A COGNITIVE BEHAVIOURAL TREATMENT PROGRAM FOR CHRONIC LOWER BACK PAIN: A CASE STUDY APPROACH

BY

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Dedication

Dedicated to my family, friends and teachers who have supported me on my path.

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To my supervisor, Dave Edwards, many thanks for your valuable time and insight in order to direct my paths of exploration. Your criticism, feedback, and suggestions were most appreciated.

To the staff at 2 Mil, Thank you for your endless support and assistance.

Declaration

I hereby declare that the work connected to this thesis was carried out exclusively by myself, under supervision and guidance by Professor D. Edwards.

This thesis has never been submitted for a degree at any other university.

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ABSTRACT

A cognitive behavioural treatment program for chronic lower back pain was designed, implemented and evaluated. The outpatient treatment program included education sessions, goal setting, graded activity training, physical exercise, relaxation training, cognitive techniques, social skills training, and medication reduction. Three participants volunteered to participate in the eight-week treatment program. Of the three participants, only one completed the program successfully. The results were used to critically discuss and evaluate the literature. The successful participant showed significant improvement in activity levels, decrease in subjective levels of pain, as well as decreased levels of anxiety and depression. It was shown that correcting cognitive distortions (e.g. selective abstraction, catastrophising, misattribution) and challenging early maladaptive schemas of abandonment, emotional deprivation and emotional inhibition (Young, 1990) assisted in enhancing coping mechanisms and the belief that the pain episodes would be short-lived and could be controlled. There was considerable improvement for the second participant, although he chose to withdraw from the program prior to its completion. The components of the psycho-education, relaxation and stress management and exercise program were beneficial for him. The third participant failed to accept the treatment formulation, and did not engage collaboratively in the treatment program. The case is presented as a point for examining therapeutic failures.

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1. INTRODUCTION

Pain is the most frequently presented complaint that leads patients to health care providers (Lloyd, 1996; Steele, 1991). Second to headaches, lower back pain is the most common cause of intractable pain, and is a condition that affects an estimated 50-80 % of the world's population, ranking first among all health problems in frequency of occurrence (Steele, 1991). When pain is chronic, there is often uncertainty and confusion about its origin and likely causes. There is even greater uncertainty as to when and how it will terminate, if ever. The volumes of clinical research and writings depict the struggle of patient and practitioner alike, in the effort to manage chronic pain effectively.

There is a favorable prognosis for recovery if chronic lower back pain is managed correctly. The literature demonstrates that approximately 90% of episodes of low back pain resolve without any intervention and 85-90 % of acute low back pain resolves within 6-12 weeks (Dillingham, 1995; Sarno, 1991). However, an estimated 85 % of patients with low back pain have no readily identifiable cause of pain (Dillingham, 1995). In spite of this, doctors continue to prescribe medication and advise surgery in the hope that the pain will remit. Unfortunately, the goal fails to be achieved, as the patient invariably leaves without relief, only to seek another opinion, another treatment plan – a situation referred to as "doctor shopping".

Pain, as a clinical phenomenon, remains ill understood and is therefore often mismanaged. The cost of chronic pain represents an enormous burden, in terms of human suffering, on an emotional, physical and financial level, as well as being a drain on the economy for workdays lost and costly health services. A recent newspaper article claimed that back problems are the biggest cause of disability amongst South African employees. Almost 31% of the R125 million paid out in disability benefits amongst the employer group schemes last year were related to back problems ("Sore Backs, a major problem for assurers…" 1998). It is therefore critical, particularly in South Africa, to prevent the further development

of chronic pain and its related rising costs. There is evidence to suggest that the current treatment approach for chronic lower back pain, especially in South Africa, is limited in its scope and that chronic lower back pain could be managed in a broader, more inclusive and holistic manner. This involves focusing beyond the physiological, and incorporating the psychosocial context (Baumann, 1996).

This project is in response to my own personal suffering related to chronic back pain, as well as an attempt to facilitate change in the seemingly ineffective modes of practice, with regard to assessment, treatment and practitioner-patient interaction. The medical profession focuses on the pathologic and organic factors, yet ignores the psychosocial factors that are associated with dysfunction and pain (Lloyd, 1996; Pilowsky, 1986; Sarno, 1991). These include cognitive, affective and behavioural issues associated with the initiation and/or perpetuation of chronic pain states. Research has demonstrated that treatment approaches should pay attention to biopsychosocial factors, as these have been demonstrated to impact on symptom development, maintenance and treatment. The underlying need, therefore, is for a multiple treatment approach to chronic back pain (Avanoff, 1992; Bauman, 1996).

2. LITERATURE REVIEW:

CHRONIC PAIN – TOWARDS A BIOPSYCHOSOCIAL MODEL

Because chronic lower back pain is such a complex phenomenon, it is important to conceptualize it beyond the physical or medical definitions that merely focus on organic states. In conceptualizing pain from a biopsychosocial perspective, a fuller understanding of the predisposing, maintaining and precipitating factors that exacerbate physical pain needs to be derived.

2.1 PAIN DEFINED

Two forms of pain are identified (Scott, 1996), which differ significantly from one another, these are acute pain and chronic pain. Acute pain is generally, any relatively short duration pain with known organic cause. Acute pain is in response to a stimulus resulting from an injury, and is experienced immediately, felt rather "sharply", diminishes relatively quickly and is mediated by nerve fibres that lead from the pain receptors to the cerebral cortex.

In contrast, chronic pain is defined as deep, long-lasting, intractable pain, is maintained by a host of factors, and is experienced qualitatively as dull and diffuse; it tends to increase in intensity over time, and is mediated by nerve fibres that lead to the limbic system.

Acute pain results from the experience of physical injury (tissue and/or muscular damage) and serves to signal the need for rest and recovery. It is generally accepted as a 'signal' to permit the individual to escape further harm, thus promoting recovery and the alleviation of further pain. Acute pain promotes survival, whereas chronic pain seems to confer no clear biological service and is generally destructive physically, psychologically and socially (Sternbach, 1986). Chronic pain is qualitatively different from acute pain both on medical and psychological indices (Lindegger, 1987). Chronic pain is, according to Scott, a "complex and multi-dimensional phenomenon" (Scott, 1996, p.7). It is of a longer duration than acute pain, (at least six months duration), is more diffuse in nature and far more complex. Frymoyer and Waddle (1991) warn that chronic pain may become a progressively self-sustaining condition, eventually becoming more psychological than physical.

2.2. Somatoform Disorders and Chronic Pain

Chronic pain, referred to by the D.S.M – I.V. as Pain Disorder, is classified as one of the Somatoform Disorders. These have in common the presence of one or more physical complaints that suggest a general medical condition, for which an adequate physical explanation cannot be found. The common feature of somatoform disorders is the presentation of symptoms that suggest a physical illness. The symptoms are not intentionally produced, and they cause significant distress and impairment of functioning. They cannot be attributed to substance abuse or another mental disorder nor can they be adequately explained by a physical condition.

D.S.M. - IV Diagnostic Criteria for Pain Disorder (See Appendix B)

D.S.M. – IV lists the following diagnostic criteria for pain disorders:

A. Pain in one or more anatomical site is the predominant focus of the clinical presentation and is of sufficient severity to warrant clinical attention.

B. The pain causes clinically significant distress or impairment in social, occupational or other important areas of functioning.

C. Psychological factors are judged to have an important role in the onset, severity, exacerbation, or maintenance of the pain.

D. The symptom or deficit is not intentionally produced or feigned (as in Factitious Disorder or Malingering).

E. The pain is not better accounted for by a Mood, Anxiety, or Psychotic Disorder and does not meet the criteria for Dyspareunia.

Associated factors as listed by D.S.M. - IV include 1) Psychological Factors which are judged to have the major role in the onset, severity, exacerbation, or maintenance of the pain, 2) the presence of a general medical condition, which does not have a major role in the onset, severity, exacerbation, or maintenance of the pain, or 3) the combination of associated psychological factors and a general medical condition.

According to Tyrer (1992), similarities between chronic pain and somatoform disorders include the following features:

- The course tends to be of long duration, is relatively unremitting, and often deteriorating.

- The symptoms are characteristically not responsive to standard methods of treatment.

Bauman (1996) adds two further features:

- The patient is often anxious, depressed and/or angry.
- There is a tendency to a somatic conviction (i.e. the patient is convinced that the pain is a result of underlying structural pathology), with disinclination to consider psychological and social factors.

Lindegger (1987) to describe chronic pain denotes six associated characteristics of somatoform disorders. Firstly, the *primary* presenting problem is uncontrolled pain regardless of etiology. Secondly, the presence of intractable pain of at least six months duration. Thirdly, that conventional medical or surgical treatment has been resisted. Fourthly, the presence of marked alteration of behaviour and documented depression and/or anxiety, as well as marked restriction in daily activities, excessive use of medication, frequent use of medical services, and finally, the fact that no clear relationship to organic factors can be diagnosed.

2.3. AETIOLOGICAL MODELS OF CHRONIC PAIN – TOWARD A HOLISTIC BIOPSYCHOSOCIAL CONCEPTUALIZATION

The literature suggests a treatment trend away from a purely medical or sensory conceptualization of pain towards an integrative holistic approach – which is far more comprehensive. The following section will give an outline of models of pain described in the literature depicting the development of current aetiological models.

Medical practice has tended to ignore or simply overlook the psychological components of chronic pain, involving the interaction of mind and body. The field of Psycho-neuro-immunology (P.N.I.) is attempting to readdress and consider this specific area of inquiry. An issue that is frequently overlooked in the pain field is the "link between soma and psyche" (Lloyd, 1996, p.267). P.N.I. explores the interactions among social, psychological and biological factors in the aetiology, course and treatment of medical conditions (Vollhardt, 1991). These interactions are relevant when conceptualising chronic pain from a holistic perspective. Evidence is mounting that the mind-body connection is a medical reality, and that mind/body techniques may not only improve quality of life, but actually affect the course of the disease itself (Goleman & Gurin, 1993). The average chronic pain patient is managed entirely within the medical model (i.e. medication, surgery and physiotherapy). This is particularly the case in South Africa where routine psychological evaluation and treatment are usually omitted, and the cognitive/affective component of the pain experience is excluded (Lloyd, 1996).

Psychosocial factors, including stress, coping, social support and life adversity however need to be considered in the management of the lower back pain patient, as they play a central role in the development and maintenance of chronic pain (Klapow, Slater, Patterson & Atkinson, 1995).

2.3.1 Simple Sensory Model of Chronic Pain

Beutler, Engle, Oro'-Beutler and Daldrup (1986) distinguish between "The Simple Sensory model of pain" and "The Sequential Components model". The Sensory Model defines pain as externally caused and assumes a relation between sensory and pain experiences. The common medical assumption is that common pain syndromes must be the result of structural abnormalities of the spine (arthritic and disc disorders) or chemically or mechanically induced deficiencies of muscle tissue (attributed to poor posture, over/under exercise, over-extension etc.). Implicit in this perspective is the view that emotions do not induce physiological change.

The Simple Sensory model, also known as the Specifity Theory (Catalano & Hardin, 1996), regards pain in terms of a straightforward stimulus-response concept. This phenomenon assumes the amount of subjective pain will be equivalent to the intensity of the stimulus impinging on the pain responsive organs.

2.3.2 The Sequential Components Model of Chronic Pain – A Broader Approach

From a biopsychosocial perspective, the Simple Sensory model of pain is limited as it ignores the totality of the individual within his/her environment, and several other factors that contribute to the pain experience. A broader conceptualization is thus required.

In the 1960's Melzack and Wall (1965) proposed a new model of pain, known as the Gate Control model. This model emphasized the importance of both the central and peripheral nervous system in the etiology of chronic pain. They suggested that cognitive-evaluative and motivational-affective factors interacted with sensory phenomena to produce pain. According to the Gate Control model, it is the interaction of these factors that determine the experience of pain.

Beutler et al (1986), expanding on the Gate Control model of chronic pain, argue that changes in extreme pain are seldom a function of the stimulus or sensory value of that pain, but are more often a function of the patient's coping ability and emotional involvement with the pain. The amount of pain an individual displays is a complex reflection of psychological factors, such as: expectancies, prior history with pain and prior associations with individuals who coped with pain. According to this view, therefore, pain stimuli produce sensory responses that activate emotionally laden memories. The collective effect of these emotional and sensory components is subjectively experienced as pain. These components account for individual differences in variability in a patient's condition over time (Beutler et al, 1986).

Fordyce (1994) asserts that medical practitioners rely too heavily on the medical disease model, while ignoring the patients' experiences, mood, and anticipated consequences cued by the environment when they examine back pain problems. He suggests a biopsychosocial approach, in which physiological, psychological

factors, and the link between behaviour and the environment should be considered.

Cuencaz, McCoy, Selby and McManemin (1991), similarly posit the notion of a co-operative approach to treatment between biomedical science and behavioural medicine. They advocate an interdisciplinary model to the treatment of chronic lower-back pain and conclude that the education of lower-back pain patients should include a psychological understanding of pain and pain mechanisms, as well as the role of dysfunctional cognitive processes.

2.3.3 The Operant Model of Pain

Fordyce (1976) proposed the first behavioural conceptualisation of chronic pain, which emphasised the role and importance of environmental factors in chronic pain states. According to Fordyce, there are two types of pain behaviours (see section 2.5) – respondent and operant. Respondent pain behaviours (acute pain) occur in response to stimuli arising from the site of tissue damage. Operant pain behaviours, on the other hand, are controlled directly by environmental consequences. When behaviour is systematically followed by a reinforcing consequence, the likelihood of that behaviour occurring again will increase (thereby becoming chronic). Fordyce (1994) contends that in chronic pain states, initially respondent behaviours can become operant in nature through the process of learning. The following set of conditions, he postulates, can influence the frequency of pain behaviour:

1) Positive reinforcement, such as attention, sympathy and concern, compensation payments or medications (see secondary gain – section 2.5.1).
2) Negative reinforcement or the removal of noxious stimulation such as anxiety provoking situations, the avoidance of work or other unpleasant situations.
3) Extinction or non-reinforcement of "well" behaviour.

2.3.4. Sarno's Theory - Tension Myositis Syndrome

Employing the principles of a biopsychosocial model, Sarno (1978, 1991) identified Tension Myositis Syndrome (T.M.S.) as the major cause of the common syndromes of pain involving the neck, shoulders, back, buttocks and limbs. This implies that the majority of cases of lower-back pain are the result of a non-structural disorder (Sarno, 1991). He asserts that T.M.S. is a benign, reversible, process often maintained by psychological factors. Sarno suggests that in over 88% of the cases he studied, histories of tension-related symptoms were present, including: migraine; heartburn; hiatus hernia; stomach ulcer; colitis; spastic colon; irritable bowel syndrome; hay fever; asthma; eczema etc.

According to Sarno, three primary tissues are involved in the maintenance of chronic lower back pain. These are muscle, peripheral nerves (located deep within the muscles), and tendon-ligaments. The physical incident or injury acts as a trigger, and unexpressed emotions (anxiety, anger etc.) are activated. This results in a process in which the autonomic nervous system (which controls involuntary bodily functions) causes a reduction in blood flow to the muscles, nerves and tendon-ligaments, with resultant pain and spasm in these tissues due

to oxygen deprivation (medically referred to as ischemia). If, as Sarno contends, the patient is aware of this mechanism and the fact that no structural abnormalities are present, then the attack will be short-lived. This, however, is rarely the case. Thus, if emotional factors are a contributing cause of pain, treatment at a physiological level alone is likely to be ineffective. Therapeutic change must, therefore, address the patient's emotional state. It is Sarno's contention that successful and permanent treatment involves educating 'victims' to understand 'what they have' (Sarno, 1991, p.25).

2.3.5. Stress and Chronic Pain

Chronic pain is often precipitated and maintained by stress. It has been clearly demonstrated in the literature that stress impacts on the individual's coping mechanisms and cognitive appraisal (i.e. the manner in which the stressful event is perceived or interpreted). Generally, patients who suffer from chronic pain are bereft of effective coping mechanisms, which intensify the subjective experience of stress due to the unbearable demands of 'not coping' (Burns, Wiegner, Sandra, & Kiselica, 1997). Coping mechanisms are the persons' cognitive and behavioural efforts to manage (reduce, minimize, master or tolerate) the internal or external demands of the person-environment transaction that is appraised as taxing the person's resources (Folkman, Lazarus, Gruen, & Delongis, l986).

The presence of stress, apart from the psychological features - namely anxiety, fear and depression - is often manifest in physical illnesses that are stress induced. These include coronary heart disease, gastric and duodenal ulceration,

high blood pressure, asthma, skin conditions and various allergies (Brand, 1996; Melzack, 1983; Sarno, 1987).

Stress acts as a “pain intensifier”. Part of dealing with pain must include the management/ reduction/ elimination of stress.

2.4. AFFECTIVE STATES ASSOCIATED WITH CHRONIC LOWER BACK PAIN

An important aspect of the biopsychosocial model of chronic lower back pain is a focus on the emotional states that contribute to the etiology and maintenance of chronic lower back pain.

> “Chronic pain tends to cause continual debilitating discomfort and become increasingly disassociated from the physical problems; becoming increasingly associated with emotional distress depression and/or failure to cope. As chronic pain continues, the individual becomes pre-occupied with the pain and interpersonal functioning is adversely affected” (Scott, 1996, p.7).

The term "alexithymia", has been used to describe patients who have difficulty in finding words for their feelings. The literature suggests that pain patients typically have an inability to express negative affect, and as a result internalize their anger (Brown & Pedder, 1991; Burns, Johnson, Devine, Mahoney & Pawl, 1998; Kawanishi, 1992; Sarno 1991). Alexithymia is viewed as a “disruption in both

affective and cognitive processes. It is not treated as a “true” psychiatric disorder, but rather as a general characterization of a number of traits that are often seen together in a variety of disorders including those with somatoform features. Typically the alexithymic person has relatively undifferentiated emotions, and thinking tends to dwell excessively on the mundane” (Reber, 1985, p.23).

The literature thus reflects the importance of addressing affective states associated with chronic pain. These states include depression, anger, stress and anxiety.

2.4.1 Depression

It is well established that many chronic pain patients, by virtue of their pain, are depressed (Brand, 1996; Lloyd, 1996; Sternbach, 1974). A recent study showed that as many as 79% of chronic lower-back pain patients are clinically depressed (Brand, 1996). According to Sullivan, Reeson, Mikail, and Fisher (1992), the prevalence of depression in low back pain sufferers is three to four times higher than in the general population. They caution that many depressed chronic pain patients do not receive treatment for depression and thus experience prolonged distress.

