ATTACHMENT STYLE AND CHRONIC PAIN SYNDROME: THE
IMPORTANCE OF PSYCHOLOGICAL AND SOCIAL VARIABLES IN THE
BIOPSYCHOSOCIAL MODEL OF CHRONIC PAIN

Suzanne Scott, B.A. (Psychology), M. Ed. Psych.

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Griffith University, Gold Coast, Australia.

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ABSTRACT

The current research examined the proposition that individuals who were securely attached had a fundamentally different reaction and experience of chronic pain to the experience of individuals with an insecure attachment style. A biopsychosocial model of chronic pain was created that included the variables of attachment style, pain, depression, anxiety, somatisation, quality of life, function, disability, neuroticism, age and gender. Three cross-sectional quantitative studies and one qualitative study were conducted. Participants were (a) patients from a multidisciplinary pain centre in a major public hospital, and (b) members of the general population with chronic pain who were recruited from both urban and rural settings, across various community support groups. The total sample was 470. Instruments for the quantitative studies included the Revised Adult Attachment Scale (Collins & Read, 1990), the McGill Pain Questionnaire (Melzack, 1975), the Pain Patient Profile (Tollinson & Langley, 1992), the Quality of Life Inventory (Frisch, 1994), the International Association for the Study of Pain Assessment Protocol (International Association for the Study of Pain, 1986), the Migraine Disability Scale (Stewart, Lipton, Kolodner, Liebermann, & Sawyer, 1999), and the short form of the Eysenck Neuroticism Scale (Eysenck, Eysenck, & Barret, 1985).

The clinical and non-clinical participants with a diagnosis of chronic pain syndrome were partitioned as securely or insecurely attached. In the clinical sample, the proportion of securely attached individuals was less than one quarter of the group, while in the non-clinical sample the proportion of individuals in the securely attached group was 50%. For Study 1, (200 individuals from the clinical sample), the groups were partitioned using the classification criteria of Collins and Read (1990). Securely attached participants = 27%, insecurely attached 73%. An analysis of effect of attachment style on overall pain showed
that the Securely Attached group reported less overall pain than the Insecurely Attached group.

For Study 2, (using the total clinical sample), the sample comprised 27.3% securely attached and 72.7% insecurely attached participants. The Securely Attached group reported less overall Pain, less Negative Affect and Somatisation than the Insecurely Attached group, and higher levels of Quality of Life. Somatisation provided a significant unique contribution of variance to predicting overall Pain, providing some support for the biopsychosocial model, and Negative Affect (Depression and Anxiety combined) made a significant unique contribution to Quality of Life, explaining 26% of the variance. Gender was unrelated to any variable.

For Study 3, the sample consisted of rural and urban participants, and the rural group was significantly older than the urban group. No other differences were found. The groups were combined to form the non-clinical group. The group was evenly divided (50%) between securely and insecurely attached groups. Gender was unrelated to any variable. For the non-clinical group, using the variables investigated in Study 2, there was no difference on overall pain scores, but negative affect and somatisation were higher and quality of life lower in the insecure group than in the secure group. No differences were found on Pain Intensity but Pain Pattern differed between the groups.

Three new variables were added to the model - Neuroticism, Function and Disability. Disability and Function were significantly different between the attachment style groups. Age was significantly related to lower pain scores, less loss of function, less disability and higher quality of life. Pain scores were most related to somatisation, with age and quality of life contributing significant variance. Neuroticism added further to this explanation. Negative Affect made the most contribution to the variance explained in quality of life, and neuroticism and function made no significant contribution. Neuroticism
and Attachment Style contributed significant amounts of variance to Function. To compare the Secure and Insecure Attachment groups in the Clinical and Non-clinical samples, a matched groups study, $N = 190$, was conducted. Clinical and non-clinical participants were matched for Age, Gender and Attachment Style. No differences were reported on overall pain between the attachment groups, but differences existed on negative affect, somatisation and quality of life. For sample type, the clinical group reported higher overall pain scores, less negative affect and less somatisation, but no differences were found on quality of life, compared to the non-clinical group.

Study 4 was a qualitative study that used structured interviews of 24 clinical and non-clinical participants matched for age, gender, attachment style and etiology. The securely attached group reported having extensive, positive social support, high community involvement and appropriate reliance on medical and allied health care and medications. The insecurely attached group reported more problems with physical pain and psychological distress, less social support, less function and more perceived disability. The insecurely attached group reported more use of medical, allied and alternative health resources. Older securely attached individuals reported the lowest overall pain scores and the highest quality of life. These results support the hypotheses that a secure attachment style contributes to more positive outcomes for individuals with chronic pain syndrome and were consistent with a model of chronic pain that includes biological, psychological and social variables.
STATEMENT OF ORIGINALITY

The work contained in this thesis has not been previously submitted for a degree or diploma at any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signed: ...........................................

Suzanne Scott

Dated: ...........................................
## TABLE OF CONTENTS

**ABSTRACT** .......................................................................................................................... i

**STATEMENT OF ORIGINALITY** ......................................................................................... iv

**TABLE OF CONTENTS** ......................................................................................................... v

**LIST OF TABLES** .................................................................................................................. x

**LIST OF FIGURES** ................................................................................................................ xi

**LIST OF APPENDICES** ........................................................................................................ xii

**ACKNOWLEDGEMENTS** ....................................................................................................... xiii

**CHAPTER 1. ATTACHMENT STYLE AND CHRONIC PAIN SYNDROME ....... 1**

1.1 Acute and chronic pain ........................................................................................................ 3

1.2 Models of chronic pain ....................................................................................................... 6

1.3 Chronic pain and personality ............................................................................................. 10

1.4 Developmental theories .................................................................................................... 11

1.5 Attachment theory: The origins of attachment theory .................................................... 13

1.6 Attachment theory: Attachment style and its assessment ............................................. 16

1.7 Attachment style up to ten years of age ........................................................................ 19

1.8 Adolescents, attachment style and chronic pain ............................................................ 20

1.9 Attachment style assessment of adults .......................................................................... 21

1.10 Developmental issues in chronic pain syndrome ......................................................... 24

1.11 How does attachment behaviour influence chronic pain? ....................................... 30

   1.11.1 Attachment style and chronic pain ......................................................................... 34

   1.11.2 Adult Attachment style and medical or psychological disorders ....................... 36

   1.11.3 The development of attachment style ................................................................ 38

   1.11.4 Childhood attachment style and family chaos .................................................... 39

   1.11.5 Chronic pain, function, gender, age, and quality of life .................................... 39

   1.11.6 Limitations of Attachment Theory .................................................................... 42

1.12 Conclusion ....................................................................................................................... 45

**CHAPTER 2.0 - THE VARIABLES OF THE BIOPSYCHOSOCIAL MODEL OF CHRONIC PAIN......................................................................................... 46**

2.1 Depression ....................................................................................................................... 47

2.2 Anxiety ............................................................................................................................. 50

2.3 Somatisation .................................................................................................................... 53

2.4 Quality of life .................................................................................................................. 55

2.5 Function .......................................................................................................................... 57
2.6 Disability ................................................................................................................. 59
2.7 Neuroticism ............................................................................................................. 60
2.8 Social and Demographic variables: Age and Gender.............................................. 62
2.9 Social and Demographic variables: Social Support ................................................ 65
2.10 Use of Medical and Allied Health Care ................................................................. 67
2.11 Overview of the research program .......................................................................... 68

CHAPTER 3.0 - CLASSIFYING ATTACHMENT STYLE AND INVESTIGATING ITS RELATIONSHIP TO PAIN IN THE CLINICAL GROUP ........................................................................... 70
3.1 Attachment style and the experience of pain........................................................... 70
3.1.1 Pain and suffering.........................................................................................71
3.1.2 Pain and attachment style.............................................................................72
3.1.3 Objectives of Study 1 ....................................................................................73
3.1.4 Research Hypotheses ....................................................................................73
3.2 Method..................................................................................................................... 74
3.2.1 Participants...................................................................................................74
3.2.2 Instruments ...................................................................................................75
3.2.3 The Revised Adult Attachment Scale (Collins & Read, 1990)......................75
3.2.4 The McGill Pain Questionnaire (Melzack, 1975).........................................78
3.2.5 Procedure .....................................................................................................80
3.3 Results ..................................................................................................................... 81
3.3.1 Organisation and distribution of the variables ............................................81
3.3.2 Internal consistency of these measures.........................................................81
3.3.3 The Revised Adult Attachment Scale: Close, Depend and Anxious..............82
3.3.4 Attachment style, pain and suffering ............................................................83
3.4 Attachment style and pain pattern ........................................................................... 83
3.4.1 Attachment style and pain intensity ..............................................................84
3.5 Discussion................................................................................................................ 85
3.5.1 Attachment groups, pain and suffering.........................................................88
3.5.2 Attachment and pain intensity .....................................................................89
3.5.3 Attachment and pain pattern .......................................................................89
3.5.4 Attachment style and pain............................................................................90

CHAPTER 4.0 - TESTING PAIN, NEGATIVE AFFECT, SOMATISATION AND QUALITY OF LIFE IN THE CLINICAL POPULATION........................................................................................................... 91
4.1 Pain and suffering.................................................................................................... 91
4.2 Objectives of Study 2 .............................................................................................. 92
4.3 Research hypotheses............................................................................................... 92
4.4 Method..................................................................................................................... 93
4.4.1 Participants ................................................................................................... 93
4.4.2 Measures ....................................................................................................... 94
4.4.3 Procedure ..................................................................................................... 97
4.5 Results ................................................................................................................ 97
4.5.1 Organisation and Distributions of the Variables ......................................... 97
4.5.2 Internal consistency of psychological measures ........................................... 97
4.5.3 Evaluation of the role of attachment style .................................................. 98
4.5.4 Relationships among the measures ............................................................... 99
4.5.5 Attachment Style Group and Gender on McGill Pain Total, Negative Affect, Somatisation and Quality of Life ..................................................... 100
4.5.6 Predicting Pain........................................................................................... 102
4.5.7 Predicting Quality of life ............................................................................ 103
4.6 Discussion .............................................................................................................. 104
4.6.1 Attachment style .......................................................................................... 104
4.6.2 Gender ........................................................................................................ 107
4.6.3 Age .............................................................................................................. 108
4.7 Summary ................................................................................................................ 108

CHAPTER 5.0 - TESTING THE BIOPSYCHOSOCIAL MODEL IN A NON-CLINICAL POPULATION ............................................................. 110
5.1 The relationship between function and pain ....................................................... 111
5.2 Function and disability .................................................................................... 113
5.3 Neuroticism ...................................................................................................... 113
5.4 Objectives of Study 3 ....................................................................................... 114
5.5 Research Hypotheses ....................................................................................... 114
5.6 Method ................................................................................................................ 117
5.6.1 Participants................................................................................................. 117
5.6.2 Measures ..................................................................................................... 119
5.6.3 Eysenck Neuroticism Scale ........................................................................ 119
5.6.4 IASP Assessment of Function .................................................................. 119
5.6.5 Assessment of Disability .......................................................................... 120
5.6.6 Procedure ................................................................................................... 121
5.7 Results ................................................................................................................ 121
5.7.1 Organisation and distributions of the variables ......................................... 121
5.7.2 Disability .................................................................................................... 121
5.7.3 Internal consistency of the measures ......................................................... 122
5.7.4 Differences in the non-clinical sample obtained from different demographic locations ................................................................. 122
5.7.5 Attachment Style categories for the non-clinical group ......................... 123
5.7.6 Comparison of Secure/Insecure Attachment across the clinical and non-clinical groups ................................................................. 124
5.7.7 Relationships between the measures .........................................................126
5.7.8 Impact of Attachment style and Gender on McGill Pain Total, Negative Affect, Somatisation, Quality of life, Function and Neuroticism.................................................................129
5.7.9 Attachment Style and Pain Intensity ..........................................................131
5.7.10 Attachment Style and Pain Pattern .........................................................132
5.7.11 Attachment Style and Disability ..............................................................133
5.7.12 Predicting Pain, Quality of Life and Function ..........................................135
5.7.13 Predicting Pain .......................................................................................135
5.7.14 Predicting Quality of Life .........................................................................137
5.7.15 Predicting Function ................................................................................139
5.7.16 The comparison of the clinical and non-clinical samples: ....................140
5.7.17 MANOVA results for Attachment Style and Group ................................141
5.8 Discussion of Study 3 ..................................................................................143
5.8.1 Results from the study of the non-clinical population ..............................143
5.8.2 Proportions of attachment style ..............................................................143
5.8.3 The impact of attachment style on psychological variables and function .................................................................................................................................144
5.8.4 The biopsychosocial model........................................................................146
5.8.5 How did the clinical and non-clinical groups compare? .........................149
5.8.6 Attachment and Neuroticism....................................................................150
5.8.7 Is it beneficial overall to be securely attached? .......................................150

CHAPTER 6.0 - A QUALITATIVE INVESTIGATION OF ATTACHMENT STYLE AND CHRONIC PAIN..............................................152
6.1 The relationship between back pain, attachment style and chronic pain ....152
6.1.1 Back pain .................................................................................................153
6.1.2 Objectives of Study 4 ...............................................................................155
6.2 Method .........................................................................................................155
6.2.1 Participants ...............................................................................................155
6.2.2 Measures ................................................................................................156
6.2.3 The use of qualitative research ................................................................158
6.3 Results ..........................................................................................................161
6.4 Case History 1. A securely attached individual from the clinical sample ....162
6.4.1 Review of Case History 1 .........................................................................164
6.4.2 Case History 2. An Insecurely Attached individual from the Clinical sample ..........................................................165
6.4.3 Review of Case History 2 .........................................................................167
6.4.4 Case History 3: A Securely Attached individual from the Non-Clinical sample ................................................................................................................................168
6.4.5 Case History 4: An Insecurely Attached individual from the Non-Clinical sample .................................................................................................................................171
6.5 Aggregated case histories ...................................................................................... 174
  6.5.1 Comparison of clinical and non-clinical participants ....................................... 174
  6.5.2 Secure Attachment versus Insecure Attachment .............................................. 175
  6.5.3 Negative Affect, Somatisation and Function ................................................... 175
  6.5.4 Education and employment history, attachment style and gender ................. 176
  6.5.5 Financial considerations .............................................................................. 177
  6.5.6 Vulnerability, resilience and chronic pain status .............................................. 177
  6.5.7 Vulnerability: The securely attached clinical group compared to the
      securely attached non-clinical group .................................................................. 180
  6.5.8 Vulnerability: The insecurely attached clinical group compared to the
      insecurely attached non-clinical group ................................................................ 180
  6.5.9 Resilience: Positive themes related to the resilience of participants as
      adults .................................................................................................................. 183
  6.5.10 Resilience: The securely attached clinical group compared to the
       securely attached non-clinical group .................................................................. 184
  6.5.11 Resilience: The insecurely attached clinical group compared to the
       insecurely attached non-clinical group ................................................................ 184
  6.5.12 Chronic pain status: Assessment of general biological and cognitive
       function .............................................................................................................. 188
  6.5.13 Chronic pain status: The securely attached clinical group compared to
       the securely attached non-clinical group ......................................................... 188
  6.5.14 Chronic pain status: The insecurely attached clinical group compared
       to the non-clinical group .................................................................................. 189
  6.5.15 Comparing means and standard deviations for the clinical and non-clinical
       groups and scores for individuals in the qualitative study .............................. 190

6.6 Discussion .............................................................................................................. 193

CHAPTER 7.0 - DISCUSSING THE BIOPSYCHOSOCIAL MODEL ................. 196

7.1 Partitioning attachment style groups ................................................................. 203
7.2 Results of the quantitative and qualitative studies .............................................. 205
7.3 Neuroticism ......................................................................................................... 206
7.4 Depression, anxiety, somatisation and quality of life ........................................ 207
7.5 Factors of vulnerability and resilience ............................................................... 208
7.6 Why is insecure attachment a disadvantage when adults have chronic pain? ...... 209
7.7 Limitations of the research .................................................................................. 211
7.8 Changing Pain Education Programs and Chronic Pain Assessments ............... 215
7.9 Conclusions: chronic pain, bereavement and loss ............................................ 215

REFERENCES ............................................................................................................ 216
LIST OF TABLES

Table 3.1  Means, standard deviations and 95% confidence intervals for the sub-scales of attachment style: Close, Depend, Anxious and McGill Pain Total (N = 200), for Securely and Insecurely Attached and Total sample. ................................................................. 83

Table 3.2  Contingency Table for Attachment Style and Pain Pattern Category. ........ 84

Table 3.3  Contingency Table for Attachment Style and Pain Intensity Category ..... 85

Table 3.4  Comparison of Means for Females and Males in this study and Collins and Read (1990). In this study N = 200 and in Collins and Read N = 118 .............................................................................................. 87

Table 4.1  Means, Standard Deviations and 95% Confidence Intervals for Secure Attachment Style x Gender, Females = 144 (Secure = 29), Males = 119 (Secure = 34) (Total score for each scale = maximum 30). ........... 98

Table 4.2  Means, Standard Deviations and 95% Confidence Intervals for Insecure Attachment Style x Gender n = 200 (Females = 115, Males = 85) ........................................................................................................... 99

Table 4.3  Intercorrelations for Study 2 (clinical sample). .................................................. 99

Table 4.4  Means, Standard Deviations and 95% Confidence Intervals for Securely Attached (n = 99) and Insecurely Attached (n = 263) Total groups .......................................................................................................................... 101

Table 4.5  Means, Standard Deviations, 95% Confidence Intervals for Securely Attached group x Gender, Total N = 63 (Females = 29, Males = 34) ..... 102

Table 4.6  Means, Standard Deviations and 95% Confidence Intervals for Insecurely Attached group x Gender N = 200 (Females = 115, Males = 85) .......................................................................................................... 102

Table 4.7  Means, Standard Deviations and 95% Confidence Intervals for the Total group x Gender (Females = 144, Males = 119) ................................................. 102

Table 4.8  Summary of Standard regression Analysis for Variables Predicting McGill Pain Total N = 362 ......................................................................................................................... 103

Table 4.9  Summary of Standard Regression Analysis for Variables predicting Quality of Life. (N = 283). ................................................................................... 104

Table 5.1  Means, standard deviations and 95% confidence intervals for the raw scores of rural and urban participants ......................................................... 123

Table 5.2  Summary table for the dimensions of attachment style, Close, Depend and Anxious for Insecurely and Securely Attached: Means, Standard Deviations and 95% Confidence Intervals (n = 108) ........................................... 124

Table 5.3  Means, standard deviations and 95% confidence intervals for attachment style by rural (n = 43) and urban group (n = 65) .............................. 125

Table 5.4  Intercorrelations for the variables .................................................................. 129
LIST OF APPENDICES

Appendix A  Letter of information given to participants
Appendix B  Letter of consent signed by researcher and participant
Appendix C  Demographic information
Appendix D  Revised Adult Attachment Scale (Collins & Read, 1990)
Appendix E  McGill Pain Inventory (Melzack, 1975)
Appendix F  International Association for the Study of Pain: IASP Assessment of Function (1986)
Appendix G  Structured Interview for Study 3.
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CHAPTER 1.
ATTACHMENT STYLE AND CHRONIC PAIN SYNDROME

Neurological and physiological findings about causes of physical and mental illnesses tend to create the expectation that everything can be reduced to a single cause that proceeds to a fixed outcome (Loeser, 2000). The idea that we all construct our own destinies via our day-to-day experiences has been sidelined by science-based, evidence-based interpretations (Loeser, 2000). Rather than using a conventional bio-medical model of current pain, the current study proposes an elaboration of the bio-medical model that includes the impact of developmental experiences on individuals and the manner by which the positivity or negativity of that developmental history affects the reaction of the individual as an adult when faced with chronic pain.

A model of chronic pain that separates the functions of body and mind is unacceptable since neither can function independently of the other. Humans construct their own reality (Horney, 1970). Our own bodies and minds construct our emotional and psychological states according to our particular perceptions of the environment into which we are born, raised and grow into adulthood. Humans seek physical comfort and a supportive milieu, and in order to reach that state, “cures” and “fixes” of many kinds are sought (Ingram, 1991). A model of chronic pain must also consider the role of emotions and pain. Emotions are states of the body and brain, and emotional feelings are the brain’s way of monitoring bodily states (Damasio, 2003). Emotional feelings are portraits of these states. Humans can also become emotional about past, present and future events that are external to our bodies and may well be beyond the usual experience.

The current research evaluates the proposal that the experience known as chronic pain syndrome can only be studied by creating a biopsychosocial model of pain, which
encompasses the physical, emotional, cognitive, social and developmental aspects of the pain experience.

Attachment theory has been used as the basis of this investigation. Attachment theory is very broad and pervasive in its scope. The theory has two principal components: (a) a normative component which attempts to explain modal, species typical patterns of behaviour and stages of development, and (b) an individual difference component which attempts to explain stable, systematic deviations from modal behaviour patterns and stages (Ainsworth & Bowlby, 1991)

Original attachment experiences create radically different unconscious models of how to live in the world and interact with other individuals. The securely attached individual views life in general as an exciting concept to be explored, while the insecure individual views life as a challenge to be survived. Therefore, each group creates an internalised model of life, each with different views on the value of self and of the value of others in their environment.

Humans communicate to each other their values and attitudes. They “learn” the family in which they grow up. In the family situation they learn how and when things are funny or sad, what is beautiful or ugly, or acceptable and appropriate, or unacceptable and destructive. Humans comprehend the world via the learning gained from multiple interactions within their social environment, whether they feel supported and secure, or anxious and insecure. Insecure attachment results from inappropriate parenting or ambiguous experiences with the carer or carers, and each negative experience or abuse (whatever its source) compounds the amount of anxiety about survival felt by the insecure individual. The securely attached individual experiences life from a protected, secure base where anxiety seldom intrudes and a sense of curiosity that leads to various exploratory behaviours is the norm. When experiencing chronic pain, the secure individual reacts to the
problem with characteristic problem-solving approaches, while the insecure individual reacts by becoming increasingly anxious and distressed (Engel, 1959). The behaviours in each case are congruent with their secure or insecure, internalised, unconscious models of attachment.

A review of the literature on chronic pain shows that various researchers consider that childhood traumas, bereavement, abuse and neglect predispose an individual to chronic pain as an adult (Adler, Zlot, Hurney & Minder, 1989; Engel, 1959; Reis, Collins, & Berscheid, 2000; Roy, 1992; Schoffermann, Anderson, Hines, Smith & White, 1993; Violon, 1978). The development of the child can be compromised by these experiences such that the view of the self and of the other is negative and accompanied by high levels of anxiety. The behaviours that relate to this view are episodic and most obvious when the individual experiences pain, fatigue or fear (Bowlby, 1969). It has been suggested that it is not the amount of trauma, nor the length of time it went on, but rather the amount of damage to the personality, which then contributes to a failure to develop essential life skills (Griffin & Tyrrell, 2003). Just as other biological systems of the body demonstrate their level of robustness when stressed or damaged, an individual’s life schema, or their internalised model of life, may be unrevealed until later life events precipitate the behaviour into the observable world.

1.1 Acute and chronic pain

Pain is a process that involves both mind and body. It has sensory, affective and cognitive components. Pain is not a single event but a series of events. In response to an ascending nociceptive signal (i.e., from an injury to the skin) from the site of the trauma the brain registers pain at a level consistent with the strength of the incoming signal. A strong signal evokes an immediate and prolonged effect while a low or inconsistent signal will
produce minimal or momentary effects. There also exists a sophisticated descending physiological system of pain modulation of the amount of pain felt from a given injury. Thus, the process of pain exists not in mind or in body, but between mind and body (Sullivan, 2001).

Chronic or persistent pain is governed by complex neurophysiological activities that result from changes in the central nervous system. To describe this state individuals use a single word, pain. This word is used universally by the victim to describe a state of physical and emotional discomfort arising from real or anticipated injury occurring under the influence of internal or external events, lesions of the nervous system, or psychological turmoil.

Nociceptive pain is presumed to arise from a mechanical failure of the skeletal and/or articular components of the skeleton, or from pathological entities that compromise neural elements, such as the pressure from a tumour. Neuropathic pain results from changes to the nerves of the body and thus pain can arise without any known tissue damage or any likely pathological cause. Thus, nerve damage is capable of producing altered states in which pain occurs in the absence of noxious stimuli. Nociceptive pain cannot occur without nerve involvement, but neuropathic pain can arise without any mechanical problems (La Rocca, 1992).

Chronic pain is described as pain that lasts beyond the expected time of healing. Acute pain is usually time-limited with a foreseeable ending, while chronic pain can, and often does, last for the remaining lifetime. Chronic pain is a disorder that is possibly better described as “persistent pain,” pain that begins as an acute phase and passes into a transitional phase where it does indeed “persist” (Cousins, 2002). From this transitional phase it is possible that long-term persisting pain becomes established.
The International Association for the Study of Pain (IASP, 1986) defines pain as a complex, personal, subjective and unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. It was also noted by the IASP that each individual survives or endures pain and chronic pain according to the patterns of behaviour or thought that are the result of early learning.

It was once considered that chronic pain syndrome was not an entity diagnosable in itself, but that it accompanied various other medical diagnoses. It is now considered to be etiologically separate (Cousins, 2002), and to consist of a collection of symptoms and perceptions about pain accompanied by various symptoms of disability. The pain syndrome itself is labeled chronic when the pain has lasted well after the estimated time of normal healing of the original physical injury or trauma. This is usually about 3-6 months after the initial onset of acute pain (Bonica, 1990).

The symptoms of chronic pain syndrome include pain as a continuous or constantly recurring event in the daily life of its victims, and a perception that the pain itself has a high impact on the normal activities, emotions and functions of daily life in all of its forms. The IASP assigns patients to predetermined diagnostic groups related to the match of symptom characteristics rated along five dimensions: body region, system involved, temporal characteristics of the pain and patterns of occurrence, intensity and duration of symptoms, and etiology. A general overview of the literature suggests that the psychological symptoms that have been related at various times to the cognitive and behavioural manifestations of the syndrome are hypochondriasis, hysteria, depression, anxiety, neuroticism, catastrophising, manipulative behaviours, obsessionality, hostility, paranoia and psychoticism (Turk, 1990).

Pain is traditionally valued only when it points to disease activity. Illnesses are categorized by the character of the pain produced (Sullivan, 2001). Illness behaviours - or
suffering and distress, are believed to be characteristic of psychological pain. Pain may be thought of as an entity that can be “cured” by medical means or as a separate entity that represents a loss or an existential crisis. The pain from a biological injury, such as a broken leg, that creates an emotion, such as distress, is not necessarily the same as pain that results from a biological stressor, such as cancer.

It is clear that the body is not just a simple conduit for pain messages either to or from the brain. Research has repeatedly shown that many psychological and social factors have an impact on pain levels (Loeser, 2000). The existential meaning of the pain to the victim moderates or intensifies the perception of pain severity. Unemployment, loneliness, age, gender, depression and anxiety are but a few of the variables that may influence pain behaviours and reported perceptions of pain intensity (Sullivan, 2001).

1.2 Models of chronic pain.

Pain medicine is concerned with all aspects of the human experience of pain. Practitioners exploit the diagnostic value of pain as a symptom of underlying pathologies. Once this is achieved, management of the residual pain and physiological, psychological and social consequences follows. Research has attempted to establish to what degree the underlying pathology responsible for chronic non-malignant pain has any bearing on the treatment or outcomes (Wilson, 1996). Wilson’s suggestion is that, instead of relying on the symptoms of a medical pathology, pain syndromes traditionally categorized as acute, chronic and cancer pain, be extended into diagnostic and treatment-focused dimensions using the neurophysiological mechanisms from the nociceptive (i.e., the response to pain) to the neuropathic (i.e., the actual damage to the nerves), the physiological changes that occur in response to the pain, and the psychological, personal and social response.
Multidimensional rather than single, biophysical approaches to the identification of subgroups of people with chronic pain have been more successful in predicting the therapeutic approach most likely to produce a satisfactory outcome (Wilson, 1990). As well as the traditional philosophical, physiological and biomedical models of pain there are now psychodynamic, behavioural, cognitive-behavioural, bio-behavioural, interpersonal and biopsychosocial models.

Psychodynamic theories utilize Drive theory (Engel, 1959). The example is given of an infant who experiences the pain of hunger, cries, and is comforted by the attentions of a warm and loving parent. The pain becomes a symbolic representation of internal conflict and/or a means of coping with this conflict. Anna Freud, in her treatise on infants in 1944 (cited in Freud, 1966), suggested a secondary Drive Theory, rather than a primary drive such as hunger, saying that the infant is not attached to the image of the object, but to the blissful experience of satisfaction and relief. Nonetheless, she did make the comment that attachment to the carer is an important instinctual need. The influence of unfulfilled dependency needs (such as hunger) is also cited by Van Houdenhove (1986). The personality that develops as a result of unempathetic parenting and a chaotic family history cannot cope when physical injuries occur. When trauma interrupts their lives, these individuals, who premorbidly have developed dysfunctional relationship styles, become dependent and demanding.

Behavioural theories focus on contextual issues such as reinforcement and learning. Fordyce (1986) for example, characterizes pain as a complex set of events composed of peripheral stimulation, cognitive and perceptual processes, neurochemical and neurophysiological changes. These factors result in a set of behaviours that signal to others and to the self, that pain is present. Behavioural assessment leads to the identification and
the alteration of these behaviours and the reinforcement of wellness behaviour (Fordyce, 1986).

Cognitive-behavioural theories assess the current state of the individual’s cognitive processes. In contrast to the behavioural model, in which the individual is portrayed as a passive recipient of environmental events, the cognitive approach promotes the individual as an active information processor whose response is determined by active appraisal of the situation and of current resources (Lazarus, 1991; Mikail, Henderson, & Tasca, 1994). An individual’s awareness of pain and their response to pain has been the central focus of cognitive-behavioural interventions, with change in perceived pain intensity or quality as a desired outcome (Phillips, 1951; Phillips & Rachman, 1996).

Biobehavioural models emphasise the contribution of biological and behavioural factors to the pain experience. These models postulate that pain is a complex experience influenced by (a) biological factors: neural activity, endocrine responses and immune function, and also by (b) psychosocial factors: emotions, distress, family and work environment and cultural background, the meaning of the pain to the individual and the appraisal of its controllability (Keefe, Jacobs, & Underwood-Gordon, 1997).

These one or two-factor models of behaviour and cognition considered the individual as one member of a psychologically homogenous group. Little attempt was made to classify the sub-groups of individuals by any means other than by medical diagnoses. In order to accommodate the heterogeneity of individuals who have chronic pain, two multifactorial models have been proposed.

The Interpersonal model of chronic pain (Mikail et al., 1994) proposes that individuals are guided by both interpersonal and intrapersonal factors, and influenced by environmental factors. This model acknowledges that the individual interacts with other individuals within a social and physical environment and that their response to pain will be
in accord with three major areas of functioning as (1) physical trauma and changes to biological functioning, (2) beliefs about illness behaviours, and (3) external influences such as family and culturally defined roles (Mikail, et al. 1994).

The second multifactorial model proposes that biological, psychological and social dimensions contribute to the experience of chronic pain - (demographics, etiology, psychology and the social and physical environment). This biopsychosocial model (Loeser, 2000) proposes that the age and gender of the individual, the region of the body and the bodily system involved in the pain, the psychological profile of the patient, their perceptions and feelings about the pain, plus the environment in which the patient exists, all contribute to the concept of pain and suffering. More importantly, this model proposes that each individual operates within a set of beliefs and expectations about life in general that affects the manner in which they respond to pain and suffering. This self-schema of how an individual values the self and others in their environments is regarded as the primary motivator for all learning and all behaviours. The experience of chronic pain is only one of many experiences in their lives to be affected by this self-schema (Bowlby, 1969).

Each of these models of chronic pain included a number of factors that could be influential when an individual has pain. However, only the biopsychosocial model proposed that the manner in which pain is tolerated is primarily allied to an internalized model of self, representing the beliefs, fears and expectations of the individual, and a guide to all action (Loeser, 2000; Turk, 1990). The research by Turk (1990) proposed that individuals who have chronic pain have been treated as an homogenous group, to a wide variety of treatments designed to reduce their pain and suffering, but not designed to accommodate individual needs. His research produced three clusters of patients that he classified as (a) adaptive copers (positive, resourceful personalities), (b) dysfunctional (disorganized personalities), and (c) relationship stressed (socially ambiguous
personalities). Turk (1990) suggested that three different treatment pathways could be expected to benefit each of these groups of individuals because they all shared particular, stable, personality traits that strongly influenced their views about the experience of chronic pain. These recommendations about homogenous clusters of patients are difficult to implement given the constraints to funding and staffing of many pain clinics.

The biopsychosocial model of chronic pain was adopted for this research using the theory of attachment style to represent individuals who have chronic pain and have a positive view of self and others (Secure attachment) versus those who have chronic pain and a negative or ambiguous view of self and others (Insecure attachment). That is, a stable personality style based on an internalized model of behaviour.

1.3 Chronic pain and personality

The attitude of the individual to the experience of chronic pain may be strongly influenced by personality. Adler, Zlot, Hurney and Minder. (1989), Engel (1959), and Violon (1990) have all suggested that a “pain-prone” personality exists. These individuals seem destined from birth to experience and even attract problems of all kinds because of their personality traits. These researchers suggested that emotional disturbances that have their origins in personality factors contribute to pain in two ways. It may be that the individual is predisposed to interpreting emotions as pain because of premorbid emotional conflict or it could also be that the experience of chronic pain, the suffering and distress, creates or changes personality variables.

The current research considered the view that the quality of care of a child influences his or her learning about the self and the other, and created an internalized model of life, a “life-style” (Adler, 1929), or an “attachment style” (Bowlby, 1944) that
predisposed the child to resilience or vulnerability when the individual was required to face challenges in life.

### 1.4 Developmental theories

The manner in which human infants develop from helplessness to adulthood and construct a model for self and other has been the subject of many eminent researchers (Abraham, 1924; Adler et al., 1989; Bowlby, 1982; Freud, 1966; Klein, 1997; Lacan [as cited in Hill, 1997]; Oppenheim, 1910; Winnicott, 1965). These theorists each described the early life of an infant as a function of various drives or needs, the fulfilment of which were dependent upon the quality of the care given to the infant by its various carers. The personality and the competency of the carer in providing a secure base for the child was said to determine how he or she created an internalised model for living that was stable over the lifetime. Adler (1929) used the notion of life-style to describe an individual’s essential character structure as established in early childhood. More specifically, he deployed it to account for personal behaviour and emotional reactions throughout the life cycle. He argued that the core “style of life” was founded in the first four or five years of life, and that a fragment of memory preserves the motives of a lifestyle for the individual (Adler, 1929).

For a short time after birth the vulnerable and fragile human infant is cocooned within a caring relationship with its mother. Other carers come and go, but the bond with the mother is thought to be the most enduring of all and the most deterministic of all relationships (Crittenden, 1985). The maintenance of affectionate bonds is essential to the survival of the human species and a compelling individual need. This primary relationship lays the foundations for psychological health: a sense of security, of self-efficacy, of being loved and having the capacity to love, of being a person in the world like others and yet
with one’s own unique biographical trajectory, of being resilient in the face of the failures, losses and disappointments that are the inevitable consequence of living (Holmes, 1993).

As the infant grows in strength and awareness, the carer or carers withdraw their total engrossment in providing care and encourage the child to strive to elicit attention. The child learns to reciprocate by gesture and sound and to respond to verbal and non-verbal cues so that it may gain attention and attain its goals (Lacan, as cited in Hill, 1997). For Lacan, the work of the child is to separate from the mother by intolerance of the frustrated needs, a desire to learn the “language” of the mother and move towards autonomy and appropriate detachment.

If the carer or carers are responsive to the infant and attuned to its needs, the child will be secure in its attachment to them. Inconsistent, rejecting or inept parenting creates insecure attachment. A lack of empathetic, consistent care results in an early depression that may never be renegotiated (Bowlby, 1953). The internalised model of relationship is one of unremitting despair about unmet needs. Because there is no positive sense of self, others are viewed with anxiety and the importance of positive social reciprocity is never established (Holmes, 1993). The attachment behaviours that are related to the style of attachment are predominantly episodic in appearance. It is theorised that these behaviours are most observable at times when the individual is fatigued, ill or frightened (Bowlby, 1958).

The carer or carers are the ones who create meaning for the infant in a new and confusing world. This primary learning is imprinted and endures as an internalised model (Bowlby, 1958). The original sensory stimulus-response oriented world of the self-involved child develops into a complicated model of self and other awareness. An interpersonal model of chronic pain emphasizes the importance of developmental influences. Mikail, Henderson, and Tasca (1994) have suggested that both interpersonal
and intrapersonal factors contribute to the experience of chronic pain. Attachment theory has the potential to provide new insights into this primary biological function, the purpose of which is protection of the individual throughout the life cycle (Ainsworth & Bowlby, 1991).

1.5 Attachment theory: The origins of attachment theory

The first research paper to present these issues of childhood attachment was written by John Bowlby (1958) and was titled “The nature of the child’s tie to his mother.” A previous paper, (1944), titled “Forty-four juvenile thieves,” gave case studies and details of his early work at the Tavistock clinic but it was not at that stage a coherent theory of attachment per se. These papers and all of his following publications dealt with the influence of early childhood experiences and the way in which they shape the developmental trajectory of the emerging adult. Bowlby was perhaps the most influential of the post-Freudian theorists who suggested that adolescent and adult behaviour was influenced and even severely distorted by the experiences as a child within the family during their years of childhood and adolescence (Bowlby, 1944, 1958, 1969, 1973, 1977, 1980, 1982, 1988). He suggested that those experiences were influential not only within these developmental years, but that they also influence the emotional and interpersonal style of the individuals in their adult years. According to his theory, attachment is characterized by deep, long-term emotional preference for a specific individual or a few specific individuals, most notably those who are perceived to be stronger and wiser. These affectional bonds originate during social interaction with the principal carer or carers during the first nine months of life.

Attachment behaviour is organized, learned and reinforced or extinguished by this social interaction. Bowlby argued that the security of the child appears to depend on the
repeated attentions of the attachment figure. Furthermore, the relationship of children to their parents is based on an asymmetry of need and response to need. If children are threatened, they appeal to a figure that they see as a guarantor of security. This behaviour has been observed to persist even in the face of negative feedback such as is received by the children of inadequate or abusive parents. Exploration behaviour in particular is helped or hindered by feedback from the carer or carers (Weiss, 1991).

The evolutionary nature of separation and reunion behaviour, as the child or its carers venture out into the world, has its origins in observations of animal behaviour. If the social bonds of dyads or of family groups are strong, immature individuals are best protected, and their survival, developmental and reproductive opportunities are maximized. When danger threatens, retreat to a secure base increases the safety of the individual and reduces anxiety. Those individuals who are neglected or do not bond to their carers are less likely to survive. Attachment behaviour in animals ensures the protection and nurturance of the young animal, while fostering its independence and resourcefulness at an appropriate age or stage of its life. This behaviour is a survival mechanism interactively aroused and maintained by both carer and cared-for, so that in a time of need the immature being is adequately nurtured and also educated towards self protection and self awareness.

For human infants, who cannot move about on their own, the protection of an adult is essential. Thus, human infants are born with a biologically-based desire for proximity with adults. When a threat to the integrity or safety of the individual is perceived, attachment behaviour is activated (Bowlby, 1958). Attachment behaviour facilitates the growth of a mentally healthy individual whose chances of survival and development to maturity are maximized (Bowlby). Attachment behaviour is the survival training of childhood, and attachment style refers to the manner in which an individual relates to significant others.
Children learn not only from their original relationship with their primary carer, but also from all subsequent relationships as they develop dynamically and continuously towards adulthood. Freud considered all childhood experiences as having a deterministic influence on later life. He considered that all adults unconsciously interpret situations through a lens “left over” from childhood (as cited in Hancel, 2000, p. 15). In research conducted by Bowlby (1944), it was hypothesized that the development of personality could be explained by examining the learning of individuals in their original relationship with their primary carer or carers. Bowlby suggested that children create an internalised model or schema for rules of behaviour within personal relationships. This internalized model becomes the reference base for all future relationship behaviours. It became the theme of many research projects of Bowlby’s that an attachment style develops in infancy that is organized, learned and reinforced or extinguished by the child’s interaction with its primary carers.

The content of attachment relationships is concerned with emotional regulation or “felt” security. While individuals seek pleasant social interactions when in good spirits, when under stress they seek a reliable and secure relationship. Attachment is not just another form of social bonding. Attachment behaviour serves to maintain proximity to the attachment figure. The experience gained within that relationship creates the internalised model upon which all future relationships will be judged. Warm and responsive parenting is expected to give rise to positive models of both the self and other, resulting in secure and fulfilling adult relationships (Bartholomew & Horowitz, 1991). Interactions experienced within subsequent relationships, and through life events, are thought to provide opportunities for the developing adult to confirm or change the internalized working model.
1.6 Attachment theory: Attachment style and its assessment

In 1973, Bowlby identified two key concepts of the primary attachment relationship: (a) whether or not the attachment figure is judged to be the sort of person who in general responds to calls for support and protection (trust), and (b) whether or not the self is judged to be the sort of person towards whom anyone, and the attachment figure in particular, is likely to respond in a helpful way (self-value). Operationalising Bowlby’s theories was made possible by the work of Ainsworth, Blehar, Waters, and Wall (1978) who developed the Strange Situation scenario for observing and categorizing attachment behaviour. Their research used observations of children’s reunion behaviour after separation, and identified three attachment styles of caregiver-infant attachment: secure, anxious-preoccupied and anxious-avoidant.

Evidence has been gathered from three major sources on the effects of the deprivation of care in early childhood: (a) Direct observation of children and their carers in normal dyads, foster homes and institutions such as orphanages and hospitals, (b) Retrospective studies of adolescents who have developed psychological problems, and (c) Follow-up studies of children first observed in early childhood.

The direct studies are the most numerous and provide strong evidence that the children who are insecurely attached and deprived of care either partially or fully (particularly before seven years of age), are at high risk of developing physical, social, intellectual and psychological pathologies. The follow-up studies indicate that sometimes these problems are minimal, but it is more likely the damage is serious and the effects of the damage are life-long (Bowlby, 1953 p. 21). Those children who have been institutionalised are the most affected and most under-developed of all children who suffer neglect of some form.
Bowlby comments that all of the children studied, no matter what race or creed, where there was neglect, the child was usually listless, quiet, unhappy and unresponsive. He posits that the “inner” development of the psyche, or “wounds to the spirit” are so great that after three months of deprivation of loving care “there is a qualitative change after which recovery is rarely, if ever, complete” (Bowlby, 1953, pp. 27/28).

While researchers concurred that such damage occurs because of the lack of quality of care, their studies were generally undertaken in isolation, by people of various nationalities, training and scientific method. What was needed was a somewhat more precise method of assessing attachment style, using stringent standards of research practice. Bowlby (1982) suggested that attachment styles be defined using two orthogonal axes consisting of the view of the self and the view of the other. Each of these axes is anchored by a positive and a negative valence at either pole. Based on this suggestion, Ainsworth, Blehar, Waters, and Wall (1978) provided the most basic method of assessment of the time, called the “Strange Situation.”

Ainsworth et al. (1978) devised the Strange Situation in order to study mother-child interactions in the first year of life. Ainsworth et al. wanted to observe the attachment and exploratory behaviours of children and to construct a standardized assessment of attachment that would be naturalistic and could be reliably rated. The success of this method of assessment ensured that attachment theory became accessible for empirical testing. Since the theory is based on the assumption that early relationships are a formative influence on character, direct observation of the parent-child interaction is preferable to retrospective reconstructions of what may or may not have happened in an individual’s early life.

The Strange Situation (Ainsworth et al., 1978) consists of a twenty-minute session in which the mother and one-year old child are first introduced into a playroom with an
The mother is then asked to leave the room for three minutes and to return, leaving the child with the experimenter. After her return, and the reunion with the child, both mother and experimenter go out of the room for three minutes, leaving the child on its own. Mother and child are then once more reunited. The whole procedure is videotaped and rated, focusing particularly on the response of the child to separation and reunion. The aim is to elicit individual differences in coping with the stress of separation. Initially three, and later four, major patterns of response were identified.

