower cholesterol level.

We realise that sometimes people find it difficult to take their medicines as their doctor recommends. This may be because of side effects of the medicine, having to take lots of different types of medicine, or simply forgetting. Unfortunately not taking your medicines as recommended means that they will not be as effective at lowering your risk of heart disease. Taking your cholesterol-lowering medicines as recommended by your doctor is very important in maximising the benefits of your treatment.

It is thought that you are more likely to take your medicines correctly if you make a decision about when and where you will do so. Some participants in this study were asked to do this. Making ‘action plans’ as they are called have been found to help people remember to take their medicines. It can be useful to take a tablet just before or just after something, such as brushing your teeth. An example of an action plan is as follows:

'I will take my tablet in my bedroom, at 7.30pm after my evening meal.'

You were not asked to make these plans during the study, but as they have been shown to help people take their medicines correctly, you may still wish to do so.

If you have any concerns about your cholesterol-lowering medicines, or find it difficult to take them as recommended, please do talk to your doctor about this.

Remember we are here to help you