D.S.M. - IV suggests that depression can manifest in one of three manners. It can either precede the chronic pain state, alternatively it can occur as a result of the chronic pain, or finally, pain and depression can co-occur.

In addition to changes in mood, there are concurrent disturbances in thinking and behaviour. Pain tends to capture and dominate the person's attention. Patients become preoccupied with it, and they are able to describe the qualities and location of the pain in precise detail. Pain becomes a dominant focus of their attention. Despite the existence of a lack of structural abnormality, patients tend to withdraw from social contact and leisure activities, including sports, hobbies and housework. Sexual activity is lessened because movement often makes them feel worse. Many patients retreat to a bed or chair and become increasingly dependent on family or friends. If they cannot work, financial problems ensue with additional worry, loss of independence and lowered self-esteem. Beutler et al (1986) claim that depression provokes pain by increasing pain sensitivity and by lowering pain tolerance thresholds. Pain serves as a stressor that in turn evokes subsequent depression. They conclude that pain and depression are simultaneously occurring experiences that are related only because of coincidentally similar psychological or biological foundations.

Although there is little doubt that somatic pain complaints are common in patients whose major problem is depression, the reason for this is not obvious. The question that still seems to confuse researchers is whether the pain or the depressive syndrome is primary. Part of the answer is that depression serves to lower pain tolerance, so that 'normal' day to day pains become intolerable. It has been suggested that this occurs at a neurochemical level where depressed patients have lower levels of pain inhibiting neuro-transmitters such as serotonin, norepinephrine, or endogenous opiod peptides (Fields, 1987).

Two additional factors associated with chronic pain and depression are: locus of control as well as the coping mechanisms of the patient. These contributing factors need to be taken into account when conceptualising chronic pain from a biopsychosocial perspective.

a) External vs. Internal Locus of Control

Most chronic pain patients tend to make attributions in terms of an external rather than internal locus of control. This suggests that they look to others in the hope that they can bring about change rather than taking personal responsibility for effecting change themselves. Studies have shown that an internal locus of control, coupled with the belief that the pain/stress can be effectively controlled and successfully managed, was associated with more effective coping (Klaber-Moffet, Hughes & Griffiths, 1993). Knowledge of the patients' coping styles provides invaluable information in pointing towards the nature and quality of treatment (Brand, 1996). The medical model has been criticised as it assists in reinforcing an external locus of control by empowering the doctor, and consequently dis-empowering the patient through withdrawing the patients' responsibility for his/her pain management, thereby impeding treatment (Lloyd, 1996).

b) Coping Mechanisms.

Coupled with external locus of control, patients who suffer from chronic pain are bereft of effective coping mechanisms. Typically they display passivity, and helplessness as common coping responses, overuse of medication and

dependency on others. This, according to Brand, maintains a vicious circle of "help seeking away from, rather than towards, themselves which tends to reduce the potential for personal efficiency and self-reliance" (1996, p.78). Weickgenant, Slater, Paterson, and Atkinson (1993) have demonstrated the relationship between pain, depression and coping. Their findings revealed that chronic lower back pain was associated with a combination of passive-avoidant coping responses and concurrent depressed mood.

2.4.2. Anger

In addition to depressive features, anger is a prominent emotion experienced by chronic pain patients. The inability to modulate or express intense, unacceptable feelings may create and maintain both chronic pain and depression. Individuals are said to either verbally express and display anger, or to inhibit the expression of anger and suppress angry feelings. Both mechanisms according to Burns have been implicated in the development and/or maintenance of poor physical health. (Burns et al, 1998). In a recent study conducted by Burns (1997) it was shown that anger management style and hostility affect the maintenance and intensification of chronic lower back pain.

2.4.3. Anxiety

Anxiety has been shown to be a significant affective component of chronic lower back pain (Avanoff, 1992; Baumann, 1996; Fields, 1987). Anxiety management has been shown to have a significant impact on lowering the levels of chronic pain (Brand suggests that the importance of noting that "pain acts as a stressor"

and the two in combination, forge an "inextricable bond" which he refers to as the "pain/stress cycle", or the "pain/anxiety/tension cycle" (Brand, 1996, p.304). In this self-sustaining, reinforcing pattern, pain provokes anxiety that in turn induces prolonged muscle spasm at the pain location and at trigger points, as well as vasoconstriction, ischaemia, and the release of pain producing substances. As will be described in section 2.6.1, through the internal dialogue that the patient employs, this vicious cycle may then repeat itself (Craig, 1994).

Having considered the factors that contribute to the totality of the pain experience, we arrive at a fuller conceptualisation of chronic pain.

2.5. PAIN BEHAVIOUR

The preceding discussion highlights the psychological and affective factors in the etiology and maintenance of chronic pain. These factors are generally subjective responses to pain. The following section presents the behavioural factors associated with chronic pain.

Pain is a subjective experience and does not lend itself to objective measurement and control. Pain behaviour, on the other hand, can be objectively measured and modified.

Specific behaviours associated with pain include: Taking medication; repeated visits to doctors; rest periods of inactivity; reduced work, leisure and social activities; and finally the manipulative secondary gains e.g. attention seeking

behaviour (moaning and groaning) and the adoption of the 'sick role' (see section 2.5.1.b below). There is an increased preoccupation with the symptom of pain, which comes to dominate the patient's consciousness. Fearful speculations arise about the cause of the pain, as patients believe that pain is a warning signal of some ongoing pathological process. This 'health anxiety' may be accompanied by persistent conviction of serious pathology despite all attempts at medical reassurance. Patients become "increasingly ruminative and obsessional with a fascinated absorption in the experience of physical deterioration" (Sternbach, 1986, p.244).

The learning theory model of chronic pain advocated by Fordyce (see section 2.3.3) therefore has direct implications for the treatment of chronic pain states. Where pain behaviours are operant in nature, the reinforcement for those behaviours should be withdrawn and reinforcement must then be provided for "well" behaviours. Pain behaviours will decrease in frequency and will ultimately be extinguished if reinforcement no longer follows these behaviours. Thus the behavioural approach does not attempt to modify pain directly, but rather to modify maladaptive pain behaviours, thereby altering the patient's disability (Follcik, Zitter & Ahern, 1983).

2.5.1.Secondary Gain

Secondary gain refers to pain behaviours that secure tangible advantages and benefits that accrue to people as a result of their becoming sick. Examples include: being excused from obligations and difficult life situations; receiving

support and assistance that might otherwise not be forthcoming and controlling other peoples' behaviour (Kaplan & Sadock, 1991). Secondary gain may manifest in various forms, depending on the patient's predisposition, coping style, family context and work environment. It is necessary to focus on such factors in attempting to fully conceptualize the pain experience. Two examples of secondary gain are the injured on duty back and the sick role.

A) The "Injured on duty" back - (I.O.D.)

Pain behaviour as a secondary gain may have direct implications for financial gain and/or work avoidance behaviour. The I.O.D. syndrome reflects an example of secondary gain. The term was coined in response to the increased number of workmen who are insured against injury and disability. Of all the work injuries reported to the Workmen's Compensation commissioner, 4,14% involve the back, with an average compensation of R19 500 per claim (Du Toit, 1993).

Features of the I.O.D syndrome are that it is extremely volatile, and usually takes the form of a minor injury subjectively perceived and reported as a major disability.

B) The Sick Role:

Pilowsky (1986) has shown that the chronic pain patient engages in a set of adaptive abnormal illness behaviours that represent a particular version of the sick role. This role (referred to above as a preference for an external locus of control) exempts patients from social responsibility as well as responsibility for

their illness, but the patient is, nonetheless, expected to seek appropriate professional assistance in attempt to get well. Problems between doctor and patient develop when the patient seeks legitimisation of the sick role, placing the doctor in a position of uncertainty regarding the certification of the legitimacy. The patient resists efforts to reassure and rehabilitate.

2.5.2. The Marital and Family System in the Treatment of Chronic Lower Back Pain

Lindegger (1987) proposes that marital and family variables play a central role in the aetiology and/or maintenance and treatment of chronic pain patients. It may therefore be important to address marital and family systems in the treatment of chronic lower back pain. He emphasises that while only a small proportion of cases of chronic pain are likely to be primarily or exclusively the result of family dynamics, the inclusion of a marital/family perspective in the assessment and treatment of chronic pain has positive implications. The difficulty of such an approach emerges in attempting to establish cause and effect relationships. He indicates two important issues regarding the family of origin. Firstly, there is a significantly higher incidence of pain in the families of chronic pain patients than in control groups as well as a significant correlation in the location or site of pain (lower back, neck, head etc). Secondly, there is a higher level of emotional deprecation and abuse in the families of chronic patients than in controls (including rejection, battering and abandonment).

Lindegger cites Minuchins' study of psychosomatic families, where children were affected with chronic pain. Families of these children showed common constellations of characteristics including enmeshment, rigidity, over-protectiveness, poor problem-solving skills, and little regard for individual autonomy and privacy. Despite these findings, these families tended to deny family difficulty with the exception of difficulties directly associated with the presenting medical complaint.

Lindegger's literature review cites specific functions served by pain in the family. The role and meaning of the pain in the family may be attributed to the following factors: The pain may serve to provide a communication channel in the family. By so doing, it may assist an individual in avoiding or resolving family conflict. It thereby results in maintenance of emotional balance or homeostasis. It may assist in providing a scapegoat for family difficulties. The pain may serve to provide an indirect satisfaction of needs, e.g. closeness, dependency. Further, it may assist in maintaining dysfunctional family sub-systems, e.g. keeping parents apart, (through the avoidance of sexual contact), and maintaining enmeshed relationships. Finally, pain may aid in replicating issues from the family of origin (Lindegger, 1987).

2.6. THE COGNITIVE BEHAVIOURAL TREATMENT APPROACH – BASIC PRINCIPLES

The multi-dimensional nature of pain thus warrants a more holistic approach to treatment and management. The last two decades have heralded a proliferation

of pain management programs, which address psychological factors from a cognitive behavioural approach. The growing body of outcome research data supports the efficacy of these approaches in the management of chronic pain (Avonoff, 1992; Bru, Mykletun, Berge & Svebak, 1994). The cognitive behavioural treatment approach for chronic pain recognises the impact of the biopsychosocial factors discussed previously by incorporating the whole range of factors which generate and maintain the pain, into the case conceptualisation and treatment program.

Five central assumptions incorporated into the approach are the following:
Individuals are active processors of information and not passive reactors; thoughts (e.g. appraisals, expectancies) can elicit or modulate mood, affect physiological processes, influence the environment and can serve as impetuses for behaviour; conversely, mood, physiology, environmental factors and behaviour can influence thought processes; behaviour is reciprocally determined by the individual and environmental factors; individuals can learn more adaptive ways of thinking, feeling, and behaving; and individuals are capable and should be involved as active agents in change of maladaptive thoughts, feelings and behaviours (Turk & Meichenbaum, 1994).

Cognitive behavioural approaches are concerned with the interactive relationships between thoughts, emotions, behaviours and psychological processes (Avonoff, 1992; Hawton, et al, 1989). Specifically with chronic pain, the focus is on the way patients perceive, interpret and relate to pain (Brand,

1996). Cognitive therapy aims to reduce thoughts of helplessness and lack of control which helps reduce the severity of the pain (Craig, 1994), as well as the duration of the pain episodes (Bru et al, 1994).

2.6.1. Pain and Negative Cognitions

Information and memory are collected in one's experience in the form of templates or schemata, and serve as 'filters' for interpreting subsequent sensations and for constructing the perceptual qualities that will characterise each new experience (Beutler et al, 1986). In addition, schemata are influenced by factors such as stress, emotional states and perceptions of one's ability to cope, which mediate and influence one's cognitive processes. Weisenberg (1994) states:

> "Because pain patients suffer from stress, anxiety or depression, it is likely that cognitive interventions affect pain directly as well as indirectly by reducing the stress or emotional disturbance associated with the pain". (p.275)

Pain patients typically display negative thought patterns and beliefs about their pain (Brand, 1996). Sufferers often 'catastrophise' about their pain (anticipation or misinterpretation of events as particularly severe). "This undermines their sense of self-efficacy, and reinforces the belief that defines them as inadequate copers" (Brand, 1996, p.306). In addition, they use styles of over-generalisation - assuming similar outcomes to different experiences, and selective abstraction - selectively attending to negative aspects of experience (Craig, 1994). Jensen,

Turner, Romona, and Karoly (1991) claim that beliefs and coping have a strong relationship to the adjustment to chronic pain. They add that patients who believe that they can control their pain, who avoid catastrophizing and who believe that they are not severely disturbed, function better than those who do not. It is therefore appropriate to confront such states when working with pain patients. This would require practitioners to be trained in working with thoughts, behaviours, images and belief systems.

2.6.2. Early Maladaptive Schemas

Young (1990) uses the term "Early Maladaptive Schemas (EMS)" to refer to stable and enduring structures that develop during childhood that are elaborated upon throughout the individual's lifetime. According to Young, EMS's develop out of dysfunctional experiences with parents, siblings and peers during the formative years, rather than resulting from single incidents of trauma or abuse. Most schemas are caused by ongoing patterns of negative experiences, which cumulatively strengthen the schema. For example, a child who is repeatedly deprived of affection and nurturance will develop schemas around the themes of defectiveness or unlovability. Elton, Hanna and Treasure (1994), similarly suggest that patients may be predisposed to cope maladaptively after the experience of parental indifference in early life. These schemas serve as templates for processing of later life experience.

EMS's usually take the form of unconditional beliefs about oneself in relation to people and the environment. They are seen as irrefutable, taken for granted

truths about how things are (Young, 1990). Due to the fact that schemas develop early in life, they assist in forming the core of the individual's concept of self, others and the environment. Because they are so familiar and comfortable, when challenged, the individual will often distort information to maintain their validity. The reason for this, Young argues, is that the threat of schematic change is too disruptive to the core cognitive organization or identity. They hypothesize that EMS's can lead directly or indirectly to psychological distress such as depression, loneliness, and psychosomatic disorders.

Young and Lindemann (1992) identify three processes whereby schemas are processed. These are: schema maintenance, schema avoidance and schema compensation. They refer to these as "schema dynamics". Each of these schema dynamics gives rise to schema-driven behaviours that are self-defeating in the long run and create emotional distress.

A) Schema Maintenance:

Young refers to the processes through which EMS's maintain themselves as schema maintenance. At the cognitive level, schemas are maintained by processes described by Beck as cognitive distortions. At the behavioural level, schemas are maintained by self-defeating behaviour patterns, such as maladaptive partner selection.

B) Schema Avoidance:

The activation of an EMS is usually signaled by a higher level of emotional arousal than is the case when automatic thoughts or underlying assumptions are the focus (Young, 1990). Due to the fact that EMS's produce high levels of negative affect, patients develop volitional and automatic processes for avoiding schemas. These may include cognitive, affective or behavioural avoidance.

C) Schema Compensation:

Patients adopt cognitive or behavioural styles that seem to be the opposite of what we would predict from knowledge of their EMS's. These styles serve to compensate for the underlying schemas.

2.7. THE COGNITIVE BEHAVIOURAL TREATMENT APPROACH – A FIVE STAGE TREATMENT MODEL

Turk, Meichenbaum and Genest (1983) developed a cognitive behavioural model that emphasizes pain as a complex, multidimensional, perceptual phenomenon. They suggest that to better understand and treat pain, consideration must be given to the role of cognitions, emotions and behaviour as well as to sensory contributions in the formation of pain perceptions. An important contribution of the cognitive-behavioural model is the increased attention given to the attitudes and beliefs of the patients regarding their understanding of their plights, of the health care system, of responses to disease, of their own capabilities, and of their responses to stress (Turk & Rudy, 1986).

Cognitive-behavioural interventions are active, time-limited, structured forms of treatment that can be administered on either an individual or group basis. Therapy is designed to help patients identify, reality-test and correct maladaptive, distorted conceptualizations and dysfunctional beliefs. The treatment is designed to help patients learn to live more effective and satisfying lives despite the presence of varying levels of discomfort. The aim is to increase the patient's knowledge of pain models. Through the provision of information, possible misunderstandings can be clarified.

The treatment program outlined by Turk and his colleagues comprises five overlapping stages. These will be summarized below (for more details of the treatment program see chapter 3, section 3.2.2 and Appendix A).

2.7.1. Stage 1 Assessment

In assessing cases of chronic pain, clinicians are faced with the challenge of assessing the relative contribution of organic, physiological, psychological and somatic factors (Brand, 1996; Erskine, Raine, & Lindegger, 1986; Turk & Meichenbaum, 1994).

a) Medical Assessment

A full medical examination is carried out to detect the presence or activity of organic disease and the role played in the patients' pain symptoms by the latter. Specific tests used to rule out physiological damage may include:

i) X-rays – these are utilized to rule out diseases, inflammation, abscesses and other bone disorders.

ii) Computerized Axial Tomography (C.A.T. scan) - these are used to detect soft tissue damage of the muscles, tendons and ligaments.

iii) Magnetic Resonance Imaging (MRI) – uses an electromagnetic field to detect thermal imbalances in the cells and tissue.

iv) Myelography and Discography - these tests utilise a contrast dye, which enhances the soft tissue. This dye is injected into the spinal fluid space to assess soft tissue damage around the spinal cord or nerve roots. Discography differs from Myelography in that the dye is injected into the disc itself in order to assess discal damage (Catalano & Hardin, 1996).

b) Medication Assessment

There is significant evidence, which suggests that many patients are over-medicated and are often dependent on analgesics. It is thus important to assess the levels of medication that the participants are using to control their pain. Medication assessment should occur in conjunction with the medical practitioners. (Lloyd, 1996; Turk & Meichenbaum, 1994). Education, with regard to the correct use of appropriate medication, is important. Current practice suggests that analgesic medication is taken on a time basis, and not on a p.r.n. (per required need) basis. The reason for this is that the p.r.n. procedure is less effective as patients wait until the pain has built up to a high level, making the medication less effective. A time-based regimen provides a stable, predictable base from which cognitive-behavioural strategies are used, which results in a

growing confidence and trust in the use of the physical and cognitive/behavioural part of the program (Lloyd, 1996) (For a detailed discussion on the effects of medication see Fields, 1987, and Lloyd, 1996).

c) Psychological Assessment

Once the structural components have been assessed, it is then necessary to obtain a full psychosocial history from the patient. What Brand (1996) suggests as a starting point is a detailed assessment of the pain itself. This includes: onset (trauma, disease process, or pain of 'unknown' or 'uncertain' origin); location; quantity; duration and intensity. Once these factors are understood, it is logical to assess what reduces pain and what intensifies it - this assists with overall understanding and management. Pain, Avonoff (1992) contends, needs to be understood (when taking a history), not as an isolated behaviour, but within an interactional framework, which includes learning, history, biological and genetic factors, as well as present environmental influences. Pilowsky (1994) adds, that, in assessing patients, an overall understanding of cognitive style, level of functioning, affective status (e.g. feelings surrounding the condition, symbolic significance, body image, etc.) as well as overt behaviours need to be considered. Patients' lack of awareness as well as discomfort in discussing emotional issues compounds the problem of assessment. Chronic pain patients frequently deny emotional problems related to their pain, and resist psychological evaluation (Brand, 1996).