1. Secure attachment: These children are usually (but not invariably) distressed by the separation. On reunion they greet their parent, receive comfort if required, and then return to excited or contented play.

2. Anxious-avoidant attachment: These children show few overt signs of distress on separation, and ignore their mother on reunion, especially on the second occasion when presumably the stress is greater. They remain watchful of her and inhibited in their play.

3. Anxious-preoccupied attachment: These children are highly distressed by separation and cannot be easily pacified on reunion. They seek contact, but then resist by kicking, turning away, squirming or battling away offered toys. They continue to alternate between anger and clinging to the mother, and their exploratory play is inhibited.

4. Insecure-disorganised (or fearful attachment): It is suggested that individuals in this small group are both avoidant and anxious. They show a diverse range of confused behaviours including “freezing” or stereotyped movements, when reunited with their parent (Holmes, 1993).

Prospective studies by Main and Weston (1981), Grossman, Grossman, and Schwann, (1986) and Sroufe, (1979) show that mothers of secure one-year-olds are
responsive to their babies, mothers of anxious-avoidant babies are unresponsive, and mothers of anxious-preoccupied babies are inconsistently responsive. This indicates that the key to secure attachment is active, reciprocal interaction (Rutter, 1981).

1.7 Attachment style up to ten years of age

Follow-up studies of children tested at one-year-old, pre-school, school entry and ten-years-old suggest that attachment style is stable and that the differences between the secure and insecurely attached children remain overt (Bretherton, 1985; Grossman & Grossman, 1991; Sroufe, 1979). These studies posit the idea that insecure attachment patterns represent an adaptation or compromise to a sub-optimal environment. Securely attached children are reported to be more confident, empathetic, organized and show more positive affect in free play. Insecure children are more aggressive, inept in constructive play, less likely to elicit help from others and less likely to engage in free play. Sroufe (1979) sees securely attached children as having greater ego-control and ego-resilience than those children rated as insecure. It was noted that what began as a competent care-giver-infant pair led to a flexible, resourceful child. Such predictability is not due to the inherently higher intelligence of the securely attached infant, or, apparently, to inborn differences in temperament (Sroufe, 1979).

In summary, relationship patterns established in the first year of life continue to have a powerful influence on childrens’ subsequent behaviour, social adjustment, self concept and self-awareness until at least ten years of age (Holmes, 1993). From studies of maternal handling and of attachment patterns in babyhood, attachment assessment moved its focus to relationship style and the internalized world of pre-pubescent and adolescent individuals, and on to the adult self-other representations and metacognitive aspects of adult attachment models.
1.8 Adolescents, attachment style and chronic pain

The three styles of attachment postulated by Ainsworth et al. (1978) were utilized by Cooper, Collins, and Shaver (1998) in a study of attachment behaviours in adolescents. They found that the stress experienced by adolescents with differing attachment styles follows a time-specific frame for each attachment style. Secure adolescents display the best psychological health with emergence into adulthood at a mature level. This was evidenced by their low levels of indulgence in high-risk behaviours and reported low levels of anxiety and distress. Anxious-preoccupied individuals displayed more distress and more indulgence in high-risk behaviours at an early age, resolving in mid to late adolescence. Anxious-avoidant individuals experienced the most upheaval in mid to late adolescence and, like the anxious-preoccupied individuals emerged into adulthood with less functional maturity as evidenced by higher levels of distress and higher involvement in high-risk behaviours when compared to the securely attached individuals. They also found that across cultural groups, the secure individuals, regardless of race or gender, were consistently the least distressed group on any measure. Insecure adolescents of either gender or any race displayed more anxiety than the secure group and indulged in more high-risk behaviours. These researchers reported that the anxious-preoccupied individuals displayed the poorest adjustment, with high levels of negative affect and social deficits, and engaged in the most high-risk behaviours of the three groups. The anxious-avoidant individuals were less likely to engage in high-risk behaviours, were less hostile and more academically able than the anxious-preoccupied group, but equally likely to be lacking in social skills. Females in their studies with an anxious-preoccupied attachment style were found to be susceptible to elevated levels of depression and more prone to psychoticism.

Other psychosocial factors shown to be relevant to adolescents who were chronic pain sufferers without documented physiological etiology (but with complaints of
headache, back, limb, and abdominal pain) are neuroticism, negative fear of failure and less experienced social acceptance (Merlijn, Hunfield, van der Wouden, Hazebroek-Kampschreur, Koes, & Passchier, 2003).

1.9 Attachment style assessment of adults

Hazan and Shaver (1987) investigated the attachment style of adults. They postulated that romantic love was an attachment process. Using a simple forced choice measure that describes attachment styles, they found evidence to support three attachment styles in adulthood conceptually similar to those of childhood. Each style was associated with a unique constellation of emotions. Secure attachment was characterized by trust, acceptance and support, while anxious-avoidant attachment was characterized by jealousy, fear of intimacy and a tendency to emotional highs and lows. Anxious-preoccupied attachment was characterized by obsessions with love relationships, a desire for reciprocation, emotional highs and lows and jealousy.

Main, Kaplan & Cassidy (1985) and Main (1991) proposed and then constructed an assessment tool based on a semi-structured interview to assess adult attachment as a “working or internalized model.” In this approach the interviews are audiotaped and rated on eight scales: quality of relationship with mother, quality of relationship with father, role reversal with parents, quality of recall, anger with parents, idealization of relationships, derogation of relationships, and coherence of narrative. Participants are then assigned to four categories. (a) Autonomous-secure adults who give accounts of secure childhoods described in an open, coherent and internally consistent way. In this group, attachments are valued and, even if their experiences have been negative there is a sense of pain felt and overcome, (b) the Anxious-avoidant group give brief, incomplete accounts, professing to have few childhood memories and tending to idealise the past, (c) the Anxious-pre-
occupied adults give inconsistent rambling accounts in which they appear to be over-involved with past difficulties with which they are still struggling, (d) the Unresolved-disorganised (fearful) category is rated separately and refers specifically to traumatic events such as child abuse that have not been resolved emotionally (Holmes, 1993).

Researchers such as Bartholomew and Horowitz (1991), Collins (1996), Collins and Read (1990), and Feeney and Noller (1990) have since devised and/or adapted the concept of adult attachment assessment through questionnaires that rate this sense of security, of being loved and having the capacity to love, of being a person in the world like others and yet having a unique biological trajectory, and of being able to withstand the failures, losses and disappointments of life. These assessments measure basic values of self and self-confidence and trust of others.

Other researchers have stressed that these attachment styles are maintained into adulthood and have suggested that the four character styles be used to study the continuity of attachment style from childhood to adulthood (Hazan & Shaver, 1987; Horowitz, Wright, Lowenstein, & Parad, 1981; Main & Goldwyn, 1984). Regardless of the methodology used, these styles have been meaningfully related to the type of parenting these individuals recall experiencing as children (Rothbard & Shaver, 1994).

Noller and Feeney (1994) have queried this allocation of attachment style via the four sub-styles. These researchers have studied the stability of attachment style into adulthood and propose a return to the two basic categories of attachment, that of secure and insecure attachment. They claim, and present empirical evidence for these claims, that the importance of various levels of insecure attachment has been overstated and that the most important distinction is the difference between securely attached individuals and insecurely attached individuals. They report that the crucial issue is whether the responsiveness of the caregiver is systematically related to the developmental models of self and other, models
that in turn influence relationships throughout life. A further review of research by Rothbard and Shaver (1994) confirms that while secure style compared to insecure style produces clear statistical differences, the evidence for separate adult insecure styles is often statistically inconclusive.

A review of existing protocols for assessing adult attachment styles was conducted by Feeney and Noller (1990). They agree that all assessments are based on the view of the self (positive or negative) and the view of the other (positive or negative). The number of dimensions viewed as core concepts varies in each type of assessment. Thus, they argue that two cluster solutions are based on (a) felt security or comfort with closeness in relationships, and (b) the amount of anxiety created in the relationship, while three cluster solutions add (c) confidence in others. These three dimensions are usually labeled (a) Secure, (b) Avoidance or Dependence and (c) Anxiety. These researchers hold the view that the most basic and important differences lie between Secure and Insecure attachment styles. Secure individuals have positive, stable and consistent responses across all forms of assessment. They present a style that is high in self-confidence and comfort with closeness and low in anxiety in relationships. Insecurely attached individuals differ in the ways in which they are insecure. Therefore, the evidence, that there is an inherent unreliability in the assessment of insecure individuals in most assessment protocols analysed by Noller and Feeney (1994), argues strongly that only secure and insecure categories are basically sound.

In the current research, the Collins and Read (1990) adult attachment assessment was used in each study. Since all participants in the study had persistent pain, and usually had a carer (who was often their partner), a necessary change was made to the original questionnaire, which was designed for an individual and their partner. The word “partner” appears in three of the eighteen questions, and was replaced with the word “carer.” No other alterations were made to the questionnaire. Collins and Read (1990) found that 50%
of their sample of undergraduate students was Secure, 31% Anxious-avoidant and 19% Anxious-Preoccupied (or 50% Secure and 50% Insecure). They reported that these percentages correspond closely to previous studies of this population.

In what was probably the first Australian study of chronic patients and attachment style, \( N = 89 \) chronic pain sufferers from a pain clinic in a remote rural community were also assessed by the Revised Adult Attachment Scale (Collins & Read, 1990). It was found that in this sample 86% were securely attached, 24% insecurely attached, with the females in the sample showing the most comfort with closeness (Agar-Wilson, 1994). In contrast, Collins and Read (1990) found no gender differences on this dimension in a study of university students. Using three samples of undergraduates, Collins and Read (1990) found the three sub-scales to be reliable measures of the three attachment dimensions, with Cronbach alpha’s of .80 (Close), .78 (Depend), .85 (Anxious).

1.10 Developmental issues in chronic pain syndrome

Studies of attachment or of developmental influences in chronic pain are few in number, since this is an emerging area of research. The interpersonal model of chronic pain proposed by Mikail, Henderson, and Tasca (1994) suggested that trauma experienced during childhood affects the emerging personality characteristics of the developing individual in such a way that they have greater difficulty learning to cope appropriately with chronic pain and its effects.

Childhood abuse has been defined as a factor in chronic pain and suffering by various researchers. The term “cryptotrauma” (or hidden trauma) has been used to describe this often undisclosed history of physical and sexual abuse in women with chronic headaches (Harness & Donlon, 1988). Victimisation and childhood sexual abuse in either men or women, have been related to subsequent psychological and social dysfunction and
chronic pain by Wurtele, Kaplan, and Keairnes (1990). It has also been reported that physical and sexual abuse results in depression, less positive coping strategies, poor social adjustment, social isolation and chronic pain (Fillingim, Wilkinson, and Powell, 1999; Linton, Larden, and Gillow, 1996). These latter researchers also suggested that a history of abuse leads to the formation of a pain-prone personality.

From his study of individuals with chronic pain, Engel (1959) first hypothesized that the experience of childhood neglect and abuse contributed to the development of a pain-prone personality. It was suggested that these individuals displayed more pain behaviours than would normally be expected in the face of a known peripheral pain generator. Engel (1959) theorized that pain-prone patients:

“...repeatedly or chronically suffer from one or another painful disability, sometimes with and sometimes without any recognizable peripheral change. In their choice of pain as the symptom, a long-term background of guilt and/or a guilt provoking situation precipitating pain can be expected. Some of these individuals are chronically depressive, pessimistic and gloomy people whose guilty, self-deprecating attitudes are readily apparent. Some seem to have suffered the most extraordinary number of defeats, humiliations and unpleasant experiences. They drift into situations or submit to relationships in which they are hurt, beaten, defeated and humiliated and seem not to learn from experience. They conspicuously fail to exploit situations that should lead to successes, even though they complain of pain, for them the pain is almost a comfort or an old friend. It is an adjustment, a way of adaptation acquired through psychic experience” (p. 904).
Engel suggested these five primary conditions as basic to the development of pain-proneness:

1. having parents who are physically or verbally abusive to each other and/or their children,
2. having one brutal parent and one submissive parent, the former sometimes an alcoholic father,
3. having a parent who punishes frequently but then suffers remorse and over-compensates with a rare display of affection so that the child becomes accustomed to the sequence of pain and suffering in order to gain love,
4. having a parent who is cold and distant and responds with affection when a child is ill or suffering pain to the point that the child invites injury to elicit such a response from the parent,
5. being a child who deflects the aggression of a parent away from the other parent onto himself, or herself, usually with much guilt.

Two more covert abuse situations described by Engel (1959) likely to produce pain-proneness are:

6. observing parental pain or pain in a significant figure close to the child for whom the child feels responsibility and perhaps even guilt,
7. experiencing a situation that led to the abandonment of feelings of aggression or pain by some sudden event where the abandonment was usually associated with guilt (Engel, 1959).

Strong support for the theories of Engel has been obtained from a study by Adler, Zlot, Hurney, and Minder (1989). They tested the hypothesis in a controlled study of adult patients with (a) psychogenic pain, (b) organic pain, (c) psychogenic bodily symptoms, and (d) organic disease. The results of their study showed that two factors are responsible for
73% of the variance. Brutality-Overcompensation (of the parents towards the child) was related to the duration of the pain, and Submission-Inhibition (between the parents) was related to the number of operations and accidents of the child in its adulthood.

The links between childhood abuse, punitive behaviour, neglect, and the development of a pain-prone personality were also researched by Violon (1978, 1980, 1990). Her first study (1978) used sixty-three people who had severe, intractable pain. That is, their pain was unmanageable by normal medical controls. Of these, 40% had grown up in a single parent household and another 23% had been abandoned. Of the next study, \( n = 83\)% reported an absence of affection during their childhood, 63% had been openly rejected and 37% had been battered children. A further examination of thirteen patients with cluster headaches and fifteen people with atypical facial neuralgia revealed multiple incidents of battering, rejection and of growing up in affectionless families (Violon, 1980).

Following these studies, Violon (1990) presented a model that demonstrated the process of becoming a pain-prone patient. She proposed that the individual learns to communicate by means of pain behaviours. Negative childhood experiences lead to neuroticism that in turn leads to proneness to depression leading to pain. Furthermore, the lack of bodily gratification leads to a distorted body perception that may lead to proneness to pain or proneness to depression.

A comprehensive literature review completed by Roy (1992) of the social context of chronic pain sufferers examined some forty research papers on child abuse, neglect, punishment and chronic pain or other suffering. Most of the studies reviewed had small numbers of subjects and focused on particular medical or physical conditions, but each study clearly suggested that there exists a link between repression, internalization and somatisation (a focus on physical symptoms of pain) and child abuse that compromises the
development of the child both physically and mentally. This abnormalising of their social development may change their coping strategies into negative styles that are destructive to, rather than supportive of, self-care. Since well-being depends on securing the protection of attachment figures, that relationship between self-care and self-value is of central concern throughout childhood, and its unresolved insecurities linger into adult life (Marris, 1991).

The process of development is helped or hindered by the experiences of childhood and the meaning that is attached to those experiences. When an experience is negative and social support is unavailable or increasingly damaging, the capacity of the individual to cope with any new experience is influenced by the internal working model of the world and interpreted as a threat to psychological and physical health.

Theories that incorporated the influence of prejudicial environments for developmental and corporeal pain began to come together in 1993 with the publishing of Schoffermann, Anderson, Hines, Smith and White’s study on unsuccessful outcomes for back surgery. These studies demonstrated a clear and significant relationship between the number of childhood risk factors and the success rate of lumbar spine surgery. The risk factors that they included were:

1. physical abuse (intentional physical injury by a primary caregiver),
2. sexual abuse (exploitation of a child for an adult’s stimulation),
3. alcohol or drug abuse in a primary caregiver,
4. abandonment (loss of a primary caregiver perceived as abandonment),
5. emotional neglect or abuse (unavailable caregivers, or if there was persistent criticism, neglect, or no validation of a child’s emotional needs).

Patients with three or more risk factors had an 85% failure rate for back surgery, while those with no risk factors had a failure rate of less than 5% for the same form of surgery. This study confirmed that for these individuals, vulnerability to chronic pain was
exacerbated by a lack of care and insecure attachment with their primary caregiver. Other research that examined the role of the family, by Lester, Lefebvre and Keefe (1994) noted that a family history of pain was related to higher levels of pain and activity interference. When an individual had lived with a family member who had chronic pain, as adults they displayed maladaptive pain behaviours, reporting more pain sites and higher loss of function than individuals from families without a member with chronic pain (Engel, 1959; Blumer & Heilbronn, 1982a; Lester et al., 1994). When these family and background factors are reported, it may explain why some individuals develop certain proclivities to pain behaviours or failed interventional strategies, and why so many apparently normal, non-psychotic or non-hysterical individuals fail to respond to care (Schoffermann et al., 1992).

Over a ten-year period, studies of patients with disabling spine pain were conducted (Anderson and Hines, 1994). They hypothesized that an individual’s capacity to be consoled (that is, recover from the pain induced by injury) is directly related to his or her attachment security. The ability of the individual to learn to tolerate and to accommodate to chronic pain can be predicted by knowledge of their attachment style. These researchers suggested that a patient who has experienced any of the five factors listed in the earlier study by Schoffermann et al. (1992) up until the age of 21 years, will have less chance of recovery from refractory spine pain. Their proposal was that chronic pain often represents a non-specific plea for help in overcoming earlier, unresolved traumas. They theorized that the successful resolution of chronic pain problems requires the formation of a team of therapists or clinicians who work to relieve the distress of the patient via a secure relationship (Anderson & Hines, 1994).
1.11 How does attachment behaviour influence chronic pain?

Chronic pain occurs within an intra-psychic, interpersonal and biological setting. The disease or trauma compromises the biological state of the individual, the mental models of self, the perceived resources of the self, and the social and communication skills of the individual. The perceived threat to life and lifestyle that the individual experiences as a part of their physical condition must also play a part in this scenario. Bowlby (1977) believed that internalized working models guide the manner in which an individual perceives events, forecasts the future, and constructs his or her plans. This internalised working model would necessarily predate the development of chronic pain, since pain serves as a form of threat to the individual and thereby precipitates a sequence of attachment behaviours. He called the behaviours related to attachment styles “goal corrected behaviours” and postulated that they are used to formulate set goals to achieve an anticipated outcome. This model must include (a) awareness of one’s own goals, (b) recognition that others have goals for themselves, (c) recognition from the clues as to what these goals are, and (d) the framing of a plan that is likely to affect the set goals of the other (Bowlby, 1988).

The interpersonal model of chronic pain proposed by Mikail et al., (1994) predicted that the behavioural response of an individual experiencing threat is guided by the features of an internal working model and the associated social system. The onset of pain initiates a sequence of events that is intended to restore a state of equilibrium and ensure continued survival. The attachment behaviours that follow serve to reduce anxiety.

Attachment behaviours are thought to be episodic. The proposition that they become most evident and most observable at times of stress was first proposed by Bowlby (1973). This was operationalised by Ainsworth et al. (1978) who created an experiment in which separation and reunion behaviour between mother and child were used to evoke
stress reactions in both mother and child. These authors hypothesized that under these conditions they would be able to categorise their behaviours and identify the characteristics of different attachment styles. The behaviours they observed were as follows.

1. behaviours that evoked a response from others,
2. behaviours that were in response to the actions of others,
3. behaviours aimed to avoid separation or termination of interactions,
4. exploratory behaviours, and
5. withdrawal or fear behaviours.

It was noted that these behaviours changed in response to fatigue or pain, becoming more or less evident according to the situation (Ainsworth et al., 1978). Bowlby (1969) noted that patterns of behaviour typical of a specific attachment style change when traumatic illnesses or accidents occur. Children may become more demanding, receive more protective care than previously and be more upset by separations or perceived rejections. In the research presented, it appears that in older children, adolescents and young adults, lability diminishes as the years pass, whether the attachment style is secure or insecure, and is said to become less easily changed. In any dyad, the pressure to maintain the style is regarded as constant. Secure style is consistently self-sustaining, while the inconsistencies of insecure style will continue to initiate personality conflicts both within and between individuals.

From the literature presented it is apparent that chronic pain is related not only to the physical manifestations of disease and damage, their biophysical state, but also to the psychosocial world of the individual, their internalised model of the self and other. Attachment theory is one way of conceptualizing this paradigm and helps to explain some of the ways in which individuals with chronic pain perceive the existential meaning of their
experience. The physical maturity of the individual may or may not reflect the maturity of the child inside.

**Supplementary Literature Review**

Much of the research published since this thesis project was completed has focused on the changes in emphasis on assessing attachment behaviours through adolescence and adulthood. A major emphasis was on assessing attachment behaviours through adolescence and adulthood, using the dimensions of attachment previously used to categorise attachment style, now sometimes being used to portray the continuum of attachment security rather than being totally focused on the labels “secure” and “insecure”. These are the dimensions of views of self and other, as comfort with closeness/avoidance, and anxiety about relationships (Feeney, Hohaus, Noller, & Alexander, 2001). This supplementary literature review presents recent research about attachment style and the links between attachment style and the variables under study: chronic pain, negative affect, somaticism, quality of life, function, disability, and neuroticism.

**An overview of the literature 2000 to 2006**

The impact of attachment models on pain experiences has been investigated using individuals with no previous pain and individuals with established chronic pain in both experimental conditions and with hospital inpatients (Karoly & Ruehlman, 2006; McWilliams & Admunsen, 2006; Meredith, Strong, & Feeney, 2006a / 2006b).

Attachment style and medical conditions such as diabetes (Ciechanowski, Hirsch, & Katon, 2002), and depression, catastrophising and utilization of health care have been further researched (Ciechanowski, Sullivan, Jensen, Romano, & Summers, 2003). An investigation of multidisciplinary pain management strategies in order to maximize the chances of injured workers to return to work has also been presented (Nicholas, 2002; van der Giezen, Bouter, & Nijuis, 2000). The acquisition of positive or negative coping
strategies and stress reducing behaviours was investigated by Turner, Jensen, and Romano (2000). Research into the demographic variables of age and gender and chronic pain prevalence has also been presented (Blyth, March, Brnabic, Jorm, Williamson, & Cousins, 2001; Fillingim, Edwards & Powell, 2000; Gibson & Helme, 2000; Keefe, Lefebvre, Egert, Affleck, Sullivan, & Caldwell, 2000). A comparison of treatments by General Practitioners versus a Multidisciplinary Team approach was completed by Becker, Sjogren, Bech, Olsen, & Eriksen, (2000). The relationship between function and disability and accepting the existence of pain within a normal lifestyle has been investigated in adolescents and adults by Nicholas and Asghari (2006), Keogh and Eccleston (2006), and McCracken and Eccleston (2005).

It has been proposed that unlike Freudian ideas of unconscious drives and the interaction of id, ego and super-ego creating what we know of as “personality”, the unconscious, internalized schema for attachment is said to be created by the infant’s reaction to external, uncontrollable events such as parental neglect and abuse. While these investigations are not a part of the focus of this current research, they provide some insight into the origins of attachment behaviours. Wilkinson (2003) has provided evidence of how children learn the language and behaviours of “dis-ease” and develop their own coping strategies from the lessons they learn from family members and according to their particular attachment style. He presents strong arguments for the role of attachment behaviours assisting or hindering the process of treatment and/or rehabilitation when individuals have biological and psychological problems, suggesting that compliance, concordance and goal-corrected behaviours are each influenced and often limited, by internal models of attachment (Wilkinson, 2003). On the subject of development of the infant brain, research has been presented on the role of high cortisol levels that result from negative care-giving strategies, linked to childhood depression, hypervigilance, fear, and

1.11.1 Attachment style and chronic pain

In an experimental situation, researchers Meredith, Strong, and Feeney (2006a) demonstrated that an internalized model of secure attachment could provide the most resilience to pain. Their sample of 58 adults with no previous history of chronic pain demonstrated that attachment anxiety was associated with lower pain thresholds, more stress, depression and catastrophising, diminished perceptions of control over pain, and diminished ability to decrease pain. Catastrophising was linked to high pain intensity and being insecurely attached. These researchers concluded that attachment anxiety, in this experiment, was linked to vulnerability (Meredith et al., 2006a). This study, while it has created an artificial “pain” situation, has shown that personality factors may be strongly linked to factors of resilience and vulnerability.

In a further study of 152 chronic pain sufferers, Meredith, Strong and Feeney, 2006b) investigated pain self-efficacy and anxiety, pain intensity and pain-related disability. Participants high on the anxiety dimension of attachment were low on pain self-efficacy, and insecure attachment was related to higher levels of anxiety. Pain self-efficacy predicted pain intensity. The belief that one can cope with pain when it is present appears to moderate the sensory aspects of pain by lowering anxiety. Disability was better predicted by pain self-efficacy than by anxiety or pain intensity. Individuals who scored high on the dimension of comfort with closeness were also high on pain self-efficacy, particularly males. This study, using a sample of patients admitted for multidisciplinary pain management, has provided interesting evidence about patient’s function being related to
their beliefs about their coping skills and less related to affect or reported levels of sensory pain.

A third study in 2006, by McWilliams and Admundsen, also investigated the role of the attachment dimensions in catastrophising, pain related fear and hypervigilance. Their results indicate that insecurity of attachment was linked to higher levels of these factors and the model of self (comfort with closeness was significant in each construct). The model of others dimension was significantly linked to catastrophising but not to fear of pain or hypervigilance. The sample used was 278 students who were free of chronic pain, so in this experimental situation, they have shown that a low value of the self was again linked to anxiety and thus vulnerability.

Resilience/vulnerability to chronic pain was also measured by Karoly and Ruehlman (2006). From a national sample of chronic pain sufferers two, groups, matched for age and gender, were identified by testing for the severity of interference and emotional burden. Significant differences were found between these resilient and non-resilient groups on coping strategies, pain attitudes and beliefs, catastrophising tendencies, positive and negative social responses to pain, health care and medication utilization patterns.

Research that uses experimental conditions of induced pain may show positive results about the manner in which individuals cope with unusual situations. However, it may not be their natural response if they were suddenly experiencing acute pain, or forced to endure the long-term effects of chronic pain. Research using experimental conditions of induced pain in convenience samples of university students, about attachment models, may or may not be indicative of the individual’s unconscious model of attachment behaviours.

Attachment style research has now provided a basis for understanding adult interpersonal relationships, particularly when the relationship involves solace-seeking (as in a therapeutic relationship), or proximity-seeking (as in an intimate relationship). High
discomfort with closeness is characterized by avoidance and nervousness around other people. Anxiety about relationships is characterized by fears of abandonment, rejection and low self worth (Bowlby, 1969). Attachment security is measured on a continuum of avoidance and anxiety. Securely attached individuals are characterized by high comfort with closeness (low avoidance) and low anxiety with others, while insecurely attached individuals are characterized by ambivalent views of self and others (low avoidance/low anxiety, high avoidance/high anxiety, high avoidance/low anxiety) (Feeney, Hohaus, Noller, & Alexander, 2001).

People who are insecure with self and others tend to respond negatively to stressful situations, and expect negative outcomes. They interpret situations negatively, and the prospect of a “happy ending” as very unlikely (Feeney et al., 2001). These attitudes do not predict good therapeutic relationships for those individuals who have chronic pain syndrome.

1.1.2 Adult Attachment style and medical or psychological disorders

A study about diabetes and attachment style notes that many diabetes patients have low self management skills, resulting in unstable health. Previously, this state has been attributed to depression and anxiety. However, Ciechanowski, Hirsch, and Katon, (2002) found that in a sample of 276 Type 1 diabetes patients, attachment style predicted their level of self care, diabetes related complications, and levels of co-morbid medical conditions. Being securely attached was related to the best biological and psychosocial outcomes. Being high on the dimension of avoidance was related to the highest levels of clinical symptoms. Information for this study was provided by a postal survey to assess attachment style, depression and clinical and demographic information. Other clinical symptoms were assessed via patient records. This study recommends that therapists should
be more patient centred in their approach in order to facilitate therapy with insecure individuals. However, therapists also have their own issues of attachment to address when communicating with others. The ability to communicate effectively and be empathetic is surely more important in working with every patient, secure or insecure.

In another study of 111 chronic pain patients in a pain management programme, Ciechanowski, Sullivan, Jensen, Romano, and Summers (2003) found that attachment style was an important determinant of illness behaviours such as a lack of adaptive coping, care seeking, and treatment response. It was noted that high catastrophising, or overt signs of distress, serves to elicit continuing support from others, and negative affect and higher health and pain complaints were related. Insecurity of attachment was related to higher levels of depression, higher use of health care for pain problems, and catastrophising. Being assessed as securely attached was related to lower levels of depression at treatment and at 12 months follow-up. Neither pain intensity nor physical dysfunction was associated with attachment style. Attachment style was assessed for this study by telephone contact, not by questionnaire, and the authors caution that a response bias such as social desirability may have been operating. Furthermore, the data were re-examined as a secondary analysis of a larger study, and information on attachment security was not sought until 5-28 months after treatment.

Research on attachment style and dysthymia in women included the variable of helplessness that the authors labeled "agency of self" (West & George, 2002). Dysthymia was the clinical disorder chosen by the authors, rather than clinical depression, since it has long-term implications for mental health, has a 5% prevalence rate in the community, and is common in women after adolescence. They expected that insecure attachment would be strongly related to dysthymia and that those individuals with high relationship anxiety would be most likely to present with dysthymia. The sample comprised 24 individuals
diagnosed with dysthymia, out of 420 women, with a mean age 45 years ($SD = 9.0$). The self report survey gained information about demographics, childhood losses or abuse, and attachment style was assessed using the Adult Attachment Projective test (George, West, & Pettet, 1999). This test is a series of eight pictures to which the individual responds by describing each scene. From the resulting narrative, the assessment of attachment is obtained. Age, level of education or current living arrangements were not related to being securely or insecurely attached; 92% of the women were insecurely attached, 58% of the women were found to have high relationship anxiety. The authors suggest that these findings link underlying cognitions, such as feelings of helplessness, high relationship anxiety, and depression in women. It was cautioned by the authors that the results from this small sample of volunteers may not be generalisable to the wider community. Also, the current existence of depression may tend to colour the narratives of these women, and may not be the same story at times of remission. However, this method of assessing attachment style appears to be culture-free, time-consuming, but thorough, an improvement perhaps, on self-report questionnaires.

### 1.11.3 The development of attachment style

Children develop their unconscious models of attachment according to the responsiveness and availability of their carers. Sensitive caring involves the ability to enter into an affective attunement of mutuality, synchrony and an ability to provide emotional support (Wilkinson, 2003). The socio-emotional development of the child shapes the attachment form. Children adapt their behaviours to suit the conditions within which they live, according to the threats to which they have been exposed. Family conflicts destabilize attachment security. The role of family conflict has been investigated because it is related to changes to children’s physical and psychological health (Gregory, Moffit, Caspi, &
Poulton, 2006; Moffit, Caspi, & Rutter, 2005; Vendlinski, Silk, Shaw, & Thane, 2006), and also the preservation of self esteem and the expression of anger and hostility when the individual is under threat.

1.11.4 Childhood attachment style and family chaos

A longitudinal, prospective study by Gregory et al. (2006) of 1037 children from birth to 18 years of age, with assessments every two years, investigated the impact of a chaotic family environment. The problems that resulted from this for the child were both internalized and externalized. For example, the insecurity of the children was reflected in insomnia, health problems (linked to physical problems), hypervigilance, worry, rumination and depression. Parental conflict resulting in the internalisation of problems was presented by Silk, Shaw, Skuban, Oland, and Kovacs (2006). They found that mothers who had suffered from childhood depression, and had current parental conflict, had children who had problems with emotion regulation. In another study of parenting style being linked to childhood adjustment, Vendlinski, Silk, Shaw, and Thane (2006) showed that children’s emotional security was linked to parental conflict in families. Acceptance of others, warmth, decision-making and hostility were all affected. This study used a sample of 101 Euro-American and 49 Afro-American children, and failed to show the same results for the latter sample. For the Euro-Americans, family conflict was viewed as parental rejection, while in Afro-American children, parental control and punishment was viewed as parental concern. This study (of a small sample) demonstrates that cultural biases must be considered when assessing possible attachment behaviours.

1.11.5 Chronic pain, function, gender, age, and quality of life

Chronic pain affects a large proportion of our population. Of 17,543 assessment interviews, chronic pain was reported by 17.1% of males and 20% of females. For males,
prevalence peaked at 27% in the 65-69 year age group, and for females prevalence peaked at 31% in the oldest age group, 80-84 years. Out of working age adults, 84.3% of females and 75.9% of males aged 20-24 years reported having chronic pain (Blyth, March, Brnabic, Jorm, Williamson, & Cousins, 2001). Related to the chronic pain status was older age, being female, lower socio-economic status, poorer health and worse employment status. Related to the chronic pain also, was the amount of interference in ordinary function and daily activities of these people.

A study conducted in the Dutch population sought to predict what factors prompted low back pain patients to return to work. The researchers found that psycho-social aspects of health and work, and economic aspects have the most effect when compared to levels of physical disability or pain (van der Giezen, Bouter, & Nijhuis, 2000). Better general health, better job satisfaction, being the breadwinner, lower age and less pain were predictors of a successful return to work after 3-4 months of sick leave. This study presents evidence that suitable coping strategies will be found to deal with physical factors when individuals perceive good outcomes being related to getting on with their lives as normally as possible.

An important finding of the work of Nicholas and Asghari (2006), using the Chronic Pain Acceptance Questionnaire, has been that the willingness of individuals to engage in activities despite the pain predicted levels of depression, while pain severity or disability was unrelated to the acceptance of existing pain. Similarly, McCracken and Eccleston (2005) in their prospective study, found that a willingness to accept pain and engage in activities lead to healthy function as better emotional, social and physical function and less medication and better work status, despite the existence of chronic pain.

When outcomes such as pain reduction and reduced use of analgesics are sought, multidisciplinary pain programmes (MPP) appear to be more successful than treatment by a General Practitioner (GP) who has been instructed in pain management (Becker, Sjogren,
Bech, Olsen, & Eriksen, 2000). A sample of 189 chronic non-malignant pain patients was allocated to a control waiting list group, GP group and MPP group. At six months follow-up, the MPP group noted improvements in health quality of life, pain intensity, sleep, psychological problems and physical function. Together with the GP group, the MPP group reduced their use of analgesics. As has been noted previously, physical function, coping strategies and psychological wellbeing are related in many studies and the restoration of function promotes a better quality of life for chronic pain patients. A multidisciplinary team approach such as reported in this study appears to help reach this goal.

The belief that one can control or cope with pain is associated with lower scores on pain intensity and disability, while catastrophising is related to higher levels of pain and disability. A study by Turner, Jensen, and Romano (2000), found that an individual’s beliefs about their chronic pain predicted physical disability and depression while catastrophising predicted levels of depression, but not physical disability. This study of 169 patients in a pain management programme, highlights the fact that treatment for chronic pain needs to address pain-related beliefs as much as pain-related behaviours.

In a study of gender, pain, pain behaviour and disability, women had significantly higher pain and physical disability and exhibited more pain behaviours. It is thought that this results from women being socialized differently from men from an early age, showing more emotion and more reports of pain, which would be “unmanly” for a male. When individuals have high anxiety, high pain levels and overt distress it is known as “catastrophising”. In an experimental condition with 42 females and 38 males with osteoarthritis, it was found that once catastrophising measures were examined, no gender effects for pain, pain behaviours, and physical disability, were noted. While women scored higher on more intense pain, more pain behaviours and more catastrophising, even when controlled for depression, gender effects were not evident. Both men and woman who use
catastrophising to elicit care and support, rather than adopting more self-soothing coping strategies may have been primarily concerned with interpersonal contact as a coping strategy. This study used a small sample of patients with osteoarthritis in the knees, in an experimental condition that stimulated only mild pain. Individuals admitted for pain treatments are likely to have higher pain and well-entrenched psychological problems. The report of the study is rather confusing since it discusses various topics on aspects of chronic pain coping mechanisms unrelated to the reported results, without any discussion of their relevance to the study (Keefe et al., 2000).

Further evidence of gender differences in pain responses has been presented by Keogh and Eccleston (2006), who investigated the impact of chronic pain on adolescents between the ages of 11 and 19 years of age. They found that females reported higher pain levels and used more social support, positive statements and internalizing/catastrophising while males reported using more behavioural distractors as coping strategies. No differences were found in pain chronicity.

1.11.6 Limitations of Attachment Theory

In evolutionary terms, to be born as an individual who can be responsive to a specific environment makes more sense than being hard-wired genetically, with pre-determined responses to our environment (James, 2002). In order to explain this flexibility to nurture, attachment theory was formulated by integrating ideas from psychoanalysis, developmental psychology and ethology. It has been criticized because of its lack of concern for culture, ethnicity, religion, morality, gender, socio-economic status, age/stage of life, locus of control, financial status or financial/work influences (such as the heavy load of child care plus house care on working women). It places heavy emphasis on unconscious motives and drives (the internalized schema of attachment) and underemphasizes actual
experiences with others. Some researchers who have partaken in the “nature versus nurture” debate say that attachment theory ignores the idea that genotype influences children’s sensitivity to environmental insults (Moffit, Caspi, & Rutter, 2005; Warner & Secombe, 2003). Adler (1929) coined the term “lifestyle” to describe the essential character of an individual as a result of early childhood experiences. Unlike Bowlby (1944) who formulated the ideas about the effects of hostile familial environments and early, unresolved bereavement, melancholia and despair, Adler focused on such things as the parental stage of life at the birth of each child, the birth order of their children and the social environment at the time of their birth and early experiences. He also suggested that the memory of childhood experiences accounts for the personal reactions, motives, and professional and personal activities of adults. Chorpita and Barlow (1998) focused on control theory. They suggested that behaviours acquired in childhood are aimed to reduce anxiety/self-soothe and increase their sense of control. Cognitive style is characterized by an increased probability of interpreting events as negative and out of control. Thus, the individual becomes vulnerable to negative affect.

It has been proposed that the onset and maintenance of chronic pain could cause changes to attachment security. The stability of attachment style has been questioned by various researchers who have found that when circumstances are significant, such as in cases of psychopathology or personality disturbance, or alterations to family constellations, change is possible. This finding was true of the sample of 155 women aged 17 to 19 years of age, assessed on four occasions over two years by Davila, Burge, and Hammen (1997). These women were making the transition to adult functioning that has been postulated to be a very stressful life event (Scharfe & Bartholomew, 1994). Feeney et al. (2001), found that changes in adult attachment style were possible in partnerships, with the arrival of their first child. The stress of this event required both partners to re-evaluate and change their
relationship pattern to suit changes in care-giving strategies for each other and the infant. It was also Feeney and Noller who suggested that the dimensions of attachment (as value of self and value of others) were the most useful feature of attachment theory, since most individuals can be secure in some relationships and insecure in others, but generally secure or insecure.

Adverse events were also found to affect attachment stability by James (2002). The loss of a parent, or abuse, promoted change, while the absence of exceptional life events maintained a robust pattern of attachment. Also, the association of an insecure individual with a secure, caring other, can promote change. This researcher maintains that if the effects of a life event are prolonged, important, and of high impact, change will occur, negatively or positively. However, in the absence of exceptional life events the pattern of attachment is resilient (James, 2002).

That cultural values also affect emotional stability was investigated by Furr (2002) using as a sample 276 Nepalese teachers. This author tested the relationship between cultural values and depression. He found that the more these individuals espoused western ideas, the less depressed they became. Those individuals, who were firmly entrenched by the traditional values of the rigid caste system, and the political inequality between genders, were more depressed. While higher self value and cooperation with others is a democratic ideal, as well as a feature of secure attachment, it is hard to claim that attachment security has a major role in this outcome.

Insecure attachment style has many features that overlap with neuroticism. Horney’s descriptions of neurotics (vulnerable and insecure) and non-neurotics (resilient and secure) are conceptually similar. She describes a lack of goal-directed, goal-corrected behaviours for neurotic individuals, who tended to be non-trusting of others and ambiguous about the value of self and others. The behavioural choices of non-neurotics she describes
as pragmatic and goal-corrected, and are described as socially adaptable and unambiguous about the value of self and others (Horney, 1945/1950). It has also been suggested that the link between neuroticism and vulnerability is that being neurotic lowers the threshold at which pain is perceived as a threat and catastrophising becomes common (Goubert, Crombez, & Van Damme, 2004).

1.12 Conclusion

This supplementary literature review has covered the research presented on attachment style and childhood development related to attachment style, pain and negative affect, and the relationship of chronic pain conditions to personality variables from the years 2000 to 2006 (with some references to earlier research when related to the topic presented discussed). The research literature reviewed in Chapters 1 and 2, and the supplementary literature review provide evidence that an internalized model of secure attachment empowers an individual by providing a strong sense of self-value and an ability to elicit support from appropriate others when support is required. However, an insecure model of attachment can result in poor choices for long-term benefit, particularly when physical and psychological problems arise. The four studies of this project were designed to test the hypothesis that the attachment style of an individual with Chronic Pain Syndrome would affect their reported levels of pain and suffering, negative affect, somatisation, neuroticism, physical function, disability and quality of life.
CHAPTER 2.0 -
THE VARIABLES OF THE BIOPSYCHOSOCIAL MODEL OF CHRONIC PAIN

While the objective of this research was to investigate the influence of attachment style on chronic pain, research indicates that there are many other factors involved in learning to tolerate and accommodate to chronic pain. The biopsychosocial model of chronic pain syndrome includes physical, psychological and social factors. A syndrome is defined as a concurrent presentation of symptoms that are a characteristic combination of opinions, emotions and behaviours.

It was proposed by Loeser (2000) that many factors influence the manner in which pain is experienced. He reported that it was not the pain that makes patients seek medical care, but the suffering that they experience. Loeser proposed a model of pain where the sensory aspect of pain (nociception), produced an awareness of pain, leading to suffering, and to overt pain behaviours. Only the pain behaviours were observable, as a response to a threat, whether they originated from the suffering, or from events within the individual’s environment (Loeser). His biopsychosocial model was based on the existence of suffering produced by pain somewhere in the body that was cognitively mediated by affect, past experience, and anticipated consequences. In order to relieve pain, it was considered necessary to understand that the suffering component can be affected by many variables. To understand suffering, a biomedical model of pain was inadequate (Loeser).

A biopsychosocial model of factors, following the ideas proposed by Engel (1959) and Loeser (2000) and developed for this current research, is presented in Figure 1. This multifactorial model illustrates that chronic pain is the outcome of physical, psychological and social factors that influence the way in which pain is appraised. Supporting evidence of the involvement of these variables is presented. Chapter 1 showed the potential
contribution of attachment-like behaviours. In this chapter the contribution of other behaviours is described.

Figure 1  A biopsychosocial model of chronic pain used to investigate overall pain, quality of life and function, developed for this research into chronic pain, following the research of Engel (1950) and Loeser (2000).

2.1 Depression

Individuals who have chronic pain experience depression more frequently than either the general population or primary care medical patients (France, Krishnan, & Pelton, 1987; Merskey, 1984; Roy, 1982; Sternbach, 1986). The literature consistently reports that up to two thirds of individuals with chronic pain are affected by depressive symptoms.
while one third are believed to be diagnosable with clinical depression. Depression experienced by individuals with chronic pain appears to be related to on-going problems. A recent study of depression and health care utilization, published by Ciechanowski, Sullivan, Jensen, Romano and Summers (2003), reported that those who were depressed while in-patients at a pain center, were the highest users of health care facilities at the 12-month follow-up assessment.