Stages 2-5 take up the remainder of the program and occupy approximately eight one-hour individual sessions.

2.7.2. Stage 2 - Reconceptualisation

This stage involves the facilitation of the emergence of a new conceptualization of pain, by translating the symptoms into differentiated, circumscribed and addressable problems. Participants are educated to alter their conceptualization from a sensory view of pain to a more multifaceted view, with cognitive, affective and socioenvironmental factors considered as contributors to the experience of pain. Through this process, patients are educated to think in terms of effective treatment that will enhance their lives and provide them with greater control over their lives, even if the pain cannot be totally eliminated.

Baumann (1996) suggests that an important initial step is to have the patient acknowledge his/her symptom. Any therapeutic approach needs to ensure that the patient has a realistic understanding of his/her illness. (Pilowsky, 1994). It is not helpful to tell the patient that there is nothing wrong, rather it needs to be framed within the context of the patients' presenting problem (life circumstances, etc.). According to Sarno (1991), chronic lower back pain serves to draw attention away from the realm of the emotions. When the patient realizes this and recognizes that this is what is occurring, attention is then shifted to the emotions, the illness loses its purpose and ceases. It is crucial that patients with chronic lower back pain understand and accept the psychological formulation, as their recovery is dependent on this.

In addition, it is important to consider the patients' anxieties, fears and fantasies regarding the symptom. This implies the need for the practitioner to carefully explain the results of the examination and investigation. Anger and resentment are affects that often block effective communication between practitioner and patient. Their existence needs to be acknowledged, accepted and hopefully worked through in therapy. This may be particularly difficult when the anger and resentment are displaced onto the caregiver. If this is the case, Pilowsky (1986) suggests facilitation of ventilation of such feelings, as the patient may feel guilty, anxious, and ashamed at having such feelings towards those on whom he/she relies, and from whom he/she expects so much.

> "The focus then shifts from finding the cause, to understanding the symptom and its precipitating and perpetuating factors in a broader context. A link is tentatively forged with the identified psychological and social stressors, and the patient is encouraged to reflect on the psychological effects of these stressors. The symptom, most often the pain, can then be interpreted more broadly as a signal of distress". (Pilowsky, 1986, p. 341)

This simple sequence lays down the foundation for further management, which is determined according to the individual needs of the patient.

2.7.3. Stage 3 - Skills Acquisition and Consolidation

This phase provides practice in specific cognitive and behavioural coping skills geared toward the alteration of response to environmental contributors to pain

and to coping with specific symptoms. Strategies include: Alterations in lifestyle through activity scheduling, physical exercise, problem solving, assertiveness training, relaxation skills, medication reduction and homework assignments. These strategies are woven into the fabric of the treatment (See appendix A for details of these strategies).

Through cognitive therapy, people are trained to observe and note their automatic thoughts and identify underlying assumptions (for examples of cognitive distortions see appendix A, session 6). These underlying assumptions may be counter-productive and self-defeating and perpetuate emotional distress.

2.7.4. Stage 4 - Rehearsal and Application Training

The fourth stage attempts to review and consolidate the training procedures through homework assignments and role-play situations where the patient applies and practices the principles acquired in the previous stages of treatment.

2.7.5. Stage 5 - Generalization and Maintenance

Generalization and maintenance are fostered throughout treatment by means of the provision of guided exercise, rehearsals, and other homework assignments to increase the patients' sense of self-efficacy. The aim of this stage is to reinforce the outcome and prevent future relapse.

2.8 EFFECTIVENESS OF THE COGNITIVE BEHAVIOURAL TREATMENT APPROACH:

The clinical effectiveness of the C.B.T. approach to lower back pain has been widely demonstrated in the literature (Bru et al, 1994; Johansson, Dahl, Jannert, Melin, & Andersson, 1998; Linssen & Zitman 1984; Linton, 1984; Turner, 1982). It has shown to have be been successfully implemented in outpatient programs as well as group format and appears to be useful in terms of cost effectiveness and the potential for generalization and maintenance of the skills covered (Johansson et al, 1998; Turk & Meichenbaum, 1994).

Outcome studies have found substantial improvements in terms of activity level, reduced pain intensity, pain behaviours and use of medication and health services as compared with the untreated controls (Turk & Meichenbaum, 1994).

Saarijarvi (1992) found in his review of the literature regarding the effectiveness of cognitive psychotherapeutic treatment for chronic lower-back pain that cognitive psychotherapy is useful in addressing the intrapsychic and interpersonal factors, as well as assisting the patient to achieve a higher level of adaptation and functioning.

Nicholas, Wilson and Goyen (1992) conducted a cognitive behavioural outcome study for a group of twenty participants. Participants in both groups received a physiotherapy, back education and back exercise program. The control group, in addition, received cognitive behavioural training. The results showed significantly

greater improvement for the combined psychological treatment and physiotherapy program at post treatment on measures of functional impairment, use of active coping strategies, self-efficacy beliefs and medication use. These differences were maintained at a six-month follow-up.

Bru, Mykletun, Berger, and Svebak, (1994) conducted an outcome study comparing the effect of a cognitive-behavioural approach, a relaxation approach and a combination of the two. The study showed that relaxation was successful in reducing the subjective intensity of lower-back pain, whereas the cognitive approach was shown to be useful in reducing the duration of the pain.

Johansson, Dahl, Jannert, Melin and Anderson (1998) conducted two separate cognitive behavioural multidisciplinary pain management studies. The format of the program was based on the work of Fordyce and Turk and associates. The first study was a controlled four week C.B.T. in-patient program. The second study used a consecutive sample, utilising a four-week program run over the course of one year with long-term follow-up (to determine whether the principles were generalised and maintained). The program included education sessions, goal setting, graded activity training, pacing, applied relaxation cognitive techniques, social skills training, medication reduction, contingency management of pain behaviours and planning of work return. The first outcome study showed significant between group differences in favour of the treatment group on measures of occupational training, activity level, decreased catastrophizing and pain behaviours at post treatment. The second study showed significant

improvements over time on measures of sick leave, pain intensity, pain interference, life control, affective distress, activity level in spare time, physical fitness and use of analgesics at two-month and one-year follow-up. These outcome studies thus showed the successful application of cognitive behavioural multidisciplinary pain management programs.

Thus the effectiveness of the C.B.T. for chronic pain has been widely supported. The literature demonstrates that the application of C.B.T. principles can greatly assist in improving pain intensity and interference, decrease reliance on analgesic medication, decrease pain behaviours, and improve affective states, and finally increase activity levels and enhance quality of life.

2.9. FAILURES OF COGNITIVE BEHAVIOUR THERAPY

The literature suggests that the psychological management of somatic complaints can be problematic (Salkovskis, 1989), Chronic pain patients frequently deny emotional problems related to their pain, and resist psychological evaluation (Brand, 1996). This has negative effects on the treatment outcome. It is therefore important to consider theoretical notions of success and failure as well as issues of resistance and reluctance related to the therapeutic process.

2.9.1 Resistance and Non-compliance

When addressing the issue of back pain from a psychological perspective, it is common for therapists to encounter resistance (Fields, 1987). It is, therefore, important to consider such mechanisms when treating patients with chronic back

pain. Resistance can occur both consciously and unconsciously. Any attempt to bring feelings into consciousness could result in the emergence of anxiety. Thus resistance seeks to maintain the status quo to prevent anxiety about unconscious material.

Clients often feel that seeking psychological assistance is admitting failure, weakness and inadequacy. This is exacerbated by the notion that therapy is for sick, 'mad' people. The patient may feel stigmatised about seeking help. The therapist's task is to accept the patient's resistance and, empathically and sensitively, challenge and interpret the resistance so as to assist in exploring the patient's ambivalent feelings about accepting help. Young (1984) presented an analysis of client characteristics that slowed down therapeutic progress. Factors included: inability to focus on key automatic thoughts, inability to accept the limits of the therapist/patient roles, poor tolerance of emotional discomfort, inability to consider alternative perspectives, unwillingness to do homework, and unwillingness to accept responsibility for the problem.

2.9.2. Therapeutic Failures

Foa and Emmelkamp (1983) mention that a report on failure, without offering a hypothesis for it (other than declaring lack of motivation on part of the participant), is unlikely to enhance our knowledge.

> "A failure can be an opportunity for perfecting existing procedures and for inventing new ones". (p. 229)

It is, therefore, important for future treatment design and research to consider such enhancement of knowledge. A specific classification of failure is essential as the term 'failure' is too general and does not incorporate the reason for failure, if it is failure at all. Foa and Emmelkamp (1983) therefore consider three specific types of failures: refusals, drop-outs and non-responders.

A refusal occurs when a participant applies for treatment and later refuses to follow through. Foa and Emmelkamp (1983), cite Garfield, (1980) who maintains that one third of individuals attending a psychotherapy clinic refused treatment.

A dropout is a participant who does not complete a course of treatment considered to be adequate by the therapist. Foa and Emmelkamp (1983) note that, although some of these participants will not benefit greatly from therapy, some may drop out simply because they have achieved their goal. They recommend that a participant only be labeled a dropout when the treatment goals agreed upon by therapist and participant have not been achieved and when the therapist believes additional sessions are essential, and will result in further improvement. ***A non-responder*** is a participant who fails to respond to the treatment

2.9.3. Criteria for failures

In order to define a participant as a treatment failure, the desirable outcome should be determined in advance. First a set of goals should be set up, well specified and measurable. Consensus should be reached between therapist and participant. When treatment fails to improve one problem area, but leads to

change in another, then the person is only a failure in the former and a success in the latter. Foa and Emmelkamp (1983) state: “Failure is also relative. What is perceived by one party as a failure is perceived by another as a success.” (p.6)

Failure is defined as the absence of meaningful clinical changes. Possible reasons they list for failures are:

a) Lack of participants’ compliance.

b) Commitment, motivation and attitude towards treatment: Expectation regarding the efficacy of treatment is a non-specific factor influencing the participant’s decision to reject or undergo treatment. Generally, those who believe that treatment will help will do better than those who lack faith in it.

c) Depression: - severe depression hinders the effectiveness of treatment.

d) Duration of pain complaints, number of previous operations, level of base-line, self-report of pain, number of days of work lost due to pain and drug dependency are all negatively correlated with success.

e) Misclassification/Diagnostic error – Before a C.B.T. program is implemented, it is assumed that “nothing has been missed”. There is always the possibility that the medical work-up was imprecise. It is important to consider that failure may not be the function of the therapeutic intervention, but rather that the participants’ pain behaviours were largely respondent in nature and possibly represented a degenerative process.

f) Failure to alter contingencies or identify effective reinforcers: The behavioural management of chronic pain is based upon the premise that pain behaviours are under the control of environmental contingencies. Spouse and professional attention and narcotic medication are hypothesized to be the most frequent and

the most potent reinforcers of pain behaviour. If the patient's behaviour cannot be controlled, the intervention is likely to fail. So if the participant receives inconsistent contingencies and partial reinforcement, the pain behaviour will not be extinguished.

g) Incomplete problem list: A problem list, which is as broad as possible, should be developed for each participant. This list may include: pain behaviours; interpersonal skills; patient-spouse interaction patterns; identification of reinforcers and thorough evaluation of the patient. Following the evaluation, each problem is operationalized with specific treatment plans formulated for each problem. This results in a program that is specifically tailored for the individuals' needs, maximizing the likelihood of a successful outcome. Many chronic pain patients lack important adaptive skills. An intervention that focuses primarily on extinction of pain behaviour without remediation of deficit skills (e.g., assertiveness, anxiety management etc.) will be less successful.

h) Covert Pain Behaviours: It is not sufficient to target only the overt pain behaviours. It is necessary also to hone in on covert pain behaviours. These include thoughts or self-evaluative statements, which reflect the patients' perception of their disability and physical limitations. Failure to address covert behaviours can result in the failure of the intervention. Clinically, it appears that self-statements reflecting disability and fear of injury seriously limit the generalization of 'well' behaviours, and negatively influence the self-efficacy of the patient.

i) Attributional changes: When patients present at pain clinics, they usually possess a disease model orientation. It is critical that the participants' goals and

expectations be consistent with that of the treatment program, or the intervention will be doomed to failure because the patient doesn't want his / her behaviour modified, but rather wants pain relief. Participants must, ultimately, acknowledge that "pain" is only one of their problems. They may also be experiencing dependence, marital and sexual dysfunction, depression, emotional distress, vocational difficulties, financial difficulties, and specific functional limitations and impairments. Although it may not be possible to specifically modify the pain, it may be possible to modify other problems that have developed as a result of the long-standing pain problem.

Failure to adopt the conceptual basis and goals of a behavioural intervention may result in both failure to achieve behaviour change as well as failure to maintain behaviour change. Follick, Zitter and Ahorn (1983) recommend that participants who fail to 'buy' the treatment approach should not undertake treatment as they are a high percentage of those who drop out or fail owing to failure to alter their goals and expectations.

2.10 Conclusion

The contemporary cognitive behavioural treatment model is a complex one. An appropriate in-depth treatment plan, tailored to the individual needs of the participant thus needs to be developed to account for the individual dynamics incorporating the biopsychosocial factors of the pain experience into the case-conceptualization. The process of refining the case conceptualization and refining the design of the treatment can be investigated through in-depth treatment.

3. AIMS, OBJECTIVES AND METHODOLOGY

3.1 AIMS AND OBJECTIVES

The aim of the research was to design, implement and evaluate a cognitive behavioural treatment program for chronic lower-back pain, based on the work of Turk and Meichenbaum (1994). The aims of the treatment program were three-fold, namely to

a) To reduce pain.

b) To reduce and modify medication.

c) To increase activity levels.

The objectives of the project were to assess the practicality and credibility of their approach and to evaluate its effectiveness by means of a single case experimental design.

3.2 . METHODOLOGY

3.2.1 Research Method

The research utilised the Case Study method, which is uniquely suited to the evaluation of treatments involving a single client. This has been a fundamental method by which knowledge has been advanced in the development and testing of cognitive therapy interventions (Edwards, 1990a). According to Bromley (1986), the individual case study or situation analysis is the ‘bedrock’ of scientific investigation, which has played a central role in the advancement of knowledge in various fields of investigation. In psychotherapy, the understanding of the mind and behaviour began with documentation of individual cases which were later

generalised into broader conceptual frameworks and applied to the general understanding of people as a collective. However, over the past century, benefits of individual analysis have been overlooked in the pursuit of enhanced scientific credibility through focusing on group comparison designs.

Such a viewpoint has been expressed and supported by numerous methodologists and practitioners including Kratochwill, Mott and Dodson (1984) who write that: " Increasingly, researchers and other scholars in the field are recognising the importance of case study and single case investigations for the development of a knowledge base in the field… that is unobtainable through traditional large-N-between-group-designs in therapy research" (p.55). Edwards (1996) states that the advantage of the case study method is that "resources can be used for a more thorough investigation of each individual, yielding a complex set of psychologically rich, qualitative information that provides an in-depth understanding" (p.11).

Since chronic lower back pain is a biopsychosocial phenomenon, with multiple aetiologies and differing from individual to individual, it is thought that specific treatment regimens tailored to the individual needs of the participant are best suited as a treatment strategy (Turk & Meichenbaum, 1994). For this reason, any systematic analysis of such a treatment approach would necessarily require a comprehensive observation of the participant receiving the intervention. As a result, the case-study method was chosen as the most suitable for this type of

inquiry, as it provides quantitative as well as rich qualitative data about the participant.

3.2.2 Design of the Cognitive Behavioural Treatment Programme.

A cognitive-behavioural intervention program based on the principles of Turk and Meichenbaum (1994) was designed and implemented. In addition to the aforementioned, the program utilized theoretical principles, concepts and exercises derived from the work of Catalano and Hardin (1996), Lloyd (1996) and Sarno (1991). Throughout the program, the qualitative and quantitative data, were gathered as a means of evaluating the effectiveness of the treatment and of tracking implicit and explicit changes that occurred (see 3.6, below). The duration of the intervention (as suggested by Turk & Meichenbaum, 1994) was eight one hour individual sessions. A brief account is offered below (for comprehensive details of the program, see appendix A).

a) Stage 1– Client Orientation/Socialisation

The aim of this stage, which was sub-divided into four sub-stages, was to 'socialize' the participants into the treatment model, to develop shared goals with regard to treatment and finally to establish a treatment contract.

i) Preliminary Formulation of Treatment Goals.

This involved collaboration in establishment of treatment goals for the short, intermediate and long term.

ii) Psycho-education.

This involved translating the symptoms into differentiated, circumscribed and addressable problems. This stage prepared the participant for the intervention in order to assist with anticipating and preventing resistance as well as establishing compliance. An additional aim of this stage was to alter the participants' conceptualisation of the problem from a sensory to a multifaceted view of cognitive, affective and socio-environmental factors. This included a conceptualisation of pain according to the Gate Control model, contrasted with the unidimensional sensory-physiological model that the chronic pain patient typically employs (see section 2.2). Participants were educated to think in terms of effective treatment that would enhance their lives and provide them with greater control over their lives, even if the pain could not be totally eliminated.

iii) Graded Exercises and Activities

A basic, graded, progressive exercise program (tailored for the individual participant) was prescribed by the Department of Physiotherapy to assist with the amelioration of physiological consequences that exacerbate pain. The program consisted of initial low impact aerobic exercises (walking, cycling or swimming), building up to 20-30 minutes three times a week at an intensity congruent with participants' age and fitness levels. A home physiotherapy program was taught, educating participants how to stretch the muscles identified with the muscle trigger points. These stretches were performed three times for six seconds, and three times per day.

iv) Medication Reduction:

Current practice suggests that analgesic medication is taken on a time basis, and not on a per required need basis (p.r.n). The reason for this is that the p.r.n. procedure is less effective as patients wait until the pain has built up to a high level, making the medication less effective. A time-based regimen provides a stable, predictable base from which cognitive-behavioural strategies are used which results in a growing confidence and trust in the use of the physical and cognitive/behavioural part of the program (Lloyd, 1996). Participants were instructed to take medication at specific times each day, and not per required need (p.r.n.). The intervention is based on the principle of the avoidance of re-enforcement of pain behaviours. Medication was monitored and systematically reduced to enhance self-control and increase responsibility (see literature review, section 2.7.1b).

b) Stage 1: Active Intervention

i) Skills acquisition and consolidation

Once goals of the programme were agreed upon and initiated, the active intervention began. This provided practise in specific cognitive and behavioural coping skills geared toward the alteration of response to environmental pain contributors and coping with specific symptoms. This was adapted towards the specific resources of the participant so as to enhance his/her ability to use the skills he/she possessed, as well as towards learning new coping skills, and to enhance the ability to exercise control, thus increasing self-efficacy. Specific

skills focused on: alterations in life style; problem solving; assertiveness training; relaxation skills and homework assignments.

c) Stage 2 - Rehearsal and Application Training. This aimed to assist with rehearsal and consolidation. Role-play situations were used to encourage and support cognitive and emotional shifts that may have occurred.

d) **Stage 3 - Generalisation and Maintenance.** This was fostered throughout the program to increase participants' self-efficacy. Participants were asked to practice, exercise and identify problem areas that arose. Plans were formulated to anticipate relapse.

3.3. PARTICIPANTS

The time series intervention case study (Kratochwill et al, 1984) used three participants, who were referred by the Orthopaedics Department of 2-Military Hospital. The participants were white, middle-class South Africans, whose ages ranged between 37-56 years. At their initial visit the participants underwent a screening procedure to see if they met the criteria for participation. These were (1) chronic lower back pain which had significantly disrupted their lives; (2) absence of structural damage; (3) no further medical or surgical treatment was appropriate; (4) no psychotic illness was present and finally (5) they were willing and motivated to participate.

3.4. ASSESSMENT

3.4.1. Medical Assessment

Co-operation by Dr Wilson, an orthopaedic surgeon at Two Military Hospital, Wynberg, Cape Town, was extended. His team conducted the physical assessment, utilising specific tests to rule out structural damage and nerve-root impingement. These included myelography; magnetic resonance imaging (M.R.I.) and computerised axial tomography (C.A.T.) scans.

3.4.2. Physiotherapy Assessment

The Department of Physiotherapy was consulted to assess the participants for implementation of a graded, physical exercise program appropriate to the age and ability of the participant. This included two components, namely: low impact cardio-vascular exercise (swimming, walking or cycling) three times per week, building up to 20-30 minutes per day, and secondly stretching exercises to be practiced at home three times per day.

3.4.3. History

Psychological assessment was conducted in two one-hour sessions, after the physical examinations had been performed. Assessment continued throughout the treatment, which contributed to the quantitative data to be used in the evaluation phase (see 3.6 below). The initial stage of assessment was the assessment interview based on the Maudsley Case History (Maudsley Hospital, London). This focused on the presenting problem; previous medical illnesses; family history; personal history; education and training; activities; habits such as

use of drugs; physiological functioning; medication etc. (see Appendix C for details of assessment questions).

3.4.4. Self-Report Measures

Specific self-report inventories used to assess affective states and subjective functioning included:

a) The McGill Pain Questionnaire (M.P.Q.), - The M.P.Q. (See appendix F) (Melzack, 1983) assesses different components of reported pain. Respondents indicate the location of their current pain, and choose words which best describe their pain from a list of 78 adjectives. The adjectives are grouped into 20 subclasses describing different aspects of pain. The three major categories of pain descriptors in the MPQ are sensory, affective and evaluative. Melzack (1983) systematically evaluated the affective aspect of pain based on the descriptive words patients used to describe their pain. They came up with 20 lists of words that consensually described the experience of pain. These fall into two main categories - sensory and affective. The sensory words communicate a definite somatic sensation, (e.g., itchy, tingling, aching), whereas others describe the sensation in terms of an objective stimulus that might produce it (e.g. burning, pinching, tugging, cutting). Both types of sensory words refer to phenomena that are localized to a specific part of the body. In contrast the affective words (e.g. fearful, dreadful) describe negative feelings that do not have a specific location in the body. They refer to feelings that can also occur in emotionally charged situations where there is no specific pain. Thus the words that people commonly use to describe their subjective experience of pain support the idea that affective

responses, similar to those produced by other unpleasant life events are an integral part of “normal” pain perception (Melzack 1983). Section B of the questionnaire assesses how the pain changes over time, what relieves and increases it. Section C includes a single measure of pain intensity. Adminstration, scoring and interpretation was done according to the Rank Value System as described in the Users Portfolio (Weinman, Wright & Johnston, 1995). Although there are no normative data, mean scores are available for different groups of contrasting clinical conditions (see table of mean scores, Appendix F). The M.P.Q was conducted at assessment as well as at follow up to assist in the evaluation of the effectiveness of the treatment program.

The following instruments were administered daily during the two week baseline, during treatment and at follow-up:

a) The Beck Depression Inventory (Beck & Steer, 1993) was used to measure levels of depression.

b) The Beck Anxiety Inventory (Beck & Steer, 1993) was used to measure levels of general anxiety and over-arousal.

c) Visual Analogue Scales (see Appendix C.): The visual analogue scale is a line, the length of which is taken to represent a continuum of experience, in this case pain and activity levels. This assessment instrument is a “simple, robust, sensitive and reproducible instrument that enables the patient to express the severity of his pain in such a way that it gives a numerical value” (Huskisson, 1983, p.33). Two scales were used, namely:

i) Subjective Pain rating scales - the participant was required to subjectively rate his/her pain on a scale of 0-10, where 0 indicates no pain and ten indicates maximum or intolerable pain.

ii) Subjective Activity rating scales - the participant recorded his/her levels of activity on a scale of 0-10, where 0 indicates minimum activity, and 10 indicates maximum activity.

d) Monitoring of medication usage - Medication usage was monitored throughout, in consultation with the medical team. This information was cross-checked with the participants. Medication usage was prescribed at set times as opposed to p.r.n. (see section 5).

3.4.4.1. Summary Table Depicting Assessment Occasions

The table below summarises when the various measures were taken. The X indicates the occasion on which the measure was used:

Assessment Instrument:	Initial Assessment:	Two week Base-line:	Intervention:	Follow-up:
McGillPain Questionnaire	X			X
Beck Depression Inventory	X	X	X	X
Beck Anxiety Inventory	X	X	X	X
Activity Rating Scales	X	X	X	X
Pain Rating Scales	X	X	X	X

3.5. Case Formulation, Treatment Implementation and Follow-up

3.5.1. Case Formulation

As suggested by Turk and Meichenbaum (1994) the information derived from the assessment, namely, the evaluation of medical-physical, psychosocial and behavioural factors, was conceptualized according to cognitive behavioural principles. These were integrated and utilized for treatment planning in collaboration with the participant.

3.5.2 Treatment Contracting

Contracting was done after the initial assessment, based on the collaborative principles of C.B.T. Strict ethical principles were adhered to. Participants were informed of the goals, procedures and risks of the study prior to consenting. Participants were able to decline, or to terminate, participation at any stage without risk or penalty whatsoever. Written consent was obtained to indicate that the participant understood the nature and purpose of the proposed study, had the opportunity to ask questions and agreed to participate on a voluntary basis (see appendix D for consent form and introductory letter regarding the program). Names of participants' have been changed to ensure confidentiality.

3.5.3. Implementation of Treatment

Treatment was implemented as described in Appendix A. Quantitative measures, namely the B.D.I., B.A.I. and subjective pain and activity ratings were measured on a weekly basis.

3.5.4. Follow-up

A review of the programme was conducted four weeks following the programme. Progress and maintenance were reviewed qualitatively using in-depth, semi-structured-questioning with regard to progress, set-backs etc. Quantitative assessment instruments mentioned previously (3.4.4), were also utilised, namely the Beck Depression and Anxiety inventories, subjective pain ratings, activity levels, medication levels, and finally the McGill Pain Questionnaire.

3.6. EVALUATION OF THE TREATMENT PROGRAM

The practicality and user-friendliness of the treatment program were continually evaluated by information from the participants. Intrinsic to the design was dual aspects of assessment and inquiry, namely quantitative and qualitative material, where the latter informs and supports the former. “An essential feature of the Experimental Single-Case research design is that the participants’ behaviour is measured repeatedly so that various trends in the data can be examined” (Kratochwill et al, 1984, p.75). Although these processes occurred together, they will for the sake of clarity be discussed separately.

3.6.1. Quantitative Measures

Quantitative measures allow for the provision of formal and objective data regarding the case (Kratochwill et al, 1984). The importance of these measurements is that “they can be used to complement the visual inspection of the data and provide some type of formal criterion towards which interventions can be focused and against which program outcomes can be evaluated” (p.88).

The quantitative material was derived from repeated measures of frequency collected during the course of the program.

3.6.2. Qualitative Measures

Qualitative measures derived from the history provide information about the participant's ongoing behaviour and experience. This includes self-report data on experiences of change that may have occurred during treatment (Kratochwill et al, 1984). These measures may yield important information, but are difficult to interpret without formal quantitative data as described above. It is for this reason that *both* qualitative *and* quantitative materials are utilized.

Specific Qualitative measures included:

a) Process notes: Detailed session notes were taken during the treatment sessions. These included verbal reports of homework assignments, relevant issues that were discussed, etc. Synopses of the treatment sessions were made following the session.

b) Journaling: The participant was required to journal his/her responses to specific behavioural experiments, indicating specific thoughts and feelings surrounding specific circumstances.

c) Daily Record of Dysfunctional Thoughts: Participants were provided with a page with headings, namely: Situation or event, emotions, automatic thoughts, rational responses and outcome. They were required to fill out these records when significant situations arose (e.g. when they were aware of pain fluctuations, stressful situations or charged emotional experiences etc.) and to bring them to

the sessions for review and discussion (see example in appendix E). Other qualitative data or subjective impressions of participants' responses were recorded during, as well as after the sessions that were thought to be significant indicators of behavioural and cognitive variation.

3.7. Data Processing

3.7.1. Time Series Research Design

Within case-study methodology, the specific research design chosen was the Time Series Research Design (Kratochwill, et al 1984). When designing a single case-experimental design, it is necessary to use a time-series design, where repeated measures on the dependent variable are taken before, during and after the treatment condition is introduced (Kratochwill, et al, 1984). The repeated measures of the dependent variable make it possible to detect whether any effect was produced by the treatment condition. If no change in any dependent variables other than the treatment can be identified, then one can be more certain the treatment led to the observed differences in the dependent variable. The use of a base-line assists with projecting performance on participant behaviour (Kratochwill et al, 1984). For chronic pain specifically, with an extended history of the disorder, it is unlikely that without some form of intervention, a change would occur (Turk & Meichenbaum, 1994). Thus if the data collected prior to the intervention shows that the problem was in fact chronic (and that changes did not occur with the simple passage of time) and that a change occurred once the treatment was delivered, then certain threats to the

internal validity may be ruled out, and valid inferences may be drawn, namely that of an intervention effect (Kratochwil et al, 1984).

The present research followed a simple A-B design, where B, the treatment intervention was introduced to reduce pain levels, increase activity levels and reduce medication, following a pre-treatment phase A (establishment of base-line ratings). A number of dependent variables were measured at regular intervals during the pre-treatment phase to establish a stable baseline measurement of the participants. These levels were monitored from base-line, and continued throughout the treatment, to evaluate the effectiveness of the treatment.

The length of the pre-treatment base-line (two weeks) and treatment phase (six to eight weekly sessions) were determined in accordance with suggestions made by Turk and Meichenbaum (1994).

3.7.2. Graphs of Repeated Measures

The dependent measures were continually assessed from base-line to follow-up. Repeated measurement of the dependent variables and visual inspection with the aid of graphs (see results) reveals trends in the dependent variables, which allow for critical evaluation of the effectiveness of the treatment program. Evaluation was made by noting shifts over the course of the program in: pain levels; activity levels; levels of depression and anxiety; medication usage; and finally by interpreting the M.P.Q. according to the Rank Value system (Weinman, Wright & Johnston, 1995).

3.7.3 Case Conceptualisation

From the data collected, including the repeated measures, case-history, case notes, homework exercises, journal entries etc, a comprehensive case narrative was generated, which aimed at providing a rich account of the individual participant.

3.7.4. Narrative Synopsis of Treatment

Researchers “develop their own way of analysing data” (Taylor & Bogdon, 1984, p.129). The data of the narratives of the individual case studies were analysed and processed according to principles by Taylor and Bogdan (1984). While collecting data, themes and patterns were noted. “Data collection and analysis go hand in hand. Throughout… researchers keep track of emerging themes and develop concepts and propositions to begin to make sense of their data” (ibid, p.128). The qualitative data was processed by revising the case histories and case notes (along with the quantitative aspects of the data collected), and was compiled according to sub-headings used in the Maudsley Case History.

4. RESULTS FOR PARTICIPANT STEVEN

Of the three participants who volunteered to participate in the study, the first to be presented, namely, Steven, followed the program successfully to its conclusion, with a positive treatment response. The second participant, Johan, terminated half way through the treatment, with partial improvements recorded on the dependent variables. The third participant, Mary, failed to engage in the treatment, rejecting the initial case-conceptualisation.

4.1. ASSESSMENT OF STEVEN

Steven is a 37-year-old male who was referred with a two-year history of chronic lower back pain. Steven recently separated from his wife, and child. He is employed as a financial administrator for the S.A. Navy.

4.1.1. CASE HISTORY

As described in section 3.4.3, the case history was reconstructed from the initial assessment interview and subsequent therapy sessions.

What is apparent from the personal history is an overlap of three emerging themes or problem areas that contribute to the development and maintenance of Stevens' problem. The three themes respectively are (1) a history of physical injuries, (2) a history of unsatisfactory interpersonal relationships - related to a sense of lack of support - both with his primary caregivers as well as his lovers, and finally , (3) a psychological history of depression.

As the personal history unfolds, reference will be made to these three, inter-related, themes. These themes will then be followed up in the case conceptualisation.

Steven recalled a history of lack of emotional support from his parents. His earliest recollections of this were his three eye operations between ages five to eight years (1966-‘69), at which time he remembered having no support from his parents. Early maladaptive schemas of abandonment and emotional deprivation (see section 2.6.2) seem to have developed. This pattern appears to have continued throughout his life. This schema was reinforced when he had a fall (playing badminton) at age fifteen, (1976) and had to have surgery on his knee. He recounted that his father "lectured [him] all the way to the doctor, telling [him] how he had to be brave and cope with the pain". It appears that this was when his pain problems first became exacerbated. Steven described the difficulty he experienced in confiding in his parents. He perceived them as being indifferent to his needs. "My mom and dad didn't care that I was in pain, I was never allowed to complain about my pain...” He learned from an early age that people were disinterested in how he was feeling which supports the hypothesis that he felt worthlessness and unlovable, reinforcing his schemas of emotional inhibition and emotional deprivation. He recounted that during his stay in hospital, his mother "never came to visit me once". The overall sense of not being sufficiently loved and cared for became Steven’s ‘template’ for processing his later experiences. He recalled how angry he was at his parents, as he "couldn't speak to anyone about [his] feelings, and [that he] had no one to confide in."

In high school, (1973-'78) he reported that his work deteriorated due to his physical problems, related to his knee injury. Previously, he claimed to "have done very well". He attributed this to his physical activity being restricted, and the fact that he could no longer be as involved as he was in sporting activities. He began to withdraw socially at this time as he began spending more time alone, engaging in solitary activities - namely reading. Perhaps this was the beginning of the manifestation of depressive symptoms. Details of this time are rather sketchy. Steven was somewhat evasive when talking about his childhood, claiming that it was "uneventful" and that he "recalled very little of those times". What he did recall, was how his peers had teased him, referring to him as "the hop-a-long". He was excluded from physical education and sat on the stands, watching. He tended to ruminate on the fact that his pain was the only significant factor of his middle school and high school years. What was of consolation during his high school years was a relationship with a girl in his class that provided him with support and nurturance.

After Steven matriculated, (1979) he enrolled with the Navy. During this time, his pain had appeared to remit, and he was able to function normally. No mention was made of any special military medical classification, and he completed basic training without any physical restrictions.

In 1980, a depressive episode occurred which was precipitated by his high school girlfriend, whom he had been involved with for six years, became involved with another man, terminated the relationship. He reacted by becoming mildly

depressed for several months, feeling rejected and abandoned. He claimed he became "stressed out" at work, and under the recommendation of his captain, consulted a psychologist for the first time for a two month period. When questioned on the content of the sessions, he identified issues of adjustment (due to his greater work responsibilities) as well as loss (of his high school romance). He used rather simplistic and circumstantial language.

In 1982, he requested a transfer and moved to Durban to "change [his] life". At this time he continued working as a Seaman. He complained of missing his parents and his ex-girlfriend terribly. His knee pain returned, now progressing to the other joints besides the knee (lower-back, legs, neck and shoulders).

Shortly after he arrived in Durban, (1982) his ex-girlfriend began calling him and writing letters to him asking for forgiveness. She asked him to consider returning to Cape Town. He considered that it would be a “wise move” to go back to his family, for their support, as he felt isolated and alone at the naval base in Durban. He hoped that things would in fact work out with his ex-girlfriend. After much deliberation, he received a transfer and went back to Cape Town, only to be abandoned by his girlfriend who (again) left him for another man. Subsequent to this rejection, Steven responded with symptoms of an adjustment disorder with depressed features, as opposed to a major depressive episode. Symptoms included somatic complaints (headaches and generalised back pain), decreased activity, loss of energy and lack of enjoyment of previously pleasant experiences.

With time, however, his mood lifted and his symptoms remitted. He began to apply himself to his work, and became motivated to further his career in the military. He successfully completed several financial courses in the military, working his way up the ranks to the position of a Warrant Officer. During this five-year period he was not involved in any meaningful relationship, and claims to have been "focused on [his] career".

In August 1987 he met his future wife, Nicole. They were together for a year prior to their engagement and subsequent marriage three months later, in November 1988. It was shortly after this time that he fell down a small flight of stairs at work, injuring his knee. As a result of the fall, his knee swelled up and he was taken to the medical base in Simons' Town for treatment. He was subsequently referred to 2-Military Hospital for further medical care. The swelling eventually subsided and he recovered from the event. However, he claimed that ever since the fall, he had problems with his knee. These problems persisted, over a period of approximately two years, in which time he saw various medical specialists at the department of Orthopaedics (2-Military Hospital).