The incidence of depressive symptoms in the general population is thought to be between 13% and 20%, with a major depressive disorder found in 3.2% of males and 4.5% to 9.3% in females (Boyd & Weissman, 1982). The occurrence of depression in the general medical population does not quite approach the frequency seen in chronic pain patients. For these patients Katon (1987) found that the rate of all types of depression was between 12% and 25% for outpatients and between 20% and 33% for inpatients. Katon summarises the epidemiology of depression in medical care as a continuum of depressive symptoms ranging from normal, temporary depressed mood states through adjustment disorders with depressed mood and uncomplicated bereavement, to the extreme of major depression. He notes that the category of dysthymic disorder (American Psychiatric Association; DSM-IV, 1994) is another form of depression characterized by frequent and recurring disturbances of mood that are integral to the definition of certain kinds of personality disorders. In other words, depression can be a personality problem as well as a reaction to trauma.

Depression is defined as a mood state characterized as a sense of inadequacy, a feeling of despondency, a decrease in activity or reactivity, pessimism, sadness, anhedonia, feelings of worthlessness and fatigue, and a lack of motivation, together with an impairment in functioning in self-care, social, occupational and other areas of functioning, such as nutrition and sleep (DSM-IV, 1994).
A cognitive theory of depressive disorders was formulated by Beck (1967). Depressive-prone individuals possess cognitive schemas having certain unusual but characteristic features. These schemas result in individuals construing events in their lives in specific ways. Beck presents evidence that an individual’s dejected mood is a natural consequence of how one thinks about oneself, how one thinks about the world, and how one thinks about one’s future.

Bowlby (1980) contributes to this theory by adding that not only do depressed individuals feel sad and lonely, as others might in similar circumstances, but unwanted, unlovable and helpless because of their particular patterns of insecure attachment. Insecurity, he suggests, is always accompanied by depression of some form. When a child is born unwanted and subsequently rejected and neglected in various ways, depression as a consequence, has a very early onset. In contrast to this early onset, a child who is traumatized by bereavement, illness or abuse at a later age may experience depression as a reaction to these negative events. Whatever the timing of onset, depression is associated with insecure attachment style as a life-long pattern. Bowlby (1977) suggests that following a traumatic incident, a mentally healthy and secure individual will suffer a period of depression and disorganization, but will eventually adapt to circumstances and reorganize interactions, emerging with his or her sense of competence and personal worth remaining intact. In contrast, an insecurely attached individual finds it difficult to recover from trauma and experiences a low level of functioning, is emotionally disorganized and unable to elicit appropriate social support or to organize appropriate long-term strategies for self-care (Bowlby, 1977).

Research by Blumer and Heilbronn (1981, 1982a, 1982b) has focused on a depressive equivalent theory of chronic pain. These three studies investigated “pain-proneness” and concluded that some of their subjects had chronic pain that was the “prime
expression of a muted depressive state:” (Blumer & Heilbronn, 1982b, p. 386). This disorder included (a) the presence of somatic complaints, expressed as continuous pain of obscure origin, a hypochondriacal preoccupation and a desire for surgery, (b) a “solid citizen” style, characterized by the denial of conflicts, an idealization of self and family, and excessive activity prior to the onset of pain, (c) depression appearing after the onset of pain, characterized by anergia, anhedonia, depressive mood and despair, (d) a family and personal history of depression and alcoholism, (e) a history of past abuse by the spouse, and (f) the presence of a disabled relative or a relative with chronic pain (Blumer & Heilbronn, 1982a).

The studies quoted above suggest that depression can be masked as somatic complaints and can give an idea of the order in which pain and depression can emerge. Pain can be influenced by both the family history and personal factors, including the origins of the individual’s attachment style. A pain condition of any kind constitutes a loss or a threatened loss. Chronic pain conditions bring about changes in relationships as well as the loss of the usual occupations or vocations. Such personal and important losses activate the internalized working model of attachment. When attachment style and coping strategies are negatively biased, sadness, melancholy and depression result. To investigate a possible link between depression and vulnerability to chronic pain, depression was used in this research as a continuous variable, using the raw scores from the Depression sub-scale of the Pain Patient Profile (Tollinson & Langley, 1992).

2.2 Anxiety

Anxiety is defined as a vague, unpleasant emotional state characterized by apprehension, dread, distress and uneasiness (DSM-IV, 1994). No specific object can be defined as the cause of the anxiety, unlike fear, that usually has an identifiable source.
Anxiety is a learned state, consequent to negative events that is amplified by perceived negative events (Reber, 1985). Individuals who are anxious are in suspense, waiting for information to clarify their situation. They are typically watchful and alert and over-reactive to noise or stimuli, hopeless, helpless, inactive and despairing rather than pessimistic and discouraged as in depression (Gregory, 1987).

Anxiety is a response conditioned by a signal of danger. Pain is interpreted as “danger” and the usual response is anxiety (Reber, 1985; Skevington, 1996). Thereafter, the anticipation of the pain will arouse the same response in the absence of pain but in the face of the threat of pain. Anxiety becomes an habitual response and reduces the possibility that new ways will be sought or attempted to manage the pain (Skevington, 1996). Anxiety is also related to the amount of control that is felt by the individual. Norris (2000) found that, at least in lower magnitude disasters, prior experience with a specific type of event may reduce anxiety. Individuals who had successfully negotiated such situations before showed higher levels of “hazard preparedness.”

Chronic illness profoundly affects an individual’s beliefs about health control and it is commonly associated with strong external beliefs about the power of others to control what happens to health (Skevington, 1996). These beliefs have been shown to predict that individuals with pain are more likely to be non-compliant with non-medical treatments such as non-drug therapies. Patients who fail to improve and report increasing pain and negative emotions (such as the co-occurrence of depression and anxiety), also report that they have little or no control over their medical condition. Having an external force to blame serves to reduce anxiety and decrease responsibility (Skevington, 1996).

A cyclical relationship between pain, anxiety and sleeplessness (leading to further pain), has been proposed by Cousins (1991). The pain and its anticipated continuance sets up a vicious cycle where the fear of further pain increases anxiety and interrupts sleep, that
exacerbates further anxiety and perceived pain. Anxiety is related to attention and expectation (Shulman, 1989). Attention is the way one responds to one’s own sensations of pain. Pain increases according to the amount of attention paid to it and the expectation of it, and decreases if attention is diverted from it or the expectation of it is that it will lessen (Graham, 1987). Anxiety is the mental state accompanying tension. Anxious attention, worry and pessimistic anticipation sabotage the hopeful attitude that is necessary for the treatment of chronic pain (Bachiocco, Scesi, Morselli, & Carli, 1993; Shulman, 1989). These perceptions about oppressive demands, discouragement, stolid endurance of burdens, and feelings of being trapped in a constraining situation from which one does not have the energy or ability to free oneself, constitutes the dysthymic pain disorder.

Attachment anxiety begins when children are afraid that their secure base, their mother or carer, is either unavailable or unreliable. Attachment behaviour in children is readily elicited by (a) conditions of the child such as fatigue or pain, (b) environmental conditions such as alarming events, and (c) the absence or discouraging of proximity on the part of attachment figures (Bowlby, 1969). In adolescents and adults, sickness and calamity, danger or disaster will elicit attachment behaviour to another who is known and trusted (Bowlby, 1973). Adults also can become very demanding of others at a time of great stress. However, this adult attachment behaviour would not be labeled unusual if the circumstances were frightening or dangerous.

To investigate the contribution of anxiety to chronic pain anxiety was used in this research as a continuous variable using the raw scores obtained from the Anxiety sub-scale of the Pain Patient Profile (Tollinson & Langley, 1992).
2.3 Somatisation

Somatisation is a disorder characterized by high rates of disability, medical utilization and psychiatric comorbidity (Allen, Gara, Escobar, Waitzkin, & Silver, 2001). Somatic preoccupation is a heightened sensitivity and/or selective attention to bodily discomfort. Somatisation refers to the manner in which an individual focuses on symptoms or processes of the body and excludes any psychological influences including depression, anxiety, anger or fear.

The presence of physical symptoms unexplained or inconsistent with objective physical findings tends to be interpreted by health professionals as a reflection of somatisation. Individuals with (a) pain for which there is no readily apparent cause and no physical diagnosis can be discerned, (b) a symptom complaint that is not commensurate with physical pathology if present, (c) denial of psychological illness, and/or (d) psychological distress accompanying the physical complaints that is apparent as some form of anxiety or depression, are labeled somatisers and the process they manifest is labeled somatisation (Dworkin, Wilson, & Massoth, 1994; Goldberg & Huxley, 1980).

Rodriguez, Soares, and Pestana (1996) investigated adult chronic stress and ambiguous symptoms of physical illness in job-stressed executives. Extensive physical and psychological testing revealed that a diagnosis of somatisation could be made of 76% of the group, while the rest of the group had physical ailments accompanied by psychological problems of anxiety and mood disorders. In this group of somatisers, over-attention to physical symptoms, without the presence of a medically diagnosed condition, served to obscure the reality of their over-commitment to work.

The biopsychosocial model of pain posits three processes – nociception, a signal from the body that damage has occurred; perception, awareness that an injury has been sustained; and appraisal, a cognitive assessment of the extent and the possible effects of the
damage. These intrapersonal processes may lead to observable pain behaviours that form an important social function. They signal to others that suffering is being experienced and reveal coping strategies that are being used to accommodate to pain (Dworkin et al., 1994). These behaviours may be rewarded by a reduction of responsibilities in various areas of life, such as a release from employment, home, or social duties. The result can be increased care and attention by others. The value placed on these rewards may reinforce or reduce observable pain behaviours. At the same time an increase in the use of health systems of many forms may be sought to reduce the discomfort and dysfunction, not necessarily the pathology that has caused them. Increased visits to health professionals and paramedical services, the use of assistive devices such as walking sticks or back braces, and increased use of both prescribed and over-the-counter medications are common observable coping strategies of the somatising patient (Dworkin et al., 1994).

Two models of influences towards a somatically focused personality have been posited. According to the first model, childhood experiences contribute to the development of somatising behaviour. Childhood exposure to models of illness behaviour, such as a parent with a chronic disease, and/or exposure to traumas such as physical or sexual abuse may directly increase the risk for somatisation or indirectly contribute by influencing personality (Stuart & Noyes, 1999). The second model posits that somatising behaviour is a manifestation of maladaptive communications of distress in response to environmental stressors. Illness behaviour elicits care-giving responses from others and may be a manifestation of family dysfunction and also of the community of medical carers. Physician’s negative reactions to multiple physical complaints may increase somatising behaviours (Stuart & Noyes, 1999). These researchers suggest that adverse childhood experiences have a profound impact on the development of the attachment styles of individuals who later manifest somatising behaviour. The interaction between the type of
parental care and the responses of the child are governed by the affective responses of the parents more than by the trauma itself. A child who injures him or herself may not react until he or she gauges the reaction of the parent as attention and concern, or inattention and discounting of the importance of the trauma (Stuart & Noyes, 1999). Such selective caretaking has been described by Violon (1985), who suggests that such a parent attends only to physical needs and not to the emotional needs of the child, leading to reinforcement of illness behaviour and the creation of a somatising personality.

Vulnerability to chronic pain is hypothesized to relate to the individual’s capacity to be consoled, or to be able to self-soothe, that is, to recover from the pain inducing injury. The more insecure that attachment the more inconsolable the individual, and as a result the more vulnerable he/she is to chronic pain (Anderson & Hines, 1994). Anderson and Hines suggested that expectancies and self-fulfilling prophecies, that increase the rigidity of internal models, underlie the maladaptive coping strategies such as somatisation, depression and anxiety, while caregiver insensitivity may modify attachment behaviours by reinforcing or rewarding somatic focus. The illness behaviour becomes the method of communicating distress.

Somatisation was used in this research as a continuous variable using the raw scores obtained from the Somatisation sub-scale of the Pain Patient Profile (Tollinson & Langley, 1992).

2.4 Quality of life

The World Health Organisation (WHO, 1948) defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. It is suggested that quality of life is based on perceived life satisfaction, given the importance or the value of specific areas of life such as health to the individual (Frisch,
The terms quality of life, perceived quality of life, subjective well-being, happiness, and life satisfaction all convey the idea that individuals assess their lifestyles via emotional and cognitive schemas. Affective schemas view subjective well-being as a balance of positive versus negative affect, such as joy versus sadness, or contentment and pleasure versus depression and anxiety. Cognitive schemas judge the balance between satisfaction of life goals and disappointment and dissatisfaction with life’s circumstances. If the discrepancy between one’s aspirations and achievements is small, the greater will be the level of reported life satisfaction (Frisch, 1992).

Quality of life research has been dubbed “happiness” research (Frisch, 1994) since the focus is on satisfaction with life and on positive feelings. Such research includes factors that increase good feelings about being alive and anticipating the future with hope, optimism and perceptions of social support. An evaluation of quality of life assesses concepts embedded in the social and cultural context of the subject. For example, being a volunteer worker in the community and making the most of social connections are significantly related to reports of happiness (Kahneman, Diener, & Schwarz, 1999).

The correlation between a global judgement of quality of life and objective conditions of living are low. This has been related to positive aspects of existence that humans appreciate even in negative environments. Adaptation to circumstances has been a focus of much research and it has been shown that for both positive and negative events of life, human beings adapt to the situation and thereafter resume something of their previous levels of functioning (Brickman, Coates, & Janoff-Bulman, 1978). Quality of life assessment includes a cognitive coding of the present, a retrospective coding of past affect, plus some anticipation of a level of satisfaction about the future (Kahneman, Diener, & Schwarz, 1999). Kahneman (1999) suggested that the utility of an event in memory, or a mental decision that an event was “good” or “bad,” determines the possibility of
satisfaction. When one is satisfied with life in general (subjective happiness) one is less likely to be ruffled by changes to circumstance (objective happiness). A judgement about the importance of a concept is made by sampling a domain of life “How important is having a home to you?” while satisfaction is judged by recent evaluative thoughts about a specific set of circumstances “Are you satisfied with your home?” Kahneman suggests that these evaluations depend upon the pleasure or pain that arises with the memory of the circumstances in question.

Wealth, health, employment and family status are the factors most influential in quality of life research (Kahneman, 1999). In the present research, 16 variables were included when measuring quality of life. They were health, self-esteem, goals/values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighbourhood and community. These items constitute the Quality of Life Inventory devised by Frisch (1994). Quality of Life was used as a continuous variable in this research as the weighted raw scores obtained from the Quality of Life Inventory (Frisch, 1994).

2.5 Function

Pain programs aim to increase the function of the individual in all roles, despite the presence of chronic pain (Jensen & Karoly, 1992). It is never a prime objective to remove the pain, it is rather that the individual learns to tolerate and accommodate to the pain. Dysfunction (or functional limitation) refers to the degree to which an individual perceives that they are able to perform certain tasks of everyday life according to their own expectations Jette, 1994). For example, this may be how they see their own ability or inability to sit, or to put on shoes. These activities are known as activities of daily living or ADL’s (Delitto, 1994; Jette, 1994). For example, individuals who took part in a pain education program reported by Hubbard, Tracey, Morgan, and McKinney (1996) were able
to increase their “good” days when they could be more involved with work-related activities, and reported less pain overall. Their perception of themselves as dysfunctional was altered. Similarly, research by Jensen and Karoly (1992) shows that individuals’ beliefs about their levels of dysfunction are significantly reflected in their everyday function. These beliefs are in turn, moderated by perceived pain severity.

Therapists who run pain education programs emphasise to participants that pain is not a barrier to function (Jette, 1994). Pain education aims to increase personal resourcefulness by teaching that activities of both personal and general function can be managed if the method of operation is adapted or changed. When patients perceive that they have more personal resources to manage their pain, function increases. This ability to use personal resources to return to active living, not new drugs, pain cures or new diagnostic procedures, is an important focus (Jette, 1994, Nicholas, 2002). Resourceful individuals are able to better cope with pain both because of more effective coping strategies and less psychological distress (Toomey, Seville, Mann, Abashian & Wingfield (1995). These authors cite four major differences between those patients studied who were resourceful and those who displayed negative behaviours: (a) higher resourcefulness was related to lower psychopathology, (b) perceived pain severity was independent of personal behaviours, (c) being able to self-regulate behaviour and emotions was related to less suffering, and (d) being more resourceful was related to the ability to delay self-gratification and problem-solve, while the less resourceful patients employed more costly and impulsive pain-reducing strategies such as increased drug-taking and emergency ward attendance (Toomey et al.).

An individual’s reported ability to function in activities of daily living was measured in this research by a scale provided by the International Association for the Study of Pain (1986). This scale asks individuals to rate the success or failure of their attempts to
perform ordinary activities such as getting out of bed, or bending to pick up their clothes from the floor.

A survey conducted at the Royal Brisbane Hospital Multidisciplinary Pain Centre (Pearce, Cramond, O’Callaghan, & New, 1999) of 269 individuals admitted to the hospital with chronic pain from various causes. Using the International Association for the Study of Pain (1986) scale, these activities in order of difficulty are as follows: Females named the most difficult tasks as doing the garden, or vacuuming, participating in recreational activities and bending over to pick up something from the floor. Males agreed on this list except they reported that doing the shopping caused more problems than bending over. Both genders rated participating in social activities as fourth in difficulty. Getting in and out of a car or a bed, standing, and walking up steps were the next most difficult tasks for both males and females. Age was not a factor in rating difficulty and neither was the time that had elapsed from the onset of pain. It was universally agreed that doing gardening or vacuuming was the most difficult task and that turning door handles to open a door and using the telephone provided the least difficulty.

2.6 Disability

Disability refers to self-imposed limitations in function reported by individuals who experience chronic pain. Because individuals avoid normal activities due to the severity of the pain, anxiety, or fear of further pain, normal daily life is disrupted. Higher reported levels of disability indicate higher levels of dysfunction, emotional distress, somatic focus and low quality of life (Stewart, Lipton, Kolodner & Sawyer, 1999). Thus, disability is an important determinant of treatment needs. In their study of patients with long-term, chronic headache and migraine, Stewart et al. reported that sufferers were more likely to avoid household activities and less likely to avoid social, family or leisure activities. They also
reported that, while the majority of participants in their study did not take full days off from activities, they could not be as active or be as productive each day as they wanted to be. Participants who reported migraine headaches reported more pain, emotional distress, role disability, and lower quality of life even between attacks, than reported by chronic headache sufferers.

Disability also refers to restrictions in the ability of the individual to perform socially defined roles and tasks expected of an individual, for example, an inability to work or participate in family or social events (Delitto, 1994; Jette, 1994). Patients who may have similar impairments and similar functional limitations may have differing levels of disability. Whereas a functional limitation primarily reflects the perceptions and characteristics of the individual (eg. “I don’t think I’m well enough to do that”), a disability cannot be explained solely by the attributes of the individual. Thus, psychological, biological and social aspects of their condition may help to explain their differing levels of distress and associated disability.

In this research Disability was measured using an adapted form of the Migraine Disability Scale (Stewart, Lipton, Kolodner, Liberman, & Sawyer, 1999).

2.7 Neuroticism

To be labeled “neurotic” implies that the individual suffers from a personality disorder not due to any physical or psychological pathology, but who displays obsessive or abnormally sensitive and dysfunctional behaviours, including inappropriate emotional reactions to everyday events (Reber, 1985). Negative childhood experiences produce neurotic personality traits that precede depression and vulnerability to pain (Violon, 1990). The individual uses psychological defenses that protect their vulnerability by transposing reality into tolerable fantasies of what is real. An individual who experiences positive
caring has a sense of care and containment of inner hopes and dreads. Parental support ensures the development of autonomy and self-care and reduces the possibility of repression (Elliot, 2001).

Understanding neuroticism is easier if a normal individual is one who is viewed as having at least two positive, conscious choices of action about a particular concept, both of which are equally desirable. The neurotic dithers between two contradictory courses of action, neither of which is consciously desirable (Horney, 1945).

Horney (1945) noted that neuroticism emerges prior to observable mood disorders. She suggests that an individual who has to focus on survival in an affectionless, uncertain and threatening world develops *ad hoc* strategies to deal with the conflict and some of these strategies become a part of the psychological character. Someone who feels such basic anxieties, weakness and helplessness, can act by moving toward people and seeking help by various means. They can also move against people, becoming hostile, defensive and rebellious. As another tactic, they can move away from people, becoming avoidant and aloof. Thus, they remove themselves from the “real” world and disassociate from others. These three strategies for survival have been named by Horner (1945) the “basic conflicts” that constitute the core of neuroses. Neuroticism is based on hopelessness, helplessness, isolation and hostility. The capacity to be responsible for feelings and desires is compromised by an inability to relate authentically to the world (Horner, 1970).

The relationship between neuroticism and pain was noted by Violon (1990), Engel (1959), and Roy (1992). Engel notes the existence of a “psychic signature,” whereby some individuals relate to their pain with appropriate psychic imagery and descriptions such as sharp, dull, aching and throbbing pains, while other individuals give complex and verbose descriptions of their pain that are less likely to be concordant with anatomical and physiological processes. Roy (1992) mentions the link between repression, internalization
and somatisation that produces psychosomatic and psychogenic pain. These defense strategies alienate the individual from events that are seen as external to the self and disconnect cause and effect (Horney, 1970). These researchers agree, an individual who has chronic pain can place the blame entirely on an external cause and focus on the physical suffering and pain of an injury without acknowledging the existence of grief and suffering of psychological origin. They choose to use the pain as a symptom in order to obscure reality. Neuroticism was measured in the present research using the short form of the Neuroticism sub-scale of the Eysenck Personality Questionnaire (Eysenck, Eysenck & Barret, 1985).

2.8 Social and Demographic variables: Age and Gender

Studies that include as a pre-treatment variable the chronological age of the individual in chronic pain have shown that it is a factor in both the treatment planning and the prediction of outcomes, independent of the chronicity of pain and psychological variables (Graff-Radford & Naliboff, 1988). In one epidemiological study, Brattberg (1990) reported that individuals of older working age (45-64 years old) made more reports of increases in their pain experience than those individuals who were older than 65 and not working. Individuals with chronic pain were questioned about the sensory and intensity aspects of their pain, how they perceived that the pain affected their lives, and their ability to self-care in their activities of daily living. Perceived need for care was assessed by surveying the number of times individuals had used medical, surgical, psychiatric, physical, and alternative, therapeutic services. In this survey of 1009 individuals aged 18-84 years of age, the highest perceived need for care was in the group 45-64 and the lowest perceived need for care was in the group 18-44 years of age. Younger individuals and older individuals displayed better coping strategies than the middle-aged group.
Individuals who are diagnosed with Chronic Pain Syndrome generally experience a classic profile of high pain, high impact of the pain on their lifestyle, and high levels of mood disturbance (Corran, Farrell, Helme, & Gibson, 1997). These researchers investigated the changes in this profile as the individuals aged. Their findings suggest that this classic presentation in younger and middle-aged individuals does not occur as frequently in older adults. Their sample of 340 individuals, assessed in multidisciplinary pain centers, were aged between 17 and 93 years. Older individuals were classified as high impact without experiencing high pain intensity or high levels of mood disturbance, with an increasing prevalence of multiple disease states with advancing age. It was also shown that for these individuals their decrease in activity could reduce the severity of their pain sensations via incapacity to engage in activities that would normally produce an increase in pain intensity. Older individuals had learned to cope with their pain in a realistic fashion by evaluating the impact of the proposed activity on their physical state, whereas the younger and middle aged individuals did not consider the impact of activities and became frustrated by their inability to be active in their chosen style. Roy and Thomas (1987) also reported that pain, while common in the elderly, was not associated with disability due to the pain, and Roy, Thomas and Makarenko (1989) reported a lack of anxiety associated with pain. The participants of these studies did not regard pain as a major issue in their lives and for these groups of socially active and community integrated individuals, pain and disability were mutually exclusive, as was pain and anxiety.

Brattberg, Parker, and Thorslund (1997) conducted a longitudinal study of 24 years duration, using a sample of 321 individuals who were between 53 and 63 years of age at baseline. Their results showed that individuals developed pain during the study as they aged, rather than a decrease as they aged, and women reported more persistent and more severe pain than the men in this study, particularly in the areas of back and hips. The
authors suggest that those who reported a decrease in their pain could be the group who had
retired from employment and had thus decreased the stress associated with their lifestyle.
Women in general, and particularly women in employment, have been shown to report
more intense pain (Novy, Nelson, Averill, & Berry, 1996; Sternbach, 1986; Unruh, Ritchie,
emotional distress (particularly anxiety) similarly to males, depending on the amount of
trauma reported at assessment for chronic pain. When the definition of trauma includes
crime-related events, man-made and natural disaster, injury to self or loved ones, as well as
unwanted sexual and physical experiences, measures of pain severity and disability do not
distinguish between men and women (Spertus, Burns, Glenn, Loflund, & McCracken,
1999).

Both men and women with chronic pain have been reported to experience poor
psycho-social adjustment, while women tend to use a wider variety of coping strategies and
to be distressed by the meaning of the pain condition. Men are more likely to be poorly
adjusted to the social situation, more likely to be on disability pensions and more likely to
respond to vigorous rehabilitation programs (Weir et al., 1996).

Ladwig, Marten-Mittag, Erazo and Gundal (2001) investigated somatisation in 7,466
participants aged 25-69 years and found that higher somatisation was linked to high levels
of emotional stress and lower quality of life. Women had slightly higher levels of
soamitisation, but for both men and women, when socio-economic status and levels of
emotional distress were considered, males and females did not differ.

In the current research, Age was used as a continuous variable and Gender was
dummy coded for the analyses as 0 = male, 1 = female.
2.9 Social and Demographic variables: Social Support

Intimate attachments to other human beings are the hub around which a person’s life revolves, not only when an infant or a toddler or a schoolchild, but throughout adolescence, early adulthood and on into old age. From these intimate attachments a person draws his or her strength and enjoyment of life (Bowlby, 1980). Attachment theory states that securely attached individuals have high self-regard, are happy to make decisions for themselves and are confident about seeking help when threats occur to well-being. In addition to these traits, it is suggested that they are also happy to be close to others, to give appropriate care to others and to show warmth and understanding. Research consistently shows that having close friends and loving parents, and having high self-esteem, are important influences on happiness (Argyle & Furnham, 1983; Campbell, Converse, & Rogers, 1976; Larsen, 1987).

Human beings have traditionally found strength from being in groups. Groups of individuals and/or families aid in protection, food gathering and child care. Thus, survival of the species is enhanced. Humans seek close relationships and support from others. In turn, group ideals create behaviours related to social acceptance, group loyalty, identification and rituals, and decrease the possibility of loneliness and isolation (Myers, 1992). The marriage relationship also increases the well-being of each partner in various ways. Generally, it has been found that positive people do well in this relationship. Role identity and role diversity increases, and equity, intimacy, self-disclosure and immune strength are more positive (Myers, 1992).

Social support plays a very strong role in the strength of the immune response, and in the progress of cardiac disease and cancer (Rubermann, Weinblatt, Goldberg, & Chaudhary, 1984). Independent of the variables age, gender, income, hypertension, serum cholesterol, smoking, diabetes, genetics and hostility, having a social network strongly
improved the survival rate of individuals who had metastatic breast cancer (Spiegal, Bloom, Kraemer, & Gottheil, 1989). Lonely individuals with no one to confide in, or no one to share worries and feelings, were the individuals most likely to have long-term health problems and the highest mortality rate (Diener, 1998; Goodwin, Hunt, Key, & Samet, 1987; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). For those with health problems, having someone to share reciprocal disclosures leads to the best long-term improvements in health.

Following the Iraqi missile attack on Israel during the Gulf war, students were interviewed and classified according to their attachment style. Securely attached people living in dangerous areas reported more support-seeking strategies, less distress, less somatisation and less hostility than those individuals with insecure attachment. Insecurely attached individuals reported higher levels of distancing strategies, distress, hostility and emotion-focused strategies (Mikulincer, Florian, & Weller, 1993).

Gender differences exist in the experience of loneliness. Females value interdependence and empathetic qualities in themselves and others, and enjoy the friendship of other women the most. Men value independence and the company of other males, while at a time of need both males and females prefer to approach a woman for help and sympathy (Myers, 1992).

Individuals who have chronic pain often report many problems with family dysfunction (Roy, 1992). The principal social support of most patients is their family. Chronic pain exerts a measurable influence on the well-being of all members of the family. The roles and responsibilities of family members change in response to the presence of someone not only in need of support, but often seen as unavailable in their former roles. Women endeavour to maintain their roles, but their children perceive both parents as more unavailable and less involved in their welfare. Family members may also become
symptomatic in their search for attention (Roy, 1992). The principal factors noted in research to be most important in this systematic family dysfunction are family adaptability, cohesion and stability. The most often reported areas of concern are family finances, role responsibility, perceived support and intimacy and sexual activity. The most reported emotional response to family problems is depression (Roy, 1992). In studies 1 to 3 of this current research, it was assumed that attachment style grouping would account for this variable, as it has been shown that secure attachment and social support are positively related, while family dysfunction and a lack of social support were related to insecurity of attachment style. Social support was also assessed in Study 4 of the current research using evidence from interviews obtained for the qualitative study.

2.10 Use of Medical and Allied Health Care

The use of health care services is understood to be an indicator of psychosocial adjustment to illness and disability (Brattberg, 1990; Lindal & Uden, 1989; Pennebaker et al., 1988; Weir et al., 1996). In each of these studies examining the relationship between health care needs and health care services, these researchers report that psychosocially well-adjusted individuals expressed less distress and less need for care than those individuals who were poor or average on adjustment. Females generally reported more distress while the men expressed more need for social support and issues of trust. In a study by Brattberg (1990) there were also explicit gender differences in the use of health care services. Women had higher direct costs for health specialists while men had higher indirect costs, such as lost income.

Evidence that attachment style, negative emotions, and health behaviors were related was shown by Feeney and Ryan (1994). Early family experiences of illness were linked with increased symptom reporting and increased visits to health professionals.
Participants who reported chronic illness in the family during their childhood paid more visits to health professionals than other subjects who did not report these experiences of family illness. However when insecurely attached participants were also avoidant, the frequency of visits to health professionals was inversely related to high levels of negative emotion. This suggests that for insecurely attached individuals, high negative affect was related to inappropriate help-seeking strategies. There was also a tendency found in this study for insecurely attached individuals to over-report symptoms of illness. This was attributed to their general tendency to perceive events negatively.

Examining the concept of medical consumers versus non-consumers of medical services for chronic pain patients, Reitsma and Meijler (1997) found that consumers were looking for a medical explanation for their pain and presented a dysfunctional and interpersonally distressed profile. Their pain was more likely to be linked to increased somatic factors, higher levels of pain distress and a more continuous presentation of pain. Non-consumers reported a higher quality of life and were more likely to have episodic or recurring pain than continuous pain. The findings of the study by Reitsma and Meijler (1997) were replicated by Vedsted, Fink, Oleson and Munk-Jorgenson (2001) who found that high levels of psychological distress predicted increased attendances at medical clinics. The use of health care was assessed in Study 4 of this current research using evidence from interviews recorded for the qualitative study.

2.11 Overview of the research program

The evidence presented up to this point strongly supports the biopsychosocial model of chronic pain. This model gives consideration to existential factors as well as to traditional factors of physical and psychological pathologies. The major purpose of the current research was to test the idea that security of attachment is an important factor within
this model and to gain some understanding of how this factor could predispose individuals to the experience of chronic pain.

It is the experiences of social relationships, not the events of childhood that define attachment style. Attachment style develops according to experiences with other people (their role models) and the manner in which they approach and care for the child. Attachment theory suggests that the chronicity of pain is linked to a decline in hope and trust, and an increase in despair and distress. When the attachment model of self and other is secure (and thus resilient), individuals will be motivated towards appropriate self-care and self-soothing strategies. When the attachment model of self and other is insecure (and thus vulnerable), negative mood states increase, relationships with others are further disrupted, and future resolution of the pain problem becomes more unlikely. A cyclical pattern of despair, hopelessness and rejection of support emerges.

While it is accepted that biological processes contribute to chronic pain states, the following studies investigate (a) a better understanding of the association of psychological factors to attachment style, and (b) the efficacy of the biopsychosocial model of pain.
CHAPTER 3.0 - CLASSIFYING ATTACHMENT STYLE AND INVESTIGATING ITS RELATIONSHIP TO PAIN IN THE CLINICAL GROUP

This quantitative study sought to find a robust method of classifying attachment style using 200 clinical participants and to evaluate the effects of attachment style, as secure or insecure attachment on chronic pain and suffering, pain intensity and pain pattern. It was expected that those participants who were defined to be Securely Attached would report less pain and suffering overall than those who were classified as Insecurely Attached.

3.1 Attachment style and the experience of pain

Pain is a useful phenomenon, but when acute pain becomes chronic pain, when individuals are faced with the fact that their pain is to be their familiar but unwelcome companion for the rest of their days, intra-individual resources are tested to their limits. It has been apparent from the literature presented that chronic pain has an immense influence on the psychosocial functioning of the individuals who experience this syndrome. Most research has focused on the influence of the family culture and the social environment of the individual. The importance of the early learning of the child within the family of origin has too often been minimized or dismissed. The bonds that attach a child to its carers, the value the carers’ place on the child and on the relationship, appear to be of vital importance to the child’s development into adulthood and maturity. Therefore the behaviours associated with specific attachment styles are likely to reflect the physical and psychological reactions of the individual when experiencing chronic pain.
3.1.1 Pain and suffering

The suffering component of the pain and suffering is the affective component. Melzack and Wall (1982) argue for four essential components of pain: intensity, sensory, affective and evaluative. The interpretation of the intensity and sensory components of the pain is a conscious, cognitive process. By its very presence, pain forces the individual into awareness of its existence. The affective and evaluative components, or suffering, need not be a conscious process. Awareness of emotions is not a requirement for action. Pain is an experience that cannot be simultaneously shared or reported by anyone else than the person experiencing it (Szasz, 1957). Physicians or other carers can only judge the extent of pain by their observations of the patients’ behaviour and language.

The more complex the ideation and the imagery involved in the pain description, the more complex are the psychic processes involved in the pain experience (Engel, 1959). It is relatively simple for a doctor to note that patients who complain of chest pain may be concerned about heart disease. Signals of pain focus attention on body function and are linked psychogenically to experience. Less obvious may be the patient’s concerns about a family history of untimely deaths from cardiac problems, and this will affect the intensity and breadth of the pain and suffering.

A pain arising from a minor peripheral injury that is quickly identifiable, or an injury with a single generator such as a fall will be described in simple, economical terms. The most common of these pain descriptors is “sharp, aching, throbbing or dull.” The individuals who use elaborate imagery or vague descriptors of pain use the language that reflects the psychic function of the pain. Such descriptions indicate the characteristics of the internalized model of pain behaviours as well as the characteristics of the individual (Engel, 1959).
3.1.2 Pain and attachment style

From the literature presented, it is argued that children who are insecurely attached to their significant others develop into adults with a psychological vulnerability to chronic pain (Roy, 1992; Schofferman et al., 1992; Violin, 1990). Stress factors, such as anxiety, maternal insensitivity and unavailability, abuse and neglect, are posited to set in motion the potential for non-normal psychological development that is characterized by an inability to establish normal social connections and an inability to communicate effectively their needs for support and appropriate care at a time of need. This behaviour is demonstrated in various situations as the biased, subjective interpretation of the situation, along with the emotional response, directs the outcome. Everyone is an active participant in the construction of his or her own reality (Collins, 1996).

The literature review has suggested that the securely attached individuals were an homogenous population who have specific personal attributes such as self-confidence and good social skills that help them to communicate with health professionals and act in the interests of their own self-care. The insecurely attached individuals, also show very strong similarities in response to stressful situations. Chronic pain, by definition, is pain experienced over long periods of time, even lifetimes, so the experience of chronic pain for the insecurely attached, creates an homogenous, anxious and stressed composite group, whose response to professional interventions, like pain education programs, is an increase in psychosocial distress (Bartholomew & Horowitz, 1991; Roy, 1992).

This research sought to test if individuals who suffer from chronic pain were more likely to be insecurely attached and influenced by their negative image of self and others, since perceived lack of support, even in the face of evidence of support, appears to be the norm for these people (Collins, 1996). Many individuals with chronic pain report high levels of suffering in the absence of observed, diagnosed or reported injury or disease.
Many of these individuals also appear to lack the motivation to seek appropriate help, cannot perceive its benefits, and appear to be unable to perceive the benefits of learning new ways to tolerate and accommodate to the pain.

3.1.3 Objectives of Study 1

The objectives of this study were to test if this group was predominantly insecurely attached and if insecurity of attachment style was related to higher levels of overall pain and suffering.

3.1.4 Research Hypotheses

Specifically it was hypothesized that:

1. It would be possible to determine the attachment style of each individual as Securely or Insecurely Attached, by the comparison of the sums of scores on the three variables of Close (i.e., the view of the self), Depend (i.e., the view of the other) and Anxious (i.e., the anxiety experienced in relationships) of the Revised Adult Attachment Scale (Collins & Read, 1990).

2. There would be a higher proportion of Insecurely Attached individuals than Securely Attached individuals using the classification criteria of Collins and Read (1990). Securely Attached participants would number approximately one quarter of the group while Insecurely Attached participants would number approximately three quarters of the group.

3. The Securely Attached group would report significantly less pain than individuals from the Insecurely Attached group measured by the Total score on the McGill Pain Questionnaire.

4. The Securely Attached group would report one descriptor of Pain Pattern rather than a mixed presentation of temporal effects. The Insecurely
Attached group would be less likely to choose a single descriptor of pain pattern and more likely to select multiple descriptors of temporal pattern.

5. The Securely Attached group would report less intensity of pain experienced than the Insecurely Attached group.

3.2 Method

3.2.1 Participants

Data were obtained from 215 participants who completed both the Revised Adult Attachment Scale (RAAS) and the McGill Pain Questionnaire (McGill Pain Total). Only those cases with no missing data on the two measures were included. Cleaning the data consisted of removing the non-intact cases (15) leaving 200 participants with an average age of 47.12 years (SD = 13.1) with 85 males (42.5%) and 115 females (57.5%). The participants included patients who were on sickness benefits, disability pensions, unemployed, retired, or out of the labour force (e.g., home duties). All participants had a diagnosis of Chronic Pain Syndrome arising from mechanical damage (e.g., pain in the joints) and/or neuropathic pain (e.g., pain due to nerve damage). Each participant had attended the education program at the Multidisciplinary Pain Centre at the Royal Brisbane Hospital between the months of August 1999 and August 2000 and who volunteered to participate in the study. These patients had been referred by their general practitioner or medical specialist to the Chronic Pain Outpatients Clinic and assessed by members of the Multidisciplinary Pain Team. Each patient was interviewed by a medical specialist, an occupational therapist, a psychologist, and a physiotherapist, to determine their suitability for the inpatient program. Criteria for suitability included the ability to be an inpatient for at least 10 days, the need for further specialist or therapeutic intervention such as diagnostic procedures, basic medical care, pharmacological review, intensive physiotherapy,
psychotherapy, or instruction in self-care from the occupational therapist, and a team decision that this patient would benefit from the type of educational program that was employed at this hospital. The research study was approved by the Human Research Ethics Committee of both the Royal Brisbane Hospital and of Griffith University. Both adhere to the guidelines of the National Health and Medical Research Council of Australia.

3.2.2 Instruments

The questionnaire provided to the patients consisted of eight pages with three sections: the letter of information (supplied as a loose sheet for patients to keep), the consent form, demographic information, the Revised Adult Attachment Scale, and the McGill Pain Questionnaire. Copies of these documents are provided as Appendices A to E.

3.2.3 The Revised Adult Attachment Scale (Collins & Read, 1990)

Collin’s and Read’s (1990) attachment questionnaire was chosen for this study after it was tested in a sample of 50 chronic pain patients as well as the assessment designed by Hazan and Shaver (1987) that uses three forced choice statements about styles of attachment. This assessment was rejected because 26% of the patients chose two categories of attachment rather than one, which would have meant that those individuals would have to be withdrawn from the sample. The Collins and Read (1990) test of attachment was designed to measure intimate attachment, and the relationship between a chronic pain patient and their carer, is by necessity, an intimate relationship. The term ‘carer’ is well known to individuals who have chronic pain. Most often, their carer is their partner or another close family member. In fact, these people often receive a ‘carer’s pension’ since they look after the person in chronic pain on an intimate basis every day.

On the questionnaire the word ‘partner’ was changed to ‘carer’ on three items only. On the other fifteen questions there was no reference to a particular type of relationship.
The three questions were changed as follows: 1. “I often worry that my partner won’t stay with me/ I often worry that my carer won’t stay with me”. 2. “I often wonder if my partner really cares about me/ I often wonder if my carer really cares about me.” 3. “My partner often wants me to be emotionally closer than I feel comfortable being/ My carer often wants me to be emotionally closer than I feel comfortable being”. This change from ‘partner’ to ‘carer’ preserves the idea that the relationship is an intimate one but not necessarily a romantic attachment.

The other fifteen questions in the Revised Adult Attachment Scale (Collins & Read, 1990) relate to feelings of trust about people in general. None of these remaining questions was altered in any way. The scale has 18 items with each item rated on a 5-point Likert-type response format, with “1 = not at all characteristic of me” to “5 = very characteristic of me.” This scale yields three sub-scales, each consisting of six items that measure the attachment dimensions of Close, Depend, and Anxious. The Close sub-scale measures the extent to which an individual feels comfortable with closeness to others or avoids involvement with others. The Depend sub-scale measures the extent to which an individual feels that he or she can depend on others to be available when needed, or have their appeals for help rejected. The Anxiety sub-scale measures the extent to which someone worries about acceptance or abandonment by others. These three sub-scales were used to categorise individuals into the two basic styles of Secure and Insecure attachment. In this study, participants were categorized according to the recommendations of Bartholomew and Horowitz (1991) and Noller and Feeney (1994), and defined from the scores on the test by using the instructions given by Collins and Read (1990).

The original assessment of attachment style by Ainsworth et al. (1978) was assessment by observation of infants in a waiting room, known as “The Strange Situation.” From the typology developed by Ainsworth (1978), Hazan and Shaver (1987) created an
assessment consisting of three statements to be read by an individual, who then chose a single ‘story’ that described best their own attachment style (Avoidant, Anxious or Secure). Each of these short narratives described the view of the self and the view of the other, thought to be central to the typical views of each of the three attachment styles. The problem is that each statement assumes three mutually exclusive styles, rather than allowing individuals to differ on views of self and other.

In order to create an assessment for adults that measured beliefs about the availability and dependability of others, or the abandonment or rejection by others, the Adult Attachment Style Scale was developed (Collins & Read, 1990, p. 646). This original scale had 21 items, 7 pertaining to each attachment style. From a factor analysis it was found that 3 items loaded on more than one factor and were deleted, leaving 18 items. When Kaiser’s eigenvalues criteria greater than 1 were evaluated, 3 factors remained: comfort with closeness (Close), anxiety in relationships (Anxious) and trust on others (Depend). Depend and Close were moderately correlated (.41) suggesting that people who felt they could depend on others tended to be more comfortable with getting close to others. Anxious was weakly correlated with Depend (.18) and not at all related to Close (.01). Chronbach’s alpha were Depend = .75, Close = .72, and Anxious = .69. Test-retest correlations for Close, Depend and Anxious were .68, .71, and .52 respectively. The 18 item test was then known as the Revised Adult Attachment Scale (Collins and Read, 1990, p.646).

From the validity and reliability analyses applied to the assessment test, three styles of attachment were shown. Secure attachment was comfortable with closeness, able to depend on others and not worried about being abandoned. An Avoidant individual was uncomfortable with closeness, not confident about others availability and not worried about
abandonment. An Anxious individual was comfortable with closeness, fairly confident about the availability of others, but worried about abandonment.

3.2.4 The McGill Pain Questionnaire (Melzack, 1975)

The McGill Pain Questionnaire was designed to provide a valid, reliable and consistent quantitative measure of clinical pain (Melzack, 1975; Melzack & Wall, 1982). The test consists of twenty groups of adjectives that are used by patients to describe their pain experience and the suffering that they experience because of the pain. Scores can be obtained on the sub-scales of Sensory, Affective, Evaluative and Miscellaneous, plus a Total sum of scores. A coefficient alpha quoted in the original paper from Melzack (1975) for McGill Pain Total $r = 0.97$. Other research also using the McGill Pain Total report adequate internal reliabilities: Towery & Fernandez (1996) $r = 0.91$ and Melzack and Torgerson (1971) $r = 0.91$.