On the 19th of November 1990, their child was born. Six months later (May 1990), having had continuous pain, he had surgery on his knee to remove the cartilage, which had seemingly been damaged when he fell. At this time, he recalled his wife was supportive. He reported, however, that after the surgery, he developed "arthritic flare-ups" and was in continuous pain. In response to the prolonged physical pain he became seriously depressed. He was hospitalised in the

psychiatric ward of 2-Military Hospital in November, 1991, where he was diagnosed with a Major Depressive Disorder. He voluntarily admitted himself, claiming that he could no longer cope with the pain, and that he felt suicidal as a result of its debilitating effects. Steven was treated with anti-depressant medication (Prozac) as well as powerful pain-killers (Agiolax) to alleviate the pain.

The following three years appeared to be uneventful. Steven continued working diligently at his job, with minor setbacks. He had intermittent episodes of pain that remitted spontaneously.

In 1994, he had a “flare-up” which he attributes to his “arthritis” (knee and lower back). In addition to this, conflict developed between him and his wife. It is difficult to determine which precipitated which. Steven provided a rather vague picture of the problems they were having, finding it difficult to give any specific examples of problems experienced, only that they “were not getting along as they used to”, and that “something had changed between [them]”. He could not however articulate specifically what had changed. He stated that with regard to his physical pain, she ignored him, and gave him little support. Their communication deteriorated, they began arguing over “trivial” matters and his wife spent less time at home. He reported that she was abusing substances (alcohol and marijuana) heavily and would avoid talking to him for days on end. He threatened to leave her, but she convinced him to stay, for the benefit of their child.

In March 1995, he had a “vigorous squash game when [he] put [his] back out”. Following referral from Simons’ Town Medical Base, Steven was hospitalised at 2-Military Hospital (Orthopaedics) where he was treated with cortisone injections and anti-inflammatories for mechanical lower back pain with muscular inflammation (see medical assessment, section 4.1.2 below). He reported that he was also severely depressed at this point, and felt suicidal due to the continuous pain.

He recalled that his wife only came to visit him once during his three-week admission. After his discharge, with the assistance of a military social-worker that he saw for counselling, he claimed to have worked hard on the marriage by attempting to communicate more effectively, spending quality time together, engaging in pleasing activities etc. His wife refused to go for marital counselling, claiming that it was unnecessary. Things improved initially. However, he reported that his wife was only "nice" to him when she was drunk or stoned (on marijuana). It is evident from Steven’s reports that his wife, who previously used substances socially, had become substance dependent, a factor which seemed to contribute to the progressive conflict in (and eventual breakdown of) their marriage.

After he had recovered from this admission, his wife went to the United States of America for a six-week period to visit her sister. She sent letters of love, which he believed to be genuine. When she returned, “things were initially fine, but then conflict developed between [them]”. Examples of the conflict included less time

spent together, moodiness (both his and hers), his wife's short temper and inability to communicate without yelling at him. They had frequent arguments regarding differing views to the upbringing of their child. In addition, their sexual relations were reduced for months at a time.

In September 1995, he was re-admitted to the psychiatric ward of 2-Military Hospital. He was diagnosed with a Major Depressive Disorder (recurrent with moderate severity). He asserted the reason for admission was "stress related". He reported that he "needed a break". He claimed that his wife was furious with him (due to his physical pain), and failed to understand him. During this admission she did not visit him at all. After this discharge, in November, 1995 his wife went away alone to Durban for two weeks. During her absence, she did not contact him. On her return, she requested a divorce as she "could not handle me constantly being sick … she didn't love me anymore". Steven reported that he was shocked about her request for a divorce, he realised that things were bad between them, yet he did not expect such a response. He was "reluctant to leave her initially, as [he] loved her very much, and couldn't imagine living without her". He subsequently established that his wife was in fact having an affair, but was still having sexual intercourse with him during this time, which he was very angry and hurt about. In December of 1995 she became verbally abusive, criticising him for being a "fat, lazy, hypochondriachal bastard". She subsequently moved out, took their child and furniture and moved in with her lover. Steven initially saw separation as an interim measure. He was hoping that things would resolve,

but he admitted having “a sense that things were finally over between them”. After a two-year process of legal proceedings, the divorce was finalised.

During this time, he experienced continuous lower-back pain and saw Dr Wilson (Dept. of Orthopaedics, 2-Military Hospital) repeatedly with little relief. It was at this time that I informed Dr Wilson of the program and he was referred as a participant in this study.

4.1.2. Diagnostic Considerations at Assessment

A. Medical Assessment:

There appear to be conflicting medical diagnoses of the problem according to the Orthopaedics Department. Medical investigations via M.R.I. (performed to assess the structure of the bone tissue) report:

> “No significant abnormality in relation to the intraspinal components. … Minor degenerative pathology is seen, but this is unlikely to be of significance in relation to the patient’s clinical problem.”

For purposes of diagnostic thoroughness, a C.A.T. Milogram (conducted in order to detect soft tissue damage) was also performed, which was “absolutely normal”. Dr Wilson’s final opinion was that the patient had

> “Intractable low back pain, which is unresponsive to any therapy…Mechanical back pain, with no root irritation. Possible facet joint arthritis at L4/5. Investigations, however, have not proved a clear-cut diagnosis. Previous treatment attempts, including analgesic medication and bed-rest were ineffective”.

In summary, the diagnostic procedures performed during the medical assessment ruled out structural damage to the spine or discs, and although minor degeneration was visible, this was normal for his age and not significant in causing the pain he was experiencing. No nerve or root impingement was visible, which further ruled out any significant structural damage.

B. Medication Usage

On assessment, Steven was concerned with his reliance on analgesic medication. He had been taking Stopayne pain–killers, dosage of 400 mg, with a 4-6 hour frequency, and Brufen anti-inflammatories 500mg, with a 4-6 hour frequency, for a period of two years. He would additionally use Panado or Stopayne per required need. The results were relatively ineffective, and generally offered “short term relief”.

4.1.3. PRESENTING PROBLEM

Steven complained that he was having “extreme difficulty living with [his] lower back pain, as well as coping with the adjustment to [his] separation” since his wife left him. Because of his physical pains, he found it difficult to sit for extended periods of time and had to miss several days of work. This seemed to distress him, as he feared he might jeopardise his career with the navy.

From the assessment it became clear that pain was intensified by: Movement; long periods of inactivity; sleeping too long; staying in one position for too long; exercise; sitting too long; and “carrying virtually anything”.

Pain was decreased by: “Heat – hot baths, lying down with my feet over a pillow or in-between my legs”; crouching or squatting; self-medicating with anti-inflammatories and painkillers.

Previous treatment attempts included visits to anesthetists, general practitioners, orthopedic surgeons, physiotherapists, an acupuncturist, as well as a faith healer.

4.1.4 Psychometric Data and D.S.M. -IV Diagnosis

From the initial assessment and base-line recordings conducted over a two week period, mean pain ratings on the subjective pain rating scales were moderate - 7.6 (max – 10). Mean activity levels, measured on the activity lists were greatly impaired - 4.3 (max – 10). Mean depression levels (calculated by assessing the average over the two week baseline), recorded using the Beck Depression Inventory were 29.7 indicating moderate depression, and finally, mean anxiety levels (calculated by assessing the average over the two week baseline) recorded using the Beck Anxiety Inventory were 21.6 indicating mild levels of anxiety.

<u>D.S.M. – IV Diagnosis</u>

Axis I: 296.3.2 Major Depressive Episode (moderate in remission)

Pain Disorder (307.80 Associated with psychological features), chronic

Axis II: No Diagnosis.

Axis III: No Diagnosis.

Axis IV: Problems with primary support group (Divorce, parental problems)

Axis V: G.A.F. 55 (current).

4.2 CASE CONCEPTUALIZATION

The case conceptualization was guided by principles of the biopsychosocial model discussed in the literature review. As mentioned in the personal history, three emerging themes or problem areas overlap, which contribute to the development and maintenance of Steven's problem. The three core themes respectively are (1) a history of physical injuries, (2) a history of unsatisfactory interpersonal relationships - related to a sense of lack of support - both with his primary caregivers as well as his lovers, and finally, (3) a psychological history of depression. These will be discussed separately.

4.2.1. Physical Pain:

4.2.1.1. Predisposing Factors:

From the case history, it is evident that Steven has continually suffered with pain related symptoms. The predisposing factors from the history and assessment indicate a lengthy history of pain, which contribute to the likelihood of potential development of the target problem. Steven had multiple operations, as a child on his eyes and then as an adolescent on his knee. He suffered with knee pain and was physically challenged for most of his middle and high school life.

From the pain theory proposed by Fordyce (1976), a central assumption is that pain behaviour has been learned, and that such behaviours can be triggered by external or internal cues which have become associated with the problem behaviour. These predisposing factors are central to the formulation of Steven's

case and will be referred to and described in greater detail as the case conceptualization progresses.

4.2.1.2. Precipitating Factors:

The course of his current chronic lower back pain began with the squash injury two years ago (1995) when he “put his back out”. This has deteriorated with time. Included, are the emotional factors due to the irretrievable breakdown of his marriage (this will be discussed later in section 4.2.2).

4.2.1.3. Maintaining Factors:

On assessment it appeared that Steven’s pain had significantly disrupted his life. It had affected both his home and work life. The pain seemed to have greater effect on his personal life. He managed to work quite consistently despite his pain levels. On returning home, he would retreat to his room and lie down.

Steven’s cognitive distortions intensified the impact of his dysfunctional beliefs. He is prone to the distortions of misattribution (e.g., “If I have pain, then, there is something wrong with my back”) , as well as catastrophizing (e.g., “It’s just terrible, my pain is so bad, I’ll eventually lose my job…”). These views have a broad impact both affectively and physiologically in terms of the pain/depression cycle described above, which creates a downward spiral (Brand, 1996). Pain provokes anxiety (based on fear), which in turn induces prolonged muscle spasm at the pain location and at trigger points (Sarno, 1991).

Stevens' preoccupation with his pain and fears associated therewith have resulted in a decrease in activity that has several effects: The unoccupied time provided additional opportunity for depressing ruminations, as his pain behaviours increase (namely increased time spent lying down, reliance on medication, moaning and groaning). Pain is experienced and negative thoughts and feelings are activated (e.g. I cannot cope with the pain, it's getting worse and worse…"). These negative self-statements in turn intensify the perceived levels of pain and the cycle reproduces itself, becoming increasingly worse. In addition to this, the cycle of inactivity impacts in reinforcing the belief that activity causes pain. Activity is thus avoided at all costs.

4.2.2. Social Isolation and Lack of Support

What seems to be a recurrent factor during all his operations and hospitalisations was his sense of lack of support from his loved ones at these times. The cognitive view argues that an individual's schemas, beliefs and assumptions constantly and automatically shape their perception of events (Turk & Rudy, 1986). Owing to the fact that he was raised in an environment where emotions were not taught, expressed, accepted or encouraged, he developed a tendency to somatize. From his descriptions of the home atmosphere, he felt neglected and unloved. Further, due to the E.M.S. of emotional inhibition, little space was made for the expression of negative feelings. It is thus hypothesised that these factors contribute to the development of alexithymia (section 2.4) and consequent lower back pain as a result thereof.

4.2.2.1. Predisposing Factors

It became increasingly apparent that Steven's primary problem, namely the need for acceptance and support, originated within his family. In the treatment sessions to follow, he spoke at length about his family and his poor relationships within the family. Support had continually been lacking in his life. The multiple episodes of abandonment and rejection that Steven experienced as a child and an adolescent support the hypothesis of the development of the early maladaptive schemas of abandonment, emotional deprivation and emotional inhibition. His parents lack of nurturance and empathy laid the foundation for his inability to feel empathic attachment. These factors, which will be referred to in greater detail as the case conceptualisation progresses, predisposed him to depression, the development of alexithymia and subsequent lower back pain.

4.2.2.2. Precipitating Factors

The breakdown in the relationship with his wife precipitated an intensification of his social isolation, feelings of abandonment and lack of support. The eventual separation from his wife is 1988, contributed to his distress and inability to cope. The relationship with his wife was initially nurturing, and supportive. Her tolerance for his pain progressively declined, as she became less empathic, accusing him of being a "fat and lazy hypochondriachal bastard".

4.2.2.3. Maintaining Factors:

It was the researchers' hypothesis that he unconsciously attempted to gain emotional support through the secondary gains of his pain behaviour (namely

through the attention of others). These secondary gains became part of his repertoire of learned behaviour patterns (Fordyce, 1976). These, however, partially failed him. He only received attention from medical professionals, and not from his wife and parents. Steven's needs were continually unmet, leaving him in a position of hurt, frustration, disappointment and anger at those around him. His negative thoughts and beliefs were: "No one loves me… "; " No one wants to be with me." ; "I'm all alone…". These thoughts reinforced his feeling of social isolation and abandonment, leading to avoidance and social withdrawal.

Steven had difficulty expressing his needs and feelings. These feelings were continually reinforced through his inability to obtain the nurturance longed for. It was the researcher's hypothesis that his physical pain was his only effective strategic response to cope with and express his emotional pain, which had left him feeling vulnerable, alone and emotionally not met. The schema of emotional inhibition resulted in failure to develop expressive skills.

4.2.3. Mood Disorder

The E.M.S.'s of emotional deprivation, abandonment, emotional inhibition and social isolation are hypothesised to contribute strongly to the development of a mood disorder.

4.2.3.1. Predisposing factors

A further predisposing factor in Stevens' pain disorder is the history of a mood disorder, which in all likelihood began when he was at school, after his knee

injury and subsequent operation. From the history it is evident that his poor relationship with his parents, prepared him for a predisposition to adult depression. His core belief is "I am unlovable", this belief generates negative automatic thoughts, which in turn reinforce the core beliefs of being "helpless and unlovable".

4.2.3.2. Precipitating Factors

The Major Depressive episodes, with two psychiatric hospitalisations in 1991 and 1995, provide further evidence of associated emotional disturbance. E.M.S's of abandonment, social isolation and emotional deprivation were activated at these times in response to the life circumstances that Steven was experiencing, namely feelings of abandonment, work stresses, pain intensity etc. (see case history, section 4.1.1). The depressive component increased his vulnerability, and in all likelihood increased the severity of the pain-depression cycle (see description below - 4.2.3.3).

In addition, following the separation from his wife, Steven seemed to be suffering from an Adjustment Disorder, with mixed emotional features. This diagnosis contributes to the conceptualisation of his current functioning.

4.2.3.3. Maintaining Factors:

The Pain Cycle:

The following cycle presents the typical sequence of events that occurs when Steven experiences lower back pain: Steven experiences pain. Subsequently,

due to the pain he becomes inactive because of the incorrect belief/assumption that movement or activity will intensify the pain. Owing to the inactivity, he focuses on the pain even more and he begins to ruminate on negative thoughts such as: “It’s hopeless, the pain will never go away, and I’m gonna be an invalid for the rest of my life”; “I feel helpless”; “nobody loves me”. The negative thoughts increase the focus on the pain, with the resultant increase in negative affect. Steven becomes more depressed, which enhances the subjective experience of his pain.

The cognitive behavioural model views depression as characterised by a “cognitive triad” of a negative view of the self (e.g. “I’m worthless”), a negative view of the world (e.g. “No one loves me”) and a negative view of the future (e.g. “it’s no use”) (Freeman, Pretzer, Fleming & Simon, 1990). This cognitive view manifests in the content of Steven’s automatic thoughts, his immediate, involuntary, non-reflective cognitive responses to a situation. Steven made many negative statements that reflected these automatic thoughts (as described above). Steven believed these thoughts implicitly. They contributed to his overall depressed mood, his low motivation, and his sense of hopelessness and dissatisfaction. These thoughts reinforced the negative triad, and resulted in further pain. This is the process that Sarno identifies as T.M.S. (see section 2.3.4.).

4.3. NARRATIVE SYNOPSIS OF THE TREATMENT PROGRAM

A narrative synopsis of the treatment procedure that was implemented follows:

4.3.1 Sessions 1 and 2 Psycho-education

On initial contact, rapport was quickly established. My telling Steven that I had a special interest in chronic pain due to my own experience seemed to motivate him to look at ways to cope with his chronic pain. Steven's expectations about his recovery were positive. He was motivated to begin the treatment program, He reported: "After Dr Wilson told me about the program, I was hopeful, I have tried so many things, and nothing has worked, perhaps seeing a psychologist is not such a bad idea…".

a) Specific goals

Goals that were collaboratively agreed upon during initial contracting were: Gradual improvement, beginning with small changes, namely to increase activity through the strategy of a graded exercise program (with the Physiotherapy Department); an increase in social activity, through increased recreational activities, a reduction in time spent lying down and sleeping; and finally a process of medication reduction. Additional goals included:

1. Adjustment to the divorce.
2. Anxiety management through stress management training.
3. Communication and assertiveness training.

Based on the case conceptualisation, a series of appropriate cognitive behavioural strategies and interventions were selected to achieve the aforementioned goals. These included:

b) Psycho-education

This fundamental aspect of the treatment program shifted the focus from a sensory view of pain, to the multi-faceted, Sequential Model of pain (see section 2.4). With the psycho-educational training, which provided graphic material of models of pain, Steven began to reconceptualize the pain process and understand more about pain mechanisms. This was achieved with the aid of diagrams and information that illustrated the various models. Specifically, he identified that he had previously focused on the Sensory Model of pain. In shifting his understanding to the Sequential Model of pain, he became open to begin to address the collective effect of situational variables, psychological and social factors that influenced his pain experience. With this understanding, he began to view his pain from a more differentiated perspective. This initial reconceptualisation aided in shifting his focus from the physical to the emotional realm.

c) Self Monitoring

The aims of self-monitoring were explained, namely to assist in providing detail about the nature of his pain behaviour. This information would be utilised to set specific goals. Once the above process was clearly understood, the following self-monitoring exercises were prescribed to aid his understanding of the above process.

i) Time Scheduling

This homework assignment used time schedules, which break the day up into hours. Steven was required to go home and collect data to bring to the following session. The data reflected the time; duration of pain; activity and subjective pain rating.

Once data was collected, in session two, by reviewing the homework it was confirmed that Steven was not in pain constantly, but that the pain varied throughout the day. For example, it was worse in the morning upon awakening, easing up after his shower, worse driving to work, better when seated at his desk etc. This insight allowed him to begin to see his pain episodes as having definite beginnings and endings, thus seeing them as a fluid process that were not life threatening, and interpreting them as responses that could be controlled. In addition, these episodes were seen to vary in intensity (rising and falling over extended periods). The identification of a pain pattern helped encourage a sense of control through predictability (Turk & Meichenbaum, 1994).

ii) Pain Behaviours

The second self-monitoring exercise involved collecting a list of his pain behaviours (overt expression of pain and suffering). Examples of these were given. He was then required to go home and generate a list of other pain behaviours that formed part of his repertoire. Steven identified several behaviours: lying down excessively; missing work; less time spent with his children; moaning and groaning.

d) Graded Exercises and Activities

The graded exercise program described in Appendix A, was introduced to increase Steven's activity levels. In collaboration with Physiotherapy at 2-Military Hospital, an exercise-activity programme appropriate to Steven's physical status, age and gender was designed. The program included two components, namely low impact cardio-vascular exercise, as well as stretching and muscle toning. This was implemented at the outset, in order to attempt to break the cycle of inactivity (his progress is graphed in section 4.8). He reported being "fearful initially to begin exercising, as [he] thought it would make [his] pain worse". He was nonetheless extremely compliant with this schedule and he noted how positive he began to feel once he broke the cycle of inactivity. This confirms the hypothesis offered in the case conceptualisation, namely, that fear and the subsequent avoidance of physical activity contributed to the cycle of inactivity and is hypothesised to have increased the pain through the resultant decreased blood flow and the shortening and weakening of the muscles (Katalino & Hardin, 1996; Sarno, 1991; Turk & Meichenbaum, 1996).

e) Medication Reduction:

As described in section 4.2.2., Stevens' analgesic medication was relatively ineffective, offering only mild, short-term relief. It is also possible that the inappropriate use of excessive medication was contributing to over-sedation and depression. He also noticed that the anti-inflammatories were affecting his digestive system, as he often experienced cramps in his lower abdomen after ingesting his medication. He was thus motivated to begin to reduce his intake.

The medical practitioner made the recommendation of the use of non-steroidal, anti-inflammatory drugs similar to aspirin. Using medication at specific intervals (3 times per day, at mealtimes) was encouraged, enhancing self-control and responsibility (Lloyd, 1996; Turk & Meichenbaum, 1996).

4.3.2. Session 3 – Pain management: Cognitive and Affective States:

Following the psycho-educational process of sessions 1 and 2, the intervention progressed to consider the cognitive and affective states associated with Steven's pain. Having identified the multifaceted nature of his pain, the homework assignment of open-ended, probing questions (see intervention program - appendix A) which was prescribed at the end of session 2, was reviewed. These questions were designed to elicit information, designed to furnish an in-depth understanding of the participant's experience (Bromley, 1986).

Steven's answers provided qualitative material to begin to focus on the cognitive and affective states that exacerbated the pain. He responded to the question: "What chronic pain means to me?" as follows:

> "Chronic pain means living with pain all the time, it means that my life has changed completely… I can't do what I used to do, I am in too much pain to even play with my child or go camping, or running with my friends. I just sleep all day, and never really feel relaxed…"

Reviewing the homework exercise, we began to identify situational factors involved in his experience of pain. He recounted, for example, how when he was having problems with his ex-wife, his pain intensified. “Instead of talking to her, I’d just withdraw to the room and read the paper, watch television, or lie down and sleep”. He confirmed a pattern of avoidance of conflict through his pain behaviour, which we would aim to remedy by finding suitable means of expression.

The above finding confirms and extends the observation of alexithymia made in the case-conceptualisation. He began to understand how, when experiencing conflict, he withdrew, and this in turn increased his frustration and exacerbated his pain levels.

What was significant with regard to his avoidance of so much activity was the fear related to any activity. In the second homework session, the following self-monitoring question was posed: “when did you last do any physical exercise? What did you do? How did you respond to it?” Steven’s written response was: “I believed, as I was told (by doctors, and specialists) that I had injured myself, so I treated myself very carefully, and generally began restricting my life since everything I did made my back hurt, and I was afraid I was interfering with the healing process”. This confirmed that his belief that he should avoid exercise was in fact distorted. The self-imposed restrictions were based on unfounded, unrealistic fears, which impacted on his levels of inactivity. As will be illustrated in section 4.5.1, his activity levels gradually began to increase as a result of the

graded exercise program. In addition, his levels of pain and depression gradually decreased (see activity, pain, and depression graphs section 4.5.1).

4.3.3. Session 4 - Relaxation and Stress Management.

The role of stress in maintaining his pain was highlighted. The aim of this aspect of the treatment was to assist in altering the way stress was perceived, experienced and coped with. Steven clearly identified a stress-related component to his pain. Specifically he acknowledged that his pain was exacerbated by stressful conditions both at home and at work. He gained insight into his patterns of anxiety, which generated muscle tension.

Progressive Muscle Relaxation

Progressive Muscle Relaxation (Jacobson, 1938) proved to be very useful for Steven. Guiding him through a relaxation session, (see intervention program, appendix A) he achieved a deep level of relaxation. Following the guided visualisation at the end of the progressive relaxation, the level of calm he achieved struck him. It was explained that this was a state that could be 'learned' and 'remembered' by the mind and body, and that "the relaxation response" (Benson, 1976) could be recalled and evoked in stressful situations through simple awareness. The relaxation induction was recorded on audio-tape and given to him to take home and practise.

We contracted that he would perform the exercise twice a day for ten to fifteen minutes. With the introduction of the relaxation exercises, Steven began to experience a marked decrease in subjective pain (see section 4.5.1).

4.3.4. Session 5 – The Origins of Pain

The theme of this session focused on the affective states accompanying Steven's chronic pain – specifically depression. We mapped out previous pain incidents, which confirmed and extended the initial case conceptualization in terms of depression, interpersonal factors and alexithymia.

In beginning to confront the emotional aspects of his chronic pain, Steven identified that his pain had in fact begun earlier than the first episode (when he injured his back playing squash). We traced the history of his pain back to childhood as described in the case history. Using imagery exercises, including dialogues with parents and other significant figures, Steven's schemas were triggered. I asked Steven to close his eyes and visualise an image of a situation involving his parents. He responded with a vivid childhood image of going to the hospital with his father (as described in the case history). He described his fathers' coldness as he lectured him about his pain on the way to the hospital. Steven reported that he couldn't complain, as he knew his father would ignore his true feelings. When asked to explore the image in detail, he appeared afraid, and reported feeling sad, and lonely. This image added support to the hypothesis of emotional deprivation and emotional inhibition as Steven's core schemas.

He began to gain insight into his pain behaviour and the response he had been seeking (namely emotional support, and the feeling of being looked after and cared for by his parents). He began to realise that he had, in fact, never received what he had been trying unconsciously to achieve. This resulted in the emergence of anger towards his parents, his wife and his friends.

By acknowledging his response to his parents' shortcomings (being let down and not sufficiently cared for), Steven experienced the feelings of hurt and disappointment, which had been the underlying anger. These emotions were identified with underlying the E.M.S.'s of emotional deprivation and abandonment, which took on the form of the assumptions: "I am unlovable, I am worthless" (Young, 1990). It is hypothesised that these E.M.S's formed the templates or lenses for the processing of later experience, forming the core of his self-concept.

The process that typically occurred was as follows: Steven would adopt the sick-role and was reinforced with the expectation of the attention he would receive. However this would be short-lived and insufficient, as it would only partially meet his needs (due to the fact that the expectation was not met). He then felt disappointed because he felt rejected. This reinforced his negative beliefs of being worthless and unlovable, and the negative triad (namely the negative view of himself, the world and the future) was strengthened, resulting in depressed affect.

It was interesting how close to the surface these feelings were, and by the researcher simply sitting quietly and empathically reflecting, Steven directly experienced intense emotional pain. This would suggest the activation of an E.M.S., which according to Young (1990) is signalled by a high level of emotional arousal. The sadness he experienced may suggest that he was accepting that he had never felt sufficiently cared for during his childhood. Through this experience, two processes occurred. Firstly, Steven developed insight into his pain behaviour. By confronting the inaccuracy of the conclusions he had drawn about himself, namely his un-acceptability and un-lovability as a person, his previous perspective was challenged and an alternative framework for viewing events was offered. He was thus able to attribute the loss to his parents' shortcomings and not to his own unworthiness. Secondly, he experienced a subsequent feeling of relief at the conclusion of the session, which revealed some amount of restructuring that had taken place.

The above description confirms the hypothesis discussed in the literature review (section 2.7.4), that therapeutic experiences resulting in getting in touch with and acknowledging of constrained emotions lead to positive effects on both depression and chronic pain. Furthermore, through the dialogue directed by the researcher, the childhood schema could be identified, modified and challenged.

I suggested as the homework assignment for the week, that he begin to write a journal, with the intention of recollecting his life-story. He was very motivated to do this, as he wanted to get to the "source of [his] ailments".

When Steven began journaling, he became aware of intense anger. This anger (which was hypothesised to be an offensive response to being hurt), began to erupt and spill out at work, and was displaced on to other colleagues. An example of this occurred when his co-worker ignored him when he arrived at the office. He misinterpreted the event as an assault on himself and verbally attacked his co-worker, accusing him of being an “unfriendly bastard”. He wrote of this incident in his journal. We began to work with this anger through cognitive restructuring, and came to understand that his relationship with his parents was driving these feelings, specifically, his anger and disappointment at their “not being available for me throughout my life”. The above material supports the development of E.M.S.’s and extends the initial case conceptualisation of Alexithymia (i.e. Steven’s inability to express negative affect, specifically anger).

Description of Cognitive Restructuring:

What emerged through our explorations from the material generated through the recording of dysfunctional thoughts (prescribed for homework in the previous session) was the 'vicious cycle' that permeated Steven’s life. Examples of cognitive restructuring will be discussed.

Step 1: Description of schema driven behaviours:

We discovered his mode of being was to attempt to get people to support him, yet when this failed, his pain would intensify, resulting in the following three components of negative automatic thoughts. He identified feeling (1) “not good enough”; (2) “alone”; and (3) “a failure ” (rating – 100). (See Appendix E– Daily

Record of Dysfunctional Thoughts).

Step 2: Analysis of the thoughts

By dialoguing with the negative thoughts (which contribute to the maintenance and generation of painful emotions and sensations), we attempted to test the validity of the beliefs for their rationality, their accuracy and their functionality. In questioning the validity of Steven's statements, I explained to him that he was using over-generalisations. Further, by correcting the cognitive distortions, by means of revising the beliefs and focusing on his achievements rather than his failures, he understood that he was "actually good enough" and wasn't "a failure". He had over-generalised these previous feelings from other situations, specifically: his parents' lack of support; his wife's lack of support; and, finally, his wife's leaving him. By testing the high standards he placed on others, he realised that he was creating a set of expectations for his loved ones' performance that he expected would be met. These high expectations were continually not met, creating the cycle of expectation followed by disappointment. Specifically, Steven's assumption was:" If people don't take care of me, then they don't love me". This results in him feeling "not good enough, alone and a failure". This cycle confirms the pattern of the lack of support, sense of abandonment and emotional deprivation he perceived as a child growing up as discussed in the case formulation.

A second example that emerged in relation to feeling worthless was in reference to his ex-wife, and her recent affair. Steven admitted feeling "cheap, dirty as well

as emotionally and sexually used". This further fuelled his rage and anger against her, because she had lied to him. He stated regretfully: "At 37, I was caught for the second time like an idiot".

We discussed what it meant to be “caught like an idiot”, and the discussion led back to his family and their lack of understanding of his pain, and their lack of sympathy and support. This made him feel like “an idiot”.

> “For so long I had to just pretend I was fine... I was too scared to ask them for help... I didn't know whom to turn to. I was let down by everyone, including the doctors. I expected Nicole to save me from this vicious cycle of pain and depression, but she let me down...”.

Challenging this view, Steven became aware of “being okay, without them.” Further, through the process of reality testing, he established that he had a dose circle of friends who admired and respected him for being “a good person, a loving husband, father and a loyal friend”. By testing the underlying belief, “I am not good enough”, he subsequently rated the belief at 10, where previously it was rated at 100. He felt relief at this, and we decided that it might be useful for him to begin to make more effort socially and contact his friends more regularly.

Finally, at the end of this session, an important piece of information emerged, which highlights an example of a cognitive distortion based on generalisation. Steven commented: “I noticed that if someone mentioned the word ‘disc’ or ‘back’ in a conversation, my pain would intensify, almost like a shock-wave going

through my back". We discussed this image and how he responded to cues from the environment. He realised that he was in fact hypersensitive to such cues. Such negative thoughts increased his anxiety and pain, causing him to focus on the catastrophe. This created fear of the worst happening. This, he noted, would leave him feeling "like a helpless victim". In turn, his body would respond by tensing with fear and anger, and as his body tightened, his pain would increase. Through reality testing of the specific cognition "There's something wrong with my back", he was able to see that merely by ignoring such responses, he could interrupt the feed-back loop that he had set up for himself, and he became aware of his exaggerated dysfunctional beliefs about the pain. The significance of the above realisation is that it highlights the self-maintaining cycle of pain and fear, which in turn generates more pain, and intensifies it. In addition the process of the development of awareness and insight is evidenced, as Steven becomes 'tuned-in' to the Sequential Components of the pain cycle, namely the awareness of situations and their consequent effect on his thinking, feeling and behaviour.

By realising that these negative statements were incorrect, Steven began to re-examine his previous attitudes and beliefs that formed a 'reflex' reaction to his pain. His ability to accept new ideas, to challenge his old styles of thinking and the personal myths, assisted in shifting his cognitive states and resulted in a shift in affect and behaviour. Coupled with this was the sense of enhanced control and self-efficacy. These shifts are visibly evident on the graphs below (section 4.5), indicating a gradual decrease in pain intensity, as well as an increase in activity.

4.3.5. Session 6 - Social Skills Training

a) Homework Exercise

As a homework exercise, we contracted in the previous session that he would socialise with his friends. The rationale of this experiment was to 'test' the strength of his friendship, as well as to break the cycle of withdrawal from interpersonal contact. Finally it aimed to increase his self-confidence and his sense of self-efficacy. Reviewing the homework, Steven recounted that he had called some friends, reluctantly at first, but they went out, and he "had a good time". He reported: "The experiment was effective, I realised I have some good friends, I had fun, and did something good for myself…I hadn't been out in weeks".

The homework exercise resulted in a positive experience for Steven. He realised how the 'experiment' of socialising with his friends challenged his beliefs of being "worthless and unlovable". His initial reluctance to contact his friends was due to the fear of their response, namely their rejection of him. He however realised that this fear was in fact irrational and based on feelings of previous abandonment schema that were driven by his experience of rejection by his ex-wife. Further, the experience gave evidence for the cycle of avoidance which is associated with the pain-depression cycle (see section 2.4). By breaking this avoidant cycle, Steven felt a sense of contact and joy, as he seemed to feel less alone and isolated.

b) Assertiveness Training

Drawing on the hypothesis that his inability to express himself was central in contributing to Stevens' pain problem, we began to address this issue. We discussed the difference between assertive and aggressive behaviours. What followed was a discussion of a list of feeling words that might be appropriate to express himself.

Steven realised that he did in fact have difficulty talking to people directly and effectively. Using assertiveness training techniques, we began to find more appropriate ways for him to express himself. It was apparent that Steven lacked basic communication skills. We worked with communicating "I" messages, without blaming or criticising, simply being honest. This incorporated expressing how he felt, why he felt it, and finally, what he would like to change. The basic template that we utilised was:

> **" I feel…***(sad/angry)** **, when you…** *(Ignore me)**, **because…***(I feel unloved*)* **and I want…(***you to pay more attention to me***)*.**
>
> * (Italics represent examples given to describe the template)

I asked Steven to choose an example of an interpersonal situation, which may have been problematic for him. He described a situation between him and his boss, where he had been blamed for an error regarding the financial statements. The error had in fact been the work of his colleague, for which he was incorrectly blamed. When his boss reprimanded Steven, he lacked the courage and

conviction to assertively state that he was not the 'guilty party' and that his co-worker was to blame.

When I asked Steven to identify the specific feelings that emerged in response to this, he seemed to freeze up. It was apparent how difficult it was for Steven to respond. When I asked him to attempt to imagine confronting his boss, he became visibly tense – his breathing became shallow, his jaw clenched, and his body stiffened. I asked him to close his eyes and take a few deep breaths, and to invoke the "relaxation response". I then asked him how he was feeling. Spontaneously he reported feeling "angry, victimised, hurt and frustrated." He almost seemed surprised that he was capable of labelling these feelings. I validated these feelings and praised him for labelling them so articulately. He seemed relieved to recognise these feelings. I asked him to notice the effect the feelings had on his body. He noticed the tension "brewing in [his] lower back".

We looked at ways of clearly expressing these feelings, without blaming or criticising, according to the template mentioned previously. This was extremely difficult for Steven, as it was clearly not part of his existing repertoire of behaviours. Using role-play techniques, we enacted various means of defending himself in the situation for which he had previously accepted responsibility, without any defence. After much deliberation and discussion, Steven articulated the following response to his boss:

"I felt angry when you *inaccurately blamed me* because *It was Staff Sgt. X who prepared the statements.* And I want you to *clearly establish the facts before accusing me.*

It was apparent how this moment of honesty and clarity affected his demeanour. The relief he felt at being able to express himself was remarkable. He sighed with relief. I asked him to focus on his body, and to note any changes. He was surprised at how "light and relaxed [he] felt".

We discussed the implications of this 'experiment'. It was confirmed for Steven that his thoughts, behaviours and feelings were in fact connected and were having an effect on his pain levels. This observation confirms the hypothesis made in the case-conceptualisation that the expression of affect has direct physiological implications. Steven was instructed to go home and practise this technique. He returned to the next session and reported having successfully implemented the 'I message skill' in several situations.

4.3.6. Session 7 – Parents

In reviewing the previous homework exercise (i.e. to go home and experiment with this newly learned 'template)', Steven reported that he had implemented the new behaviour in at least three situations, and it had been effective. What followed from this was his difficulty communicating with his parents, with whom he was unsuccessful in his 'experiment'. He described the event in which he supposedly failed. Steven had spoken to his mother on the telephone, regarding

the weekend when he would be visiting with them. She told him to be on time, criticising him that he was always late. Steven, who is sensitive to criticism, became offended and attempted to assert himself (using the aforementioned 'template'). His mother responded negatively to his plea, and became abusive towards him.

We agreed that perhaps it was too soon to confront his family, as it might fail and fuel his anger, as well as theirs. In realising his need to be 'superficial' with his family, Steven acknowledged how he really loved his family. We used role-playing techniques of communicating this to his family. In reference to his father, he began to cry, expressing a fear that he would die without the situation being resolved between them. This moment of expression of genuine emotion was significant as it clarified for Steven his confused, un-expressed emotions towards his parents. He wondered about the ambivalence of his feelings. In working through this, we discussed his need to love his parents unconditionally, yet this was difficult because of the hurt and disappointment that he had been reluctant to confront. He began to acknowledge the ambivalent nature of these feelings. I explained that part of the difficulty of changing his long-standing behaviour, was that his parents would need to change their behaviour too, which would take time and patience, but that he should keep trying without losing heart. This seemed to satisfy Steven, even though the situation is still precarious.