The word “pain” refers to an endless variety of qualities and not to a specific, single sensation, so the subgroups of descriptors were created to exemplify these qualities. The sub-scale “Sensory” uses words that describe the pain experience in terms of temporal, spatial, pressure, traction, hotness, coldness, brightness, and dullness. The sub-scale “Affective” uses words that describe affective qualities of pain in terms of tension, fear and autonomic properties. The sub-scale “Evaluative” uses words that describe the subjective overall intensity of the pain experience, while the sub-scale “Miscellaneous” was created to include adjectives that were considered to be essential in some cases and did not appear to fit in with the descriptors of the other categories.

Scoring of the McGill Pain Total is based on the rank value of the words in each group. The ranked value of each chosen descriptor is summed to obtain a sub-scale score. The participant selects any descriptor from the total list that they consider is relevant to
their pain and suffering with only one word to be chosen from each group of words. However, participants are not required to choose a word from every group of descriptors. To score the test, the first word in each group is given a score of one, the second one of two, the third of three, and so on, up to a maximum score of six. Groups of descriptors vary from two words to six words. The sub-scales consist of a number of groups of words. If a participant selects the first word in each of the 10 groups of words in the Sensory sub-scale then they would have a score of 10 on that sub-scale. The Sensory sub-scale consists of the word groups 1-10 and uses words such as “throbbing, shooting, stabbing, aching and sharp.” The Affective sub-scale consists of word groups 11-15 and uses words such as “tiring, frightening, and punishing.” The Miscellaneous sub-scale consists of word groups 17-20 and includes words such as “nauseating, numb, and spreading.” The Evaluative sub-scale has only one group of words “annoying, troublesome, miserable, intense and unbearable.” The Total summed score of all sub-scales can range up to a maximum raw score of 78.

The sum of the sub-scales was used as a continuous variable and gave a measure of the total or overall pain experience (McGill Pain Total). This summed score of pain and suffering is the most important since many individuals do not select a descriptor on each sub-scale, nor necessarily do all individuals rate all sub-scales as important in their pain experience. It has been recommended that the sum of the sub-scales (McGill Pain Total) is the most reliable assessment of pain (Fernandez & Boyle, 1994; Fernandez & Towery, 1996; Towery & Fernandez, 1994).

Part 2 of the McGill Pain Questionnaire asks about the patient’s experience of the pattern of the pain as (a) continuous, steady or constant (meaning that the pain is there all of the time), or (b) rhythmic, periodic or episodic (meaning that they have non-continuous pain), or (c) brief, momentary or transient (meaning that the pain flares up for a short time,
but usually is absent). In the present study, the pattern of the pain had an extra category, (d) multiple patterns of pain, since individuals with chronic pain often have interlinked patterns of pain in different parts of the body. This fourth category does not appear in the original questionnaire but a decision was made to include this option since many patients presenting at pain clinics select descriptors from all three of the possible sub-groups. This fourth category captures this information.

Part 3 of the McGill Pain Questionnaire records the present pain intensity from a very low level of pain to the most extreme severity. This is an ordinal rating from 1-5, with 1 = mild, 2 = discomforting, 3 = distressing, 4 = horrible, and 5 = excruciating. This is not an interval scale as the choice of a score in this rating was related to the personal interpretation of pain intensity.

These variables, Pain Pattern and Pain Intensity, were used as categorical variables because they are non-continuous ratings.

3.2.5 Procedure

On the first day of their admission, patients who attended the Pain Education Program at the Multidisciplinary Pain Centre were invited to participate in the research. These patients reside in the City of Brisbane and surrounding semi-rural areas of south-east Queensland. The sample consisted of the first 215 patients who were admitted to the Pain Education Program, and who volunteered to be a part of the study. These patients were admitted to the clinic between August 1999 and August 2000.

All patients were told that their participation was voluntary and that they could choose not to participate without prejudice. The letter of information was displayed together with the consent form. If they agreed to participate, the consent form was signed by the researcher and the patient, and the questionnaire was given to them. Only some of
the information was used in Study 1 (the McGill Pain Questionnaire and the Adult Attachment Style Scale). The remaining data were augmented with more patient information, then analysed, and are reported in the next chapter.

Participants took the questionnaire in an A4 envelope with instructions to fill it out and replace it in the pre-addressed envelope, seal it and return it to the ward receptionist at the close of the day. Participants who had some problems with recording their answers because of physical constraints or minor problems with literacy, had their answers recorded by the researcher. This was done in a private environment. Each questionnaire was allocated an identity number to protect the anonymity of the patient, scored by the researcher and the data entered into the database for statistical analyses. These questionnaires were then stored together in a locked filing cabinet in the researcher’s private office.

3.3 Results

3.3.1 Organisation and distribution of the variables

The continuous variables were Close, Depend and Anxious (used to partition attachment style) and the McGill Pain Total. All assumptions of normality of data were met. Categorical variables were Attachment Style as Securely or Insecurely Attached, Pain Intensity and Pain Pattern.

3.3.2 Internal consistency of these measures

In this present research the coefficient alphas for the sub-scales for the combined sample were 0.65 for Close, 0.62 for Depend. Since scores on the variables Close and Depend were used to partition the groups of securely attached and insecurely attached participants and not used as continuous variables, these reliabilities were considered to be
adequate. Coefficient alpha for the variable Anxious was 0.83. Coefficient alpha for the McGill Pain Total was 0.94.

3.3.3 *The Revised Adult Attachment Scale: Close, Depend and Anxious.*

The three sub-scales of the Revised Adult Attachment Scale, Close, Depend and Anxious were normally distributed. Descriptive statistics for the Secure, Insecure, and Total sample are presented in Table 3.1. From this scale, the three attachment sub-scales were used to create a new variable that defined attachment style for each individual as 1 = Secure, or 0 = Insecure, using a cut-off score of 19, following the criteria defined by Collins & Read (1990). One of the difficulties with using this criterion (Collins & Read) is that participants who score exactly at cut-offs are excluded from classification. In this sample, 23 participants (11.5%) would have been deleted from the study. To avoid this difficulty a more stringent criteria was set. This procedure was then used as follows. The Securely Attached group have scores of 20 or above, out of 30 on Close and Depend, and less than 20 out of 30 on Anxious. On this basis the 23 participants (15 females and 8 males) were not deleted but were counted in the Insecurely Attached group. Means and 95% confidence intervals for the three attachment sub-scales, Close, Depend and Anxious show that two statistically discrete groups have been created (see Table 3.1). In each case, the 95% confidence intervals for Securely and Insecurely Attached groups did not overlap. Hypothesis 1 was supported as it was possible to partition this clinical sample into the two groups of attachment style using the original criteria.

The Securely Attached group had 54 participants (27%), and the Insecurely Attached group had 146 (73%). This clinical sample had a higher proportion of Insecurely Attached individuals than Securely Attached and thus supports Hypothesis 2.
3.3.4 Attachment style, pain and suffering

The McGill Pain Total is the sum of the scores for all pain sub-scales. The mean, standard deviation and 95% confidence intervals for this variable are presented in Table 3.1. The analysis employed was an independent groups t-test conducted to compare the Securely and Insecurely Attached groups and their self-reported levels of pain and suffering on the variable McGill Pain Total of the McGill Pain Questionnaire. All assumptions for the analysis were met.

The result of the t test indicate that there was a significant difference between the two groups, \( t(198) = 2.86, p < .01 \) (\( p = .005 \)). The Securely Attached group reported significantly less pain than the Insecurely Attached group, supporting Hypothesis 3.

Table 3.1
Means, standard deviations and 95% confidence intervals for the sub-scales of attachment style: Close, Depend, Anxious and McGill Pain Total (\( N = 200 \)), for Securely and Insecurely Attached and Total sample.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Secure</th>
<th></th>
<th></th>
<th>Insecure</th>
<th></th>
<th></th>
<th>Total Sample</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>( SD )</td>
<td>( LB )</td>
<td>( UB )</td>
<td>( M )</td>
<td>( SD )</td>
<td>( LB )</td>
<td>( UB )</td>
<td>( M )</td>
</tr>
<tr>
<td>Depend</td>
<td>22.37</td>
<td>2.27</td>
<td>21.77</td>
<td>22.97</td>
<td>15.45</td>
<td>3.43</td>
<td>14.88</td>
<td>16.02</td>
<td>17.42</td>
</tr>
<tr>
<td>Anxious</td>
<td>9.32</td>
<td>2.64</td>
<td>8.62</td>
<td>10.02</td>
<td>14.91</td>
<td>6.06</td>
<td>13.91</td>
<td>15.91</td>
<td>13.32</td>
</tr>
<tr>
<td>McGill Pain</td>
<td>28.05</td>
<td>13.80</td>
<td>24.39</td>
<td>31.72</td>
<td>37.09</td>
<td>14.69</td>
<td>34.66</td>
<td>39.52</td>
<td>34.52</td>
</tr>
</tbody>
</table>

Note: \( LB \) = Lower Bound, \( UB \) = Upper Bound of 95% Confidence intervals

3.4 Attachment style and pain pattern

An analysis of the contingency table for these data indicated a non-significant association between attachment style and pain pattern, \( \chi^2(1, 199) = .40, p = 0.53 \). Hypothesis 4 was not supported as there was no significant difference between the Securely
Attached group and the Insecurely Attached group in the pattern of the pain. However, the Securely Attached group was more likely to select a single descriptor of pain than the Insecurely Attached group, who were more likely to choose multiple descriptors of pain. See Table 3.2.

Table 3.2  
*Contingency Table for Attachment Style and Pain Pattern Category.*

<table>
<thead>
<tr>
<th>Attachment Style</th>
<th>Secure</th>
<th>Insecure</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Descriptor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>37</td>
<td>93</td>
<td>130</td>
</tr>
<tr>
<td>Expected Count</td>
<td>35.1</td>
<td>94.9</td>
<td>130</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>.3</td>
<td>-.2</td>
<td></td>
</tr>
<tr>
<td>Multiple Descriptors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>17</td>
<td>53</td>
<td>70</td>
</tr>
<tr>
<td>Expected Count</td>
<td>18.9</td>
<td>51.1</td>
<td>70</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>-.4</td>
<td>.3</td>
<td></td>
</tr>
<tr>
<td>Total Count</td>
<td>54</td>
<td>146</td>
<td>200</td>
</tr>
</tbody>
</table>

3.4.1  *Attachment style and pain intensity*

An analysis of the contingency table for these data showed a non-significant association between attachment style as Securely or Insecurely Attached and Pain Intensity, \( \chi^2 (1, 199) = 3.76, p = .052 \). Hypothesis 5 was not supported as there was no significant difference between the Attachment Style groups in the intensity of the pain. However, the data indicate that the Securely Attached group was more likely to choose low intensity pain whereas the Insecurely Attached group was more likely to choose high intensity descriptors. See Table 3.3.
Table 3.3
*Contingency Table for Attachment Style and Pain Intensity Category*

<table>
<thead>
<tr>
<th>Attachment style</th>
<th>Secure</th>
<th>Insecure</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Intensity Pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>27</td>
<td>51</td>
<td>78</td>
</tr>
<tr>
<td>Expected Count</td>
<td>21.1</td>
<td>56.9</td>
<td>78</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>1.3</td>
<td>-0.8</td>
<td></td>
</tr>
<tr>
<td>High Intensity Pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>27</td>
<td>95</td>
<td>122</td>
</tr>
<tr>
<td>Expected Count</td>
<td>32.9</td>
<td>89.1</td>
<td>122</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>-1.0</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Total Count</td>
<td>54</td>
<td>146</td>
<td>200</td>
</tr>
</tbody>
</table>

3.5 Discussion

The results of this study show that (a) this sample can be partitioned into two independent groups, securely attached individuals who make up approximately a quarter of the sample, and insecurely attached individuals who make up approximately three-quarters of the sample, and (b) those individuals who were securely attached reported lower scores on pain and suffering than the insecurely attached group, but on measures of pain intensity or pain pattern they were not significantly different.

The first objective of this study was to ensure that a reliable method of defining attachment style was established for this and the following studies, and to determine the proportions of securely attached individuals to insecurely attached individuals.

In the general adult population it was reported that approximately 50% of individuals were securely attached and 50% were insecurely attached (Collins & Read, 1990; Hazan & Shaver, 1987). In the Australian study of remote rural pain patients, 86% were found to be securely attached (Agar-Wilson, 1994). In his study of Attachment Style,
Pain and Depression \( (N = 45) \) Scott (1989) found that 26\% of his chronic pain subjects could be classified as Securely Attached, a much smaller proportion to that found for the general population. In a study by Ciechanowski, Katon, Russo, and Dwight-Johnson (2002) of 32 patients with chronic pain only 31\% of the patients could be classified as Securely attached. Again a smaller proportion to that found previously in the general population. All of these previous studies of chronically ill patients found that Insecure Attachment was related to greater problems with physical and psychological pain.

It was previously identified that individuals who attend Chronic Pain clinics were more likely to be insecurely attached (Scott, 1989) and this current study has demonstrated that in this sample of chronic pain patients there was a similar proportion of insecurely attached individuals to that found by Scott. The insecurely attached group also reported greater pain overall than the Securely attached members of the group.

The Revised Adult Attachment Scale (Collins & Read, 1990) was selected because it elicited the most consistent responses from the patients. However, some difficulties arose in using the cut-off scores applied by Collins and Read. Scores were obtained from three sub-scales, (a) relationship to the self (Close), (b) relationship to others (Depend), and (c) relationship anxiety (Anxious). Theoretically, groups of securely attached individuals report a stable pattern of scores (high on Close and Depend and low on Anxiety) while insecurely attached individuals report an ambiguous pattern of scores. Insecurely attached individuals present as either high or low on these three variables (usually with high anxiety) but not in the manner of the pattern representing secure attachment. Therefore, it is important to set up realistic criteria to separate the groups, while acknowledging that there are some within-group differences.

When the Collins and Read (1990) criterion was used, 11.5\% of the participants were unclassified. In this study, when cut-off scores were increased to a minimum of 20/30
for Close and Depend, and less than 20/30 on Anxious as the definition for Securely attached, it was possible to classify all participants as either Securely or Insecurely attached.

If the Collins and Read (1990) criterion had been used, 23 participants from the total sample would have been lost from the data because they scored exactly the cut-off score of 18. By increasing the cut-off score to 20, it kept this group in the data as members of the Insecurely attached group. When the data were examined for the three variables of Close, Depend and Anxious, using a cut-off score of 18, the 95% confidence intervals for each variable overlapped, and means were similar, showing that the groups were not independent. Only when the cut-off score was raised to 20 did the groups become independent with no overlap on the 95% confidence intervals.

The following Table 3.4 presents the means for the Total groups for Close, Depend and Anxious for the Females and Males in this study and for Females and Males in the Collins and Read (1990) study. Collins and Read did not quote standard deviations for their study or figures for their total group.

<table>
<thead>
<tr>
<th>Study Variable</th>
<th>Chronic Pain Patients</th>
<th>Collins and Read(1990)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Close</td>
<td>20.90</td>
<td>20.11</td>
</tr>
<tr>
<td>Depend</td>
<td>17.56</td>
<td>17.22</td>
</tr>
<tr>
<td>Anxious</td>
<td>13.80</td>
<td>12.70</td>
</tr>
</tbody>
</table>
As shown by Table 3.4 of the total groups, females and males in both the general population and in the chronic pain patients reported similar scores. Since individuals from the general population who were securely attached scored above the average (above 20) on Close and Depend, and below 20 on Anxious, this information supports the decision to make 20/30 the minimum score for Secure Attachment and below 20 for Insecure Attachment for the population of the current study.

It is most important to consider the sub-scale that defines the view of the self (Close) and the sub-scale that defines the view of the other (Depend) before considering the impact of the sub-scale Anxious. It was shown that a high score on Close and on Depend, and a low score on Anxious defined who was securely attached, and by default, who was Insecurely attached. For the Insecurely attached, the sub-scale Anxious can be used to further partition the sub-groups of attachment style, Anxious-Ambivalent and Anxious-Avoidant. For this research, only the fundamental groups, Securely and Insecurely attached were used.

3.5.1 Attachment groups, pain and suffering

The second objective of this study was to determine whether attachment style was related to overall pain and suffering. From the research presented in the literature review, it was expected that those participants who were classified as Securely attached would report significantly less pain and suffering overall than those who were classified as Insecurely attached. This hypothesis was supported. The Securely attached group reported lower levels of pain and suffering than the Insecurely attached group. Being Insecurely attached is related to low levels of self-confidence and less trust of others, and high anxiety in stressful situations (Bowlby, 1944). Thus, it is understandable that the experience of
chronic pain should increase their subjective discomfort both physically and psychologically. These results contribute to validating the cut-off scores selected for the two groups of Securely and Insecurely attached, as the two groups responded to their pain situation in different ways.

3.5.2 Attachment and pain intensity

This question about pain intensity on the McGill Pain Questionnaire specifically asked participants to estimate their current pain level from “mild” to “excruciating.” This is a question about the physical manifestation of their pain. Although the hypothesis stated that these attachment groups would differ in their reports of current pain intensity, the groups did not differ significantly, although there was a trend for the Secure attachment group to report scores representing lower pain intensity. Levels of pain intensity differed according to the biological factors that have caused the pain and attachment style may not be as important in this variable.

3.5.3 Attachment and pain pattern

It was hypothesized that being Securely or Insecurely attached would affect reported pain pattern. The question asked if pain was (a) continuous, or discontinuous, or appeared only at brief intervals, or (b) if the pattern of their pain combined these presentations. Many individuals who have chronic pain have pain in various areas of the body and each area has its own pattern of pain. The reliability of the scale measuring pain pattern may have been inadequate to describe the pain presentations at the time the questionnaire was answered. The analysis showed that the attachment groups did not differ significantly, but once again there was a trend for the Securely attached group to report only a single presentation of pain while the Insecurely attached group reported multiple presentations of pain.
3.5.4 Attachment style and pain

These findings show that patients who attended the pain education programme can be partitioned into two separate groups. These groups reported different levels of pain severity and pattern, and differences in the impact of their pain. The overall measure of physical and psychological pain, as the McGill Total Pain score, showed that the insecurely attached group had more problems than the Securely attached group. The finding that both biological and psychological problems were higher in the Insecurely attached group was supported by research presented in the literature review. Increased psychological problems that existed because the subjects had an insecure model of attachment were compounded by the problems that were related to the experience of chronic pain, including the anxiety of being admitted to hospital for treatment.

Based on these findings, Study 2, reported in Chapter 4, was designed to test the hypothesis that negative emotions such as depression, anxiety, somatisation, and perceptions of quality of life would also be affected by an individual’s style of attachment. It was expected that the emotional resilience of the Securely attached individuals, even when they were in chronic pain, would be shown by the quantitative analyses, in comparison to the vulnerability of those individuals who were Insecurely attached.
CHAPTER 4.0 -
TESTING PAIN, NEGATIVE AFFECT, SOMATISATION AND QUALITY OF LIFE IN THE CLINICAL POPULATION.

Using 362 participants from the Multidisciplinary Pain Clinic at the Royal Brisbane Hospital this study investigated the relationships between attachment style, age, gender, pain, and the psychological variables of depression, anxiety, somatisation and quality of life. The results of Study 1 showed that being securely attached was significantly positively related to less pain and suffering. It was expected that Study 2 would show that being securely attached was significantly positively related to a higher quality of life. This study also investigated the effects of age and gender on the physical and psychological variables.

4.1 Pain and suffering

Pain is a warning and a lesson, and humans have the dubious honour of knowing pain in two dimensions, physical and psychological (Vertosick, 2000). Pain is useful only when the individual is intelligent and aware. To be conscious of the meaning of the pain is to be aware that it may signal some physical damage and distress either now or sometime in the future. Psychological distress may be a greater source of suffering than the physical pain. People’s perception of pain is affected by intellect, imagination, emotions, and cultural and spiritual beliefs (Vertosick). Individuals who have persistent pain relate that the physical pain is to “blame” for the changes in their circumstances, the depressed moods, the focus on disability and the reduced quality of life. Generally, they are not aware that the impact of their suffering and distress far outweighs the effect of their physical pain and may interfere with chances of recovery (Vertosick).
Chronic pain often presents as somatic complaints such as headaches and general body aches and pains. It is primarily associated with negative affect (Blumer & Heilbronn, 1982). Negative affect is a common symptom presented by both physically and psychologically distressed individuals (Blumer & Heilbronn, 1982; Miller, 1988). In his original research, Bowlby (1944) noted that all of the insecurely attached adolescent boys in his care (and thus relationship stressed) were assessed as being generally anxious and depressed. The literature suggests that depression and anxiety commonly co-occur in the community (Blumer & Heilbron, 1982), while somatisation, a physical manifestation of psychological distress, does not appear to be strongly related to these disorders (Dworkin et al., 1994). The current study will investigate the relationship of negative affect and somatisation to the other psychological and physical variables.

4.2 Objectives of Study 2

The main objectives of the present study were to determine the proportion of Securely Attached individuals to Insecurely Attached individuals in this larger sample and to determine the contribution of the demographic and psychological variables to the total reported experience of chronic pain for Securely and Insecurely Attached groups.

4.3 Research hypotheses

Specifically it was hypothesized that:

1. Based on the results of Study 1, approximately 75% of the group would be Insecurely Attached and 25% Securely Attached.

2. The Securely Attached group would report less pain, less negative affect, less somatisation, and a higher quality of life than the Insecurely Attached group.
3. Gender would be related to levels of reported pain, negative affect, somatisation and quality of life in either the Securely Attached or Insecurely Attached groups.

4. Predicting Pain: Higher pain levels would be associated with insecure attachment style, higher levels of negative affect and somatisation, a lower quality of life and younger age.

5. Predicting Quality of Life: Higher Quality of Life would be associated with secure attachment style, less pain, lower levels of negative affect and somatisation, and older age.

4.4 Method

4.4.1 Participants

Participants were 362 hospital patients who were on sickness or disability pensions, or out of the work force for other reasons such as home duties. They were drawn from the Multidisciplinary Pain Centre at the Royal Brisbane Hospital. All participants had a primary diagnosis of chronic or persistent pain arising from various medical conditions. There were 159 males (44%) with an average age of 45.4 years ($SD = 10.91$), and 203 females (56%), average age 46.7 years ($SD = 13.38$). Two hundred of these participants took part in Study 1. For the Securely Attached group, the average age was 48.7 years ($SD = 12.24$) and for the participants in the Insecurely Attached group, the average age was 45.1 years ($SD = 12.29$). In the Securely Attached group, there were 54 females (54.5%) and 45 males (45.5%). In the Insecurely Attached group, there were 149 females (56.7%) and 114 males (43.3%). These individuals were admitted to the hospital between August 1999 and December 2001 and volunteered to participate in the study. Four hundred and fourteen individuals were admitted during that period to the Pain Centre and attended the Pain
Education Program. Three hundred and eighty-eight individuals volunteered to participate in the research. Twenty-six individuals failed to return their questionnaires, giving a response rate of 92% of respondents with a total of 362 cases included in the analyses. This is an additional 162 (44.8%) clinical participants from those used in Study 1.

Ethics approval for the project was obtained from the Human Research Ethics Committee of both the Royal Brisbane Hospital and of Griffith University. Both adhere to the guidelines of the National Health and Medical Research Council of Australia.

4.4.2 Measures

These were the Revised Adult Attachment Scale (Collins & Read, 1990), the McGill Pain Questionnaire (Melzack, 1975), the Pain Patient Profile (Tollinson & Langley, 1992), and the Quality of Life Inventory (Frisch, 1994). A comprehensive description of the Revised Adult Attachment Scale and the McGill Pain Questionnaire can be found in Chapter 2.

*The Pain Patient Profile (Tollinson & Langley, 1992)*

The Pain Patient Profile is a self-report, multiple choice instrument designed to identify patients who are experiencing emotional distress associated with pain as a result of physical trauma, disease or illness. The Pain Patient Profile has three clinical scales, Depression, Anxiety and Somatisation. The clinician is able to evaluate scores in comparison to other patients who have pain. Scores could also be compared to a normative community sample on the three clinical scales.

The Pain Patient Profile consists of 44 groups of three statements numbered 1, 2 and 3. The Depression scale consists of 14 groups of statements, the Anxiety scale has 12 groups and the Somatisation scale has 13 groups. A validity scale is also included that consists of 5 groups of statements. For each item participants were instructed to choose the
one statement that best described how they had been feeling. The score of the item was equal to the rank order of the statement (1, 2 or 3) that the participant selected. A raw score was computed by summing the value of the responses for the items on that scale.

Tollinson and Langley (1992), who used a sample of 497 participants in the development of the Pain Patient Profile, reported coefficient alphas for pain patients as 0.91 for Depression, 0.89 for Anxiety, and 0.85 for Somatisation, indicating good internal consistency. Intercorrelations quoted for the validity study by Tollinson and Langley were 0.73 for Depression and Anxiety, 0.60 for Depression and Somatisation, 0.58 for Anxiety and Somatisation ($p < .001, N = 242$). In the present study, the internal consistencies were 0.85 for Depression, 0.83 for Anxiety and 0.69 for Somatisation, which were acceptable for research. Higher scores on these sub-scales indicated higher scores on Depression, Anxiety and Somatisation respectively.

Sample questions were (a) for Depression, “I am a happy person / I don’t seem to be as happy as most people / I am not happy,” (b) for Anxiety, “I am a calm person / I am probably more nervous than most people / I often feel so nervous and on edge that I am miserable,” and (c) for Somatisation, “Most of the time I feel pretty good / I seem to tire easier than most people / I feel weak and tired most of the time.”

_The Quality of Life Questionnaire (Frisch, 1994)_

The Quality of Life Questionnaire is a 32-item measure of life satisfaction comprising 16 items with 2 questions each. The first question in each item asks the respondent to rate the importance of a specific area of life. The second question of the item asks the respondent to rate the satisfaction or dissatisfaction felt about that specific area of life. Sixteen areas of life are included: health, self-esteem, goals/values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighbourhood and community.
For each item, respondents are asked “How important is this concept to you?”, and are asked to respond as $0 = \text{Not important}$, $1 = \text{important}$, and $2 = \text{extremely important}$. They are then asked “How satisfied are you with this area of your life?”, and are asked to respond as $-3 = \text{very dissatisfied}$, $-2 = \text{somewhat dissatisfied}$, $-1 = \text{a little dissatisfied}$, $+1 = \text{a little satisfied}$, $+2 = \text{somewhat satisfied}$ and $+3 = \text{very satisfied}$.

As an example for the concept of “home”, the description is, “Home is where you live. It is your house or apartment and the yard around it. Think about how nice it looks, how big it is and your rent or house payment. What is the importance of your home to you and how satisfied are you with your home?”

Satisfaction ratings are then weighted by the importance of the area involved. For example, Importance may be 0, 1, or 2. Satisfaction scores range from -3 to +3. If a participant chooses an importance score of zero the item is not scored or counted in the final summed scores. If there are more than 2 zero-rated items the test is invalid. Twenty-six questionnaires (7%) that had more than two zero-rated items were discarded from the sample as invalid. If a participant chooses an importance score of 2, and a satisfaction score of +2, the weighted score for this value is $2 \times 2 = 4$. If the satisfaction rating was -2, the value would be $2 \times -2 = -4$. Thus, there can be a positive or a negative weighted score with a possible range of -6 to +6. The total scores for the sixteen values are summed and then divided by the number of sub-scales (16), giving a “weighted” average value. If there is one missing item, the summed scores are divided by 15. If there are 2 missing items, the summed score is divided by 14. The number of invalid items must not exceed 2. Higher scores indicate a higher Quality of Life.

The Quality of Life Questionnaire was standardised on a community sample of 798 participants, average age 36 years, with 65% females and 35% males. Coefficient alpha for this validation study was 0.79, showing adequate consistency for that population (Frisch,
Sound validity evidence was also provided based on associations with similar scales (Frisch, 1994). Coefficient alpha for this research, for the current study was 0.86.

4.4.3 Procedure

Each participant was given the questionnaire at the first Pain Education class, on their first day of admission, to be completed and collected at the end of the day. For a full description of the data collection, please refer to the Procedure Section of Chapter 3. Examples of the letters of information, of consent and the demographic information sheet can be found as Appendices A, B and C.

4.5 Results

4.5.1 Organisation and Distributions of the Variables

Data were organized as category variables (Gender and Attachment Style) and continuous variables (Age, McGill Pain Total, Depression, Anxiety, Somatisation and Quality of Life). However, the variables Depression and Anxiety showed a strong linear correlation (0.71***,) so were combined into a variable Negative Affect, that was an average of both scores. (For example, with a score of 22 on Depression, and 18 on Anxiety, 22 + 18=40 ÷ 2 = 20). This new variable was named Negative Affect. All continuous variables were normally distributed.

4.5.2 Internal consistency of psychological measures

In the present study, the internal consistencies for the total sample were Close, 0.59, Depend, 0.56, and Anxious, 0.83 for the partitioning of sub groups of attachment style, 0.89 for the McGill Pain Total, 0.90 for Negative Affect, 0.69 for Somatisation, and 0.86 for Quality of Life. Since the variables of attachment style were only used to partition the sub-groups and unused in any analyses, these coefficients were considered adequate.
4.5.3 Evaluation of the role of attachment style

Attachment style group, Secure or Insecure, was generated based on the criteria presented in Chapter 3. An individual was classified as Securely Attached if they had a score of 20 or above on Close and Depend and less than 20 on Anxious. There were 99 participants in the Securely Attached group (27.3% of the participants) and 263 in the Insecurely Attached group (72.7% of the participants). Hypothesis 1, that approximately 75% of the group would be Insecurely Attached, was supported. As predicted from the results of Study 1, this approximates 25% of the population of individuals attending a pain clinic being Securely Attached. Tables 4.1 and 4.2 show the means, standard deviations and 95% confidence intervals for females and males in the Securely Attached and Insecurely Attached groups for the dimensions of attachment, Close, Depend and Anxious.

To test whether Attachment Style was independent of Gender a $\chi^2$ test of association was performed. Attachment Style was independent of Gender $\chi^2 (1, 361) = 0.13, p = 0.72$. This result was not significant, showing that Attachment style and Gender are independent.

<table>
<thead>
<tr>
<th>Table 4.1</th>
<th>Means, Standard Deviations and 95% Confidence Intervals for Secure Attachment Style x Gender, Females = 144 (Secure = 29), Males = 119 (Secure = 34) (Total score for each scale = maximum 30).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>$M$</td>
</tr>
<tr>
<td>Close</td>
<td>24.93</td>
</tr>
<tr>
<td>Depend</td>
<td>23.21</td>
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<tr>
<td>Anxious</td>
<td>8.55</td>
</tr>
</tbody>
</table>
Table 4.2
Means, Standard Deviations and 95% Confidence Intervals for Insecure Attachment Style x Gender n = 200 (Females = 115, Males = 85).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Female</th>
<th></th>
<th></th>
<th>Male</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>LB</td>
<td>UB</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Close</td>
<td>19.41</td>
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<td>18.35</td>
<td>20.47</td>
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<td>4.19</td>
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<tr>
<td>Depend</td>
<td>15.81</td>
<td>3.55</td>
<td>14.94</td>
<td>16.68</td>
<td>15.86</td>
<td>3.08</td>
</tr>
<tr>
<td>Anxious</td>
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<td>5.66</td>
<td>13.48</td>
<td>16.24</td>
<td>14.47</td>
<td>5.64</td>
</tr>
</tbody>
</table>

Table 4.3
Intercorrelations for Study 2 (clinical sample).

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td>.05</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Attachment Style</td>
<td>.13*</td>
<td>-.02</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. McGill Pain Total</td>
<td>-.19***</td>
<td>.03</td>
<td>-.21***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Negative Affect</td>
<td>-.24***</td>
<td>.07</td>
<td>-.37***</td>
<td>.26***</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Somatisation</td>
<td>-.10</td>
<td>.09</td>
<td>-.17**</td>
<td>.29***</td>
<td>.54***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Quality of Life</td>
<td>.29***</td>
<td>.04</td>
<td>.28***</td>
<td>-.27***</td>
<td>-.65***</td>
<td>-.40***</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note: Correlation significant * p < .05, ** = p < .01, *** = p < .001.

4.5.4 Relationships among the measures

Table 4.3 reports bivariate Pearson correlations that describe the linear relationships between the variables used. An examination of the intercorrelations for these variables produced the following information.

Significant high and positive relationships were found for somatisation and negative affect, and a negative moderate relationship was found between quality of life and negative affect. These relationships show that individuals who are depressed and anxious are likely to focus on the physical symptoms of their pain and report a lower quality of life.
There were weak but significant relationships between age and negative affect, quality of life, attachment style and pain, but no significant relationship to gender or somatisation. This indicates that as individuals with chronic pain grow older this is associated with less negative affect, improved quality of life and less pain, perhaps because they have improved their coping strategies and their life-style is not as demanding. Age was unrelated to somatisation.

Gender was unrelated to the physical or psychological variables. No effects of gender have been found in these analyses.

Attachment style showed weak but significant associations with the psychological variables. The highest correlation of attachment style was to negative affect. Being secure was significantly more likely to be linked to lower levels of negative affect.

The McGill Pain Total measured levels of pain and suffering. There were weak negative but significant relationships to age, attachment style and quality of life. Being older, being secure and being more satisfied with life is related to less reported pain. While this relationship was not strong, reports of greater total pain were positively associated with increased negative affect and somatisation. The more pain was reported, the more negative affect and the greater the focus on the physical symptoms of pain.

4.5.5 Attachment Style Group and Gender on McGill Pain Total, Negative Affect, Somatisation and Quality of Life

A Multivariate Analysis of Variance was conducted to test the effect of Attachment Style group and Gender on reported McGill Pain Total, Negative Affect, Somatisation, and Quality of Life (Table 4.3 shows the weak to strong correlations among the dependent variables, showing that MANOVA is the appropriate analysis here). All assumptions for the analysis were met. There was no significant interaction between Gender and
Attachment Style group, $F(4, 283) = .84, p = .50$. There was no significant main effect for Gender, $F(4, 283) = 1.06, p = .377$, but there was a significant main effect for Attachment Style group, $F(4, 283) = 12.89, p < .001$. The Bonferroni correction applied to the four dependent variables produced a revised $\alpha$ level of 0.0125. Using this, the Securely Attached group reported significantly less pain and suffering on the McGill Pain Total, $F(1, 286) = 7.66, p < .01$, less focus on physical symptoms on the measure of Somatisation, $F(1, 286) = 9.16, p < .01$, lower on the measure of Negative Affect, $F(1, 286) = 48.75, p < .001$, and higher on the Quality of Life measure, $F(1, 286) = 23.92, p < .001$, than the Insecurely Attached group. See Tables 4.4, 4.5 and 4.6 for Means, Standard Deviations and 95% Confidence intervals for Securely Attached, Insecurely Attached and Total groups. These results demonstrate that being securely attached was beneficial as the members of this group showed considerably less physical and psychological effects of chronic pain. These results supported Hypotheses 2.

No significant multivariate effect or main effect was found for Gender in this analysis. Hypothesis 3 was not supported. This result was unexpected as the literature suggests that in general, gender has an influence on both physical and psychological variables.

Table 4.4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Securely Attached</th>
<th>Insecurely Attached</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>30.57</td>
<td>15.36</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>20.16</td>
<td>3.63</td>
</tr>
<tr>
<td>Somatisation</td>
<td>25.16</td>
<td>4.24</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>2.04</td>
<td>1.43</td>
</tr>
</tbody>
</table>
Table 4.5
Means, Standard Deviations, 95% Confidence Intervals for Securely Attached group x Gender, Total N = 63 (Females = 29, Males = 34)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Securely Attached Females</th>
<th>Securely Attached Males</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>29.81</td>
<td>16.83</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>20.53</td>
<td>3.46</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>1.96</td>
<td>1.49</td>
</tr>
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</table>

Table 4.6
Means, Standard Deviations and 95% Confidence Intervals for Insecurely Attached group x Gender N = 200 (Females = 115, Males = 85)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Insecurely Attached Females</th>
<th>Insecurely Attached Males</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>37.06</td>
<td>16.15</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>24.99</td>
<td>5.09</td>
</tr>
<tr>
<td>Somatisation</td>
<td>27.50</td>
<td>5.10</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>1.17</td>
<td>1.74</td>
</tr>
</tbody>
</table>

Table 4.7
Means, Standard Deviations and 95% Confidence Intervals for the Total group x Gender (Females = 144, Males = 119)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>35.69</td>
<td>16.02</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>23.89</td>
<td>5.17</td>
</tr>
<tr>
<td>Somatisation</td>
<td>27.06</td>
<td>4.86</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>1.37</td>
<td>1.71</td>
</tr>
</tbody>
</table>

4.5.6 Predicting Pain

A standard multiple regression analysis was conducted to determine the extent that the overall pain score (McGill Pain Total) was explained by Negative Affect, Somatisation, Quality of Life, Age and Attachment Style group. Gender was not included in the analysis.
since it showed no significant correlations to any of the variables of this study. Attachment Style was coded as a dummy variable, 0 = Insecurely Attached, 1 = Securely Attached. All assumptions of the analysis were met. Together, the independent variables accounted for a significant 13% of the variance in the McGill Pain Total, \( F(5, 278) = 8.09, p < .001 \). Somatisation made the only significant unique contribution (\( sr^2 = 3.9\% \)) to the explanation of overall pain, \( t(5,278) = 3.37, p = .001 \).

In this analysis the overall pain score (McGill Pain Total) was uniquely related to a focus on the physical symptoms of the pain (Somatisation). Quality of life, age, or negative affect made no unique contributions to predicting the overall pain score, although they contributed to predicting the overall effect. This combined group of variables succeeded in predicting 13% of the variance in pain and suffering. Thus, there was some support for Hypothesis 4 for the combination of variables predicting pain, although Somatisation made the largest independent contribution of the analysis. See Table 4.8 for the summary.

### Table 4.8
**Summary of Standard regression Analysis for Variables Predicting McGill Pain Total N = 362**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>( \beta )</th>
<th>( sr^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R^2 = 13%, Adjusted R^2 = 11%</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.14</td>
<td>0.08</td>
<td>-.11</td>
<td>0.01</td>
</tr>
<tr>
<td>Attachment Style</td>
<td>2.02</td>
<td>2.21</td>
<td>0.06</td>
<td>0.00</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>0.15</td>
<td>0.27</td>
<td>0.05</td>
<td>0.00</td>
</tr>
<tr>
<td>Somatisation</td>
<td>0.72</td>
<td>0.24</td>
<td>0.23**</td>
<td>0.03</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>-0.92</td>
<td>0.67</td>
<td>-0.10</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*Note: ** = p < .01

4.5.7 Predicting Quality of life

To determine the extent that Quality of Life was explained by the combination of variables, a standard multiple regression analysis was conducted. Attachment Style was
dummy coded as 0 = Insecurely Attached, 1 = Securely Attached. Using Age, Attachment Style, Negative Affect, Somatisation and the McGill Pain Total as the independent variables, 45% of the variance in Quality of Life was explained, \( F(5, 278) = 45.17, p < .001 \). Negative Affect uniquely accounted for 26% of the variance \( t(5, 278) = -9.97, p < .001 \). The McGill Pain Total, Somatisation and Attachment Style and Age, while contributing to the explanation did not make significant unique contributions. Hypothesis 5, that Quality of Life would be predicted by using this combination of variables, was supported with Negative Affect a substantial unique predictor. See Table 4.9 for the summary of the standardized regression analysis predicting Quality of Life.

Table 4.9
Summary of Standard Regression Analysis for Variables predicting Quality of Life. \((N = 283)\).

<table>
<thead>
<tr>
<th>Variable</th>
<th>( B )</th>
<th>( SE , B )</th>
<th>( \beta )</th>
<th>( sr^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.28</td>
<td>0.01</td>
<td>0.09</td>
<td>0.02</td>
</tr>
<tr>
<td>Attachment style</td>
<td>3.96</td>
<td>0.20</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>-0.20</td>
<td>0.02</td>
<td>-0.57***</td>
<td>0.26</td>
</tr>
<tr>
<td>Somatisation</td>
<td>-1.62</td>
<td>0.02</td>
<td>-0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>-7.25</td>
<td>-0.01</td>
<td>-0.07</td>
<td>0.01</td>
</tr>
</tbody>
</table>

\( R^2 = 44.8\%, \text{Adjusted } R^2 = 44\% \)

Note: *** = \( p < .001 \).

4.6 Discussion

4.6.1 Attachment style

It was found that individuals admitted to the Pain Education Program were more likely to be insecurely attached than securely attached. Approximately 72% were insecurely attached and 28% were securely attached, similar to the proportions reported in Study 1. Over two-thirds of the individuals admitted to the pain clinic in this sample were insecurely attached. Comparison with other research is difficult as studies that specifically
investigate attachment style and chronic pain are very few. Scott (1989) assessed 44 patients in 2 pain clinics for attachment style, acute and chronic pain, and depression. He found that 26% of his sample was securely attached. Ciechanowski et al. (2002) investigated attachment style and depression, catastrophising and health care use in a sample of 32 chronic pain patients and found that 31% of his sample was securely attached. Turk (1990) classified his chronic pain patients according to their personality characteristics, into adaptive copers, dysfunctional and interpersonally distressed (echoing the secure, avoidant and anxious categories of attachment). His cluster showed that between 20% of participants with chronic low back pain, and 31% of headache sufferers could be classified as “adaptive copers.” These figures suggest that generally, about one third of chronic pain patients are securely attached and over two thirds of chronic pain patients are insecurely attached.

From the results of the MANOVA it was shown that these insecurely attached individuals were reporting more pain overall, more negative affect, more somatisation and a lower quality of life than the securely attached group. However, when attachment style was included as a predictor in the multiple regression analysis explaining overall pain, it accounted for only 2.6% of the variance. When combined with the effects of the other variables attachment style had an almost negligible effect. The combination of variables explained 13% of the variance in overall pain, with somatisation contributing 3% of the variance. Eighty seven percent of the variance in overall pain was unexplained by the variables of the research model. Results did indicate that the physical manifestations of pain, as somatisation, were important in investigating overall pain in chronic pain syndrome.

Attachment style was included as a predictor in the multiple regression analysis explaining quality of life. Only negative affect provided a significant unique contribution
and the individual effects of the other variables was negligible. Fifty five percent of the variance was unexplained, showing that variables other than those included in this model are influential in assessments of quality of life.

Since attachment style is a theory of affect regulation, it was assumed that emotions such as negative affect (depression and anxiety) and quality of life (life satisfaction) would provide a significant contribution in the analyses. Quality of life for all individuals in this total clinical group, was most related to levels of depression and anxiety, indicating that physical and psychological components may provide differing components in quality of life. This finding supports Bowlby’s theories that insecurity of style is related to levels of depression and anxiety – and thus related to a lower quality of life. Anxiety about interpersonal issues is a dimension of attachment style and not unique to chronic pain status. For the insecurely attached individuals, anxiety triggered by their attachment model in situations of distress such as chronic pain, compounds the experience of the situation, thus resulting in greater pain and more distress. These results show that good justification has been provided for pain clinics to concentrate their diagnostic and therapeutic skills on the identification and treatment of depression and anxiety to improve their patients’ quality of life, whether the individuals are securely or insecurely attached.

Attachment style had a significant effect on the correlation matrix, but due to its relationship with variables such as negative affect, it was not a significant unique predictor. Total pain score had a weak relationship only to quality of life. It could be expected that this overall measure of physical and psychological pain would have a high impact on quality of life. However, in this clinical sample it was not significantly related to any other specific physical, psychological or social variables.