4.3.7. Session 8 Generalization and Maintenance

The final session comprised of 'putting it all together'. We reviewed the previous sessions, focusing on the progress and achievements Steven had made. We also examined some of the setbacks he had experienced. Specifically, we focused on the maintaining factors, namely, his pain behaviour, his previous inactivity and subsequent activity, his coping mechanisms, and his stress management (progressive relaxation, guided visualization and problem solving). Steven felt confident in his ability to live with his pain, with an awareness of the need to be the master of his pain, and to see it in its entirety, within the perspective of the cognitive triad of thoughts, behaviours and feelings.

With regard to his parents, he has begun to acknowledge their strengths and their shortcomings and is content to begin to accept their differences.

Specifically, we reviewed how important it was for him to maintain the changes that he had begun to make, and discussed problem-solving techniques should he experience any relapses in the future.

4.4 Synopsis of Post-treatment Follow-up

Below is a summary of the qualitative feedback that was obtained at follow-up with Steven.

4.4.1. Post Treatment Follow-up:

Four weeks after the intervention program, I met with Steven, and it was apparent how his affect had changed. He was lively, positive and enthusiastic about life and the future.

> "I have had very little pain over the last four weeks…. When I do experience pain, it seems to be milder and of a shorter time…. I use the techniques I've learned. Just being aware is useful for me, as it corrects my negative thoughts when they arise… I realise what a vicious cycle of pain I was in: bed-rest, more pain and fear, fear, fear. It hemmed me in and was so depressing. The relaxation and deep breathing works best. I immediately feel calm and relaxed. I am no longer obsessed with my back, as I used to be…When I experience any pain I see it now as a 'barometer' of my anxiety or depression… I feel I have control over my life again. I know that it may never go away completely, but I feel confident that I can control it now without depending on my doctor or drugs… I am enjoying my life, my child and I can play together, my naval career is back on track and I have great hope for the future…"

4.4.2. Steven's Understanding of the Psycho-Educational Aspects:

Summarising his understanding of the psycho-educational sessions Steven's response was:

> "I think that in fact my pain is both physical and emotional. I have been looking at all the physical facts, and have never really thought about

how my past experiences have affected how I cope with things. I seem to somehow be coping much better…. I normally just keep quiet about things and don't say anything, as I don't want to rock the boat. I just 'grin and bear it'. I have done so for as long as I can remember. I feel so frustrated most of the time, and it just gets worse and worse".

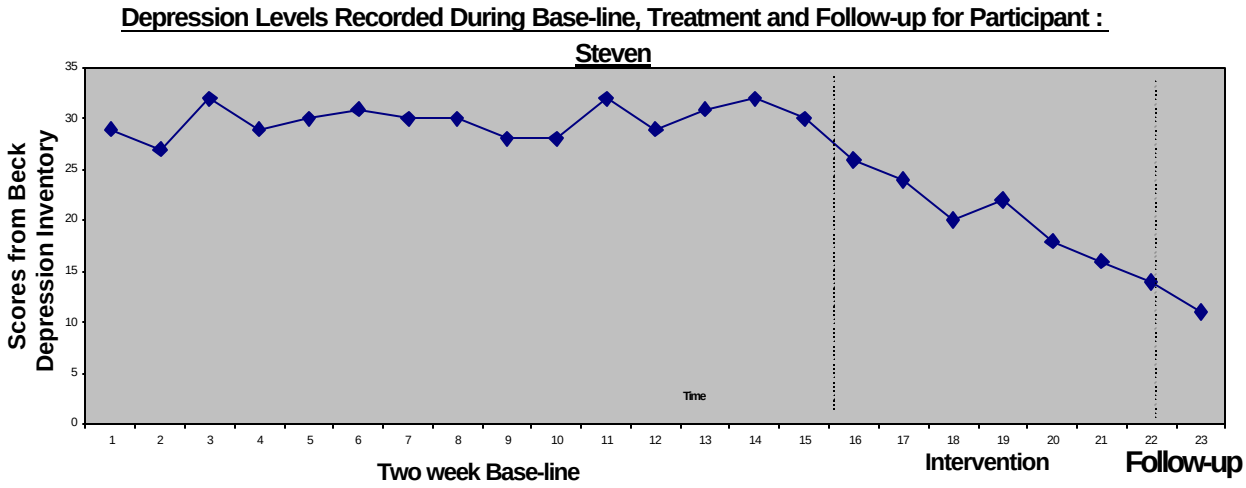
The above reflections demonstrate Steven's active involvement in the therapeutic process and illustrates the process of learning through the cultivation of awareness, coupled with development of insight, which is fundamental in initiating therapeutic change (Brown & Pedder, 1992). Finally, they emphasise and confirm the initial case-conceptualisation, namely:

1) The focus on the physical aspects of his pain experience, namely the utilisation of the Sensory Model of pain.
2) The collective effect of past experience which impact on the maintaining factors, and finally,
3) The difficulty he experienced expressing himself (alexithymia).

4.5. SUMMARY OF QUANTITATIVE DATA

4.5.1.Graphs of Repeated Measures

As described in the methodology chapter, a significant aspect of the program involved self-monitoring of multiple variables. These included: depression levels; anxiety levels, activity levels and pain levels. The self-monitoring occurred daily during the base-line period and weekly during the intervention. Finally, the measures were taken at follow-up.



The graph above depicts the base-line, treatment and follow up scores from the Beck Depression inventory. The base-line scores reveal a relatively constant level with the highest score of 32, and the lowest score of 28 recorded during the two week base-line. These levels indicate mild to moderate depression prior to the commencement of treatment (Beck, 1993).

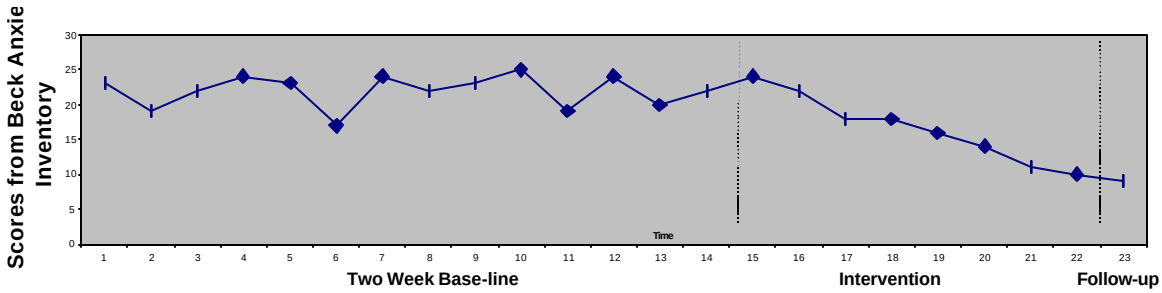
General qualitative impressions drawn from the inventories suggest themes of failure, a sense of discouragement with regard to the future, lack of satisfaction, feelings of disappointment, irritation, loss of interest in previously pleasant activities, lack of motivation and pre-occupation with physical problems. The picture is one of overall gloom, despair and hopelessness.

With the introduction of the treatment, there is a gradual decrease in the vegetative symptoms previously observed. In addition, the feelings of hopelessness and despair lift. The lack of motivation is replaced by a sense of enthusiasm, and energy, quite different from the initial scores during base-line. At follow-up, Steven's score of 11, which is within the normal range, shows a

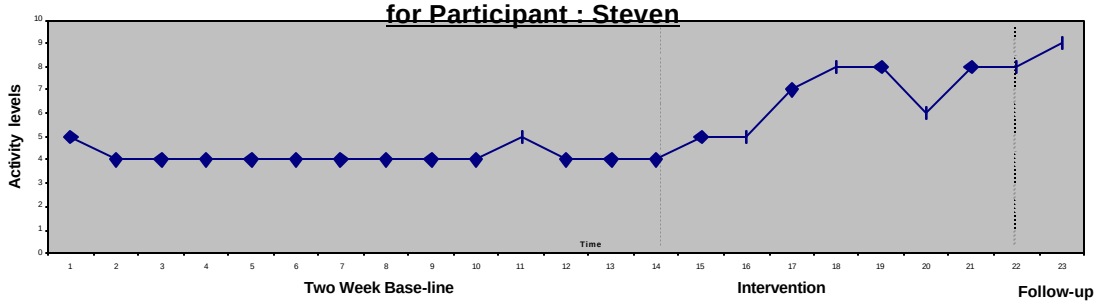
qualitative difference from the initial score (32 - moderate depression) obtained at assessment.

As with the depression levels, the anxiety levels recorded during base-line depict a relatively stable pattern. Anxiety levels fluctuated between 17 and 24, depicting mild levels of anxiety during base-line (Beck, 1993). Specific themes noted from the inventories include: inability to relax, fear of the worst happening, a sense of terror, nervousness, and fear of loss of control, to name a few. It is evident from the graph that with the introduction of the treatment, the anxiety levels decrease gradually to a low level of subjective anxiety with a score of 9 at follow-up.

Anxiety Levels Recorded During Base-line, Treatment and Follow-up for Participant : Steven.



Activity Levels Recorded During Base-line, Treatment and Follow-up for Participant : Steven

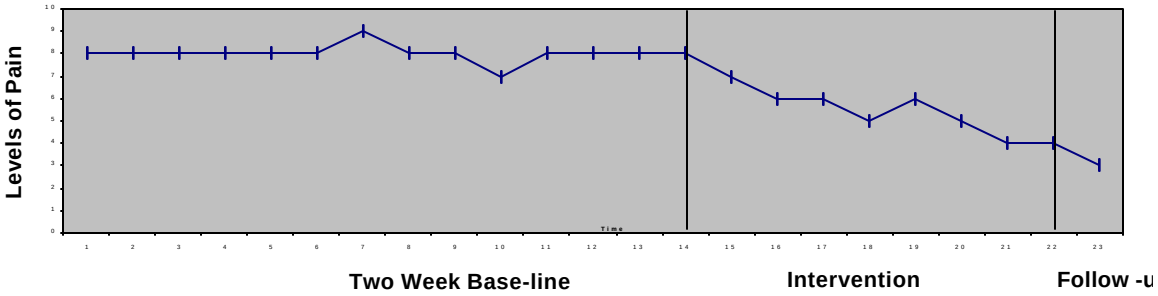


The activity levels, recorded on a scale of 1 (indicating least activity) to 10 (indicating maximum activity), depict an almost constant level of inactivity during

base-line, varying between 4 and 5 points. With the introduction of the intervention, there is a noticeable increase in the activity levels over the eight-week period, with levels of activity as high as 9 being reached at follow-up.

The pain levels recorded on a scale of 0 (indicating no pain), to 10 (indicating severe or maximum pain) reveal a relatively stable base-line between 7 and 9 points recorded during base-line. With the intervention, the pain levels gradually decrease to a level of 3 points at follow-up.

Pain Levels Recorded During Base-line, Treatment and Follw-up for Participant: Steven



4.5.2. Evaluation of Medication Reduction:

The medication reduction program was adhered to, without difficulty. As the intervention continued, Steven became less reliant on his medication. The medication reduction process went relatively effortlessly, his intake monitored throughout the process using medication charts (see appendix A). Steven complied completely with the medication reduction.

4.5.3. McGill Pain Questionnaire

The McGill Pain questionnaire was presented at assessment and at follow-up (see section 3.4.4a).

Present Pain Intensity (PPI)

The PPI is obtained by the score to the response to the question: " Which word describes your pain right now?" This index of measurement is recorded as a number from 1 to 5, where 1= mild; 2 = discomforting; 3 = distressing; 4 = horrible, and finally, 5 = excruciating.

PPI at assessment:	5 (excruciating).
PPI at Follow up:	1 (mild).

From the above scores, the difference in PPI between assessment and follow-up is clearly demonstrated, and noticeably indicates an intervention effect, with a decrease in pain intensity of four points.

Number of Words Chosen (NWC) - Pain Rating Index (PRI)

The PRI based on the Rank Value system was used. The PRI permits measurement of the sensory, affective and evaluative dimensions of the pain.

NWC AT ASSESSMENT:		NWC AT FOLLOW-UP
PRI Sensory (max 42)	32	3
PRI Affective (max 14)	10	0
PRI Evaluative (max 14)	5	0
PRI Misc. (max 17)	9	0
PRI Total (max 78)	52	3

From the results above, when compared with the available mean scores (see table Appendix F) it is evident at assessment, that the scores in all five categories were much higher than the established mean scores. The sensory and affective scores specifically are highest. These high scores indicate the perception of subjective levels of both sensory as well as affective distress. Steven's profile

reflects a higher affective component to his pain (indicated by a greater use of affective descriptors). This high score reflects the degree of affect associated with his pain. This observation is confirmed by the depression and anxiety inventories as well as his subjective complaints of physical and psychosocial disability.

According to the users' portfolio (Weinman, Wright & Johnston, 1995), a higher score is indicative of a higher pain report. Clearly, the pain report on assessment indicates high levels of pain (in contrast to the established mean scores) , a total score of descriptive pain of 52 (maximum possible score = 78). After the intervention, the scores of the PRI drop to a mere score of 3, indicating a significant reduction in sensory, affective and evaluative components.

4.6. INTERPRETATION OF THE RESPONSE TO AND THE EFFECTIVENESS OF TREATMENT

4.6.1. Internal Validity

To ensure internal validity (which concerns the validity of claims about causal relationships), Edwards (1990) suggests the need to evaluate the effectiveness of the intervention by considering alternative explanations and competing theories. It is therefore important to consider alternative factors that can lend support to the conclusion that the positive outcome was related to the specific intervention. These factors will now be discussed.

a) Spontaneous Remission:

Spontaneous remission needs to be considered as possible an alternative explanation to the treatment outcome. From the history, it is evident that the pain problem Steven experienced, was of a chronic nature, rather than acute. Further, from the initial base line measures, it is evident that the scores were relatively constant, and his chronic pain condition did not improve with the simple passage of time (Kratochwill et al, 1984). Steven had previously consulted a number of health practitioners, with minimal relief experienced. From the quantitative data collected, it is evident that the changes that occurred with the introduction of the treatment, assessed by a series of repeated measurements, are immediate, and large. In light of this, spontaneous remission is an unlikely alternative explanation for the changes that were sustained.

b) Extra-therapy Factors

A possible alternative explanation of the remission of symptoms is that possible life-changes may have occurred outside of the therapy process. This non-specific therapy factor needs to be considered, as life-changes have been shown to have a considerable effect on the expected outcome (Kratochwill et al, 1984). It is extremely unlikely that any major events occurred in Steven's life during the intervention program that may have impacted on treatment outcome. The researcher was unaware of any such changes. Due to the collaborative nature of the relationship, it is expected that had there been any such changes, Steven would have informed the researcher thereof. Thus the alternative explanation of the non-specific extra-therapy factor is lessened.

c) Client Expectations:

Client expectations offer a further alternative explanation for the remission of symptoms. Expectancy effects can be self-fulfilling and thereby contribute to positive treatment effects. Implicit in psycho-education and the collaborative nature of cognitive behaviour therapy, the therapist attempts to generate realistic client expectations (as opposed to idealized expectations). Previous unrealistic or idealized expectations, which had not assisted in alleviating the problem up until the intervention, need to be clarified. The fact that Steven was motivated to participate in the treatment program, as well as the fact that he was aware of the fact that the researcher himself had suffered with chronic lower back pain, and had experienced relief possibly contributed to his expectation regarding recovery. Client expectations, however, are not necessarily sufficient, as the participant still

has to experiment with the cognitive and behavioural changes. It will be shown (section 4.6.2) that the cognitive and behavioural techniques allowed for the observed outcome.

d) Therapists' Concerned Interest

The therapist being empathic and supportive has been cited as an alternative explanation for a positive therapeutic outcome (Edwards, 1990b). The issue of the qualities of the therapist and the participant liking the therapist are evidence of a good working therapeutic alliance. This non-specific therapy factor has been widely observed and needs to be taken into account when considering internal validity (Edwards, 1990a; Kratochwill et al, 1984). Cognitive behaviour therapy relies heavily on establishing a collaborative, empathic, supportive relationship between practitioner and client. This relationship was clearly achieved between the researcher and Steven, and is a central aspect of cognitive behaviour therapy. It seems unlikely however that the specific cognitive and behavioural changes that contributed to this would have occurred spontaneously as a result of the warmth of the therapeutic relationship. It will be argued in the following sections (see 4.6.2 below) that the individual treatment components (psycho-education; goal setting and contracting; self-monitoring, medication reduction; stress management; physical exercise and cognitive restructuring) played a role in breaking the pain-cycle.

4.6.2. Specific Skills Acquired as A Result of the Treatment Program

Having considered the non-specific and extra therapy factors that provide alternative explanations for the observed changes in the outcome measures, the discussion progresses to consider evidence from the case narrative for the impact of the specific components of the intervention program designed around the case conceptualization.

a) Psycho-education

Psycho-education made the intervention credible and assisted in providing Steven with the motivation for behavioural change. With the introduction of the psycho-education, Steven's perspective shifted from a sensory view of pain to a more multi-faceted view, with cognitive, affective and socioenvironmental factors, considered as contributors to the experience of pain. The reconceptualisation stage proposed by Turk and Meichenbaum (1994) was a central feature of cognitive behavioural treatment. This initial step in the treatment laid the groundwork for effective cognitive-behavioural change. The acceptance of the initial case formulation by Steven was a vital factor in order to initiate and engage in the treatment program (Brand, 1990; Follick, Zitter & Ahern, 1983, Salkovskis, 1988).

Evidence from the assessment suggests an initial sensory conceptualisation for his pain, with a limited awareness of the biopsychosocial factors that contributed to his pain experience. By educating Steven in session 1 (section 4.3.1) and by having him acknowledge the multiple impact of the pain on his life, he began to

reconceptualize the pain process and understand more about pain mechanisms. The evidence for the reconceptualisation that he achieved from the psycho-education is clearly observed at treatment follow-up, when he claimed:

> " I have learned from the lectures and the graphs that my pain is not just a physical entity, but has to do with a whole lot of other things that I have learned to tackle one by one… Specifically, I have learned about the effects of stress, depression, and the impact on my self-esteem…"

This statement provides clear qualitative evidence of the role of his chronic pain in his life. The fact that the psycho-education was credible to Steven provided him with the impetus and motivation to achieve subsequent behavioural change, and to shift from the centrality of the chronic pain in his life.