This result does not show that attachment style is to be disregarded, since it has been shown that attachment style did differentiate between individuals on levels of pain,
mood disturbance, somatisation and quality of life. Knowledge of the attachment style of each individual could indicate the type of personal and interpersonal resources of a patient so that the type of therapy offered when admitted to a pain clinic could be planned to maximize the chances of an improved quality of life. It has previously been suggested that depressed and anxious individuals who attend pain clinics who are “adaptive copers” (Turk, 1990) respond differently to pain therapies when compared to those patients who have presented with high negative affect, high somatisation, and disorganized, self-damaging behaviours (Turk, 1990). Individuals who already possess good problem solving abilities would need appropriate counselling and guidance towards proven, long-term self-care strategies as well as education about pain problems and appropriate physical programs. Individuals with high psychological as well as physical problems would require more intensive, perhaps long-term psychotherapy, pain education and supportive physical therapies.

4.6.2 Gender

In the study, gender was unrelated to pain or other variables. This was unexpected as the literature reports that generally females tend to report higher pain severity (particularly in the back and hips) and males and females report similar levels of emotional distress (Novy et al., 1996; Unruh et al., 1999; Weir et al., 1996). One possible explanation is that all individuals in the study were suffering from long-term chronic pain and were all attending the pain education program. That is, they were an homogenous group. Another possible explanation is that there are no gender differences where there are high levels of personal trauma and pain (Roy et al., 1989; Spertus et al., 1999). Since individuals in this clinical group have had chronic pain for many years, a common history of trauma may have been a factor.
No differences attributable to gender on pain and depression were reported by Roy and Thomas (1987). Turk (1990) conducted separate analyses for gender effects and found that results were similar for chronic pain patients. For attachment style and its sub-scales of close, depend and anxious, Agar-Wilson (1994) found that only on comfort with closeness did the females differ from the males. She postulated that in the rural community from which they came, the strong community culture encouraged female self-confidence.

4.6.3 Age

Evidence from the literature supports the view that older individuals would report less overall pain or negative affect than younger or middle-aged individuals (Corran et al., 1997; Graff-Radford & Naliboff, 1988). In this study age was significantly but weakly related to a higher quality of life, secure attachment style, less overall pain and negative affect. Only when included with the combination of variables did age make any contribution of note to predicting pain or quality of life. This suggests that for this clinical group, getting older is associated with a more comfortable relationship with the self and feeling more competent about coping with pain problems. Attachment style is considered to be stable over the lifetime, but in this population older age had a weak significant relationship to secure style, suggesting that older chronic pain patients tended to be more secure.

4.7 Summary

This clinical sample of chronic pain patients had been admitted to hospital for therapies for their pain condition. As a total group, they reported high levels of depression, anxiety and somatisation, higher than community norms. They also demonstrated lower levels of quality of life than community samples. When attachment style was partitioned less than 1/3 of the sample was securely attached while community norms suggest that
approximately 50% is the norm in the general community. The demographic variables age and gender were negligible in their effects.

Qualities associated with insecure attachment are high symptom focus, anxiety and depression. While attachment style as a categorical variable was not a strong predictor of either overall pain or quality of life, negative affect was important in explaining quality of life. In the following study this proposition, that the qualities of attachment are more explanatory than the categories of attachment, was tested in a non-clinical sample.

The following variables of the biopsychosocial model were assessed in the next study: Age, Gender, Attachment Style, Pain Total, Negative Affect, Somatisation and Quality of Life. This partial evaluation of the model was able to explain a minor amount of variance in overall Pain (13%) and a major amount of the variance in Quality of Life (45%). Quality of life describes the individuals’ view of their satisfaction with life and may be a better indicator of general distress than the measurement of the pain experience.

In the next study additional variables of the model – Neuroticism, Function and Disability were tested. The following chapter reports on the investigation of these variables in the biopsychosocial model in a sample of non-clinical (community) individuals who have never been referred to a pain clinic for treatment as inpatients.
CHAPTER 5.0 -
TESTING THE BIOPSYCHOSOCIAL MODEL IN A NON-CLINICAL POPULATION.

Participants for this third study were 108 individuals from a non-clinical population of chronic pain sufferers. This group was defined as a sample of those individuals in the community with self-reported chronic pain, who had not had the opportunity or felt the need to attend pain education programs. Data collected from this non-clinical sample were used to investigate the extent that attachment style, negative affect, somatisation, quality of life, age and gender predicted levels of pain and quality of life. Additionally, data from this study and Study 2 were combined to investigate overall similarities and differences between the samples. The two groups have not been compared previously. Since there are very few research studies that include chronic pain sufferers from the community it was important that both clinical and non-clinical participants be included, and any differences between the groups be examined. This study investigated the variables that may explain pain in this non-clinical sample and enabled a comparison of the non-clinical and clinical patients.

The first component of this study investigated the same variables as those used in Study 2. As an extension, a number of new variables found to be related to pain and quality of life were also investigated.

Research discussed in the introduction supports the prediction that as well as the variables investigated in Study 2, neuroticism, function and disability also help explain the level of pain experienced. New variables were (a) Neuroticism, a personality trait characterized by high anxiety and poor social skills that has been shown to be important when measuring the impact of chronic pain (Anderson & Hines, 1994; Fordyce, 1986), (b)
Function, operationalised as an individual’s perception of their ability to perform activities of daily living, and (c) Disability, operationalised as the number of days in one month that individuals “rested” either because they consider they had too much pain, or to avoid pain while being active in any area of individual, family, home, or social activities.

The study examined all of the variables and their relationship to Attachment Style in order to answer four questions, (a) When each of these measures has been assessed for the non-clinical group, how do the results compare to those of the clinical group? (b) Is Function related to the pain that is reported or is it more strongly related to psychological or demographic factors? (c) Is Disability more strongly related to physical, or psychological, or demographic factors? (d) Is it beneficial overall to be Securely Attached?

5.1 The relationship between function and pain

The ability of the individual to function, and the level at which he/she functions, depends upon the impact of the perceived pain. Pain is a syndrome that represents a coincident group of signs and symptoms rather than a single phenomenon (Wall, 1999). The system that alerts us to pain works concurrently to identify the tissues involved and to activate emergency protection. Thus, sensory and cognitive activation is a response to pain. Mind, body and sensory systems act in unison to serve a biological purpose. If a sensory reaction includes active participation of mind and body, reactions to pain are, at once, emotional, psychological and physiological. The presence of pain results in observable, associated reactions that can be identified in both human and animal populations. The individual becomes alert, orientated to the source of the pain, attentive and explorative. Attention to the pain is immediate and necessary as activities are suspended that obscures the pain reaction and attention is then given to any activities that may provide relief from pain. This is the primary stage of the pain state (Wall, 1999).
The secondary stage of the pain state occurs as the initial startle reactions fade and the pain itself becomes the focus. The damaged area is guarded, rested and protected, and for the affected area, weightbearing, movement and pressure are avoided. This is the recovery phase (Wall, 1999). This care of the pain-origin site is biologically determined to allow healing to proceed. The secondary phase is crucial to recovery. In order to “rest” certain areas of the body, other areas may have to adapt their function and even change their function, to avoid mobilizing the damaged area or body part. Thus, an injury to the ankle is both painful and observable, in part because the injured person relies on their “good” leg to take most of their weight whatever their motion or resting posture.

Recovery is stimulated by the appropriate care and increased activity of the damaged area. Improved function follows mobilization. Most pain states or injuries respond to this regime (Nicholas, 2002; Wall, 1999; Wilson, 1996). To understand, to seek, and then undertake such care, the individual needs to assess both the appropriateness of self-soothing and self-care strategies. Personality and environmental factors influence the motivation to self-care, the manner of care, and the amount of effort that is put in to this task. Strategies will be learned and adopted that are consistent with self-values. That is, some individuals will pursue negative strategies persistently and “neglect” to seek other means of care, while others will try, and then discard negative strategies and adopt more positive strategies. Education from various therapists or media sources has to be interpreted, absorbed, and finally activated in order to be effective. This effectiveness is based upon the readiness of the individual to create changes to bring about an improved lifestyle. If pain persists, there are ongoing difficulties with everyday function.
5.2 Function and disability

Function refers to the degree to which the individual perceives they are able to perform activities of daily life, while Disability refers to restrictions in the ability to work or participate in individual, family, household or social pursuits (Delitto, 1994; Jette, 1994). For an individual who has chronic pain, it is most important that they continue to be active at whatever level is possible for them, because too much “rest” causes deconditioning of the muscles, and therefore, a further decline in function. Continuing with activities of daily function, living as normally as possible helps the individual to remain “able-bodied” rather than degenerating into a “disabled” patient (Nicholas, 2002). Individuals who have been encouraged to maintain a normal lifestyle have reported faster recovery from acute symptoms and fewer recurrences of symptoms (Nicholas, 2002). In this study, Function was measured by assessing the difficulty individuals reported in completing general daily tasks, while Disability was measured by the number of days an individual reported that they were unable to take part in any activities. Since none of the participants was in the workforce or in paid employment and they have chronic pain, the assessment was made of full days absent from (a) household, or (b) social or leisure activities.

5.3 Neuroticism

Gregory (1987) and Reber (1985) define neuroticism as an enduring trait that results in distress, anxiety, labile moods, depression and avoidance of reality for purposes that are inherently selfish. An individual who has chronic pain may blame an external cause and focus on the physical symptoms of pain without acknowledging any personal suffering. These neurotic individuals choose to use the pain as a symptom in order to obscure reality (Engel, 1959; Horney, 1970; Roy, 1992; Violon, 1990). Neuroticism is considered to be relatively stable over the lifetime of the individual and is associated with psychological
distress and negative self-esteem (Eysenck & Eysenck, 1975). Pavot, Fujita and Diener
(1996) found also that neurotics have a larger discrepancy between their actual and ideal
selves than do non-neurotics, and suggest that skills involved in seeking social support, the
performance of self-defeating behaviours, and finding appropriate coping strategies are
significantly related to levels of neuroticism. In this study, Neuroticism was measured to
investigate its relationship to attachment style and chronic pain.

5.4 Objectives of Study 3

First, this study sought to identify the proportion of securely and insecurely attached
individuals in the non-clinical sample and then compare these proportions with the clinical
sample. Second, to investigate the relationships between age, gender, pain and suffering,
attachment style, negative affect, somatisation, quality of life, neuroticism, function and
disability in the non-clinical sample. Third, to test for differences on age, gender, pain and
suffering, negative affect, somatisation and quality of life between the attachment groups of
either sample and between clinical and non-clinical samples.

Predictions for the study of the non-clinical sample and the comparison of the
clinical and non-clinical samples are presented.

5.5 Research Hypotheses

Attachment style in the non-clinical sample

1. (a) Attachment style characteristics will be the same as that found for the
clinical sample of chronic pain patients referred for treatment. Based on the
results of Study 2 of the clinical group, 75% of the non-clinical group would
be Insecurely Attached and 25% of the group would be Securely Attached.
(b) The proportions of securely attached to insecurely attached individuals in this non-clinical group will be the same as the proportions found for the clinical group.

2. Consistent with Studies 1 and 2 of the clinical group, the Securely Attached non-clinical group would report less Pain on the total measure of pain, less Negative Affect, less Somatisation and a higher Quality of Life than the Insecurely Attached non-clinical group.

3. Consistent with Study 1 of the clinical group, there would be no significant difference between the Securely Attached group and the Insecurely Attached group from the non-clinical sample, in their report of Pain Intensity.

4. Consistent with Study 1 of the clinical group, there would be no significant difference between the Securely Attached group and the Insecurely Attached group from the non-clinical sample, in their choice of Pain Pattern.

5. The Securely Attached group of non-clinical participants would report fewer days of Disability in the past month, than members of the Insecurely Attached group.

6. The Securely Attached non-clinical group would report less loss of Function than the Insecurely Attached non-clinical group.

Impact of Gender and Age in the non-clinical group

7. In concordance with research presented in the introduction, Gender will be significantly related to reported Pain Total, Quality of Life, and Disability in the non-clinical group.

8. In concordance with research presented in the introduction, Age will be significantly related to reported Pain, Quality of Life, Function and Disability.
Testing aspects of the Biopsychosocial model

9. In the non-clinical sample, the variables of Age, Attachment Style, Negative Affect, Somatisation and Quality of Life, will provide a small but significant percentage of the variance in the explanation of total pain. (In line with the findings of Study 2).

10. In the non-clinical sample the variables Neuroticism, Function and Disability would add to the amount of variance predicting reported levels of Pain over that amount found in Hypothesis 9.

11. In the non-clinical sample, the variables of Age, Attachment Style, Pain, Negative Affect and Somatisation would account for a significant amount of the variance explained in predicting Quality of Life. (In line with the findings of Study 2).

12. In the non-clinical sample, Neuroticism, Function and Disability would add to the amount of variance predicting reported levels of Quality of Life, as found in Hypothesis 11.

Explaining reported Function

13. In the non-clinical sample the variables of Age, Attachment Style, Total Pain, Negative Affect, Somatisation, Quality of Life, Neuroticism and Disability would account for a significant amount of variance in predicting perceived levels of everyday Function.

Comparison between the clinical group from Study 2 and the non-clinical group from Study 3.

14. The non-clinical group would report less Total Pain, less Negative Affect, less Somatisation and a higher Quality of Life, than the clinical group.
15. Being Securely Attached in the non-clinical group, would predict the lowest level of Total Pain, Negative Affect and Somatisation, out of the Securely Attached clinical and non-clinical groups and the Insecurely attached clinical and non-clinical groups.

16. Being Securely attached in the non-clinical group would predict the highest Quality of Life, out of the Securely Attached clinical and non-clinical groups and the Insecurely attached clinical and non-clinical groups.

5.6 Method

5.6.1 Participants

There were 108 chronic pain sufferers solicited from various community self-help groups from both urban and rural locations. Urban participants, constituting 60.2% of the sample, came from support groups organized by the Arthritis Foundation of Australia, the Ankylosing Spondyilitis Society, the Parkinson’s Disease Foundation and from View Clubs of Australia. Participants from rural areas (38.9%) attended meetings convened to deliver “Living with chronic pain” seminars, at which the researcher was an invited speaker. The urban participants were regular attendees at support group meetings organized by their society or foundation. The rural group did not have the opportunity to attend regular support group meetings as health seminars are only available on an irregular basis according to the availability of funding.

No participants were in paid employment and all had reported chronic pain. Rural participants came from outer metropolitan communities and were generally able to perform some light duties around their homes and gardens. Urban participants came from inner-city suburbs and reported that they were able to perform similar duties around the home and garden. The majority of the non-clinical participants were receiving sickness or
disability pensions, some depended on their spouse for support, and some received seniors’ pensions. Participants reported having pain either daily or regularly during each week. The non-clinical response rate was 43.37%, meaning that 43 out of 143 attendees at the meetings completed surveys (30.07%), and 65 out of 106 urban attendees at the meetings completed the surveys (61.32%). This gave a total of 108 participants.

These participants consisted of 39 males (36%) with an average age of 51 years ($SD = 14.68$), and 69 females (64%) with an average age of 54 years ($SD = 16.90$). The age range of participants was from 18 - 84 years of age. As in the clinical group, the inclusion criteria was the existence of reports of chronic pain arising from musculo-skeletal pain, damage or disease.

The clinical comparison group consisted of the same participants included in Study 2, that is, 362 clinical participants who were on sickness or disability pensions or out of the work force for other reasons, drawn from the Multidisciplinary Pain Centre at the Royal Brisbane Hospital. There were 159 males (44%) with an average age of 45 years ($SD = 10.91$) and 203 females (56%) with an average age of 47 years ($SD = 13.38$). In the clinical sample, there were 54 (15%) females and 45 males (12%) in the securely attached group, and there were 149 females (41%) and 114 males (32%) in the insecurely attached group. See Chapter 4 for further information. A subsection of the clinical sample used in Study 2, matched for age, gender and attachment style was used for comparison purposes in this Study 3.

Ethics approval for this study was obtained from the Human Research Ethics Committees of both the Royal Brisbane Hospital and Griffith University. Both adhere to the guidelines of the National Health and Medical research Council of Australia.
5.6.2 Measures

Measures of function, disability and neuroticism were added to the questionnaire used in Study 2. The questionnaires included the Revised Adult Attachment Scale (Collins & Read, 1990), the McGill Pain Questionnaire (Melzack, 1975), the Pain Patients Profile (Tollinson & Langley, 1992), the Quality of Life Inventory (Frisch, 1994), the short form of the Eysenck Neuroticism Scale (Eysenck, Eysenck, & Barret, 1985), the International Association for the Study of Pain Function Scale (IASP., 1986), and an adaptation of the Migraine Disability Scale (Stewart, Lipton, Kolodner, Lieberman, & Sawyer, 1999). The first four scales were described in Chapters 2 and 3. The scales measuring Neuroticism, Function and Disability are described below.

5.6.3 Eysenck Neuroticism Scale

The short form of the Neuroticism subscale of the Eysenck Personality questionnaire (Eysenck et al., 1985) was used to measure this personality variable. The scale consists of 12 items with a Yes/No response format, to such questions as: “Do you ever feel ‘just miserable’ for no reason? / Does your mood often go up and down?” The answer yes = 1, while no does not receive a score. The number of items that are answered as yes are summed as the raw score. Higher scores indicate higher levels of Neuroticism. Validation studies of the scale support the factor structure and reliability of this dimension of personality, $\alpha = 0.89$. The range of scores obtained in this current study were consistent with those reported by Eysenck et al. (1985).

5.6.4 IASP Assessment of Function

Function was measured by the International Association for the Study of Pain: Assessment of Perceived Function (IASP, 1986). This test of function comes from the IASP Assessment Protocol Tier 2, Pain History. This document, a structured interview
protocol, is provided to all pain clinics internationally to use in the initial assessment interview of individuals admitted for care. It includes sections related to demographic, functional, psychological and medical factors. The section used in this study required that the individual consider their own ability to function in 20 activities of daily living, such as getting out of bed, walking outdoors, opening a car door, doing some vacuuming or gardening, turning switches on or off, or using a telephone. Responses ranged from 1-5, with 1 = no difficulty with the task, 2 = slight difficulty, 3 = moderate difficulty, 4 = extreme difficulty and 5 = unable to do this task. The Total score is the sum of the numbers chosen. Higher scores on this measure indicate that the respondent perceives that they have more difficulty with activities of daily living.

The use of this questionnaire has been piloted within the Multidisciplinary Pain Centre at the Royal Brisbane Hospital. The reliability coefficient for that study, with 169 patients, was 0.89.

5.6.5 Assessment of Disability

Disability was measured by the Migraine Disability Scale (MIDAS: Stewart, Lipton, Kolodner, Liberman, & Sawyer, 1999). This scale consists of four questions about daily activities as full or half days of missed participation in employment/school, household activities, family/social activities, and the number of days where productivity was reduced by 50% or more. A fifth question enquires about the number of days on which they had pain. To use the scale in this population the word “headache” was replaced by the word “pain” in the relevant questions. The scale is based on memories about activities over the last three months. For this population, many of whom have memory problems due to analgesics or anti-depressant drugs, this time was reduced to one month instead of three. An example question is Question 3. “On how many days in the last month did you miss
family, social, or leisure activities because of your pain?” Sound psychometric properties have been identified for the MIDAS scale (Stewart et al., 1999: Stewart, Lipton, Kolodner, Sawyer, Lee, & Liberman, 2000).

5.6.6 Procedure

Following the opening address for the seminars, the convenor asked for volunteers to participate in the research and the questionnaires were distributed for completion over the various breaks throughout the day. Examples of the letter of information, consent form and the demographic information sheet, plus examples of the tests in the public domain, can be found in the appendices.

5.7 Results

5.7.1 Organisation and distributions of the variables

Data were organized as categorical variables (Gender, Attachment Style, Pain Pattern, Pain Intensity and Disability) and continuous variables (Age, McGill Pain Total, Negative Affect, Somatisation, Quality of Life, Function and Neuroticism). Since the variables Depression and Anxiety were combined to create the variable Negative Affect (because of their high intercorrelation) for Study 2 with the clinical population, a comparison of effects for this non-clinical population required the same merging of these two variables. There was some missing data for measurement of some of the required variables, so different analyses will be reported with different numbers of participants. The correlation between Depression and Anxiety for this sample was 0.73***.

5.7.2 Disability

The two items measuring Disability, that is the days per month that an individual “rested” in order to avoid pain aggravated by Home or Social activities, were categorically
distributed, either participants needed to rest for whole days, or they did not. When social activities were considered 62 (64%) of those responding to the item reported no days of rest per month. The remainder of the participants in Study 3 generally took less than 5 days rest per month for any reason, while a few others reported resting most days of the month. On this basis, two categories were generated, one for no rest, and a second one for one or more days of rest per month for Home or Social activities combined.

5.7.3 Internal consistency of the measures

Coefficient $\alpha$ for the dimensions of attachment in Study 3 were: Close = 0.75, Depend = 0.72 and Anxious = 0.83. The reliability coefficient for the McGill Pain Total was $\alpha = 0.87$, Negative Affect, $\alpha = 0.87$, Somatisation, $\alpha = 0.80$, Quality of Life, $\alpha = 0.87$, Neuroticism, $\alpha = 0.89$ and Function $\alpha = 0.93$. The correlation for items 1 and 2 for the Disability scale were $p = 0.22$, ($p < .05$). The low correlation suggests that different concepts were being measured by the two items.

5.7.4 Differences in the non-clinical sample obtained from different demographic locations

Prior to full data analysis, the consistency of the sample was investigated. The major difference between the rural and urban samples was the age distribution, with the rural sample ($M = 60.95$ years, $SD = 15.47$ years) significantly older than the urban sample ($M = 48.2$ years, $SD = 14.61$ years), $t(106) = 4.34$, $p < 0.001$. Significantly greater reports of pain, were found for the urban group, $F(1,102) = 5.9$, $p = 0.017$ This disappeared when the effect of age was considered. On a number of other psychological variables, urban residents reported greater difficulty. However, when age was taken into account these differences disappeared. On this basis the sample was combined as a single non-clinical sample representative of the community. The reduced effects found in the rural population
can be attributed to the age of the sample, not the rural location. Descriptive statistics are shown in Table 5.1.

Table 5.1
Means, standard deviations and 95% confidence intervals for the raw scores of rural and urban participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Rural (N = 43)</th>
<th></th>
<th></th>
<th>Urban (N = 65)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>LB</td>
<td>UB</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Depend</td>
<td>20.26</td>
<td>4.11</td>
<td>18.92</td>
<td>21.59</td>
<td>19.09</td>
<td>4.52</td>
</tr>
<tr>
<td>Anxious</td>
<td>11.10</td>
<td>4.59</td>
<td>9.62</td>
<td>12.59</td>
<td>12.36</td>
<td>3.94</td>
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<tr>
<td>Age</td>
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<td>16.06</td>
<td>56.01</td>
<td>65.06</td>
<td>47.08</td>
<td>13.78</td>
</tr>
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<td>12.83</td>
<td>13.23</td>
<td>21.54</td>
<td>21.28</td>
<td>12.29</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>18.41</td>
<td>3.73</td>
<td>17.20</td>
<td>19.62</td>
<td>19.44</td>
<td>4.25</td>
</tr>
<tr>
<td>Somatisation</td>
<td>21.74</td>
<td>4.78</td>
<td>20.21</td>
<td>23.28</td>
<td>24.13</td>
<td>4.97</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>2.73</td>
<td>1.51</td>
<td>2.24</td>
<td>3.22</td>
<td>2.02</td>
<td>1.47</td>
</tr>
<tr>
<td>Neuroticism</td>
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<td>2.72</td>
<td>4.82</td>
<td>4.17</td>
<td>3.19</td>
</tr>
<tr>
<td>Function</td>
<td>18.72</td>
<td>16.72</td>
<td>13.30</td>
<td>24.14</td>
<td>25.28</td>
<td>17.84</td>
</tr>
</tbody>
</table>

5.7.5  Attachment Style categories for the non-clinical group

Attachment style was defined using the method described in Study 1. An individual who scored 20 or more on Close, and on Depend, and less than 20 on Anxious, was coded as Secure, while all others were coded as Insecure. This method resulted in a reliable partitioning of the attachment styles as shown by the means, standard deviations and 95% confidence intervals. There were 22 securely attached males (20.37%) and 32 securely attached females (29.63%), a total of 54 (50%). For the insecurely attached group, there were 17 males (15.74%) and 37 females (34.26%), also a total of 54 (50%). These proportions were similar across the rural and urban groups. Thus, Hypothesis 1(a) was not supported. This result showed that there were equal numbers of participants in the securely and insecurely attached groups, similar to those proportions found in the general
population. Refer to Table 5.2 for the means, standard deviations and 95% confidence intervals.

Table 5.2
Summary table for the dimensions of attachment style, Close, Depend and Anxious for Insecurely and Securely Attached: Means, Standard Deviations and 95% Confidence Intervals (n = 108)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>LB</th>
<th>UB</th>
<th>M</th>
<th>SD</th>
<th>LB</th>
<th>UB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insecurely Attached</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Female (N = 37)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td>19.82</td>
<td>3.71</td>
<td>17.91</td>
<td>21.73</td>
</tr>
<tr>
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<td>3.96</td>
<td>14.57</td>
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<td>18.41</td>
<td>3.84</td>
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<td></td>
</tr>
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<tr>
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<td>21.82</td>
<td>2.24</td>
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<tr>
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<td>2.14</td>
<td>8.14</td>
<td>10.04</td>
</tr>
</tbody>
</table>

5.7.6 Comparison of Secure/Insecure Attachment across the clinical and non-clinical groups

A comparison of scores on the dimension of Attachment Style resulted in Secure N = 54 (50%), and Insecure N = 54 (50%) individuals in this non-clinical group, while the clinical group had Secure = 99 (27.3%) and Insecure = 263 (72.7%).

A chi-square analysis indicated that there were significantly different proportions of securely attached individuals to insecurely attached individuals in the non-clinical group, compared to the clinical group, $\chi^2 (1, 471) = 19.77, p < .001$, supporting Hypothesis 1(b).

A greater proportion of the participants attending the pain clinic had an insecure attachment style when compared with the non-clinical group. A higher proportion of Securely Attached individuals were found in the non-clinical group, in concordance with previous research using non-clinical populations. See Table 3.
Table 5.3
Means, standard deviations and 95% confidence intervals for attachment style by rural (n = 43) and urban group (n = 65)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>95% Confidence Intervals</th>
</tr>
</thead>
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<td></td>
<td></td>
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<td>LB</td>
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<tr>
<td><strong>Age in years</strong></td>
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<td>46.71</td>
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<td>12.46</td>
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<td><strong>McGill Pain Total</strong></td>
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<tr>
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<tr>
<td>Secure</td>
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<td><strong>Negative affect</strong></td>
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<tr>
<td>Rural</td>
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<tr>
<td>Secure</td>
<td>17.04</td>
<td>2.69</td>
<td>15.95</td>
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<td>4.23</td>
<td>18.19</td>
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<tr>
<td>Urban</td>
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<tr>
<td>Secure</td>
<td>16.90</td>
<td>2.62</td>
<td>15.82</td>
</tr>
<tr>
<td>Insecure</td>
<td>21.64</td>
<td>4.36</td>
<td>19.95</td>
</tr>
<tr>
<td><strong>Somatisation</strong></td>
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<td>Rural</td>
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<tr>
<td>Secure</td>
<td>20.54</td>
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<tr>
<td>Insecure</td>
<td>26.11</td>
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<td>24.31</td>
</tr>
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<td><strong>Quality of Life</strong></td>
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<td></td>
<td></td>
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<td>1.07</td>
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</tr>
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<td>0.59</td>
</tr>
<tr>
<td><strong>Function</strong></td>
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<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secure</td>
<td>11.58</td>
<td>10.91</td>
<td>7.17</td>
</tr>
<tr>
<td>Insecure</td>
<td>29.73</td>
<td>18.63</td>
<td>19.42</td>
</tr>
<tr>
<td>Urban</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Secure</td>
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<td>16.54</td>
<td>15.47</td>
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<tr>
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<td><strong>Neuroticism</strong></td>
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<tr>
<td>Rural</td>
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<td></td>
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<tr>
<td>Secure</td>
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<td>2.65</td>
<td>1.54</td>
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<tr>
<td>Insecure</td>
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<tr>
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<td>1.70</td>
<td>1.98</td>
</tr>
<tr>
<td>Insecure</td>
<td>5.50</td>
<td>3.58</td>
<td>4.11</td>
</tr>
</tbody>
</table>
5.7.7 Relationships between the measures

Table 5.4 reports the bivariate correlations that describe the association between the variables of this study. An examination of the intercorrelations for these variables produced the following information. They are presented in order of their inclusion in the study.

Age showed only weak relationships to the other variables and was most associated negatively with pain, showing that as individuals get older, lower levels of pain were reported.

Gender shows no significant relationship to any other variable.

Attachment style and function, neuroticism, pain, somatisation and disability were significantly but weakly negative correlated, showing that secure attachment is related to less loss of function, less neuroticsm, lower pain levels, less focus on physical symptoms and less days of inactivity.

Attachment style and negative affect were moderately significantly negatively related to negative affect and moderately positively related to quality of life. This suggests that belonging to the securely attached group is associated with less emotional distress and higher life satisfaction than for the insecurely attached.

Pain had a strong significant positive association with somatisation, a significant moderate relationship to negative affect, function, and neuroticism, a significant weak positive relationship to disability and a significant weak negative relationship to quality of life. Having chronic pain was associated with being symptom-focused, distressed, a loss of function in daily activities, being neurotic, and less related to taking more days of rest and experiencing a low quality of life. The relationship between Age and Pain was stronger here attributed to the older age of the group and consistent with the literature reported in the introduction. The greatest pain reported was between 45 and 65 years of age.
A high correlation was found between depression and anxiety (0.73). As a result of this depression and anxiety were merged to create a single variable, negative affect, as had been done in Study 2.

Negative affect was significantly positively strongly related to somatisation and to neuroticism. Those individuals who were symptom-focussed were also more emotionally distressed and neurotic. Negative affect was also strongly significantly negatively related to quality of life, suggesting that as emotional distress increased, general life satisfaction decreased.

Negative affect was significantly moderately positively related to function and slightly less so to pain and disability. Being distressed was related to reduced function, and higher overall pain with more days of inactivity.

Somatisation had moderate to strong positive relationships with pain, negative affect, function, neuroticism, and disability, a significant moderate negative association with quality of life. Participants who reported higher scores on this variable are showing more overall pain, higher emotional distress, more loss of function in daily activities, an influence of the personality trait of neuroticism, and a lower perception of their own ability to function. They are also reporting a lower quality of life.

Quality of life was strongly related to negative affect, moderately related to somatisation and attachment style, and weakly related to age and pain. Those participants who were older and satisfied with their lives, even though they have chronic pain, were less symptom-focussed, less distressed and more likely to be securely attached.

Function had a moderate relationship to somatisation, negative affect, quality of life and pain, a weaker relationship to attachment style, and a very weak, but significant relationship with age. The loss of function in activities of daily life was associated with
pain symptoms, emotional distress, life satisfaction and reported pain levels, most likely in insecurely attached individuals who are younger than others in this sample.

Disability was only moderately related to function, with a weaker relationship to negative affect, somatisation, attachment style, and quality of life. It also showed a very weak significant relationship to neuroticism.

Neuroticism was most strongly related to negative affect, moderately related to quality of life, somatisation, attachment style and pain, and weakly related to age. This personality factor was associated with reports of higher emotional distress, greater focus on pain and symptoms and less life satisfaction in younger participants, suggesting that personality factors were associated with an individual’s ability to cope with the variety of problems associated with chronic pain.

Apart from attachment style group, where a weak but significant relationship was found with pain, moderate significant relationships were found with all psychological and function variables and reports of pain. These relationships were substantially stronger than those found in Study 2, supporting the notion that pain is related to a number of effects. Support for stronger relationships is found in the regression analyses reported later in this chapter.
### Table 5.4
*Intercorrelations for the variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
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<td>1. Age</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gender</td>
<td>.08</td>
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<td>3. Attachment Style</td>
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<td>5. Somatisation</td>
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<td>-.39***</td>
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<tr>
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<td>-.51***</td>
<td>.49***</td>
<td>.71***</td>
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<td>-.56***</td>
<td>-.67***</td>
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<td>-.45***</td>
<td>.43***</td>
<td>.45***</td>
<td>.65***</td>
<td>-.52***</td>
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</tr>
<tr>
<td>9. Function</td>
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<td>.07</td>
<td>-.37***</td>
<td>.45***</td>
<td>.59***</td>
<td>.53***</td>
<td>-.47***</td>
<td>.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Disability</td>
<td>-.11</td>
<td>-.09</td>
<td>-.41***</td>
<td>.30**</td>
<td>.46***</td>
<td>.49***</td>
<td>-.36***</td>
<td>.24*</td>
<td>.54***</td>
<td></td>
</tr>
</tbody>
</table>

*Note: * = p < .05, ** = p < .01, *** = p < .001 (N ranged from 97 to 108).*

### 5.7.8 Impact of Attachment style and Gender on McGill Pain Total, Negative Affect, Somatisation, Quality of life, Function and Neuroticism

Consistent with the analyses used for Study 2, a Factorial Multivariate Analysis of Variance was conducted to test the effect of Attachment Style and Gender on Total Pain score, Negative Affect, Somatisation, Quality of Life, Neuroticism and Function (Table 5.4 shows the moderate to strong correlations among the dependent variables, indicating that MANOVA was the appropriate analysis). All assumptions for the analysis were met. A Bonferroni correction for 6 variables was applied (0.05 ÷ 6 = 0.008) for the univariate analyses.

There was a significant multivariate interaction between Attachment Style x Gender, $F(6, 81) = 2.76, p = 0.017$. No significant multivariate main effect was found for Gender, $F(6, 81) = 1.71, p = 0.13$, but a significant multivariate main effect was found for Attachment Style, $F(6, 81) = 8.55, p < .001$. No significant interactions between Gender and Attachment Style were found at the univariate level. These results concerning Gender
did not support the hypothesis. In this non-clinical population, this result for the variable Gender is not in agreement with the literature presented, but is consistent with the results from the clinical population of Study 2, where Gender was also unrelated to the variables under study. Gender was removed from later analyses.

Significant univariate effects were found for Attachment Style for Negative Affect, $F(1, 90) = 35.53, p < .001$, Somatisation, $F(1, 90) = 16.35, p < .001$, Quality of Life, $F(1, 90) = 38.51, p < .001$, Neuroticism, $F(1, 90) = 19.62, p < .001$, and Function, $F(1, 90) = 13.50, p < .001$. Being securely attached produced reports of less negative affect, less somatisation, less neuroticism, better quality of life and greater functional capacity when performing everyday tasks. No significant difference was found for McGill Pain Total, which was not significant, $F(1, 90) = 2.90, p = 0.09$, although there was a trend in the expected direction. See Table 5.6 for the summary of Means, Standard Deviations and 95% Confidence Intervals for the sample. Overall, being Securely Attached was shown to have significant benefits for members of the non-clinical group, supporting Hypothesis 3.
Table 5.5
Attachment Style and Gender x McGill Pain Total, Negative Affect, Somatisation, Quality of Life, Neuroticism and Function in the Non-Clinical Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender Attachment Style</th>
<th>95% Confidence Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td>McGill Pain</td>
<td>Male</td>
<td>20.73</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>18.48</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>22.96</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>16.07</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>Male</td>
<td>22.10</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>16.79</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>20.96</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>17.34</td>
</tr>
<tr>
<td>Somatisation</td>
<td>Male</td>
<td>26.20</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>21.86</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>24.73</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>20.93</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>Male</td>
<td>1.31</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>2.85</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.41</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>3.29</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>Male</td>
<td>4.73</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>2.95</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>6.08</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>2.46</td>
</tr>
<tr>
<td>Function</td>
<td>Male</td>
<td>24.67</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>15.29</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>33.19</td>
</tr>
<tr>
<td></td>
<td>Secure</td>
<td>16.64</td>
</tr>
</tbody>
</table>

5.7.9 Attachment Style and Pain Intensity

Based upon the finding that there was no significant association between Pain Intensity and Attachment Style in the Clinical population, it was predicted that Pain Intensity would be independent of Attachment Style in the non-clinical population. This variable was operationalised as a scale of 1-5, with 1 being the lowest value of Pain Intensity, and 5 being the highest, most intense pain imaginable. A chi-square analysis
indicated that there were no significant differences between the Insecurely Attached and the Securely Attached participants in their reports of Pain Intensity, showing that Pain Intensity was unrelated to Attachment Style, $\chi^2(1, 104) = .97, p = .33$. In the non-clinical sample, the Securely Attached group was not significantly different to the Insecurely Attached group in their reports of Pain Intensity, supporting Hypothesis 3.

### 5.7.10 Attachment Style and Pain Pattern

Based upon the finding that there was no significant association between Pain Pattern and Attachment Style in the clinical sample, it was predicted that Pain Pattern would be independent of Attachment Style in the non-clinical sample. This variable was operationalised as $1 = $ a single pattern of pain as continuous, steady or constant, meaning that the pain was there all of the time; rhythmic, periodic, or episodic, meaning that it was non-continuous pain; or brief, momentary or transient, meaning that it flares up for a short time but usually is absent, and $2 = $ multiple patterns of pain (usually in different areas of the body). A chi-square analysis indicated that pain pattern was not independent of attachment style group, $\chi^2(1, 104) = 7.99, p = 0.005$. This result does not support Hypothesis 4 as the Securely Attached individuals of the non-clinical group were more likely to have chosen a single descriptor of Pain Pattern while the members of the Insecurely Attached group were more likely to choose multiple descriptors. This result differs from results from the clinical group, where there was no significant relationship between Attachment Style and Pain Pattern. However, in the clinical group there was a strong trend towards significance with $p = .05$. See Table 5.6 for results of Pain Pattern and Attachment Style.
Table 5.6  
Comparison of Securely and Insecurely Attached participants for Pain Pattern and Attachment Style

<table>
<thead>
<tr>
<th>Group</th>
<th>Single descriptor</th>
<th>Multiple descriptor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securely Attached</td>
<td>47</td>
<td>5</td>
<td>53</td>
</tr>
<tr>
<td>Insecurely Attached</td>
<td>36</td>
<td>17</td>
<td>53</td>
</tr>
<tr>
<td>Total group</td>
<td>83</td>
<td>22</td>
<td>106</td>
</tr>
</tbody>
</table>

5.7.11 Attachment Style and Disability

An unexpected limitation of the study was the response of participants to the MIDAS scale. The scale consists of five items relating to daily activities. The first question was about missed days of employment or school attendance. No participant was either employed or attending school. Therefore, the question was irrelevant for this population. The second question was about missed days of household work. This question was relevant (Mean 4.48, SD 7.76, Mode 0). The third question was about days missed from family or social activities. This question was also relevant (Mean 1.95, SD 4.19, Mode 0). The fourth question was about days on which the participants felt they had been less than 50% productive. All participants answered by giving the full amount of days – 30 days. The fifth question was about the number of days on which they had pain (Mean 24.22, SD 9.27, Mode 30). So out of the five questions only two were statistically relevant to the study. Histograms presented two populations for each question, one very large (no days of rest), and one very small (some days of rest). The low correlation between the two items suggested that the concepts of Home Activities and Social Activities were not strongly related. Therefore, two categorical variables were created. These non-continuos variables were categorized as 1 = 0 days of rest to avoid or reduce pain, 0 = 1 or more days of rest from Home or Social activities. Chi-square analysis showed that there were significant differences between Attachment Style and Home activities, X2(1,104) = 7.46, p
< .01 (p = .006), and Attachment Style and Social activities, \( \chi^2(1, 104) = 6.53, p < .05 \) (p = .012). These results showed that attachment style was significantly related to the days of rest taken from either home or social activities, giving limited support to Hypothesis 5, because these are not highly significant results. Considering the response of these participants to this test, this otherwise reliable test is not recommended for chronic pain patients.

While Attachment Style was important in this analysis, the link between experiences of pain and activity were interesting. Question 5 showed that participants have reported being in pain most days of the month (20-30), but not missing out on activities because of the pain experienced.

The low correlation between the two items on the Disability scale suggested that the concepts of Home activities (such as housework or gardening) and Social (Leisure and Recreational activities) were not strongly associated. Therefore, two categorical variables were created. These non-continuous variables were categorised as 1 = 0 days of rest to avoid or reduce pain, and 0 = 1 or more days of rest, for full days of rest from Home, or Social activities. Chi-square analyses showed that there were significant differences between Attachment Style and Home activities, \( \chi^2(1, 104) = 7.46, p < .01 \) (p = .006), and Attachment style and Social activities, \( \chi^2(1, 104) = 6.53, p < .05 \) (p = .012). These results showed that membership of the groups of securely or insecurely attached participants was significantly related to the days of rest taken from either Home activities and Social activities, supporting Hypothesis 5.

The next section tests variables of the biopsychosocial model, using three outcome variables.
5.7.12 Predicting Pain, Quality of Life and Function

In the following section, reports are given of the results of analyses used to predict Pain, Quality of Life and Function. Hierarchical multiple regression analyses were utilized. This allowed the dependent variables of Pain, Quality of Life and Function to be regressed on the same predictor variables as were used in Study 2 (Age, Attachment Style, Pain, Negative Affect, Somatisation, and Quality of Life). These predictor variables were included at Step 1. The newly investigated variables (Neuroticism and Function) were entered at Step 2.

This allowed (a) determination of variance accounted for using the same models as those used in Study 3 of the clinical sample, (b) determination of the amount of extra variance accounted for by additional variables outlined in the biopsychosocial model, and, (c) the total amount of variance accounted for when all the predictor variables were included. Age was also included in these analyses as it was significantly associated with the three dependent variables. Gender was not included in the analysis because it showed no significant correlations to any of the other variables. Attachment Style was coded as a dummy variable, 0 = Insecurely Attached, 1 = Securely Attached. All assumptions for the analysis were met.

5.7.13 Predicting Pain

The combination of variables entered at Step 1 accounted for a significant 42% of the variance in the McGill Pain Total, $F(5, 84) = 12.16, p < .001$. The addition of Function and Neuroticism to the model at Step 2, increased the variance explained by a significant 4%, to 46.3%, $F(7, 82) = 10.09, p < .001$.

At Step 1, a unique contribution was made to the explanation of pain by Age, $t(5, 84) = -3.61, p = .001$, Somatisation, $t(5, 84) = 3.23, p = .002$, and Quality of Life $t(5, 84) =$
2.02, \( p = .046 \). Based on the regression coefficients the strongest associations with pain at this step were somatisation, and age, with quality of life and somatisation making smaller contributions. See Table 5.7. Reports of greater overall pain were associated with being younger, having a greater focus on pain symptoms and reporting a lower quality of life. Attachment style did not produce a significant unique relationship with reports of overall pain.

When all variables were included, \( \text{Age} t(7, 82) = -2.10, p = .004 \), \( \text{Somatisation} t(7, 82) = 3.00, p = .004 \). Neuroticism \( t(7, 82) = 2.31, p = .023 \), and Quality of Life \( t(7, 82) = 2.07, p = .042 \) accounted for significant unique variance in overall pain. Based on the standardized regression coefficients and the squared semi-partial correlations shown in Table 5.7, somatisation continued to have the strongest association with pain. Age, quality of life and function were of similar importance. When the same combination of variables used in Study 2 were used to predict pain here, 42% of the variance was accounted for, with significant effects for age, somatisation, negative affect and quality of life. This contrasts with the findings from Study 2, where 13% of the variance was accounted for, with the only unique predictor, somatisation.
Table 5.7  
Summary of hierarchical multiple regression analysis for variables predicting pain (n = 89)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.26</td>
<td>.07</td>
<td>-.33**</td>
<td>0.09</td>
</tr>
<tr>
<td>Attachment Style</td>
<td>-.82</td>
<td>2.59</td>
<td>-.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>.69</td>
<td>.45</td>
<td>.22</td>
<td>0.02</td>
</tr>
<tr>
<td>Somatisation</td>
<td>1.06</td>
<td>.33</td>
<td>.43**</td>
<td>0.11</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>2.08</td>
<td>1.03</td>
<td>.26*</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.21</td>
<td>.07</td>
<td>-.28**</td>
<td>0.10</td>
</tr>
<tr>
<td>Attachment Style</td>
<td>1.70</td>
<td>2.63</td>
<td>.07</td>
<td>0.00</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>9.10</td>
<td>.51</td>
<td>.03</td>
<td>0.00</td>
</tr>
<tr>
<td>Somatisation</td>
<td>1.00</td>
<td>.33</td>
<td>.40**</td>
<td>0.10</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>2.07</td>
<td>1.00</td>
<td>.26*</td>
<td>0.03</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>1.07</td>
<td>.46</td>
<td>.27*</td>
<td>0.03</td>
</tr>
<tr>
<td>Function</td>
<td>.12</td>
<td>.07</td>
<td>.17</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Note. $R^2$ for Step 1 = .42; $\Delta R^2 = .04$ for Step 2.  * = $p < .05$, ** = $p < .01$.

5.7.14 Predicting Quality of Life

The combination of variables entered at Step 1 accounted for a significant 58.8% of the variance in Quality of Life, $F(5, 84) = 23.96$, $p < .001$. The addition of Function and Neuroticism to the model at Step 2, changed by a non-significant 0.01% to 58.9%, $F(7, 82) = 16.81$, $p < .001$.

At Step 1, unique contribution was made to Quality of Life by Negative Affect, $t(5, 84) = -3.69$, $p = .001$, Attachment Style, $t(5, 84) = 3.13$, $p = .002$, Age, $t(5, 84) = 2.54$, $p = .013$, and Pain , $t(5, 84) = 2.02$, $p = .046$. Based on the regression coefficients, the strongest associations with Quality of Life at this step were Negative Affect, Attachment Style, Age and Pain. See Table 5.8. These are similar results to those obtained for predicting Quality of Life in the clinical sample in Study 2. In that study, 44.8% of the variance in Quality of Life was accounted for.
When all variables were included, neither Function nor Neuroticism added to the explanation of Quality of Life. Based on the standardized regression coefficients and the squared semi-partial correlations shown in Table 5.8, Negative Affect and Attachment Style continued to have the strongest association with Quality of Life, with Age and Pain making similar small contributions. Thus, Hypothesis 11 was supported, but Hypothesis 12, that Function and Neuroticism would add to this explanation, was not supported. Table 5.8 presents the summary of the hierarchical regression analysis for predicting Quality of Life.

Table 5.8
Summary of hierarchical multiple standard regression analysis for variables predicting Quality of Life (n = 89).

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.93</td>
<td>.01</td>
<td>.20*</td>
<td>.07</td>
</tr>
<tr>
<td>Attachment Style</td>
<td>.80</td>
<td>.25</td>
<td>.26**</td>
<td>.10</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>-.16</td>
<td>.04</td>
<td>-.43***</td>
<td>.14</td>
</tr>
<tr>
<td>Somatisation</td>
<td>-6.33</td>
<td>.04</td>
<td>-.21</td>
<td>.04</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>2.23</td>
<td>.01</td>
<td>.18*</td>
<td>.05</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.86</td>
<td>.01</td>
<td>.20*</td>
<td>.07</td>
</tr>
<tr>
<td>Attachment Style</td>
<td>.75</td>
<td>.27</td>
<td>.24**</td>
<td>.09</td>
</tr>
<tr>
<td>Negative affect</td>
<td>-.15</td>
<td>.05</td>
<td>-.40**</td>
<td>.09</td>
</tr>
<tr>
<td>Somatisation</td>
<td>-6.14</td>
<td>.04</td>
<td>-.20</td>
<td>.03</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>2.39</td>
<td>.01</td>
<td>.20*</td>
<td>.05</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-1.94</td>
<td>.05</td>
<td>-.04</td>
<td>.00</td>
</tr>
<tr>
<td>Function</td>
<td>-3.99</td>
<td>.01</td>
<td>-.05</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note. \( R^2 = .59 \) for Step 1; \( \Delta R^2 = .002 \) for Step 2. * = \( p < .05 \), ** = \( p < .01 \), *** = \( p < .001 \).
5.7.15 Predicting Function

A standard multiple regression analysis was conducted to determine the extent to which Function in daily life was explained by the variables Age, Attachment Style, McGill Pain Total, Negative Affect, Somatisation, Quality of Life and Neuroticism. All assumptions of the analysis were met. Together, the independent variables accounted for a significant 40.5% of the variance in Function, $F(7, 82) = 7.97, p < .001$. Neuroticism made a significant unique contribution to the explanation of function, $t(7, 82) = -2.75, p = .007$, and Attachment Style also made a significant unique contribution $t(7, 82) = -2.207, p = .030$.

In this analysis, Function was uniquely related to being less neurotic and having a secure attachment style. Quality of Life, Negative Affect, Somatisation, Pain and Age made no significant unique contributions to explaining Function, although they contributed to the overall effect. This combined group of variables succeeded in predicting 40.5% of the variance in function. Thus, there was good support for Hypothesis 13 for the combination of variables predicting function, although Neuroticism made the largest independent contribution of the analysis, and being securely attached was important for less loss of Function in this non-clinical group. Table 5.9 presents the summary for the hierarchical multiple regression analysis predicting function.
Table 5.9

Summary of standard multiple regression analysis for variables predicting Function (n = 89)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.11</td>
<td>.11</td>
<td>-0.10</td>
<td>0.013</td>
</tr>
<tr>
<td>Attachment Style</td>
<td>-8.42</td>
<td>3.81</td>
<td>-0.24*</td>
<td>0.056</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>1.05</td>
<td>0.75</td>
<td>0.24</td>
<td>0.023</td>
</tr>
<tr>
<td>Somatisation</td>
<td>0.82</td>
<td>0.52</td>
<td>0.23</td>
<td>0.030</td>
</tr>
<tr>
<td>McGill Pain Total</td>
<td>0.27</td>
<td>0.16</td>
<td>0.19</td>
<td>0.033</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>-0.77</td>
<td>1.53</td>
<td>-0.07</td>
<td>0.003</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-1.87</td>
<td>0.68</td>
<td>-0.33**</td>
<td>0.085</td>
</tr>
</tbody>
</table>

* = p < .05, ** p < .01

5.7.16 The comparison of the clinical and non-clinical samples:

The clinical and non-clinical groups differed significantly in their percentages of secure and insecure participants, age, and numbers of males and females. Therefore, it was decided that equal numbers of participants from the non-clinical sample and the clinical sample be matched to enable a comparison of these groups. Participants were matched for age, gender and attachment style. This was done so that differences based on age and attachment style could be avoided.

It was possible to match 95 pairs of participants from the clinical and non-clinical groups on gender and attachment style. For Age, participants were matched exactly where possible, and within 5 years if an exact match could not be found. Age as a variable was included in the analyses to check for any unintended differences. The participants between 70 and 82 years of age were dropped from the non-clinical sample as they had no match in the clinical sample. There were a total of 116 females (61%) and 74 males (39%) in the data analysis. There were 92 securely attached participants (50 females and 42 males), and 98 insecurely attached participants (66 females and 32 males). The mean age of these matched groups was Non-Clinical group: Secure 52.26 years, (SD = 14.56), Insecure 49.31
years, \((SD = 15.47)\), Clinical group: Secure 51.22 years, \((SD = 13.50)\), Insecure 49.65 years, \((SD = 14.55)\).

5.7.17 MANOVA results for Attachment Style and Group

A Factorial Multivariate Analysis of Variance was conducted to test the effect of Attachment Style (Securely or Insecurely Attached), and Sample Type (Clinical or Non-Clinical) on reported Age, McGill Pain Total, Negative Affect, Somatisation and Quality of Life. All assumptions for the analysis were met. There was no significant multivariate interaction between Attachment Style and Sample Type, \(F(5, 179) = 1.16, p = .332\), but there was a significant main effect for Attachment Style, \(F(5, 179) = 11.41, p < .001\), and for Group, \(F(5, 179) = 7.17, p < .001\).

The Bonferroni correction applied to the five dependent variables produced a revised \(\alpha\) level of 0.01 for the univariate tests. The Securely Attached group reported significantly less Negative Affect, \(F(1, 179) = 52.36, p < .001\), less Somatisation, \(F(1, 179) = 22.33, p < .001\), and a higher Quality of Life, \(F(1, 179) = 37.01, p < .001\) than the Insecurely Attached group. The McGill Pain Total was not significantly different, \(F(1, 179) = 5.25, p = .023\), although there was a trend in the expected direction. The prediction of differences between attachment groups was supported, but the prediction that the insecurely attached group would report greater pain, was not.

Age was not significant in this matched sample \(F(1, 179) = 1.10, p = .296\).

There was a significant main effect for Group with the Clinical group reporting significantly higher pain scores on the McGill Pain Total, than the Non-Clinical group, \(F(1, 179) = 21.36, p < .001\), more Negative Affect, \(F(1, 179) = 22.75, p < .001\), and more Somatisation, \(F(1, 179) = 11.05, p < .01\). There was no significant difference between the groups on Quality of Life, \(F(1, 179) = 3.20, p = .076\). Thus, it was shown that in this
sample of matched participants, the Clinical group did differ from the Non-Clinical group, except for Quality of Life. See Table 5.10 for the Means, Standard Deviations and 95% Confidence Intervals for Securely Attached, Insecurely Attached, Clinical and Non-Clinical groups.

Table 5.10
 Means, Standard Deviations and 95% Confidence Intervals for the Comparison of the Clinical and Non-Clinical Groups and Attachment Style for the matched groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Study</th>
<th>Style</th>
<th>M</th>
<th>SD</th>
<th>LB</th>
<th>UB</th>
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<td></td>
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<td></td>
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<td>16.10</td>
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</tr>
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<td></td>
<td></td>
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</tr>
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<td>4.23</td>
<td>20.43</td>
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<td>4.18</td>
<td>18.63</td>
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<td>3.89</td>
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<td>0.10</td>
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<td>1.63</td>
<td>0.80</td>
<td>1.74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
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<td>1.60</td>
<td>1.77</td>
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<tr>
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<td>1.46</td>
<td>1.77</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Insecure</td>
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<td>1.63</td>
<td>0.78</td>
<td>1.76</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>1.72</td>
<td>1.61</td>
<td>1.39</td>
<td>2.05</td>
</tr>
</tbody>
</table>

Note: NA = Negative Affect, Som = Somatisation, QOL = Quality of Life, Non-Clin = Non-Clinical

Note: Clinical n = 95, Secure n = 46, Insecure n = 49; Non-clinical n = 95, Secure n = 46, Insecure n = 49
5.8 Discussion of Study 3

5.8.1 Results from the study of the non-clinical population

Before the investigation of this non-clinical sample could proceed it was necessary to determine if there were any significant differences between the rural and urban groups who made up this sample. The two groups were similar, except that the urban sample was significantly younger than the rural sample. The groups were combined into one non-clinical group, and the sample was then partitioned into the two attachment groups, Securely Attached and Insecurely Attached.

5.8.2 Proportions of attachment style

It was hypothesized that the proportions of Securely or Insecurely Attached participants would be the same as the proportions found in Studies 1 and 2. The clinical groups of Studies 1 and 2 had approximately 25% of the sample classified as securely attached, while the non-clinical group of Study 3 had 50% of the group securely attached. Thus, the hypothesis was not supported. These proportions were in accord with the proportions of secure/insecure reported in the research for the general population (Bartholomew & Horowitz, 1991). Thus, patients admitted to hospital were not only more likely to report more physical problems, but more likely to be individuals who were insecurely attached.

Those individuals in the study who attended the community seminars and volunteered to fill out the questionnaires possibly included a high proportion of securely attached individuals, since secure attachment is related to appropriate help-seeking strategies. They may have been strongly motivated to attend a seminar on how to deal with chronic pain and more enthusiastic about filling in the questionnaires. Those individuals who were referred to a pain clinic were expected to complete various reports/questionnaires
as their pain state is investigated. The pain clinic population may be more representative of population proportions of secure/insecure, while the non-clinical (and volunteer) population may represent those individuals who are help-seeking in the general community.

5.8.3 The impact of attachment style on psychological variables and function

The securely attached community group reported less Negative Affect, less Somatisation and a higher Quality of Life than the insecurely attached group. The variable McGill Pain Total represented the overall physical and psychological experience of the pain and scores on this variable were not significantly different between the secure and insecure groups, although there was a trend towards lower scores being related to secure attachment. This securely attached group, drawn from a sample of people with chronic pain from the general population, had less physical and emotional problems and higher life satisfaction, even though they had reported similar levels of difficulty with pain to the insecurely attached group.

Gender: Despite evidence cited in the literature, it was found that being male or female in the non-clinical group did not affect vulnerability or resilience to the physical or psychological problems that accompany chronic pain. However, the samples in previous studies included either all participants, or a majority of participants, with low back pain as a diagnosis, whereas the total sample used in the present research included those with spinal pain at any level. The hypothesis that gender was influential in chronic pain states, was not supported (Dickens, Jayson, & Creed, 2000; Spertus, Burns, Glenn, Lofland, & McCracken, 1999).

Age: Previous research has reported lower pain scores for older individuals and suggested that reducing work load or retiring from work-related stressors (and the physical activities accompanying this), reduces both the pain and the anxiety about the pain
(Brattberg et al., 1997). In the matched groups study, age as a variable was controlled since the individuals were matched for age. In Study 2 of the clinical sample, age showed significant weak relationships to attachment style, negative affect, quality of life and pain. Being older was related to less reported pain and a higher quality of life. This trend was stronger in the non-clinical study. Age made a significant unique contribution to predicting pain, and to predicting quality of life, but not to the prediction of function. Age was an important factor in the non-clinical group with the group between 45 and 65 reporting the most pain, and the group over 65 reporting the least pain.

**Pain intensity:** For the Securely Attached group, pain intensity was not significantly relevant. The hypothesis that attachment style would not affect pain intensity, was supported. In Study 2 of the clinical group, this analysis showed that Pain Intensity was not significantly related to Attachment Style group, but there was a trend for Securely Attached participants to choose lower Pain Intensity scores. A possible explanation is that the severity/intensity of the pain was linked not to attachment style, but to the individual’s awareness of sensory experience.

**Pain pattern:** In the current study, the Securely Attached group chose a single descriptor of pain as constant, intermittent or briefly present, while the Insecurely Attached group reported significantly more multiple presentations of pain. Based on the results of Study 1 it was hypothesized that since there were no significant differences between the attachment style groups in the clinical sample, the results from the non-clinical group would be similar. However, Study 2 has shown a significant difference between the groups. One explanation for this difference may be that individuals from the clinical population are more homogenous, with more complex pain presentations. In contrast, the non-clinical group may have been more heterogenous, with individuals who had many levels of chronic pain conditions and more dependence on environmental support rather
than medical support. Attachment security would influence their ability to elicit care and attention, and thus be more important to their ability to deal with the difficulties experienced.

Disability: On the measure of Disability, it was hypothesized that securely attached participants would be less likely to withdraw from activities than insecurely attached participants. The hypothesis was supported as securely attached individuals had taken significantly fewer days of rest than the insecurely attached group for home and social activities. Insecurely attached individuals took more rest (to reduce or avoid pain) more often than reported by the securely attached group. Being insecurely attached, with higher levels of physical and psychological problems, was related to a need to withdraw from activities. Insecure attachment was associated with negativity and ambiguity about the self and others, so avoidance of activity in either home or social domains is congruent with this association.

The hypothesis that attachment style was influential when individuals experience chronic pain has received good support from these studies. However, it has been shown that the personal qualities associated with attachment style have more impact on pain, quality of life and function than membership of either attachment style. The variables of the biopsychosocial model contributed considerably more variance to the model of chronic pain than attachment style alone has contributed.

5.8.4 The biopsychosocial model.

Support was provided for the hypothesis that Age, Attachment Style, Negative Affect, Somatisation, Quality of Life, Neuroticism and Function, together would predict a significant amount of variance in the total pain score. A total of 46% of the variance was accounted for. For predicting Pain, as an overall measure of physical and psychological
distress in the non-clinical population, being younger and more symptom-focused (somatisation), reporting a lower quality of life and higher neuroticism, was significantly related to higher levels of problems with pain. In the non-clinical population, Somatisation was also the strongest predictor of overall pain in the clinical group of Study 2. This showed a strong relationship between the level of distress from bodily symptoms and an individual’s fear that the symptoms were evidence of the existence of disease or damage. For quality of life, negative affect (depression and anxiety) was the strongest predictor. The contribution of these two variables (somatisation and negative affect) was much greater in the non-clinical study than was reported in the clinical study. For function, neuroticism was the strongest predictor. Those individuals referred by general practitioners or pain specialists to the pain clinic have been admitted to the hospital for treatment because they cannot manage their pain for various physical or psychological reasons. It has already been suggested that these individuals may be a more traumatized group than the non-clinical group (and thus more likely to be homogenous). It may also be that the complexity of their pain state and the impact that pain has had on their life, for the clinical group, may be far greater than the experiences of the non-clinical group. While attachment style had a significant bivariate relationship with the other variables of the study, this disappeared when the other variables were included in analyses. It could be that attachment style is important to the development of pre-morbid personality characteristics, but not important as a current predictor.

It was also hypothesized that Age, Attachment Style, Negative Affect, Somatisation, Neuroticism and Function would predict a significant proportion of the variance in Quality of Life. At Step 1, when the same variables used in Study 2 were used to predict quality of life, 58% of the variance was explained. The addition of function and neuroticism at Step 2 did not add to the variance explained. Negative Affect and Attachment Style were the
strongest predictor variables for Quality of Life. In this non-clinical sample, reporting less depression and anxiety (as Negative Affect), and being Securely Attached, had the most beneficial effect on Quality of Life. In the clinical study, attachment style was not a significant predictor of quality of life, yet in this non-clinical group it was significant. As discussed previously, attachment style may not be a good predictor of current problems within the clinical group (who were possibly more seriously impaired by the pain syndrome). Other influential variables were Age and McGill Pain Total. Being older and secure, with less pain, depression and anxiety predicted a higher quality of life. This was in contrast to the analysis of Study 2 of the clinical group, where negative affect was the strongest predictor of quality of life. Being anxious and depressed had the highest impact on quality of life.

It was hypothesized that the variables of the model would successfully predict a significant proportion of the variance in Function, and that being securely attached in the non-clinical group would be related to higher levels of function than the level reported by the insecurely attached non-clinical group. In total, 40.5% of the variance was accounted for with neuroticism accounting for 8.5% of the variance and attachment style accounting for 5.6%. Somatisation, pain, negative affect, quality of life, and age made no significant unique contributions to the variance, but contributed in combination with the other variables of the model to the total variance accounted for in predicting function. The influence of the variable Neuroticism shows that the individual’s schema of self and their ability to perform tasks of daily living, was most affected by the tendency to deny reality and blame someone or something in their environment rather than acknowledge their own role. To be neurotic was evidence of avoidance of personal responsibility and less ability to be independent. To be insecurely attached in the clinical group also contributed significantly to loss of Function in everyday living, reinforcing the idea that ordinary
activities of everyday living presented both physical and psychological difficulties. This idea is supported by research reporting that insecure attachment is related to negative attitudes to their ability to cope in many situations when experiencing fear, pain or illness (Bowlby, 1969, Violon, 1985, 1990).

5.8.5 How did the clinical and non-clinical groups compare?

The non-clinical group was on average older than the clinical group, had more females and significantly different proportions of securely attached to insecurely attached participants. In order to examine the differences between the clinical group and the non-clinical group a matched subjects design was adopted. It was possible to match 95 participants for age, gender and attachment style group, giving 190 subjects for the analyses. It was hypothesized that the non-clinical group would differ from the clinical group, on reports of Pain, Negative Affect, Somatisation and Quality of Life.

The clinical group differed from the non-clinical group on the total pain score, negative affect and somatisation, but there was no difference on quality of life. The clinical group reported higher pain scores, more negative affect and more somatisation. This result supports the idea that while each group was influenced by the pain syndrome as a combination of contributing symptoms (not as a simple presentation of specific biological or psychological symptoms), the impact was more disturbing for the clinical group.

How did the matched attachment style groups compare?

There were no significant interaction effects of attachment style x clinical or non-clinical group. There were two significant main effects, meaning that attachment style and clinical/non-clinical results were independent. Overall the clinical group reported more pain. As well as that, the insecurely attached group (including clinical and non-clinical)
reported greater effects of pain, more negative affect, more somatisation and lower quality of life than the securely attached group.

5.8.6 Attachment and Neuroticism

The association between security of attachment and neuroticism for this non-clinical study was moderate. Insecure attachment has been described as unstable, changeable, disconnected, emotionally immature and anxious – all descriptors that could be equally applied to being neurotic. Feeney, Noller, and Hanrahan (1994) refer to insecure style as an unstable style and report a strong correlation between a measure of attachment and a measure of neuroticism. Horney (1970) adds the descriptor “inauthentic” as similar to, or a product of, being neurotic. So an individual who is neurotic, is unable to face the reality about themselves, and their environment and get on with being alive, involved and authentic. In contrast, Reber (1985) speaks of secure style as an “enabling” concept, where individuals are aided by their internalized, stable models of self to reach their true potential. Engel (1959), Holmes (1993) and Violon (1990) all discuss the potential for instability in the development of insecure individuals versus the stability and connectedness of the securely attached.

5.8.7 Is it beneficial overall to be securely attached?

Studies 1, 2 and 3 have shown that being securely attached was beneficial in either the clinical or non-clinical situations, consistent with the literature presented. Overall, the securely attached participants were the least distressed by chronic pain, regardless of whether they came from the clinical or non-clinical sample. These quantitative studies showed that attachment style did influence various aspects of chronic pain, but attachment style alone did not explain a major portion of the variability in pain, quality of life or function. Variables such as neuroticism (which has been shown to be a significant
influence), somatisation and other variables of unknown origin must be considered as possible influences on individuals who experienced chronic pain and suffering.

Attachment style has been measured in these studies at the adult level. While the literature presented suggests that attachment style is stable from a young age, the effects of age and experience with other individuals and other environments must contribute to the development of a mature personality. To grow up in a supportive environment would enable the individual to become more emotionally stable, to explore alternative environments and solutions, to develop strong positive personal resources such as the ability to face reality, and to problem solve and goal-correct when facing difficulties. An unsupportive environment may contribute to the development of an unstable, over-anxious emotional style, the over-learning of negative strategies, employing magical thinking and an inability to develop trusting relationships, all of which are important factors to address in chronic pain treatment. The implications of the results of Study 3 are that the clinic sample reported greater difficulties, independent of attachment style.

An important aspect of studies that investigate the experience of pain is the individual’s experience of the pain. This was the important aspect of these studies. The way different individuals, with different psychological make-ups deal with chronic pain will be the focus of Study 4.

From the evidence of these quantitative studies it would appear that the psychological advantage of being securely attached can impact the way different individuals adapt to living with “chronic pain”. In Study 4, a qualitative, matched participants study of 24 individuals who have had back pain for >5 years was conducted to investigate other influences on chronic pain. A structured interview, recorded for later analyses, provided the material for creating a written report of each participant. From these comprehensive individual histories, containing both reported and observed information, qualitative information to support the data obtained in Studies 1-3 was sought.
CHAPTER 6.0 -
A QUALITATIVE INVESTIGATION OF ATTACHMENT STYLE AND CHRONIC PAIN

The studies reported in Chapters 3-5 investigated the influence of attachment style on a range of biological, psychological and social variables, using samples of individuals from a pain management clinic who had a primary diagnosis of chronic pain and from a non-clinical sample who reported experience of chronic pain. The investigations conducted in the quantitative studies included attachment style, somatisation, neuroticism, quality of life and age. Gender was not related to any of these variables under study. In order to investigate these variables further, and to give an opportunity for individuals to present other aspects of the pain experience that they consider to be of importance, a qualitative study of individual case histories was conducted. While group effects are important and permit statistical analyses, it is the individual who endures the often lonely, frightening, sad and confusing journey. Individuals focus on their bodies and worry, because persistent pain and an uncertain future threaten them. Study 4, used chronic pain histories obtained from interviews of individuals from two groups of twelve participants, each group matched for age, gender, attachment style and etiology (back pain of more than 5 years duration).

6.1 The relationship between back pain, attachment style and chronic pain

When individuals experience the onset of chronic pain it becomes necessary for them to learn to tolerate and accommodate to the intrusion of pain into their lives. These individuals have to learn to live each day in the same environment, but in a different manner. They have to come to terms with a debilitating but non-life threatening condition
that on its emergence, changed forever the way they lived their lives and perceived their mortality.

When these case histories are examined, the personal resources, the resilience or vulnerability of each individual and their ability to perceive and adjust to the reality of their lives, becomes overt. This qualitative information, gained from individuals who had back pain, illustrates the quantitative information gained from the previous studies, and stimulates further hypotheses about chronic pain.

6.1.1 Back pain

Pain in the back is so common that it is almost endemic. Sixty percent of the adult population has at some time taken a week off work because of some form of back pain (Wall, 1999). Yet, most of these people will find relief in rest and graded exercise, generally in 3 to 6 weeks, without any form of medical intervention. A study by WorkCover New South Wales (1995/1996), notes that most workers with low back pain return to work within 6 months. Additionally, those individuals who stay at work despite back pain have better long-term outcomes than those who stop working. The longer people are off work, the less likelihood there is of them returning to work (Waddell & Burton, 1999).

The five pathological causes of back pain, as a vertebral disorder, are listed as a slipped disc, infection, tumour, fracture and arthritis. Only 10 to 15% of back pain sufferers are diagnosed with any of these disorders. The other 85% have no discernible pathology. Also, the rate of back pain is the same for clerical workers and those who are required to lift heavy weights. There is no evidence that heavy or unusual exercise leads to low back pain (Wall, 1999).
Unfortunately, the fact that no cause has been found leads the victim and those around him or her, to conclude that they have no reason and no “real” pain to complain about. The pain is real, the patient suffers, and they are forced to draw upon their personal resources and competencies to find ways of tolerating their pain and distress. In response to this, the people in pain may become stoic or increase their pain behaviours so that others may “observe” their suffering. Comfort, support, recognition and help may or may not be offered to this group of people in pain. Finding strategies to help themselves becomes their life task. People who believe that they can cope with their pain will persevere in their efforts to reduce pain. They will not suffer as strongly as those who doubt their ability to control pain, and who are susceptible to increased anxiety, pain and stress reactions (Moosebrugger & Schermelleh-Engel, 1991).

Whether a pathology is diagnosed or not, back pain, particularly lower back pain, is difficult to overcome. The patient experiences a certain level of damage and pain, and then, according to their beliefs, they will seek strategies to overcome the problems. Individuals with back pain most at risk of negative outcomes, were most likely to have reported multiple negative experiences or events of abuse during their lives. Dworkin, et al. (1994), Engel (1959), Roy (1992) Schofferman, et al. (1992) and Violon (1990) all posited that such negative events taught the individual to communicate by means of pain behaviours and that their psychosocial problems impacted negatively on their capacity to function or to recover from injury.

To further investigate this connection between reports of negative life events, physical function following a back injury and the influence of personality and psychosocial variables, a qualitative study was undertaken using a small sample of individuals with chronic pain syndrome, from the clinical and non-clinical groups.
6.1.2 **Objectives of Study 4**

First, the objectives were to examine, via individual and aggregated biographies, the demographic, biological, psychological and social variables used in the quantitative studies, so as to gain further information about problems that could precede, co-occur, or post-date the onset of chronic pain, rather than being directly related to the pain or its physical origin.

Secondly, to (a) extrapolate themes from the interviews that were commonly reported in the literature as influential in the experience of chronic pain, (b) test for specific differences between securely and insecurely attached individuals, and between clinical and non-clinical participants, (c) identify indicators of resilience versus vulnerability to chronic pain, particularly those factors congruent with attachment theory, and (d) assess chronic pain status according to physical presentations such as speech, weight, grooming, psychological state, use of drugs of dependence and history of use of medical and allied services.

6.2 **Method**

6.2.1 **Participants**

Two groups of individuals were matched for a primary diagnosis of degenerative back disease of more than 5 years duration, gender, age and attachment style. Interviews of 35 individuals resulted in 12 matched pairs of subjects, being 12 participants from the clinical sample of Study 2 and 12 participants from the non-clinical sample of Study 3. Three pairs of each set were female and three pairs were male. Six individuals were classified as securely attached in each group and six were classified as insecurely attached. These classifications were established via the Revised Adult Attachment Scale (RAAS: Collins & Read, 1990) at the time they participated in Study 2 or Study 3. The clinical group had all attended the pain education program while the non-clinical group had never
attended such a hospital-based program. The author was known to each clinical participant because of her role as therapist in the pain education program, and known to the non-clinical group because they had attended at least one public seminar on issues of health and pain management at which she was an invited speaker.

All respondents were volunteers who gave their consent to have their recorded data included in the research program. All interviews lasted between 45 minutes to one hour. Fictitious names have been allocated to these participants. Each of these individuals has a similar presentation of pain in the back, skeletal damage that is degenerative, referred pain in the extremities and intermittent headaches. The average age of the group was 53 years (SD = 16.16). Ethics approval for the project was obtained from the Human Research Ethics Committee of both the Royal Brisbane Hospital and Griffith University.

The ethical considerations of this study follow the instructions by Miles and Huberman (1994; p. 289). The study was conducted with sensitivity to the language and meanings of the culture of the individuals who have chronic pain syndrome. There was an awareness of the costs and benefits related to their involvement with the research and the study aimed to preserve anonymity in the case studies, and present a report that was responsive to the needs of the group and a responsible form of communication.

6.2.2 Measures

A semi-structured interview format was used so that each interview included a specific set of topics. The respondents chose whether they wished to be interviewed in one of two private situations, either an office at the pain clinic or a similar private situation in their own home. All interviews were conducted during the hours of 9 am and 12 noon.

The semi-structured format included brief questions about basic demographics, education, family and social history. Individuals were asked to comment on their preferred
coping strategies, their day-by-day function and activities, and their involvements with medical and allied health care professionals. The open-ended questions were designed to allow participants to become involved in discussions on a specific topic, or to give yes/no answers and proceed to other topics of interest. A copy of the structured interview is included as Appendix G.

This system worked very well and gave a set format for record keeping. An audio recording was made of each interview and the author/interviewer wrote brief notes about the information on the response sheet. From that recording and the notes of interview, a comprehensive case history was written. The content analysis of each set of data consisted of listening to the recording, checking that information was recorded accurately in the written file and noting how information related to the variables previously investigated in the quantitative studies. For example, if a pre-morbid history of depression was provided during the interview, or the patient had a current diagnosis of depression, it was recorded. Average and current pain levels, and overt pain behaviours, were also recorded. Three types of specific themes were noted at the end of the interview sheets for later perusal. (a) Congenital or developmental problems, physical, sexual or psychological abuse, educational, adolescent and individual problems were recorded, and these factors became the key words for the summary tables provided for each group for negative life events related to physical, psychological and social vulnerability. (b) Positive themes such as community involvement, social support and family stability, positive coping strategies, problem-solving skills, insight, positive affect and motivation were recorded. These themes became the key words for the summaries for each group for positive aspects and personal strengths. (c) For chronic pain status, themes such as drug dependencies, use of health care, reported disability, pain experiences, pain behaviours, and physical, cognitive, social and
economic status were recorded. These themes became the key words for the summaries for each group for chronic pain status.

When the 24 individual case stories had been recorded, a basic set of data existed from which to extrapolate common themes, and patterns of behaviour. Individual data sheets were then placed in an envelope with the respondents’ name, group and date of interview and the envelope stored in a secure location with the other data from these studies.

6.2.3 *The use of qualitative research*

Each human being is unique qualitatively. Each individual has a style, a history and a set of traits. To know the individual, it is necessary to study him or her directly (Patton, 1987). Qualitative research has special strengths that provide us with a more complete understanding of any investigation than the use of quantitative methods alone. It is a source of well-grounded rich descriptions and explanations of processes in identifiable local contexts or cultures (Miles & Huberman, 1994). This approach has the expectation that detailed descriptions of individual cases will lead to increased knowledge and to the development of practical applications and principles that can be used in natural settings. The qualitative contribution is a complementary approach that leads to a greater understanding of the phenomenon under scrutiny.

In order to understand the world as viewed by the individual, as well as the individual himself or herself, it is necessary to examine ideas, behaviours, and effects of interventions and to place this information in the context of the individual’s social, economic and biographical existence. A number of problems need to be considered. There are difficulties with participant selection, where individuals cannot be chosen randomly but are selected as being representative, average or non-representative of the group under
investigation (Hakim, 1987). Also, generalising results from an individual or from a very small group, to a larger social group, collecting and interpreting data, data overload and the avoidance of biased interpretation are problematic (Kazdin, 1980; Miles & Huberman, 1994). Representation and generalization can be improved if a sample of individuals is chosen, not just a single individual, who are typical of the wider context of such cases (Bryman, 1988). A positive study is most likely when the approach is clearly prescribed, illustrative, and aimed at generalizing to theoretical propositions rather than being generalized and applied to larger groups or populations (Yin, 1984). If the information derived from the case studies is compared with information gained from other areas and methods of psychological research this will enhance the plausibility of the qualitative research.

Focus is provided in qualitative research by generating questions about the central issues of the investigation. As data collection, analysis, interpretation and evaluation proceed, consistently referring back to these questions keeps the study on track. Analysis refers to the organisation and categorization of the data, while interpretation involves the identification of descriptive patterns of relationships and linkages, and of significant and meaningful dimensions. Evaluation refers to the process of considering the process of the study that has in turn, led to the outcomes that have been regarded as significant (Patton, 1987).

This study used inductive analysis to identify those significant issues that emerged spontaneously from the data. The literature review cites many versions of factors of “pain-proneness” and vulnerability but no quantitative study could have provided details of the factors in the manner that they were provided verbally by the participants. Invariably, these individuals related the history of their pain condition together with the environmental, social and personal prompts that triggered or accompanied the emergence of their painful
Two kinds of patterns can emerge from this form of analysis. The data may be identified as themes or patterns by the individuals concerned, or the analyst may need to select themes from the data since the individuals may not have described it in this manner. In this study, the individuals described various life experiences. They may have been quite unaware that they were relating experiences and/or family environments that perhaps predisposed them as adults to be vulnerable to chronic pain states. The convergence of these histories, the recurring regularities of the events related by the participants has provided a valuable resource tool for the assessment of individuals who have chronic pain.

The original work of Schofferman et al. (1992) provided a basic system of allocating optimism versus pessimism about surgical interventions. This study has provided detailed background information on the reasons why an accumulation of negative learning experiences may contribute to the formation of a pain-prone personality. An individual who lacks personal resources cannot cope and becomes vulnerable to negative events, partly because they deny or avoid facing reality. Whereas an individual who has a repertoire of goal-corrected behaviours is resilient. When faced with negative events they assess the impact and the reality of the situation and employ a variety of strategies in order to reach a satisfying solution or compromise.

It was suggested by Patton (1987) that alternative explanations for patterns of qualitative data be considered and evaluated. Evidence of vulnerability due to the depression, helplessness and/or pessimism engendered by repeated experiences of environmental trauma, has been presented in the literature review. The influence of depression was presented in the original work of Bowlby (1944). He suggested in this earliest of studies that children who were denied the normal supports and care of “good-enough” parents may become depressed from as young as 6 months of age. This childhood chronic depression creates an emotional climate in which the child gives up expecting
stability and consistent care from the carer and either becomes unresponsive and emotionally blank, or discounts the carer and seeks help and attention from anyone who appears to be available. Either of these states of avoidance or preoccupation with care could be vulnerable to negative life events and/or the influence of predatory others. The attachment style of the child to the primary carer creates the basic conditions from which a negative life schema develops and from which physical or psychological vulnerability could be predicted. It is not suggested that the relationship with the primary carer is the sole experience on which a life schema is developed. Rather, it is the formative experience that biases the child’s ideas about the welcome or rejection he or she may expect from other experiences in life. All other relationships in the environment of the emerging adolescent, and then adult, contribute to the consolidation of the basic life schema. If attachment security is stable, as claimed in the literature, it may be sufficient to differentiate between securely attached and insecurely attached individuals, as child or adult, to consider that they have lived with the conditions of primary care necessary to create an internalized model of optimism (and resilience) or one of depression (and vulnerability). This qualitative study aims to contribute further evidence about the developmental history of pain-prone individuals.

6.3 Results

In the following section, four case history examples, representing the clinical and non-clinical groups, and securely attached and insecurely attached participants, are presented. These case histories illustrate the way in which these individuals have accommodated to the intrusion of chronic pain into their lives and give information about the combinations of events and resources that have influenced these specific individuals.
These case histories are followed by an aggregated comparison between the two matched groups, of clinical and non-clinical participants. Data will be discussed that emerged as common themes related to physical, psychological, and chronic pain status factors. Summary tables have been presented in this chapter. These tables report factors related to each participant’s life as a child, adolescent, or adult. They encapsulate the experiences of both securely and insecurely attached individuals, and allow some conclusions to be made about their similarities and differences across the two groups. Many common factors were reported, as were some major differences between the clinical and non-clinical groups, which were of particular interest.

6.4 Case History 1. A securely attached individual from the clinical sample

This case study was typical of the experiences of many male workers who have injured their backs at work because of faulty work practices. The damage was not only caused by the inappropriate work, it was exacerbated by continuing to work and treatment that was inappropriate. This created a mind-set that the injury is both permanent and debilitating. The grieving that follows such an injury and failed recovery often damages the family relationship, irrevocably changing the role of the breadwinner of the family and decreasing motivation to be active in any way (Nicholas, 2002).

Mr Arthur Brown (Age 54)

Mr Brown was interviewed at the Royal Brisbane Hospital Pain Clinic. He was stocky, of medium height and weight. He showed some difficulty in moving freely and adjusted his posture, both standing and sitting, regularly during the interview. He lived some distance from the hospital and in order to attend the outpatient program had to be collected by ambulance. The travelling caused him some inconvenience (he was usually
late for the program) and he became very tired, having to rest for a few days after each attendance and inclusion in the physical therapies.

*Family background*

Mr Brown had lived in the city all of his life. He grew up as the second child in an intact family-of-origin without any significant life events or illnesses. Relationships within the family were positive. He reported at the interview that his mother had passed away but he visited his father frequently. He was highly competitive in athletics and reported that he had planned to be involved in sport until he was at least sixty years of age. He felt that would be quite appropriate since “skill-based endurance is 80% of competition not just sheer strength.” This belief had enabled him to continue to be active and he had modified his activities substantially to suit his condition.

*Education and employment*

Mr Brown was educated to year 10, completed an apprenticeship as a fitter and turner and entered the army for some years of service. Following that time, he worked at an engineering firm where he injured his back, continued to work and exacerbated the injury, then went onto compensation while he received treatment for the damage. He was then on a disability pension. He commented that he had only recently been awarded this pension and that he would now like to find some way of supporting himself and making the pension unnecessary.

*Daily function and coping strategies*

Mr Brown reported that he had made many changes to the ways in which he completed his activities. He commented that “some things have to be done, you don’t have to be entirely satisfied with the results but there are alternate ways to do things if you plan for them. You can also ask for help if it is beyond your capabilities.” He had invented and adjusted implements that helped him to accomplish household and garden activities. He
paced his involvement with all activities and interests and avoided activities that could exacerbate his injury. He wore a support brace to protect his spine and he shared activities with his partner. After his involvement with therapists of the pain program he had reduced his medication by 50% and had increased his awareness of the need to pace activities in order to reduce painful episodes. He attended his local doctor once a month for prescriptions or referrals.

6.4.1 Review of Case History 1

Brought up in a stable family environment, and encouraged to be involved in many forms of activity, Mr Brown reported that he still had a good quality of life despite his injuries. Following his first injury he experienced a time of despair and depression. He divorced his wife, and leaving her and his two daughters he set off to create a new life. He then had another partner but maintained close ties with his daughters. Having a strong work ethic and motivated to continue being involved in as much as possible, he re-invented his lifestyle and has done well. He reported that he was aware of his limitations and had changed his attitudes about planning for tasks, with self-care firmly in mind.

Mr Brown was assessed as Securely Attached and had demonstrated various factors of resilience that were related to such secure status. He had a high level of physical and psychological functioning. He had maintained his social connections to family and friends, maintained his cognitive abilities with interesting activities and he had expressed hope for the future. Even though he knew that his back damage was degenerative, and while he had major, daily problems with normal activities, he had no overt symptoms of depression or anxiety. He demonstrated goal-corrected behaviours, his pain was under his control, used medical and allied services appropriately, and had developed new skills that were practical and productive.
6.4.2 Case History 2. An Insecurely Attached individual from the Clinical sample

This participant had chronic pain that had been exacerbated by other physical, psychological and personality problems. Her case was typical of many female patients who presented for treatment in the pain program.

Mrs Leanne Welsh (Age 48)

Mrs Welsh was interviewed at the Pain Centre at the hospital. She had completed an outpatient pain education program four months before the interview. This divorced lady had two children and had lived in a high-set home that she was selling so that she could move to a more appropriate low-set and low maintenance home. She had just found such a house and was very optimistic about its possibilities.

Family background

Mrs Welsh lived with both parents until nine years of age, then her parents divorced and she lived with her mother. She then lived alone following her own divorce. She cited her parents’ divorce and the events that led up to it, then the grief over the loss of her father and never seeing him again, as the major events of her young life. She reported that she had hormonal problems as an adolescent and became involved in a sexual affair with someone very predatory when she was 17 years old. Furthermore, she reported having experienced physical abuse, neglect, bullying, and psychological abuse during childhood and adolescence. From infancy, she suffered various physical ailments, was hospitalized repeatedly, and was very involved with members of the medical profession. At various times her mother was unable to care for her so one of her mother’s friends usually took over her care. This person was remembered as being very kind and attentive to her needs. Mrs Welsh was also diagnosed with clinical depression as an adolescent. She was obese and had degenerative arthritis of the spine of ten years duration, and osteoarthritis of the hands.
Her two children were both victims of sexual abuse (within the family) and had many behavioural and psychological problems. Her son recently had abdominal surgery for bowel pain and suffered from depression. Her daughter ran away from home and had been placed with a foster family. This teenager displayed aggression and anger towards her mother and had also been diagnosed with clinical depression and anti-social tendencies. Both mother and daughter were receiving psychiatric care. Visits between them were supervised by a social worker, and Mrs Welsh had to observe a court order that limited her access to her daughter.

*Education and employment*

Mrs Welsh completed primary school and then secondary school and a TAFE course. From adolescence she trained in music and was a skilled musician and classical singer. She had worked as a dental nurse and as a shop assistant. At the time of the interview, she was receiving a disability support pension.

*Daily function and coping strategies*

She reported using an opioid medication regularly and an anti-inflammatory medication as required when she planned to be active. She planned her involvement in any activities, and as she was usually almost pain-free in the mornings, she rose early (5.30 am) and completed her major activities of the day. She rested late in the mornings and accomplished further tasks later in the day, “pottering around” again until she needed to rest. By 6 pm she would have had dinner and retired to bed with a book. Her nutrition was average as she found it hard to stand for longer than 5-10 minutes to cook anything complicated.

She visited her GP every 2 weeks to monitor her opioid use and the general management of her arthritis. Once each week she attended physiotherapy with the pain specialist physiotherapist. She was unable to maintain normal function in ordinary
household tasks, recreational, social or physical activities and reported that she became very frustrated by this inability. She pushes herself to continue any involvement that she could, particularly with her church activities. She was able to self-care with some difficulty and found ways of accomplishing what she wanted to do. She enjoyed the companionship of her dog and would have liked to be able to take it to obedience classes.

6.4.3 Review of Case History 2

Insecurity of attachment is related to ambivalent connections to others, a lack of consistent self-care strategies and an inability to goal-correct when events conspire to create difficulties in life. Mrs Welsh presented a history of anxious-avoidance of others. While this lady reported a reasonable level of self-esteem she had a very low level of trust of other people. She did not express a high level of anxiety about relationships. However, from her reported activities, she maintained that level purposefully by avoiding whenever possible, any situations that could stimulate anxiety. She retreated from any conflict and distracted her mind by creating alternative occupations and avoiding reality. Mrs Welsh related that some of the therapists with whom she had contact in the past had created “a problem” because they had gone on leave or transferred from their jobs, so the therapeutic relationship was terminated. Social support was also a major problem since isolation, avoidance and a lack of outside involvement with others has increased emotional isolation, depression and somatisation.

Mrs Welsh demonstrated very few goal-corrected behaviours and a low level of problem solving ability. While she appeared to have skills that could be useful, she was not motivated to employ these skills or coping strategies for her own self-care. She reported only negative involvement with members of her family and an uneasy involvement within her church fellowship. She was dependent upon prescription analgesics and anti-
depressants, and over-used the services of medical, allied health and social services. In her interview she reported having contact either as a phone call or an appointment with a member of some medical, allied therapies, or social work/legal representative on at least 4 of the 5 working days of the week. She attended all appointments made by the pain clinic and applied repeatedly through her general practitioner for extended times for therapies.

She had continuing financial and legal difficulties. Her pain was uncontrolled (despite the strong medication), and pain behaviours were overt, including prolonged bouts of weeping. She reported major difficulties in completing everyday tasks of self care and had a history of making unwise, emotionally driven, choices about her own problems. While she expressed concern about her future and reported some worthy goals, she had made only minimum efforts to attain those goals and appeared to be accident-prone. Function and involvement in all forms of activity were impaired, and long-term, positive coping strategies were minimal. Cognitive skills were under-utilised and personality factors – particularly avoidance of facing reality - played a large part in keeping her from improving her quality of life. Her chronic pain was largely mediated by her emotional and psychological state and she used multiple prescription drugs in order to dull the pain. No use of recreational drugs was reported. Appointments with medical and allied personnel at the pain clinic were limited to a set schedule of assessment and therapies (such as a limit of six visits for physiotherapy).

6.4.4  Case History 3: A Securely Attached individual from the Non-Clinical sample

Mrs James was a slim lady of medium height. She was articulate, spoke rapidly and showed appropriate affect during the interview at her home. She lived in an apartment with a tiny well-kept garden and an environment that was comfortable and sunny, with personal
items collected from her travels scattered about. On display were some of her paintings and
needlework. She reported chronic pain brought about by injuries sustained at various levels
of her spine in a motor vehicle accident about six years previous to the study. Her injuries
were compounded by a further accident, a fall onto concrete, only weeks after the initial
accident. She has not been a participant in any pain education programs and not been
admitted to hospital for pain specialist care. She was a member of a women’s community
group and volunteered to be a participant in the study.

**Beryl James (Age 62)**

*Family background*

Mrs James was born and grew up in a major city of Australia. Her father and
mother both worked in the hospitality industry. She reported that they had a very happy
household. Both parents were very hard workers and the children were expected to follow
that work ethic. When she was about 14 years old, her father contracted Tuberculosis,
became an alcoholic, and was given a disability pension. This created major changes and
disruption to family function. At about this time also, in the company of another child, she
was physically and sexually abused by a family member.

Mrs James has a history of multiple illnesses and hospitalizations. As a child she
had perforated eardrums and abscesses, peritonitis from a burst appendix, and she suffered
from sinus problems and various allergies. As an adult she continued to have sinus
problems and repeated migraines. Following her accidents, she was diagnosed with Post
Traumatic Stress Disorder.

During Mrs James’ early adult years her brother died in a motor vehicle accident
and her mother became ill with cardiac problems, finally dying when her daughter was 50
years old. Mrs James was married and divorced some years later. She has lived alone
since that time. She had no children.
Education and employment

Following her basic schooling at primary and secondary schools, Mrs James completed a hairdressing apprenticeship and various beauty therapy and massage courses, setting up her own business. She went to live in London where she taught reflexology and aromatherapy in a salon, living there for about 10 years. She worked in her own and various other businesses until her accident. She had not worked since that time. She receives a superannuation pension and has received a small amount of compensation for her injuries. There has been no further litigation.

Daily routine, function and coping strategies

Following her accident she allowed herself a week to recover but very soon realized that she would not be returning to work. She then set out to discover what medical and allied health care she would require and embarked on a routine of exercises and various mainstream and alternative therapies. She reported that she learned to identify situations that caused her increased pain and fatigue and revised her lifestyle to accommodate the necessity of new ideas. She moved from a house to a unit with suitable access and a level floor plan and began to widen her circle of activities from a work-based group of friends to other exercise groups (such as the cardiac exercise group of walkers and swimmers) and to art and craft, and film appreciation groups. She still had periods of intense pain following various activities, but used non-dependent drugs such as paracetamol, rested for brief periods between activities, and employed massage and other distraction techniques. Sleep difficulties with pain intrusions and nightmares about accidents affected her for some time, but she had learned to regulate sleep with positional changes and the use of back supports, and the nightmares gradually declined. Her nutrition is acceptable and she enjoys cooking for her friends for lunches and special events. She reported some events from her life with sadness but no depression or over anxiety was evident.
Review of Case History 3

Congruent with securely attachment is the ability to use existing personal resources to make choices related to positive self-care, create a supportive social network and maintain physical and mental health. Mrs James provides an excellent example of an individual who has overcome major problems during her life and solved them by exploring various options and adopting those that added benefits to her life. Mrs James described herself as “a work in progress.” She had made many changes to her lifestyle and worked hard to recover as much function as possible and to maintain her circle of supportive friends. Following her accident and her departure from employment, she had found many activities of interest and stimulation and was enjoying the cognitive and physical challenges. She had deliberately set out to be practical and reality-focussed about her condition, sought reliable help and guidance from professionals, had set goals for herself that were flexible enough to cope with the physical limitations she had, and reported that she viewed any set-backs as warnings to correct her behaviours. Like the other members of this study, her injuries have contributed to her degenerative condition. Unless she maintained her regimen of self-care, the deterioration of her spine (and arthritis) would proceed at a greater rate than that contributed by the process of aging.

6.4.5 Case History 4: An Insecurely Attached individual from the Non-Clinical sample

This gentleman had work-related spinal damage and degeneration. He had not been to any pain education programs or admitted to hospital for pain specialist care. He volunteered for the study after attending the pain management seminars. He was interviewed in private at his daughter’s home while staying there with his wife and family. He was quietly spoken, not very articulate, above average in height, not overweight, clean
and casually dressed. He appeared to be older than just 60 years of age. He did not appear to be depressed or anxious.

Mr Derek Mathews (Age 60)

Family Background

Mr Mathews was born in Scotland and emigrated to Australia as a young child with his parents. They lived in a major country town. He had dyslexia, which severely impacted upon his ability to learn reading, writing and mathematics. It also made him a target for his father’s abuse and general neglect. He was diagnosed with early onset depression as a teenager. He married early, and he and his wife had one child of their own (a girl) and adopted another child, a boy, who had behavioural problems and left home as a teenager. This boy was described as “being lost” as no contact has been made since he left. Mr Mathews’ wife died of bowel cancer and he raised the children from early childhood to their teenage years. He learned to cook and clean and care for the children with the support of the community nurse and the support group “Parents Without Partners.” At one of the meetings he met someone whom he later married. At the time of the interview they had been happily married for 10 years. Of a similar age, his wife also had a back injury and was well-educated and caring. The daughter had married and had two children, so Mr and Mrs Mathews travelled frequently from their home to stay with the young family.

Education and employment

After two years of secondary school, Mr Brown left school and became a steel worker, continuing until multiple minor injuries to his back forced him to retire early in his fifties. Since then, he has kept himself active with household maintenance tasks and hobbies. Mr Mathews is functionally literate. Despite his dyslexia he tries to be well-informed by talking with others, watching television and reading what he can from
newspapers. He receives a government support pension as he is not yet old enough for an age pension.

**Daily function and coping strategies**

While Mr Mathews had a practical approach to performing various tasks, and showed lots of creativity in overcoming difficulties in his own way, his understanding of chronic pain care was limited. His basic philosophy was stated as “Life is hard and you survive the best way that you can.” While he strives to remain active, he has little concept of self-care or pacing of activities. The concept of continuing to exercise was disregarded, but he considered that continuing to be physically active was important. The solution to having pain was reported to be to stop, even if it takes two or three weeks of rest to reduce the pain, and “relaxation” was what you do after a day’s work. It was also reported that the pain was “going to be there whether he did all the jobs or not.”

His GP has taught him about the drugs he uses and in the past the doctor has attempted to get him to use strategies such as relaxation techniques, pacing, ice packs, a back brace and orthotics. However, all of these were set aside when he had some surgery to reduce neuropathic pain. Once the surgery was performed he relied on its effects, until they wore off and the pain returned. The self-care coping strategies have not been used again, but he did report knowing that he needs to go more quietly about his tasks and rest occasionally.

**Review of Case History 4**

Insecure Attachment is related to being anxious about the quality of relationships with others, while using what resources are available to maintain the best possible connection that supports the self. Mr Mathews was an individual who was anxiously preoccupied with others. He was very family-orientated and from his family’s behaviour around him, apparently much loved. He endeavoured to remain active and involved in
household tasks and hobbies with his family members. However, he did not demonstrate a broad range of skills that would aid him in his pain control and help him to maintain daily function.

He has reported many factors of vulnerability and few of resilience. This was coupled with an inability to carry out goal-corrected behaviours that would have reduced his pain and suffering. While he has positive social connections, he has not been able to face all of the practical realities of his degenerative condition. This is demonstrated by his attitude that pacing and other pain-relieving strategies don’t apply to him and current his physical condition.

6.5 Aggregated case histories

6.5.1 Comparison of clinical and non-clinical participants

The 12 participants who attended the hospital pain programs tended to use the language of the therapists. They debated whether they “paced” themselves and whether they were de-conditioned or suitably, regularly active. They were taught to monitor whether they rested or slept too much or too little, and other matters of sleep hygiene. They discussed pain levels and intensity of pain and they were comfortable with discussing medications, medication regimes and multiple therapeutic strategies. Their association with physiotherapists, occupational therapists, pain nurses and psychologists was designed to create an awareness that chronic pain was having a high impact on their lives, was a driving force in their lives, and that there were ways to combat this. Three members of the insecurely attached clinical group were without marital partners and nine members were in long-term relationships. Their social support environment included the health professionals with whom they interacted on a regular basis either in hospital or in general practice.
The 12 participants in the non-clinical group did not use these linguistic or health concepts, and generally did not regard the pain as having a high impact on their lives, either as a guide to daily living or a chosen topic of conversation. They did not identify themselves as “pain patients” or sufferers of pain. Each member of the non-clinical group in the study was in a long-term intimate relationship. In this group their social support system did not include health professionals as persons of influence in their environment on a regular basis.

6.5.2 Secure Attachment versus Insecure Attachment

The securely attached individuals in the non-clinical group reported extensive social connections to community, friends, family and extended family. More than this they reported a sense of community and family responsibility. They all belonged to community service and/or church groups and they were active members of those groups. Securely attached individuals were also very future orientated, reporting plans for various events to come, while the insecurely attached individuals were past-orientated and more likely to spend time during the interviews in lengthy explanations of the events that were blamed for their pain and suffering. Securely attached non-clinical individuals also reported that their pain state was sometimes an influential part of their lives, but unlike the clinical group, they reported being healthy with an illness, not having illness as their primary state.

6.5.3 Negative Affect, Somatisation and Function

Depression: Depression was assessed as “No current diagnosis of depression.” Two of the securely attached participants, and all twelve of the insecurely attached participants reported being diagnosed as having clinical depression concurrently with chronic pain syndrome. In general, these participants displayed flat affect, a lack of motivation to self-care, and a fear of the future.
Anxiety: Anxiety was assessed as “No inappropriate worries or neuroticism assessed” (that is, currently diagnosed). Six of the securely attached participants and all of the insecurely attached participants were highly anxious. The most common concern expressed was a fear of the future, with the possibility of increased disability and/or pain.

Somatisation: Somatisation was assessed as “no excessive focus on pain symptoms.” The same two securely attached participants who had a diagnosis of depression, and all of the insecurely attached participants were assessed to have high somatisation. Such a focus on physical symptoms serves to obscure the emotional impact of the perceived loss of roles and/or function.

Function: Function was assessed over a number of factors. (a) involvement with community, (b) involvement with family, (c) self-care strategies, (d) maintenance of cognitive flexibility (including insight and problem-solving strategies), and (e) physical activities.

On each of these variables, Negative Affect, Somatisation and Function, most (and sometimes all) of the insecurely attached participants were quite dysfunctional. In the securely attached groups the non-clinical group had no participants who were dysfunctional on any factor, while the securely attached clinical group had one or two members who were assessed as being dysfunctional on three factors, physical function, cognitive function and insight. These findings show that the results of the quantitative studies are reflected by the overt factors observed and noted in this qualitative study.

6.5.4 Education and employment history, attachment style and gender

There were no differences between the groups on education. Each member of the sample had stayed at school until year 10 and then undertaken some specific-skills training as a part of their trade or calling. In the securely attached group, either clinical or non-
clinical, each participant was previously employed in a traditional gender-appropriate role. Either male or female, they had good employment histories and studied or had been apprenticed for long periods to achieve their goals of employment, then remained in their chosen fields of employment for over ten years. In contrast, none of the insecurely attached men had remained in any specific employment for over 5 years and only two of the women had worked full-time and the others had been employed part-time or in household duties only.

6.5.5 Financial considerations

The non-clinical, securely attached group reported the most satisfaction with their financial situation. Five individuals were on pensions and one was a part-time community nurse. Three individuals lived in the city and three were from country areas. The other individuals, from both the clinical and non-clinical samples, all were on disability or seniors pensions and reported being unhappy with their unchanging financial situations. Each of the participants was happy to report their perceptions of how life experiences had contributed to their ability to cope with chronic pain.

6.5.6 Vulnerability, resilience and chronic pain status

The following section gives details of the information on vulnerability, resilience and chronic pain status, recorded during the interviews. The summaries show the groups by clinical and non-clinical status, attachment style as secure or insecure, and gender. Tables 6.1 and 6.2 summarise the factors of vulnerability for the clinical and non-clinical groups, Tables 6.3 and 6.4 summarise factors of resilience and Tables 6.5 and 6.6 summarise the relevant aspects of chronic pain status. Key words provided by the themes extrapolated from the aggregated case histories are listed, together with their definitions, at the end of each table.
### Table 6.1
**Negative life events related to physical, psychological and social vulnerability by attachment style for the Clinical group**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Secure Clinical</th>
<th>Insecure Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Congenital</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
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<td>N</td>
</tr>
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<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Age-inappropriate activities</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Female-reproductive</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Female-Visceral</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Nutrition</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Psychological abuse</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Abandonment</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Chronic pain-family member</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Substance abuse-family</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Trauma</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Adolescent problems</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Education-unavailable</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Education-absenteeism</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Employment</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Social</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Parenting style</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Religious activity</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

**Note.** Y = Yes, problem reported, N = No, not reported

**Key words for Reported Negative Life Events**

1. **Congenital**: Having an inherited or neo-natal problem or deformity
2. **Developmental**: Disability such as ADD, dyslexia, or other learning difficulties
3. **Sexual abuse**: Repeated experiences of sexually predatory behaviours
4. **Physical abuse**: Having been hit, beaten or bashed
5. **Childhood illnesses**: Illness or disease requiring a prolonged recovery
6. **Age-inappropriate activities**: Athletics, early employment, military service
7. **Females, Reproductive**: Problems such as teenage pregnancy and abortions
8. **Females, Visceral**: Pain and other problems with menarche and menstruation
9. **Nutrition**: Unsuitable or unavailable
10. **Psychological abuse**: Conditional love and/or bullying, taunting, sarcasm
11. **Abandonment**: Bereavement/loss, death, disease, immigration, wars, divorce
12. **Chronic pain - family member**: Due to disease or damage
13. **Substance abuse - family member**: Drugs and/or alcohol addiction
14. **Trauma**: >2 years duration, war, immigration, relocation or fostering,
15. **Adolescent problems**: Forensic problems, truancy, or school suspension
16. **Educational**: Schooling limited and/or unavailable
17. **School problems**: Absenteeism and/or dislike of school
18. **Employment**: Job opportunities limited and/or unsuitable
19. **Social**: Opportunities for interaction with others limited and/or unsuitable
20. **Parenting style**: Negative and inconsistent, with no positive role models
21. **Religious activity**: Religiosity, alternative practices harmful to the child
Table 6.2
Negative life events related to physical, psychological and social vulnerability by attachment style for the Non-Clinical group

<table>
<thead>
<tr>
<th>Factor</th>
<th>Secure Non-Clinical</th>
<th>Insecure Non-Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Congenital</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Developmental</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>N</td>
<td>N</td>
</tr>
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<td>N</td>
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<tr>
<td>Childhood illness</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Age-inappropriate acts</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Female-reproductive</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Female-Visceral</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Nutrition</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Psychological abuse</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Abandonment</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Chronic pain-family</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Substance abuse-family</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Trauma</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Adolescent problems</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Education-unavailable</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Education-absenteeism</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Employment</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Social</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Parenting style</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Religious activity</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Note. Y = Yes, problem reported, N = No, not reported.

Keywords for Reported Negative Life Events:
1. **Congenital**: Having an inherited or neo-natal problem or deformity
2. **Developmental**: Disability such as ADD, dyslexia, or other learning difficulties
3. **Sexual abuse**: Repeated experiences of sexually predatory behaviours
4. **Physical abuse**: Having been hit, beaten or bashed
5. **Childhood illnesses**: Illness or disease requiring a prolonged recovery
6. **Age-inappropriate activities**: Athletics, early employment, military service
7. **Females, Reproductive**: Problems such as teenage pregnancy and abortions
8. **Females, Visceral**: Pain and other problems with menarche and menstruation
9. **Nutrition**: Unsuitable or unavailable
10. **Psychological abuse**: Conditional love and/or bullying, taunting, sarcasm
11. **Abandonment**: Bereavement/loss, death, disease, immigration, wars, divorce
12. **Chronic pain - family member**: Due to disease or damage
13. **Substance abuse - family member**: Drugs and/or alcohol addiction
14. **Trauma**: >2 years duration, war, immigration, relocation or fostering.
15. **Adolescent problems**: Forensic problems, truancy, or school suspension
16. **Educational**: Schooling limited and/or unavailable
17. **School problems**: Absenteeism and/or dislike of school
18. **Employment**: Job opportunities limited and/or unsuitable
19. **Social**: Opportunities for interaction with others limited and/or unsuitable
20. **Parenting style**: Negative and inconsistent, with no positive role models
21. **Religious activity**: Religiosity, alternative practices harmful to the child
6.5.7  Vulnerability: The securely attached clinical group compared to the securely attached non-clinical group

Both securely attached groups, clinical and non-clinical, had similar low rates of all factors of vulnerability except psychological abuse, childhood illnesses, adolescent problems and chronic pain in a family member. The securely attached non-clinical group reported more problems than the securely attached clinical group with a greater focus on rigid religious ideals, less educational and employment opportunities and a lack of social opportunities. The clinical group reported higher rates of sexual and physical abuse and more substance abuse by family members than the non-clinical group.

Overall, the most often reported problems of vulnerability for the securely attached group were a past history of trauma, psychological abuse, childhood illnesses, chronic pain in a family member and problems associated with adolescence.

6.5.8  Vulnerability: The insecurely attached clinical group compared to the insecurely attached non-clinical group

Strong similarities existed between the two insecurely attached groups on rates of childhood illnesses, age-inappropriate activities, parents as role models, female reproductive and visceral problems, psychological abuse, substance abuse in a family member, traumatic experiences, adolescent problems and a lack of employment and social opportunities.

The insecurely attached non-clinical group differed from the insecurely attached clinical group with higher rates of chronic pain in a family member, educational problems (both as a lack of opportunities and as problems of truancy and school refusal), a lack of employment opportunities and religiosity in their families of origin.
The clinical group also differed from the non-clinical group with higher rates of sexual and physical abuse, rates of childhood illness and issues of abandonment. Overall, the insecure groups were most vulnerable because of reported psychological abuse, past traumatic experiences, problems with parents, adolescent problems and chronic pain in a family member.

When risk factors were tallied, the most vulnerable group was the insecurely attached non-clinical group (75 factors), followed by the insecurely attached clinical group (62 factors), the securely attached non-clinical group (40 factors) and the securely attached clinical group (37 factors). The insecurely attached groups had approximately double the risk factors of their securely attached counterparts. Having an insecure attachment style and chronic pain, and lacking admission to the assessment and care of a chronic pain program appeared to be detrimental to a pain patient.
Table 6.3
Positive aspects and personal strengths that contribute to resilience by attachment style and clinical group

<table>
<thead>
<tr>
<th>Factor</th>
<th>Secure Clinical</th>
<th>Insecure Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Optimism</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Motivation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Coping strategies</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Skills</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Goal-corrected behaviours</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Community activity</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Family activity</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Physical function</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Cognitive function</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Insight</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Adult education</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Stable environment</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Note: Y=Yes, factor assessed as present, N = No, factor not assessed as present

Keywords for positive aspects and personal strengths that contribute to resilience
1. Optimism: Expressed hope for the future
2. Motivation: Attempts to improve quality of life
3. Coping Strategies: Use of proven strategies for long-term benefit
4. Skills: Having a broad range of skills that were both practical and productive
5. Goal-corrected behaviours: Problem solving skills utilized to good effect
6. Community: Satisfying involvement and responsibility towards others
7. Family: Satisfying and responsible involvement with family and friends
8. Physical function: Maintaining fitness and activities
9. Cognitive function: Deliberately maintaining cognitive flexibility
10. Insight: awareness of the influence of past experience and the need to re-assess current ideas or attitudes
11. Adult Education: education as apprentice or other following basic schooling for the purpose of increasing employment opportunities
12. Stable environment: An absence of current traumas such as family or personal stressors
Table 6.4  
Positive aspects and personal strengths that contribute to resilience by attachment style and non-clinical group

<table>
<thead>
<tr>
<th>Factor</th>
<th>Secure Non-Clinical</th>
<th>Insecure Non-Clinical</th>
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<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Optimism</td>
<td>Y Y Y Y Y Y</td>
<td>N Y N N Y N</td>
</tr>
<tr>
<td>Motivation</td>
<td>Y Y Y Y Y Y</td>
<td>N Y N N Y N</td>
</tr>
<tr>
<td>Coping strategies</td>
<td>Y Y Y Y Y Y</td>
<td>N N N N N N</td>
</tr>
<tr>
<td>Skills</td>
<td>Y Y Y Y Y Y</td>
<td>N N N N N N</td>
</tr>
<tr>
<td>Goal-corrected behaviours</td>
<td>Y Y Y Y Y Y</td>
<td>N N N N N N</td>
</tr>
<tr>
<td>Community activity</td>
<td>Y Y Y Y Y Y</td>
<td>N N N N N N</td>
</tr>
<tr>
<td>Family activity</td>
<td>Y Y Y Y Y Y</td>
<td>N Y Y Y Y N</td>
</tr>
<tr>
<td>Physical function</td>
<td>Y Y Y Y Y Y</td>
<td>N N N N N N</td>
</tr>
<tr>
<td>Cognitive function</td>
<td>Y Y Y Y Y Y</td>
<td>N N N N N N</td>
</tr>
<tr>
<td>Insight</td>
<td>Y Y Y Y Y Y</td>
<td>N N N N N N</td>
</tr>
<tr>
<td>Adult education</td>
<td>Y Y Y Y Y Y</td>
<td>Y N Y N Y N</td>
</tr>
<tr>
<td>Stable environment</td>
<td>Y Y Y Y Y Y</td>
<td>Y Y N N Y Y</td>
</tr>
</tbody>
</table>

Note: Y = Yes, factor assessed as present, N = No, factors not assessed as present

Keywords for Positive aspects and personal strengths that contribute to resilience
1. Optimism: Expressed hope for the future
2. Motivation: Attempts to improve quality of life
3. Coping Strategies: Use of proven strategies for long-term benefit
4. Skills: Having a broad range of skills that are both practical and productive
5. Goal-corrected behaviours: Problem solving skills utilized to good effect.
6. Community: Satisfying involvement and responsibility towards others
8. Family: Satisfying and responsible involvement with family and friends
9. Physical function: Maintaining fitness and activities
10. Cognitive function: Deliberately maintaining cognitive flexibility
11. Insight: awareness of the influence of past experience and the need to re-assess current ideas or attitudes
12. Adult Education: education as apprentice or other following basic schooling for the purpose of increasing employment opportunities
13. Stable environment: An absence of current traumas such as family or personal stressors

6.5.9 Resilience: Positive themes related to the resilience of participants as adults

Despite many instances of previous negative experiences, most participants reported some positive aspects in their lives as adults who live with chronic pain. Tables 6.3 and 6.4 summarise these themes by clinical and non-clinical group and secure or insecure attachment style.
6.5.10 *Resilience: The securely attached clinical group compared to the securely attached non-clinical group*

Strong similarities existed between these securely attached groups on all factors. They were similar on the use of positive coping strategies, having a broad range of skills both practical and theoretical, using goal-corrected behaviours and being involved in community activities. They were also similar on levels of optimism, motivation, maintenance of cognitive function, personal insight and living in a stable environment. On the factors of maintenance of physical function and involvement in formal adult education there were two members of the clinical group (one male and one female in each case) who differed from the rest. The female participant had severe degenerative spinal problems that limited her physical activity, and came from a lower socio-economic background where further education was discouraged. This low socio-economic background attitude was also true for the other female who had not undertaken further education. The male participant who was not maintaining physical function also had severe skeletal and pain constraints on movement.

6.5.11 *Resilience: The insecurely attached clinical group compared to the insecurely attached non-clinical group*

The strongest similarity between these insecurely attached groups was on their high rates of involvement in family activities. They were also similar, with low rates of abilities, in their lack of positive coping strategies, few practical and theoretical skills, no evidence of goal-corrected behaviours as problem solving strategies, no recognition that it was necessary to maintain physical function and no demonstrated personal insight.

The clinical group was higher on optimism, motivation, maintenance of cognitive function and on involvement in adult education, while the non-clinical group gave more
reports of community involvement. Overall, the insecurely attached groups were most resilient on factors of family involvement and adult education.

Based on a tally of positive factors, the most resilient group is the securely attached non-clinical group (72 factors), followed by the securely attached clinical group (64 factors), the insecurely attached clinical group (28) and the insecurely attached non-clinical group (22) was reporting the least factors of resilience. Having poor social connections and chronic pain and being without appropriate medical assessment and treatment for pain out in the community, was the least beneficial to a pain patient.

To be securely attached, as a clinical or non-clinical participant, was related to possessing the most positive aspects and personal strengths for resilience.
Table 6.5
A summary of chronic pain status by attachment style for the clinical group

<table>
<thead>
<tr>
<th>Factor</th>
<th>Secure Clinical</th>
<th></th>
<th>Insecure Clinical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>1   2   3   4   5</td>
<td>6</td>
<td>7     8   9    10</td>
<td>11  12</td>
</tr>
<tr>
<td>Speech</td>
<td>S   S   S   S   U</td>
<td>S</td>
<td>S     S    U    S</td>
<td>U</td>
</tr>
<tr>
<td>Dress</td>
<td>S   S   S   S   S</td>
<td></td>
<td>S     S    S    S</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>S   S   S   S   S</td>
<td></td>
<td>S     U    S    U</td>
<td></td>
</tr>
<tr>
<td>Concentration</td>
<td>S   S   S   S   U</td>
<td></td>
<td>S     U    U    S</td>
<td>U</td>
</tr>
<tr>
<td>Attachment to reality</td>
<td>S   S   S   S   S</td>
<td></td>
<td>U     U    U    S</td>
<td>U</td>
</tr>
<tr>
<td>Disability</td>
<td>S   S   S   S   U</td>
<td></td>
<td>U     U    U    U</td>
<td>U</td>
</tr>
<tr>
<td>Pain levels</td>
<td>U   S   U   S   U</td>
<td></td>
<td>U     U    U    S</td>
<td>U</td>
</tr>
<tr>
<td>Pain behaviours</td>
<td>S   S   U   S   U</td>
<td></td>
<td>U     U    U    S</td>
<td>U</td>
</tr>
<tr>
<td>Somatisation</td>
<td>S   S   U   S   U</td>
<td></td>
<td>U     U    U    U</td>
<td>U</td>
</tr>
<tr>
<td>Depression</td>
<td>S   S   U   S   U</td>
<td></td>
<td>U     U    U    U</td>
<td>U</td>
</tr>
<tr>
<td>Anxiety</td>
<td>U   S   U   S   U</td>
<td></td>
<td>U     U    U    U</td>
<td>U</td>
</tr>
<tr>
<td>Condition stable</td>
<td>U   S   S   S   S</td>
<td></td>
<td>U     S    U    S</td>
<td>U</td>
</tr>
<tr>
<td>Etiology</td>
<td>S   S   S   S   S</td>
<td></td>
<td>U     S    S    S</td>
<td>S</td>
</tr>
<tr>
<td>No further surgery</td>
<td>U   S   S   S   S</td>
<td></td>
<td>U     S    U    S</td>
<td>U</td>
</tr>
<tr>
<td>Non-dependent drugs</td>
<td>U   S   U   S   S</td>
<td></td>
<td>U     U    S    S</td>
<td>U</td>
</tr>
<tr>
<td>Medical care</td>
<td>S   S   S   S   S</td>
<td></td>
<td>U     U    U    U</td>
<td>S</td>
</tr>
<tr>
<td>No recreational drugs</td>
<td>S   S   U   U   S</td>
<td></td>
<td>S     S    U    S</td>
<td>S</td>
</tr>
<tr>
<td>Goal setting</td>
<td>S   S   S   S   S</td>
<td></td>
<td>S     S    U    S</td>
<td>U</td>
</tr>
<tr>
<td>No legal proceedings</td>
<td>S   S   S   S   S</td>
<td></td>
<td>S     S    S    S</td>
<td>U</td>
</tr>
<tr>
<td>Finances stable</td>
<td>S   S   S   S   S</td>
<td></td>
<td>S     S    S    S</td>
<td>U</td>
</tr>
</tbody>
</table>

Note: S = Satisfactory or not reported, U = Unsatisfactory or reported to be present

Keywords for Chronic pain status
1. **Speech**: Pattern of speech appropriate (tone, inflexion, syntax, delivery)
2. **Dress**: Mode and cleanliness of dress appropriate
3. **Weight**: Appropriate for height and age
4. **Concentration**: Able to follow topics appropriately
5. **Attachment to reality**: Positive awareness of limitations
6. **Disability**: Days of disability and inactivity not excessive
7. **Pain levels**: Pain reported to be tolerated
8. **Pain behaviours**: No excessive or catastrophic behaviours
9. **Somatisation**: No excessive focus on pain symptoms
10. **Depression**: No depression currently
11. **Anxiety**: No inappropriate worries or neuroticism assessed
12. **Condition stable**: No further debilitation to physical condition
13. **Etiology**: No new diagnoses since onset of original damage or disease
14. **Further surgery**: Not an option and not sought
15. **Non-dependent drugs**: No prescription analgesics or psychotropics
16. **Medical care**: Suitable involvement with medical and allied health care
17. **Recreational drugs**: No use of recreational substances reported
18. **Goal setting**: Realistic goals for self-care and improvement
19. **No legal proceedings**: No legal proceedings for compensation or other current
20. **Finances stable**: No change in financial status
Table 6.6
A summary of chronic pain status by attachment style for the non-clinical group

<table>
<thead>
<tr>
<th>Factor</th>
<th>Secure Non-Clinical</th>
<th>Insecure Non-Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female 13 14 15 16 17 18</td>
<td>Male 19 20 21 22 23 24</td>
</tr>
<tr>
<td>Speech</td>
<td>S S S S S S</td>
<td>S U S U S S</td>
</tr>
<tr>
<td>Dress</td>
<td>S S S S S S</td>
<td>S S S U S S</td>
</tr>
<tr>
<td>Weight</td>
<td>U S S S S S</td>
<td>U S S U S S</td>
</tr>
<tr>
<td>Concentration</td>
<td>S S S S S S</td>
<td>U U S U U S</td>
</tr>
<tr>
<td>Attachment to reality</td>
<td>S S S S S S</td>
<td>U U U U U U</td>
</tr>
<tr>
<td>Disability</td>
<td>S S S S S S</td>
<td>U U U U U S</td>
</tr>
<tr>
<td>Pain levels</td>
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<td>U U U U U U</td>
</tr>
<tr>
<td>Pain behaviours</td>
<td>S S S S S S</td>
<td>U U U U U U</td>
</tr>
<tr>
<td>Somatisation</td>
<td>S S S S S S</td>
<td>U U U U U U</td>
</tr>
<tr>
<td>Depression</td>
<td>S S S S S S</td>
<td>U U U U U U</td>
</tr>
<tr>
<td>Anxiety</td>
<td>S U S U S U</td>
<td>U U U U U U</td>
</tr>
<tr>
<td>Condition stable</td>
<td>S S S S S S</td>
<td>S S U U S S</td>
</tr>
<tr>
<td>Etiology</td>
<td>S S S S S S</td>
<td>S S U S S S</td>
</tr>
<tr>
<td>No further surgery</td>
<td>S S S S S S</td>
<td>S U U U U S</td>
</tr>
<tr>
<td>Non-dependent drugs</td>
<td>S S S S S S</td>
<td>S U U U U U</td>
</tr>
<tr>
<td>Medical care</td>
<td>S S S S S S</td>
<td>U U U U U U</td>
</tr>
<tr>
<td>No recreational drugs</td>
<td>S S S S S S</td>
<td>S S S S S S</td>
</tr>
<tr>
<td>Goal setting</td>
<td>S S S S S S</td>
<td>U U U U U U</td>
</tr>
<tr>
<td>No legal proceedings</td>
<td>S S S S S S</td>
<td>S S S U S S</td>
</tr>
<tr>
<td>Finances stable</td>
<td>S S S S S S</td>
<td>S S S U S S</td>
</tr>
</tbody>
</table>

Note: S = Satisfactory or not reported, U = Unsatisfactory or reported to be present

Keywords for chronic pain status
1. Speech: Pattern of speech appropriate (tone, inflexion, syntax, delivery)
2. Dress: Mode and cleanliness of dress appropriate
3. Weight: Appropriate for height and age
4. Concentration: Able to follow topics appropriately
5. Attachment to reality: Positive awareness of limitations
6. Disability: Days of disability and inactivity not excessive
7. Pain levels: Pain reported to be tolerated
8. Pain behaviours: No excessive or catastrophic behaviours
9. Somatisation: No excessive focus on pain symptoms
10. Depression: No depression currently
11. Anxiety: No inappropriate worries or neuroticism assessed
12. Condition stable: No further debilitation to physical condition
13. Etiology: No new diagnoses since onset of original damage or disease
14. Further surgery: Not an option and not sought
15. Non-dependent drugs: No prescription analgesics or psychotropics
16. Medical care: Suitable involvement with medical and allied health care
17. Recreational drugs: No use of recreational substances reported
18. Goal setting: Realistic goals for self-care and improvement
19. No legal proceedings: No legal proceedings for compensation or other current
20. Finances stable: No change in financial status
6.5.12 Chronic pain status: Assessment of general biological and cognitive function

Assessments of chronic pain status were conducted for each participant. A part of this assessment is included to give further information about positive aspects of their general biological and cognitive function. Table 6.5 of the Clinical group, and Table 6.9 of the non-clinical group, present summaries of individual status for these assessments.

6.5.13 Chronic pain status: The securely attached clinical group compared to the securely attached non-clinical group

Near equal status existed between the securely attached groups on grooming, etiology (medical condition), use of medical and allied services, demonstrated ability to set long-term, positive goals for themselves, an absence of existing legal proceedings and stability of finances. The two groups were also very similar in their lack of speech defects, ability to concentrate on a task, level of disability, the stability of their physical condition and their non-necessity to undergo further surgery.

In both the securely attached non-clinical group and the securely attached clinical group levels of anxiety were reported as higher than normal for pain patients, according to the norms given in the pain questionnaire (Tollinson & Langley, 1992). The non-clinical group reported lower pain levels, no drugs that could produce dependency used, and no use of recreational drugs. The clinical group reported slightly higher levels of problems with pain, use of drugs of dependency, pain behaviours, somatisation, depression, anxiety, use of opioids, and use of recreational drugs.
6.5.14 Chronic pain status: The insecurely attached clinical group compared to the non-clinical group

Near equal status was reported for the insecurely attached groups on etiology, no current legal proceedings and financial stability. Somatisation, depression and anxiety were equally prevalent and an ongoing problem for both groups. A low incidence of problems of dress/grooming, speech, or use of recreational drugs was reported in each group. There were similarities of unsatisfactory levels of obesity, ability to concentrate on a task, attachment to reality, levels of disability, pain levels, and pain behaviours. More individuals were unsure about the stability of their condition or the prospects of further surgery and the use of medical and allied services was similarly high in both groups.

On chronic pain status, from the least satisfactory status to highest status, when the factors were tallied, the non-clinical, insecurely attached group had the lowest satisfactory status (a total for the group of 44 satisfactory factors). The insecurely attached clinical group had a similar level (53), the securely attached clinical group had much better status (97), and the securely attached non-clinical group was the most functional in all areas assessed, with a total of 116 satisfactory factors.

When vulnerability, resilience and chronic pain status were considered, it was most beneficial to be securely attached and a non-clinical participant, compared to being insecurely attached in the non-clinical group. The latter group had the highest level of vulnerability, the least resilience and the least satisfactory chronic pain status. When pre-morbid factors were taken into account, it was clear that insecurely attached individuals needed considerable amounts of support and therapy in order to increase their capacity to tolerate and accommodate to chronic pain.

No insecurely attached participant was assessed to be pragmatic about their pain status. That is, their reports of pain intensity and pain condition did not match their ideas
about suitable and beneficial changes to their various behaviours and their ability to make those changes. There was a demonstrated lack of understanding that if they tried to do things in a different way, they could be more successful at certain tasks. There was also poorer matching of reported pain levels and disability. That is, the activities they reported were not congruent with their reported pain levels. One participant in the study reported partaking in cross-country skiing, yet he took high levels of analgesics to combat reported ‘excruciating’ pain. The medical history that they related contained few or no attempts to learn to accommodate and tolerate their pain other than drug therapies or surgery, or other strategies of short-term benefit. This indicated an inability to face the reality of their situations. While chronic pain patients tended to be masters at distracting themselves from pain, most recognized that only a concerted effort, using consistent and informed strategies, would enable them to live productive and functional lives.

6.5.15 Comparing means and standard deviations for the clinical and non-clinical groups and scores for individuals in the qualitative study

In his original report the mean Total McGill Pain Score quoted by Melzack (1975) for individuals with back pain was 26, and for arthritis 18. For this research, the mean for the total sample on the McGill Pain Total Score was 26, for the clinical group 33 and for the non-clinical group 20. The clinical insecure group had the highest mean (36), representing high levels of physical and psychological suffering, and the non-clinical secure group had the lowest mean on pain (17). In the 4 case studies presented the clinical securely attached participant had a score considerably less than average (13) and the non-clinical insecure individual, was well above average on this overall measure of pain and suffering with a score of 50. The clinical insecurely attached individual from Case 2 had a very low score on this variable of 5. When the original response sheet was examined to
corroborate this data, it was found that she had selected words from the sub-scales related to psychological distress and none from the sensory sub-scales, suggesting that psychological suffering was very influential in her chronic pain.

For scores on Negative Affect, the average of the sub-scales of Depression and Anxiety from the Pain Patient Profile (Tollinson & Langley, 1992), an average score on Negative Affect for a member of the general public would be 17 while an average score for an individual who has chronic pain would be 25. For this research, the average score for the total sample was 21. For the clinical group the mean for Negative Affect was 22.5, with the Non-Clinical group reporting the least Negative Affect (19). The non-clinical securely attached group reported the same mean as the general public mean (17), as quoted by the authors of the Pain Patient Profile, Tollinson and Langley (1992). The insecure non-clinical mean for negative affect was 21.3.

When scores on Somatisation were compared to the norms presented in the Pain Patient Profile (Tollinson & Langley, 1992), an average score for an individual who has chronic pain would be 29. For a member of the general public the average score would be 16. In this research, the mean score for the total sample on Somatisation is 25, the clinical group 26 and the non-clinical group 23. However, when attachment groups are compared the non-clinical securely attached group had the lowest mean (21), non-clinical insecurely attached group mean was 25 for somatisation. For the clinical group securely attached group mean was 25, and the clinical insecurely attached group mean was 27. All groups are exhibiting symptoms of somatisation at a much higher rate than the general public. For the case studies presented only the clinical secure participant had a score below average (17) for chronic pain patients.

The Quality of Life Inventory (Frisch, 1994) gives a population norm of 2.6 as the mean weighted score obtained for this variable. The mean score for the total sample in this
research was 1.91, much lower than scores obtained for the general public. The mean for
the total clinical sample was 1.55, and for the total non-clinical group 2.27. For the non-
clinical secure group mean score was 3.08, and for the non-clinical insecure group, 1.46.
For the clinical secure group mean score was 2.12 and the clinical insecure group mean was
0.98. The clinical secure matched pairs group report a higher Quality of Life (3.34) than
the group from which they were drawn (2.12), and the securely attached non-clinical
matched pairs report a lower Quality of Life (2.46) than their total group from which they
were drawn (3.08). These case studies presented show that the securely attached clinical
and non-clinical participants had scores above average for either chronic pain patients or
the general public, representing a high Quality of Life, and the participant reported in case
study 2 has reported scores that represent a very low Quality of Life. The following Table
6.7 presents data for the McGill Pain Total, Negative Affect, Somatisation and Quality of
Life, taken from the quantitative and qualitative studies. This table illustrates the
differences between the groups on each of the major variables.
Table 6.7
A comparison of means and standard deviations for the clinical and non-clinical groups and scores for individual case studies by attachment style

<table>
<thead>
<tr>
<th>Variable</th>
<th>McGill Pain Total</th>
<th>Negative Affect</th>
<th>Somatisation</th>
<th>Quality of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Clinical (N = 362)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secure</td>
<td>29.45</td>
<td>14.48</td>
<td>20.44</td>
<td>3.49</td>
</tr>
<tr>
<td>Insecure</td>
<td>36.30</td>
<td>15.70</td>
<td>24.63</td>
<td>5.01</td>
</tr>
<tr>
<td>Non-Clinical (N = 108)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secure</td>
<td>17.10</td>
<td>11.83</td>
<td>17.13</td>
<td>2.58</td>
</tr>
<tr>
<td>Insecure</td>
<td>22.24</td>
<td>12.88</td>
<td>21.33</td>
<td>4.22</td>
</tr>
<tr>
<td>Matched Pairs (N = 24; 12 from each of the clinical and non-clinical groups).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Secure</td>
<td>26.83</td>
<td>11.04</td>
<td>20.67</td>
<td>3.56</td>
</tr>
<tr>
<td>Clinical Insecure</td>
<td>32.33</td>
<td>21.65</td>
<td>26.42</td>
<td>3.95</td>
</tr>
<tr>
<td>Non-Clinical Secure</td>
<td>16.5</td>
<td>11.20</td>
<td>18.33</td>
<td>3.79</td>
</tr>
<tr>
<td>Non-Clinical Insecure</td>
<td>26.33</td>
<td>13.85</td>
<td>22.67</td>
<td>4.99</td>
</tr>
<tr>
<td>Scores for individuals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Secure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 1</td>
<td>13</td>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Clinical Insecure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 2</td>
<td>25</td>
<td></td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Non-Clinical Secure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 3</td>
<td>20</td>
<td></td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Non-Clinical Insecure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 4</td>
<td>50</td>
<td></td>
<td>27.5</td>
<td></td>
</tr>
</tbody>
</table>

6.6 Discussion

Like the experience of pain, life events can only be reported from the perspective of the individual concerned. Such reports depend upon the importance that is placed on the event by the individual. However, it was possible to compare and contrast groups of participants on certain factors. These groups were similar on many factors, while other factors show strong contrasts between the groups. Reports were given for vulnerability, resilience and chronic pain status for each group. Participants in this qualitative study were in the middle years (40-60 years) of age, and all of them showed some insight into their
condition. There was an expressed awareness that certain people, events and experiences of the past had shaped the way that they viewed life. That is, they displayed varying levels of biographical awareness. Their expectations of life in the future were congruent with these early experiences of life.

Past problems were reviewed by the insecurely attached participants with regret and with some expressions of hope about the improvement of living standards and relationships in the future. In contrast, the securely attached group appeared to be more focused on current living conditions, happy within their relationships, and making plans for the future.

Psychological abuse relates to experiences of being made to feel unacceptable and loved only on certain conditions, and being the subject of bullying and sarcasm. A high number of participants reported being traumatized for periods of greater than two years by events within their specific environment, by immigration or relocation, experiences due to war, family involvement in illegal activities, being fostered out, or family and financial traumas. Adolescent problems, such as problems in relationships within their family, social or school environment were frequently reported. Five of the six female insecurely attached participants reported having reproductive and visceral pain problems. None of the female securely attached participants reported any reproductive or visceral problems in adolescence.

Another highly reported factor was a perceived lack of parent support and positive role models. Insecurely attached participants reported this factor at twice the rate of the securely attached participants. Finally, it was found that sixteen of the twenty-four participants had suffered from some severe illness as children that either lasted for over six months, or required a very extensive recovery period. Participants were asked about the usual childhood illnesses (such as chicken pox, mumps, measles and tonsillitis) and if they had experienced any unusual illnesses or accidents which made them ill for a long time, or
required a long recovery time (18-24 months). Examples that were given by the participants included head injury, meningitis, pneumonia and bronchitis, fractured limbs, hepatitis, juvenile onset diabetes and juvenile onset rheumatoid arthritis.

This study has demonstrated that, even in this small sample of participants, many of the factors of vulnerability and resilience to chronic pain, previously related in the literature, were present. Factors of vulnerability were more common in the insecurely attached group, while factors of resilience and higher physical and psychological function were more common in the securely attached group. While the study contrasted participants by clinical or non-clinical group, attachment theory was used to identify participants most at risk when chronic pain occurred. The basic tenets of attachment theory were easily identified, and included the ability to negotiate difficult times by using goal-corrected behaviours, social support as involvement with family and community, using life-enhancing strategies that were realistic in delivering personal, long-term benefits. Also shown was the high impact of childhood trauma of various origins where children learned to avoid and distrust others, and use self-soothing strategies of dubious, short-term reward.

Just as pain and suffering have been quantitatively assessed in previous studies, this qualitative study has shown the high incidence of psychological distress in this group of matched participants with chronic pain syndrome on depression, anxiety and somatisation, plus the associated variables of pain levels, pain behaviours and disability. These results of the qualitative study, as they relate to the results of Studies 1, 2 and 3, are discussed in Chapter 7.
CHAPTER 7.0 -
DISCUSSING THE BIOPSYCHOSOCIAL MODEL

This chapter provides an overview of the research and a review of the major findings. The perceived limitations and strengths of this research, suggestions for future research and implications for current pain education programs are presented at the conclusion of the chapter.

The general objective of this research was to determine the extent that the variables of a biopsychosocial model of chronic pain, a combination of physical, psychological and social variables (including attachment style), would contribute to the explanation of pain, quality of life and function. It was considered that an investigation of these variables would provide evidence about various factors that predispose or exacerbate difficulties when an individual experiences chronic pain. Specifically, the project set out to test how securely attached participants reported their pain experiences compared to the reports from insecurely attached participants.

Using the variables of view of the self, view of others and level of relationship anxiety, each sample was partitioned into two groups, securely attached and insecurely attached participants. These groups were then tested for reported overall pain and suffering, pain intensity and pattern, depression, anxiety, somatisation, quality of life, function, disability and neuroticism. Four studies were reported.

Study 1: The first study was a quantitative study, which investigated how to partition the groups into securely and insecurely attached participants. This study used a clinical sample of 200 participants, and tested whether reported overall pain and suffering differed between the two groups as a validation of the partitioning procedure. About a quarter of the sample was securely attached (27%), and about three quarters of the group was
insecurely attached (73%). These proportions were congruent with previous research by Scott (1989) and Ciechanowski et al. (2002). The securely attached group reported significantly lower levels of overall pain and suffering but showed no significant differences on pain intensity and pain pattern. The overall pain score, representing the combination of pain and suffering, was related to attachment style, but the physical expression of the pain, as intensity or pattern, was no different. It has previously been discussed that insecurely attached individuals become more distressed when experiencing fear, illness or pain, while securely attached individuals are more able to find constructive ways of coping and display less intense distress (Bowlby, 1980; Violon, 1978, 1980).

**Study 2:** The second quantitative study used the full 362 individuals from the clinical sample and included the variables attachment style and overall pain scores. The range of variables was extended to include age, gender depression, anxiety, somatisation and quality of life. This study used the procedure devised in Study 1 to partition the sample into two groups - securely attached (27.3%) and insecurely attached (72.7%). The securely attached group reported less overall pain and suffering, less negative affect and a higher quality of life. The two groups did not differ on pain intensity and pain pattern, although there was a trend towards lower pain intensity scores and a simple pain pattern presentation rather than multiple presentations of current pains for the securely attached group. It was found that gender had no significant relationships to any other variable in the study so it was excluded from further analyses. It was also found that depression and anxiety were highly correlated so they were merged as a single variable, negative affect, which was then used in all analyses.

The combined variables of the model were used to investigate whether they could predict a significant amount of the variance in predicting overall pain. Some support was provided as 13% of the variance was accounted for, with somatisation contributing a
significant 3.9% of the variance. Other variables contributed to the effect but made no other significant contributions. Being symptom-focussed contributed significantly to the analysis but overall pain levels were not well explained by this combination of variables and attachment style did not make any significant unique contribution.

An investigation of quality of life showed that the combination of variables predicted 45% of the variance explained with negative affect accounting for 26% of the variance. Neither attachment style nor any other variable made significant unique contributions although they did contribute to the total variance explained. Having a higher quality of life was related to the lower levels of depression and anxiety but not to attachment style. Since current levels of depression and anxiety were reported it appears that these psychological variables were more influential in current reported life-satisfaction than the biological or social variables.

Study 3: The third quantitative study used a sample of non-clinical chronic pain sufferers, tested the same variables used in previous studies and added the variables of function, disability and neuroticism. Gender showed no relationship to any of the other variables of the study. Depression and anxiety were highly correlated and consistent with Study 2 were merged to form the variable negative affect. A preliminary investigation of the variable Disability found that it was not normally distributed so it was then used as a categorical variable in a non-parametric analysis. The sample consisted of both rural and urban participants and when these groups were compared, the rural group had a greater age range than the urban group with older participants than the urban group, who reported less pain. When age was considered as a factor, the differences on pain were removed. The two groups were then combined as the non-clinical sample. The sample was partitioned into securely attached and insecurely attached participants in the same way as the clinical group of Study 1.
In this non-clinical group securely attached participants were 50% of the sample and insecurely attached also 50%. Previous research in the general population reported that community groups have between 50 and 60% of their sample securely attached. The group of chronic pain patients reported by Agar-Wilson (1994) from a remote rural area had 86% securely attached. It is possible that in community groups who volunteer for research, and in the remote rural group of Agar-Wilson’s study, it was more likely that individuals who are seeking appropriate help for their pain and willing to volunteer for research were more likely to be securely attached individuals than insecurely attached individuals. If this is so, the hospital-based group who are referred for help for unmanageable chronic pain, and required to provide information, could be more likely to display the true numbers of secure/insecure individuals in our general population.

In Study 3 the securely attached non-clinical group reported significantly lower levels of overall pain and suffering, less negative affect, less somatisation, and a higher quality of life than the insecurely attached group. Pain intensity in the securely attached group was not significantly different from the insecurely attached group, but pain pattern was significantly different with the securely attached group more likely to report a simple pattern of pain. This result differs from the results of Study 2, where no significant relationship was found between attachment style and the temporal pattern of the pain. This result suggests that in this non-clinical sample, in the securely attached group, the minor intrusions of pain at that time were not regarded as serious enough to be considered as a threat, while a constantly re-occuring pain was worthy of attention. For the insecurely attached group who are more symptom-focused, any occurrence of pain could have been regarded as intrusive and threatening. Loss of function and disability were significantly lower in the securely attached group, indicating that their chronic pain status has not made significant changes to their roles within their families or communities, or changes to their
involvement with personal, home or social activities. Of further interest in Study 3, appearing in the test of disability, was the fact that although the majority of participants claimed to have pain on most days of the month (20-30 days), they did not report that the existence of pain caused them to miss out on days of home or social activities. The lower levels of neuroticism found in the securely attached group compared to the insecurely attached group, suggests that these securely attached participants had fewer psychological problems. It was also found that as individuals aged, pain problems decreased and quality of life improved. This implies that the use of positive goal-corrected behaviours increases as the knowledge gained from increased life events is introjected. That is, the ability to solve problems increases if the individual has the personal resources to learn from the experiences.

The variables of the model were used to investigate their contribution to overall pain scores and 42% of the total variance in pain was explained. In Study 2 only 13% of the variance was accounted for and somatisation (3.9%) made the only significant unique contribution. In Study 3 at Step 1 of the analysis somatisation provided 11% of the total variance with age and quality of life providing further significant variance. In this non-clinical group being symptom-focussed was important in explaining pain levels reported, but pain was also influenced by the age of the participant and their general satisfaction with life. At Step 2 of the analysis neuroticism and function provided a further 4.3% of the variance explained in quality of life, with neuroticism adding a significant unique 3% of variance. Thus, the variables somatisation, age, quality of life and neuroticism, provided 46.3% of the variance explained overall pain scores with the other variables contributing to the effect, but not significantly.

When quality of life was investigated in this non-clinical group, using the variables of the model at Step 1 58.8% of the variance was explained with negative affect, age and
pain making significant unique contributions. In the clinical group 44.8% of the variance was contributed by the same variables: negative affect, age and pain. There was a larger effect of depression, anxiety, age and levels of pain in the non-clinical group than in the clinical group. This combination of variables was more successful at predicting quality of life than in the clinical group. Variables other than those tested in this study, were important in that group.

When Neuroticism and function were added to the prediction of quality of life, only 0.002% of variance was added. These variables were not important predictors in the non-clinical group. In the clinical group 3% of variance was contributed by neuroticism suggesting that personality factors could be more important in predicting quality of life in a hospital-referred group.

An investigation of function using the variables of the model predicted 40.5% of the variance. Neuroticism contributed 8.5% and attachment style 5.6% of the variance while no other variables made significant unique contributions but did add to the explanation of function. In this non-clinical group personality factors plus security/insecurity of attachment explain about 14% of the variance, suggesting that loss of function in daily activities is strongly related to psychological factors in this non-clinical group.

**Comparative study of Study 3:** In order to compare the clinical and non-clinical groups a matched samples investigation was conducted. This was done because of the differences in the age range of the two groups and to control for any differences due to age on pain or the other variables. Individuals were matched for age, gender and attachment style as securely or insecurely attached with 95 pairs of individuals being created. Exact-age pairs were not possible for every participant but age was not significant in the analysis showing that the groups were well-matched. There was no interaction of attachment style and clinical or non-clinical group. However, securely attached individuals from either group
reported less negative affect, less somatisation and higher scores on quality of life. There were no differences between the attachment style groups on overall pain scores. For group membership, the clinical group reported more pain, more negative affect and more somatisation with no significant differences on the quality of life to the non-clinical group. Differences exist on overall reported pain scores, depression and anxiety and symptom-focus but the groups do not differ on life satisfaction.

**Study 4:** The fourth, and last, study was a qualitative, interview study conducted using a structured interview in order to obtain information about family and social environment, experiences of trauma, personal resourcefulness, and use of medical and allied resources including prescription medications. In this qualitative study, secure attachment style was related to higher levels of social connectedness and lower levels of medical and allied services use, including the use of prescribed drugs. Most importantly, secure attachment was related to a high involvement with many activities of personal, family and recreational satisfaction. This showed that the individual possessed a broad range of skills, both intellectual and practical, that they were using to create a better lifestyle and accommodate to any disabilities imposed by the painful condition. They were adapting their survival strategies in order to reduce suffering and they each possessed, or had developed, a pragmatic approach to pain. Good descriptors for these people are “adapting, accommodating, tolerating, pragmatic – and resilient.”

In the insecurely attached group, a high involvement with their families was reported, but minimal involvement was reported with community or social activities. These participants reported few hobbies or interests other than church-going or television, relied on their families as carers, and depended more on medical and allied services for pain therapies for physical and psychological support. In essence, these insecurely attached individuals “suffered” more than the securely attached individuals. Good descriptors for
this insecure group were “dependent, uninvolved, suffering –and vulnerable.” Their reliance was on external sources in a confined social environment, while the securely attached individuals relied on internal resources and an enjoyment of many forms of social relationships in an extensive social environment.

It was found that insecure participants reported that they lacked parental support and positive role models during their developmental years, at twice the rate reported by participants who were classified as securely attached. An unexpected finding was the high incidence of long childhood illnesses for 16 of the 24 participants. Also unexpected was the commonality of abuse and trauma across the total group. It can be noted from the tables that more of the insecurely attached people than securely attached people suffered in this way, but it remains true that both groups have in common, reported high levels of trauma of various types. It is not true that those who were securely attached have not experienced trauma, rather, it appears that they have overcome traumas with more positive outcomes than the insecurely attached groups.

That there could be a developmental link to higher levels of suffering as adults with chronic pain is a new area of research, but the findings of this study support the results of other research into interpersonal concepts, attachment style and various forms of acute and chronic pain (Anderson & Hines, 1994; Ciechanowski et al., 2002; Mikail et al., 1994; Scott, 1989).

7.1 Partitioning attachment style groups

The literature review consistently noted that secure attachment is global and stable, having characteristics that define secure style that are both ethnically and culturally stable, as well as stable across the lifetime of the individual (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Hazan & Shaver, 1987; Horowitz, Wright, Lowenstein & Parad,
1981; Main & Goldwyn, 1984), while an insecurely attached individual varies between avoidance of others and preoccupation with others, depending upon their current social environment (Davila, Burge & Hammen, 1997). These researchers have suggested that as an individual gets older, attachment characteristics become increasingly rigid, global and stable as personality-specific behaviours both confirm experiences and precipitate events in a circular manner.

This research used the two groups of attachment style, securely and insecurely attached individuals. The insecure sub-groups of attachment style, anxious-avoidant, anxious-preoccupied and fearful, were defined and were shown to be statistically independent groups. However, there were four reasons why they were not utilized as variables. (a) Previous research presented in the literature review suggested that the two fundamental styles secure and insecure, when stringently separated, produce the most reliable statistical results (Bartholomew & Horowitz, 1991; Noller & Feeney, 1994). (b) Securely attached individuals constitute an homogenous, stable group while insecurely attached individuals as a group, are heterogeneous and unstable (Davila et al., 1997). (c) In this research, when included in some exploratory analyses, the results were not conclusive and the means, standard deviations and 95% confidence intervals for the three subgroups of insecure attachment style were similar and overlapped substantially on the confidence intervals, showing that there were not statistically significant differences between the insecurely attached groups on the variables subsequently used for the research. (d) The number of variables able to be included in this research was governed by the sample sizes. Increasing the number of variables about attachment style with another two insecurely attached groups was not necessary to fulfill the objectives of the research.
7.2 Results of the quantitative and qualitative studies

The results that have been obtained from the quantitative studies show that in any physical pain, there is an unidentifiable portion of reported or observed physical pain modified or amplified by psychological pain. The attachment style, the security or insecurity of an individual, contributes to their manner of tolerance to pain and the motivation to self-care towards resolving the painful state. Their mood state, their happiness, their function, disability and their reported experiences of pain all depend in part upon their vulnerability versus their resilience to physical and psychological pain. Interrelated variables selected for this research constitute a biopsychosocial model of chronic pain, developed for this research and following the suggestions of Engel (1959) in which attachment style had a significant influence. While it has been shown that psychological processes are indeed an important aspect to consider in this pathology, this combination of variables does not account for all variance in pain and suffering, or quality of life, or function.

It was shown that there were various differences between the clinical and non-clinical groups. Previous research has consistently shown that untreated pain patients in the community differ markedly from pain clinic patients, and the differences are not medical, or socio-economic, they are psychological (Anooshian, Strezler & Goebert, 1999). These authors report that psychiatric comorbidity of pain and psychiatric pathologies are most common in people admitted to pain clinics, so it could be expected that the clinical population would report higher levels of overall pain and suffering, as was found in this study. However, depression, anxiety and somatisation as specific variables, were higher in the non-clinical group than in the clinical group of this research, while the clinical group were more pain-focussed, possibly related to a greater incidence of painful medical conditions than in the non-clinical group.
Variables that contributed significantly to the research were age, attachment style, somatisation, neuroticism and negative affect. Thus, personality traits related to levels of emotional distress, plus the age of the individuals, were the most important variables. Quality of life was inversely related to levels of these negative emotions, and to function and disability. As age increased, quality of life increased and all negative factors decreased. Being male or female in this population had no association with the other variables, possibly because individuals who have chronic pain share common problems with varying degrees of biological or psychological trauma.

7.3 Neuroticism

Neuroticism was included in this research to investigate how this personality variable was expressed in individuals who have chronic pain. According to Horney (1945), neuroticism also has its origins in negative childhood circumstances. Bowlby (1944) based his theories of insecure attachment on negligent parenting and suggested that this was the impetus for creating a life-long attachment style. Horney suggested that the individual may have started out disadvantaged, but failed for various reasons as adults, to take responsibility for their actions. Such individuals fail to reconcile an idealized inner self with the reality of the authentic self. The choices made by a neurotic individual reinforce the rigid identity that has been carefully constructed, conserving the status quo. Thus, Bowlby excuses the individual because of external causes while Horney accuses them of failing to break out of internal and self-imposed identity.

While Bowlby infers that securely attached individuals are pragmatic, Horney says that individuals who are non-neurotics (and therefore stable) are pragmatists. This non-neurotic group is both homogenous and stable. However, the major similarities in the theories of Bowlby and Horner relate to insecurity of attachment style. The anxious-
prooccupied, anxious-avoidant and disorganized groups posited by Bowlby (1944) approximate to Horney’s groups of neurotic individuals who move towards, away from, and against other people. The neurotic group is both heterogeneous and unstable.

In the present research, neuroticism was moderately correlated with attachment style and to the other variables of the study. In the analyses of Function, increased dysfunction was significantly related to both insecure attachment and neuroticism.

7.4 Depression, anxiety, somatisation and quality of life

Research has previously focused on the high incidence of overt depression in individuals who have chronic pain (Allen et al., 2001; Blumer & Heilbron, 1981, Dworkin et al, 1994; Scott, 1989) and other research has categorized anxiety, somatisation, anger and frustration as covert depression (Roy, 1982, 1992; Vertosick, 2000; Violon, 1990; Walker, 1982). It has been suggested that these emotions are an attempt to externalize blame and avoid personal responsibility while also avoiding reality. This research has shown that high levels of negative emotions and somatisation are related to insecure attachment style in a situation of chronic pain. Individuals who have low personal resources, a minimal capacity to self-soothe and few goal-corrected behaviours (Bowlby, 1971) cannot be expected to have strategies of self care that require a high investment in time and attention to give rewarding long-term benefits. That would be a form of postponed reward based on a positive view of the future. Furthermore, over 16 different areas of life, these individuals who were insecure reported a lower quality of life than securely attached individuals. Satisfaction with life circumstances across a broad range of personal and social areas is a strong indication that the individual’s expectations about life are being met. To be in pain and unsatisfied with one’s health status is understandable, but to be unsatisfied about health status plus another 15 areas of life indicates that it is the expectations about life that create
the dis-ease, more of a general malaise of the spirit. The expectation that all pain is similar to acute pain and can generally be controlled or cured by external means (so that one then has a pain-free life) is replaced by negative emotions and an expectation that life will be physically and psychologically pain-full. In both the clinical and non-clinical samples of this study the strongest predictor of quality of life was negative affect, the variable representing depression and anxiety combined.

7.5 Factors of vulnerability and resilience

The clinical group was made up of approximately 75% Insecurely Attached and 25% Securely Attached, while the non-clinical group included 50% of each style. This may partly explain why physical and psychological problems co-occur most often in clinical patients. Based on this research, 75% of patients were insecurely attached and thus have personality traits that interfere with their successful rehabilitation from chronic pain syndrome. For the non-clinical group, drawn from the general community, rates of secure and insecure groups were the same as those found in the general population (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987).

These results had strong implications for the treatment of pain patients in pain programs. It has been suggested in past research (Turk, 1990) that this is not an homogenous population and shouldn’t be treated as such. The high incidence of negative affect and somatisation, particularly in one group, appears to support this idea. The low levels of quality of life reported by the insecurely attached group in the clinical group, corroborates further the notion that this group needs chronic pain treatment of a different focus, to that provided for the securely attached group.

The qualitative, matched participants study, was designed to investigate how attachment style affected activities of daily life, motivation, emotional stability, and coping
strategies by encouraging individuals to talk about their family and social histories, and how they used pharmacological and therapeutic resources. This qualitative study yielded information that may explain much of the vulnerability to persistent pain. It also showed that trauma, abuse and loss have been experienced by each individual in the study, but it appeared that only those individuals who had a secure attachment style had incorporated those events into their life history and moved on to optimize their social, psychological and physical chances of a good lifestyle. Certain themes pertaining to past traumatic events emerged from this study and were recorded in Chapter 6. Primary risk factors are congenital or developmental factors because they place the child at risk from birth, while secondary factors include environmental factors that create vulnerability to various forms of damage. All of these factors alter the developmental trajectory of the child in such a way that cumulatively they impact upon adult potential. The end result may be resilience and the development of an explorative, positive personality, or vulnerability, and a continuing cycle of stress, recidivism and/or reciprocity as socially hostile and deviant behaviour.

7.6 Why is insecure attachment a disadvantage when adults have chronic pain?

The organizing principle of this thesis has been Attachment Theory as originally conceived by John Bowlby (1944). Bowlby believed that a child who is born into an unstable, unsupportive environment creates an internalized model of living that is based on social disconnection rather than social connectedness. Thus, a life-style develops that is characterized by the employment of strategies necessary to reduce anxiety in a world that is perceived as hostile and has an absence of positive, self-soothing strategies. These insecure individuals are not future orientated. Since it is necessary to live in a negative environment, the individual is more likely to seek strategies giving immediate benefit. When attachment style is partitioned, the definitive variables are relationship connectedness
and relationship anxiety. The results of the present study relate to levels of psychological distress, plus age and learning. Increases in age are related to increased life experience, while learning is related to attachment concepts. In Study 2 of the clinical group, age contributed very little effect. However, in Study 3 of the non-clinical group where a high proportion of the participants were over 65, there were reduced reports of pain and negative affect. This provides some evidence that in later life there could be a reduced effect of chronic pain. As well as this, individuals in the clinical sample reported more overall pain and negative affect than the non-clinical sample, suggesting that the clinical participants were a more homogenous, possible more traumatized group with higher pain severity (and biological damage?) than the non-clinical group. The magnitude of the current difficulties of the clinical group, who had been referred to the clinic because they had unmanageable pain, was possibly higher than the magnitude of difficulties faced by the non-clinical group.

Attachment theory is a theory of affect regulation and the variables of this research are related to psychological concepts such as depression and somatisation, or physical outcomes of a psychological state, such as function and disability. Attachment behaviours are over-learned and over-determined behaviours (Alexander, Feeney, Hohaus & Noller, 2001) and the focus of this research has been the behaviour of individuals who have chronic pain syndrome. Behaviour is not passive. It is initiated by stimuli from many sources and once the behaviour is activated, similar circumstances will provoke that same behaviour into action. Awareness of behaviour, some insight, has to be acquired before changes will be made. When affect is unstable, then over-learned (or automatic) behaviours are dominant. Thus, individuals who have chronic pain as a daily companion need to acquire appropriate self-soothing strategies, plus goal-corrected behaviours that will increase comfort and lower distress to combat both immediate and long-term discomfort.
In order to manage chronic pain an understanding of possible influential biological and psychological factors is necessary. It is only recently that psychological, social and environmental factors have been recognized as important components of pain. Previously, pain theories were based on the assumption that pain was a purely sensory experience. The role of learning and experience was only viewed as influential after the publishing of Melzack and Wall’s gate control theory of pain (1965). They posited that the spinal cord contains a neurologically maintained “gate” that either allows or blocks pain signals (nociception). This gate can be influenced by brain to spinal cord messages as well as from the peripheral nervous system to the central nervous system. This means that pain is perceived centrally as well as peripherally. They suggest that cognitive-evaluative and motivational-affective factors can interact with the pain. That is, we both perceive pain as well as feeling the experience of pain. Thus, it is now recognized that biological, psychological and social factors contribute to the experience of chronic pain.

Traits that are global and stable, such as attachment style and neuroticism, were also shown to be important factors in this research. The results of these current studies have shown that for both clinical and non-clinical chronic pain sufferers, being securely attached and less neurotic is an advantage. These results confirm that chronic pain syndrome is a psychological and social pathology as well as a medical problem. This gives support to the theory that pain clinics need to use a multidisciplinary approach in order to adequately address this pathology.

7.7 Limitations of the research

Each of these studies was cross-sectional. Since this was very basic research and minimal work existed in this field, an investigation into the viability of the theory was warranted. Chronic pain syndrome is a very complex problem for individuals to cope with
since it threatens their existence on a day-to-day basis. Every day they have to face further pain and disability, and every day they have to make the best of their lives. This research has established that personality variables, such as attachment style, are plausibly linked to the manner in which they cope. While these studies provide some indication of possible links, longitudinal, or if possible, prospective studies, would shed more light on the interaction of personality, pain and suffering. It may be possible to identify those conditions in the acute stage (such as traumas that often result in long-term chronic pain) and follow the individuals through the years ahead and thus add to our store of knowledge that brings such awful distress.

It was noted in Study 3 that despite their pain problems, individuals self-reported that their quality of life was above average and they did not avoid activities simply because they had some pain. The fact that chronic pain had not limited their lifestyles even in the presence of pain warrants some investigation. Something (or somethings) in their ideas or attitudes about life is compensating for their pain status.

There are limitations on generalizing the results of these studies based on the specific samples from which these participants were drawn. The participants from the pain center population at a public hospital, who are unemployed or retired, could well be different from a population of participants from other sources such as work rehabilitation centers. The participants from the non-clinical groups all report problems with chronic pain, and possibly have major differences from other community groups. These results therefore provide only a guide to the problems of general medical populations, either inpatient or outpatient.

A further limitation in generalizing results comes from the use of self-report measures. This is mitigated somewhat by the use of a qualitative, interview study. But unless one could interview every participant in the study and observe their reactions to pain
first-hand, it would be impossible to say that the participants matched for the study are representative of this population. The evidence presented from the extensive literature review provides the support for the conclusions that have been presented. In further research, an investigation of specific diagnoses and reported assessments from medical records would enable a corroboration of results gained from the self-report measures.

The clinical sample of 362 participants provided adequate power for the analyses that were used. The non-clinical sample numbered 108 participants. While this number is relatively small, valuable data have been obtained for the first time. This research also used a population of chronic pain patients with a number of different origins for their pain. Further research using a biopsychosocial model of chronic pain and larger sample sizes of groups of individuals with specific injuries or disease is recommended. These findings validate the use of a model of chronic pain that includes various factors of the human environment other than physical or biological factors. While it was shown that age is an important factor in the model, gender was not. However, various studies have noted that there are gender differences in some areas of pain studies, so it should be retained in the combination of variables. It was also shown that some differences existed between rural and urban participants, therefore it may be wise to include this when considering larger populations. Previous research into pain has also shown that culturally there are differences in attitudes to pain (Rodriguez et. al. 1996) and its accompanying problems so a biopsychosociocultural model of pain, accounting for the multicultural aspects of pain could be recommended.

The instruments used for this study have been previously shown to have sound psychometric properties, and in these studies this appears to be supported. In addition, the major instruments, the Pain Patient Profile (Depression, Anxiety and Somatisation), the Quality of Life Inventory, the McGill Pain Inventory and the International Association for
the Study of Pain Test of Function, have been designed for use with pain patients. Only the Revised Adult Attachment Scale has no history of use in such a population. It was chosen and adapted, then used in trials along with other attachment style questionnaires, and was selected for its brevity and acceptance by the members of this population. While it supports the idea that caring for an individual with chronic pain on a regular basis is an intimate relationship, it may not be the best or most appropriate choice but seems to have been the best available. For the Revised Adult attachment Scale coefficient $\alpha$ quoted by Collins and Read (1990) were Close 0.75, Depend 0.72 and Anxious 0.69. In this research for Study 1 ($n = 200$ clinical) coefficient $\alpha$ was Close 0.65, Depend 0.62, Anxious 0.83; For Study 2 ($n = 362$ clinical), Close 0.59, Depend 0.56, Anxious 0.83; For Study 3 ($n = 108$ non-clinical), Close 0.75, Depend 0.72, Anxious 0.83. The scores from these sub-scales were used only to partition the two groups of secure/insecure attachment, therefore they were considered to be adequate.

New tests and new theories will emerge that identify and link specific problems to specific pathologies within chronic pain syndrome. To lose body parts in an accident, for example, produces chronic pain and also implies psychological and functional impairment. An accident is a direct cause and this unambiguous diagnosis has direct effects on therapies offered. As noted previously, few patients with back pain are ever able to get a specific diagnosis. The individual has to live with ambiguity for their lifetime and therapies offered are often symptom-driven and ineffective. These two examples of differing pathologies require different research approaches, but both are designated chronic pain syndromes.

To help researchers consider facets of this research that could prompt some ideas, it is suggested that further examination of the significant factors that emerged from the quantitative analyses and of the summaries of factors of vulnerability and resilience from the qualitative study could prove to be useful.
7.8 Changing Pain Education Programs and Chronic Pain Assessments

Investigating the origin of attitudes such as pragmatism, and personality traits such as neuroticism could prove to be significantly important in chronic pain research. It is insufficient to call an individual “resilient” or “vulnerable” without considering where and how that quality has developed. The resilience of an individual relates to being pragmatic and therefore realistic in expectations about life events and outcomes, while being neurotic equates to being vulnerable, unrealistic and unable to cope with life.

7.9 Conclusions: chronic pain, bereavement and loss

Attachment theory is an existential theory about how individuals view the continuance of life aided by their internalised model for living created during early relationships. Life can be viewed with fear or curiosity, hope and optimism, or pessimism and despair. When an individual is diagnosed with chronic pain syndrome it can be seen as an “ending” or just another problem to be overcome. To experience chronic pain represents bereavement, a loss of hope, loss of function and changes in relationships. For some individuals this loss of what was perceived as a “normal” life, can be overwhelming. Those insecurely attached individuals who have chronic pain arising from trauma, illness or damage may not regard themselves as being worthy of support and care, and may not regard others as being capable of providing care. Those individuals who are classified as securely attached report that they are confident that they deserve care and that care is available. In this research it has been shown that a positive view of self and others maximises the likelihood that an individual with chronic pain syndrome will learn to tolerate and accommodate to the experience of physical and psychological pain.
REFERENCES


APPENDICES

A  Letter of information, Griffith University Letterhead
B  Consent Form, Griffith University letterhead
C  Demographic information
D  Revised Adult Attachment Scale (Collins & Read, 1990)
E  McGill Pain Questionnaire (Melzack, 1975)
F  International Association for the Study of Pain-Assessment of Function
G  Structured Interview for Study 4

The following assessments are not included as they are not publicly available
•  The Pain Patient Profile (Tollinson & Langley, 1992)
•  The Quality of Life Inventory (Frisch, 1994)
•  The Eysenck Personality Scale (Eysenck et al., 1985)
•  The Migraine Disability Assessment (Stewart et al., 1999)
APPENDIX A.
LETTER OF INFORMATION.

Griffith University letterhead.

Griffith University - Gold Coast, School of Applied Psychology.
Royal Brisbane Hospital - Multidisciplinary Pain Centre.

Project: Attachment Style and Chronic Pain Syndrome.

Chronic pain makes life difficult and stressful. People become very unhappy and are no longer socially active or able to participate in interesting activities or employment. We are interested in finding new ways to help such people and to increase our understanding of the physical and psychological aspects of this problem.

We would like you to help us with this research project. You can do this by answering the questions in this booklet. Participation is completely voluntary. You may withdraw at any time.

The procedures we are using ensure that all of the information that you give to us will be kept confidential. Nobody apart from the university researchers will have any access to this information. No results will be used for any purpose other than this evaluation. These results will be grouped together on a database, and no individual will be able to be identified from this data. Each individual will be assigned a number for the purposes of the database, to protect their privacy.

A summary of the research results will be available at the completion of the evaluation.

If you have any questions or you would like further information, please contact Suzanne Scott at the address given below.

Principal Researcher: Suzanne Scott. School of Applied Psychology, Griffith University.

Supervisors:
Dr. Peter Creed, Griffith University - Gold Coast.
Dr. Elizabeth Conlon, Griffith University – Gold Coast.
Professor Tess Cramond. Multidisciplinary Pain Centre, Royal Brisbane Hospital.
Dr. Robin Murray. University of Sydney, Centre for Pain Management and Research.
APPENDIX B.
CONSENT FORM.

Griffith University letterhead.

Griffith University - Gold Coast. School of Applied Psychology.
Royal Brisbane Hospital - Multidisciplinary Pain Centre.

Consent Form.

I have read and understood the information contained on the information sheet, a copy of which I have retained. I understand that the project will be conducted as described in the information sheet, by a student from the Griffith University. I agree to participate in the project "Attachment style and chronic pain syndrome" and give my consent freely. I understand that it is my decision to participate, and should I decline to participate, or withdraw from the project this will result in no loss or benefit of treatment will occur as a result of my withdrawal nor penalty be incurred. I understand that I do not have to give a reason for not participating or withdrawing from the research project. I have had all questions answered to my satisfaction.

Signatures: ...................................................        ....................................................
Investigator     Date

...................................................        ....................................................
Participant     Date

Thank you for agreeing to participate in this research project.

Principal Researcher: Suzanne Scott

Supervisors:
Dr Peter Creed, Griffith University - Gold Coast
Dr Elizabeth Conlon, Griffith University - Gold Coast
Professor Tess Cramond, Royal Brisbane Hospital
Dr Robin Murray, University of Sydney - Centre for Pain Management and Research

The university requires that all project participants are informed that if they have any complaints concerning the manner in which this research is conducted it may be given to the researcher, or, if an independent person is preferred, either to the secretary or chairperson of the Research Ethics Committee, Royal Brisbane Hospital, Herston, 4029 (telephone 07 3636 5490). or to the Griffith University's Research Ethics Officer, Office for Research, Bray Centre, Griffith University, Kessels Rd. Nathan, Qld. 4111, (telephone 07 3875 6618) or the Pro Vice-Chancellor (Administration), Bray Centre, Griffith University, Kessels Rd. Nathan, Qld. (telephone 07 3875 7343).
APPENDIX C.
DEMOGRAPHIC INFORMATION

Date Today                  Identity Number
-----------------------------------------------
Date of Birth               Male or Female?
-----------------------------------------------
Place of Birth              
-----------------------------------------------

Diagnosis (if known)

Where is your pain?
Please indicate the area or areas of your pain by drawing them in on these figures.
APPENDIX D.  
REVISED ADULT ASSESSMENT SCALE (COLLINS & READ, 1990).

A. Who is the person who gives you the most support? (eg. Your partner, a parent, friends or other).

B. Please read each of the following statements and rate the extent to which it describes your feelings about your relationship with your carer or to other people.

Circle the number which corresponds with your feelings

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I find it relatively easy to get close to people</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I find it difficult to allow myself to depend on others</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I often worry that I am not really loved</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>I find that others are reluctant to get as close as I would like</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I am comfortable depending on others</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I don’t worry about others getting too close to me</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I find that people are never there when you need them</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I am somewhat uncomfortable being close to others</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td>I often worry that my carer will not want to stay with me</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>When I show my feelings for others, I am afraid that they will not feel the same about me</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>11</td>
<td>I often wonder whether my carer really cares about me</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td>I am uncomfortable developing close relationships with others</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I am uncomfortable when someone gets too emotionally close to me</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I know people will be there when I need them</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I want to get close to people, but I worry about being hurt</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I find it difficult to trust others completely</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>My carers often want me to be emotionally closer than I feel like being</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I am not sure that I can always depend on people to be there when I need them</td>
<td>1 2 3 4 5</td>
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</tbody>
</table>
APPENDIX E.
MCGILL PAIN QUESTIONNAIRE

McGill Pain Questionnaire

Part 1. What does your pain feel like?

Some of the words below describe your present pain. Circle ONLY those words that best describe it. Leave out any category that is not suitable. Use only a single word in each appropriate category – the one that applies best.

1. Flickering
   - 2. Jumping
   - 3. Pricking
   - 4. Sharp
   - 5. Quivering
   - 6. Flashing
   - 7. Boring
   - 8. Cutting
   - 9. Pulsing
   - 10. Shooting
   - 11. Drilling
   - 12. Lacerating
   - 13. Throbbing
   - 14. Stabbing
   - 15. Lancinating
   - 16. Beating
   - 17. Lacerating
   - 18. Pounding
   - 19. Pounding
   - 20. Pounding

5. Pinching
   - 6. Tugging
   - 7. Hot
   - 8. Tingling
   - 9. Pinching
   - 10. Pulling
   - 11. Burning
   - 12. Itchy
   - 13. Gnawing
   - 14. Wrenching
   - 15. Scalding
   - 16. Smarting
   - 17. Cramping
   - 18. Searing
   - 19. Stinging
   - 20. Searing

9. Dull
   - 10. Tender
   - 11. Tiring
   - 12. Sickening
   - 13. Heavy
   - 14. Raspbing
   - 15. Exhausting
   - 16. Suffocating

13. Fearful
   - 14. Punishing
   - 15. Wretched
   - 16. Annoying
   - 17. Terrifying
   - 18. Gruelling
   - 20. Troublesome
   - 19. Cruel
   - 20. Miserable
   - 20. Vicious
   - 20. Intense
   - 20. Killing
   - 20. Unbearable

17. Spreading
   - 18. Tight
   - 19. Cool
   - 20. Nagging
   - 18. Radiating
   - 19. Numb
   - 20. Nauseating
   - 18. Penetrating
   - 19. Drawing
   - 20. Agonising
   - 18. Piercing
   - 19. Squeezing
   - 20. Dreadful
   - 18. Tearing
   - 19. Freezeing
   - 20. Torturing
Appendix E. McGill Pain Questionnaire (Continued)

McGill Pain Questionnaire

Part 2.   How does your pain change with time?

1. Which word or words would you use to describe the pattern of your pain?

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Continuous</td>
<td>Rhythmic</td>
<td>Brief</td>
</tr>
<tr>
<td></td>
<td>Steady</td>
<td>Periodic</td>
<td>Momentary</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>Intermittent</td>
<td>Transient</td>
</tr>
</tbody>
</table>

2. What kind of things relieve your pain?

3. What kind of things increase your pain?

Part 3.   How strong is your pain?

People agree that the following 5 words represent pain of increasing intensity. They are:

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

To answer each question below, write the number of the most appropriate word in the space beside the question.

1. Which word describes your pain right now?  
2. Which word describes it at its worst?  
3. Which word describes it when it is at its least?  
4. Which word describes the worst toothache you ever had?  
5. Which word describes the worst headache you ever had?  
6. Which word describes the worst stomach-ache you ever had?
**APPENDIX F.**
**INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN – ASSESSMENT OF FUNCTION**

Here is a list of activities. Please circle the one number that best describes your current ability to participate in each of these activities.

<table>
<thead>
<tr>
<th>Degree of difficulty</th>
<th>None</th>
<th>Slight</th>
<th>Moderate</th>
<th>Extreme</th>
<th>Unable to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dress myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Shampoo my hair</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Stand up from an armless chair</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Get in and out of bed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Walk outdoors on flat ground</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Climb up steps</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Wash and dry my entire body</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Get on and off the toilet</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Bend down and pick up clothing off the floor</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Open car doors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Open jars that have been opened before</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Turn on taps</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Switch on electrical switches and plug in cords</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Turn door handles</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Use the telephone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. Run errands and shop</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Get in and out of a car</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. Do some vacuuming or some gardening</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Participate in a social activity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. Participate in a social activity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
APPENDIX G.
STRUCTURED INTERVIEW FOR STUDY 4

PATIENT HISTORY

Part 1.

1. **Education:** Please tick all the schooling that you have completed.
   1 ( ) Primary school
   2 ( ) Some secondary/high school
   3 ( ) Completed secondary/high school
   4 ( ) Trade training
   5 ( ) Tertiary studies

2. **Do you have a qualification or certificate?**
   Yes  No
   Specify type of qualification ..............................................................

3 **With whom do you live? Please tick all that apply.**
   1 ( ) Alone
   2 ( ) With husband/wife/partner
   3 ( ) With children
   4 ( ) With relatives/parents
   5 ( ) With friends
   6 ( ) Other (Describe) ..............................................................

4 **Marriage/family history**
   1. Are you currently married or in a permanent relationship? ............... 
   2. Do you have any children? .......... 
   3. Do these children live with you? .......... 

5 **Between birth and 17 years of age did you live**
   1. With one or both biological parents? ............ 
   2. With adoptive parents? ............
   3. With one or both parents absent at least part of the time? ............

6 **Did your parents separate or divorce during this time?** ..............................
APPENDIX G.
STRUCTURED INTERVIEW FOR STUDY 4 (CONTINUED)

7 Were there any other major events or traumas for you or your family during your period of childhood and young adulthood, birth to 17 years of age? Please give brief details and state your age at that time.

……………………………………………………………………………………………

8 Did you experience any trauma during that time as
1 ( ) Physical trauma
2 ( ) Sexual trauma
3 ( ) Neglect
4 ( ) Bullying
5 ( ) Sarcasm or other emotional trauma

9 Did you experience any severe childhood illness or disease? ………………………

10 On a scale of 1 to 10, how would you describe your relationship to your husband/wife/partner? Circle the appropriate number.
   a Relationship before pain began:
      0 1 2 3 4 5 6 7 8 9 10
      Poor                      Excellent

   b Relationship now:
      0 1 2 3 4 5 6 7 8 9 10
      Poor                      Excellent

11 Does anyone in your close family or friends have chronic pain problems?………
   How is this person related to you?……………………………………………………

12 Does anyone close to you have a chronic (long term) illness? (Now, or in the past).
   a. How is this person related to you?  ……………………………………………
   b. What is the diagnosis of the illness?  …………………………………………
   c. Is this illness an addiction to alcohol or recreational drugs? …………………

13 Were you born in this country?  ………………..
   If not born here, what is your country of origin?……  …………………………..

14 What is your religion?  ………………………………………  ……………………………
APPENDIX G.  
STRUCTURED INTERVIEW FOR STUDY 4 (CONTINUED)

Part 2. Open-ended questions were asked about following matters.

1. Pain history: Events preceding the pain, the origin of the pain, and the treatment of physical and psychological problems since the event.

2. Previous events of ill-health or surgery in childhood or adolescence.

3. Factors that increase or decrease the pain: Coping strategies for pain and its effects.

4. Daily activities and interests at home, within the family, and within the community.

5. Involvement with medical practitioners, allied health workers and alternative health care providers.

6. Sleep, rest, and pacing activities.


8. Current issues of trauma or abuse.

9. Use of drugs of dependence, compliance with prescription drug use, treatments for health problems, attitudes to medications.

10. Goals for the future as employment, self-care, interests maintained or expanded, treatment seeking (particularly future surgery), compensation or legal matters being pursued.