According to Foa and Emmelkamp (1983), a prominent predictive variable is changed versus unchanged thought patterns with respect to pain. As demonstrated with Steven, the change in thought patterns, lead to improved pain management. Through the educational aspect of the program, Steven gained an awareness of the centrality of the dysfunctional negative automatic thinking that he had been prone to utilize.

Jensen, Turner, Romona, and Karoly (1991) claim that beliefs and coping have a strong relationship to adjustment to chronic pain. They add that patients who believe that they can control their pain, who avoid catastrophizing and who believe that they are not severely disturbed, function better than those who do

not. The material generated in session six provides evidence that coping mechanisms that Steven learned and internalised as a result of psycho-education (and cognitive restructuring) have contributed to the positive intervention effect and his subsequent improvement. In addition, Steven's response in the follow-up session provides additional evidence for this. He reported:

> "I think that in fact my pain is both physical and emotional. I have been looking at all the physical facts, and have never really thought about how my past experiences have affected how I cope with things. I seem to somehow be coping much better….

b) Skills Acquisition and Consolidation

This stage provided practice in specific cognitive and behavioural coping skills geared toward the alteration of response to environmental contributors to pain and to coping with specific symptoms. It is hypothesized that the acquisition of the specific strategies described below, contributed to the positive treatment outcome:

i) Goal Setting and Contracting

Goal setting assisted in clarifying treatment expectations, emphasising the possibility of change by focusing on future possibilities, rather than simply on symptoms and problems. Specifically, the goals that Steven planned to achieve (e.g., increased activity, less time spent lying down) assisted in setting up realistic targets that could be readily achieved, aiding in his motivation. The subsequent successful achievement of the planned goals acted as a powerful

motivational tool. When Steven returned to the third session for example, and had achieved the target goals, his sense of excitement at his success was apparent. In addition goal setting helped reinforce the notion that Steven had to be proactive and take responsibility for his pain management (Brand, 1990; Foa & Emmelkamp, 1983; Salkovkis, 1989).

The short term weekly contracting proved to be a powerful technique in order to implement behavioural changes. This process has been supported by other programs (Brand, 1996; Freeman, Pretzer, Fleming & Simon, 1990). Contracting was done at the end of each session, so that skills learned could be generalized and applied in the following week's contract. This aided in enhancing his sense of control and self-efficacy (Craig, 1994). Steven had the opportunity to select his own weekly and monthly goals, which additionally added to his sense of control and autonomy. Examples of goals that he chose to achieve were the choice to play with his child and to fix the roof of his house - activities that he had previously avoided due to his pain. The successful completion of these goals was reportedly empowering for Steven. In addition, this fostered a shift away from dependency on the professional, and strengthened a sense of internal locus of control (Klaber-Moffett, Hughes & Griffiths, 1993).

Once the goals of the programme were agreed upon and initiated, the active intervention began, which attempted to provide practise in specific cognitive and behavioural coping skills geared toward the alteration of response to environmental pain contributors, negative beliefs regarding the nature of the pain and coping with specific symptoms.

ii) Self Monitoring

Steven was invited to keep personal records of his experiences recording his activities. The aim of self-monitoring is to generate awareness, which allows for the capacity to change. An example of this, which provides evidence of the effectiveness of this aspect of the treatment, is the time scheduling exercise, (section 4.3.1c) which confirmed that he was not continually in pain, but that his pain levels varied. By conducting the self-monitoring exercises, Steven successfully noted situational variables as well as his negative automatic thoughts (see appendix E), which preceded the emotional and behavioural responses. Developing awareness into the habitual thinking patterns (i.e. automatic reactive cognitions) perpetuating and maintaining his symptoms, along with cognitive restructuring (which occurred in session 5 – see later) was beneficial to Steven in preparation for implementing behavioural change.

iii) The Use of Medication

The idea that analgesic medication should be taken at a time and not on a symptom basis was accepted readily by Steven. His awareness of the harmful side effects, knowing that the “medication was bad for [him]” aided in his

motivation to begin the systematic withdrawal of the medication as the pain symptoms abated. The time based medication regime also provided a stable, predictable base from which physical and cognitive/ behavioural strategies were used (Lloyd, 1996). As the treatment progressed (at the beginning of session 5 when we reviewed his medication intake) Steven became increasingly confident that the medication was:

> "…Just a tool, which aided me… I am learning to take control of my pain, without relying on the drugs to do so for me" .

This statement provides qualitative evidence of a growing confidence and trust in the use of the physical, cognitive/behavioural aspect of the program (Lloyd, 1996; Turk & Meichenbaum, 1994).

iv) Stress Management - Relaxation Training

Stress management, through progressive muscle relaxation (Jacobson, 1938) and guided imagery, assisted in reducing physical tension and pain intensity levels (Turk & Meichenbaum, 1994). In session 4, after completing the relaxation exercise, he reported that:

> "Learning to relax is so useful because I have never really relaxed before. Now I can just shut down and relax my mind and body … it feels so good to be able to be in control of the pain".

The relaxation exercises helped alleviate the pain and strengthened his belief that he could exert control during periods of stress and pain. This reinforced the belief of control and corrected cognitive distortions of incompetence, impotence

and helplessness. These thoughts previously exacerbated the pain and created a self-fulfilling prophecy, which contributed to the pain-cycle and subsequent levels of pain.

v) Physical Exercise

Prior to the implementation of treatment, Steven had adopted an inaccurate belief regarding the nature of his symptoms, (namely that "something is wrong [structurally] with my back" – see session 5, section 4.3.4.). This resulted in a confirmatory bias with respect to illness related behaviour (Salkovskis, 1989). As a result, Steven selectively noticed and remembered information which was consistent with his negative beliefs about his problems. This bias contributed directly to the maintenance of his pain problem as well as to anxiety about health.

The anxiety about health extended to fears associated with exercising. Steven believed implicitly that exercising would worsen his condition (see section 4.3.4.). Furthermore, this belief was strengthened by previous instructions from his doctors to avoid activity. This provides clear evidence that fear related to physical activity led to avoidance of physical activity and subsequently contributed to the pain-cycle.

The implementation of low impact aerobic exercise and stretching was critical to management success. The home program proved to be an effective modality for Steven, assisting in providing the impetus for increased activity. At the beginning of session four, when reviewing the homework, Steven commented:

> " I am feeling much better now that I am managing to exercise. I can't believe how strong I'm feeling, both physically and mentally. I'm much more confident that I can do the exercises, without injuring myself…"

This qualitative statement provides evidence that by breaking the cycle of inactivity and simultaneously challenging his cognitive distortions related to the fear of activity, cognitive and behavioural changes were achieved (for a more detailed description of the mechanics of this process, see the pain cycle below).

vi) Breaking the Pain Cycle

Targeting of cognitive and affective variables impacting on the pain cycle occurred in conjunction with the above-mentioned acquisition of skills. For the purpose of clarity, this aspect of the program will be discussed separately. As described in the results section (4.2.3.3.), the pain cycle that occurred for Steven is exemplary of the features described in the literature.

Briefly stated Sarno (1991) hypothesises that physical pain acts as a 'trigger', which 'fires' the negative thoughts. An example of such negative thoughts in Steven's case were identified in session 3, namely apprehension with regard to physical activity. The negative thoughts (e.g. "If I exercise, it will make things worse") subsequently triggered emotions namely fear, dread and panic. These feelings, it is hypothesised by Sarno (1991), resulted in an autonomic nervous system response, whereby a reduction in blood flow to the muscles begins, with the resultant pain and spasm due to oxygen deprivation. An innocuous situational

trigger (example Steven bending down and feeling physical pain) triggered a sequence of negative thoughts, for example in Session 4 Steven reported the fear of "being paralysed" or "out of work". The catastrophic fortune-telling cognitions produced anxiety, making it more painful due to increased muscle spasm, which in turn generated more anxiety and reinforced the initial belief. The result of the anxious thoughts lead to depressing ruminations (e.g. in session 3, when in pain, he reported having the automatic thought: "It's no use, it [the pain] just gets worse and worse, I'll be an invalid for the rest of my life"), and an increase in pain behaviours, (e.g. lying down as a result of the pain, taking medication).

So, the negative self-statements (e.g. "I cannot cope with the pain, it's getting worse and worse") increased the focus on the pain, with a resultant increase in negative affect, namely feeling helpless and hopeless about his condition. As this cycle of negative thoughts repeated itself, a self-perpetuating rhythm was set up. These statements provide evidence that Steven's personal style of interpreting the meaning of painful experiences thus influenced the emotional impact, as well as the consequent levels of pain (Brand, 1996; Turk & Meichenbaum, 1994). When this process occurred, Steven's focus centred exclusively on the pain, detracting from other activities or "well behaviours". For example when experiencing such thoughts, Steven would engage in pain behaviours namely lying down, taking medication etc.

Thus, the role of cognitions, emotions and the consequent physiological responses that were set in motion in response to the aforementioned cycle perpetuated and maintained pain.

By teaching Steven to break the cycles of negative automatic thinking by dialoguing with, and correcting his dysfunctional beliefs – based on errors in processing which distort perceptions and interpretations (as described in the section 4.3.4.) - the pain episodes became short-lived. Specific interventions aimed at breaking up the pain cycle occurred with Steven. Drawing on the psycho-educational principles of the pain cycle, Steven was educated to re-conceptualize the pain by breaking up the pain cycle into its various components, namely the initial physical sensation, followed by the negative cognitions and resultant feelings. So, for example in session 3, when he identified that bending down caused pain, he was taught to de-focus on the physical sensations and examine his automatic thoughts, which reflected his helplessness and despair. By correcting the belief, that he in fact was in control of his pain, and was not "going to an invalid for the rest of [his] life", Steven learned to break the vicious self-defeating, re-enforcing cycles that spiraled downwards leading to affective states of anxiety, depression and inactivity. By effectively breaking the negative feedback loops, Steven gained a sense of 'control' over his pain and gradually managed to increase his activity levels and to lower his pain levels.

As a result of the therapeutic intervention, Steven began to develop his own self-instructions, (an example of a self-instruction he devised was: "I can beat this, I

am in control of my pain"). This process has been shown to be effective in enhancing self-control (Craig, 1994). The evidence of the aforementioned statement confirms the self-control achieved and proved to be crucial to the effectiveness of the treatment.

The results achieved for Steven confirm previous studies which show that an internal locus of control, coupled with the belief that the pain/stress can be effectively controlled and successfully managed using the techniques applied in the treatment program were associated with more effective coping (Brand 1996; Klaber-Moffett, Hughes & Griffiths, 1993). Steven confirms this with the statement made at follow-up:

> "I feel I have control over my life again. I know that it may never go away completely, but I feel confident that I can control it now without depending on my doctor, or drugs…"

Vii) Addressing Early Maladaptive Schemas

The sequential model of pain proposes that pain stimuli produce sensory responses that activate emotionally laden memories. The collective effect of these emotional and sensory components was subjectively experienced as physical pain. There was considerable evidence for this process in the present case.

As described in the results, the identification of the Early Maladaptive Schemas (Young, 1990) of abandonment; emotional deprivation and emotional inhibition were apparent in the development and maintenance of Steven's chronic lower

back pain. As described in the case conceptualisation, the E.M.S.'s developed in response to his unmet emotional needs. The abandonment and emotional deprivation schemas for example may have developed as a result of the perceived unreliability of those available for support and connection. When his parents or his ex-wife failed to care for him during his pain episodes, this belief was reinforced, and activated in the belief as described in session 5, that: "No body loves me". When his personal needs were unmet, Steven experienced emotional distress, namely sadness. This occurred as a result of perceived and or actual separation, abandonment, rejection or indifference from his parents as child and finally his ex-wife in adulthood (Young, 1992). This finding is supported by Elton, Hanna and Treasure (1994), who concluded that patients may be predisposed to cope maladaptively after the experience of parental indifference in early life.

The E.M.S. of emotional inhibition, namely the difficulty expressing or discussing feelings due to the expectation that the loss of esteem, embarrassment or invalidation (Young 1992), clearly developed for Steven at an early age. This is evidenced for example in the case history, when he appealed to his father regarding his fear of hospitalization, and he was met with indifference and abandonment.

In the case conceptualization, it was hypothesized that the EMS's were partially responsible for contributing to the maintenance of Stevens' chronic pain. So for example, the schema of emotional deprivation is activated in a situation where

Steven feels un-supported. Emotional pain is experienced as a result, but is suppressed through the process of schema avoidance (due to the high levels of unpleasant affect). Through the process hypothesized by Sarno (1991), the affective charge is then translated into physical pain.

Using techniques that systematically reevaluated the negative, inaccurate beliefs about himself, through logical analysis and reality testing, Steven began challenging and reevaluating his beliefs about himself, the world and his relationships with others. In session 5, when the E.M.S.'s of abandonment and emotional deprivation were activated, the cognitions were tracked back to their historical development in his life. As described in session 5, insight was gained into the schema maintenance, and how it contributed to the maintenance of his pain, namely through the expectation: "If I am in pain then people will take care of me". By correcting this belief, the provision of schema change was enabled. Through this process he began to acquire new skills (e.g. The increase of social and recreational activities which lead to feelings of self affirming behaviour through connection with others thereby challenging the previous beliefs of being worthless and unlovable), enhanced self-worth and living with less emotional distress, and lowered levels of chronic pain.

viii) Communication and Assertiveness Training

Coupled with schema dynamics described above, Steven's chronic lower back pain was maintained and exacerbated by his inability to express negative feelings, and appropriately express his needs. Training in communication and

assertiveness was conducted in order to address the issue of anger and alexithymia which has commonly been observed in chronic pain patients who, as a result of the inability to express themselves effectively, internalize their anger, resulting in increased stress and pain (Brown & Pedder, 1991; Burns, Johnson, Devine, Mahoney & Pawl, 1998; Kawanishi, 1991; Sarno, 1991).

When Steven experienced situations when he had difficulty expressing his needs or frustrations (e.g. with his ex-wife or with his colleagues at work), increased tension, both emotional and physical, was experienced, with the resultant intensification of lower back pain. Five categories of emotions: depression, fear, anger, joy and confusion (Gordon, 1975) were identified and discussed. These 'feeling words' were introduced in order to expand Steven's affective vocabulary. Examples of specific techniques (see section 4.3.5.b) utilized in order to facilitate improved affective expression included:

1. The "I" message skill

The "I" message skill (Gordon, 1975) was taught to Steven, highlighting the difference in messages when interpersonal problems and conflicts were encountered. Steven was encouraged to acknowledge his own feelings and experience by using the word "I" rather than bypassing this step, and blaming someone else for his discomfort. This aided in promoting confidence and control in interpersonal situations, lessening stress and tension levels, thereby decreasing pain.

An example which provides evidence of how the failure to adequately express emotion contributes to the pain cycle was described in session 6, when he was incorrectly blamed by his boss for an error for which he was not responsible (see section 4.3.5b). By using the template described Steven learned to express himself with the consequent relief in the breaking of the pain cycle.

2. Problem Solving Communication

Alternative communication based on problem solving rather than blame was explored. When Steven experienced irritation or anger in dealing with a problem he was encouraged to use the following template to communicate his problem:

1 = What the problem is?

2 = How I feel about it?

3 = What I want?

This technique was useful for Steven in owning and respecting his feelings, and for the first time learning to communicate these feelings to others. These techniques were practiced at work and proved to be effective. Learning communication skills proved useful for Steven as it helped lessen his tension and pain levels. Evidence of this was provided at follow-up, when Steven claimed:

> "…Learning to express myself more clearly, without blocking how I am really feeling has helped me to let go of so much of the tension that I used to feel… especially at work, and even with my parents… I talk about things now, it has been really difficult for me,

but I'm learning how to communicate instead of holding everything in…"

4.7. Concluding Comments Regarding the Effectiveness of Treatment.

Bearing in mind the fact that chronic pain is a complex, subjective phenomenon that is uniquely experienced by each participant, it is hypothesized the combined effects of the above mentioned components of the intervention program contributed to the cognitive, behavioural and emotional adjustment to Steven's chronic pain (Turk & Meichenbaum, 1994; Turk & Rudy, 1986).

This case study provides extensive evidence of the mechanisms described by Sarno (1991), Turk and Meichenbaum (1994), and others work in setting up and maintaining the pain episodes. By using the interventions described, the pain cycle was effectively broken for Steven, allowing him to take personal control and responsibility for his pain. This led to an increased sense of self-efficacy and ability to cope. The case-material provides evidence that the components of the intervention were in fact responsible for the changes that occurred and not due to the alternative explanations and extra-therapy factors.

The fact that Steven developed good insight into his illness, was skilled at identifying his negative thoughts, was compliant with his treatment and was therapeutically motivated were good prognostic indicators. In addition, he reacted well to the rationale behind cognitive behaviour therapy and expressed willingness to work hard and collaboratively at dealing with his pain. He readily

accepted the case-conceptualisation, which gave credibility to the treatment. Finally, the concept of self-efficacy, which has been shown to be a key predictor of treatment success (Brand, 1996) was an important factor, as it has an influence on the motivational role in pain control. These factors assisted in Steven taking responsibility for his pain management, to begin to learn how to control it and cope with it.

5. RESULTS FOR PARTICIPANT JOHAN

The second case to be presented is Johan. Although he appeared to benefit from the program, he chose to withdraw prematurely. The case illustrates the importance of an open collaborative relationship with the therapist and of a commitment to the treatment process.

Johan is a 43-year-old male, who recently resigned from the South African National Defense Force, (having worked there for eighteen years). His decision to resign was voiced at the beginning of the treatment. He is currently working as an estate agent. He has been married for seven years and has two children (age2 and 6). He presented as a squat, solid over-mass man (100 kilograms), he appeared to be sensitive and had a friendly demeanor. He presented casually yet neatly dressed. Posture and movement seemed uncomfortable, and he walked with a slight limp on the right.

5.1. CASE HISTORY

Due to the limited nature of the intervention with Johan, a brief case history is presented. In 1991, he injured his back on duty, while lifting a heavy object in Stores (SA Military). At this time, back pain receded with non-operative treatment, including bed-rest and anti-inflammatory medication. The pain settled, but he had intermittent episodes of pain. In February 1996, he re-injured his back when he moved a safe at work, and developed severe lower back pain. He was hospitalized for three days followed by three weeks sick leave. In March 1996, he lifted a heavy water bower, developed severe back pain and was treated with

physiotherapy, medication and time off work. He returned to work, but the pain continued. It is noteworthy, that prior to his first pain incident, in 1991 during his employ at the military, Johan had never experienced any pain-related symptoms.

5.2. DIAGNOSTIC CONSIDERATIONS AT ASSESSMENT

a) Medical Assessment

Medical investigations using M.R.I. reported:

> "No significant abnormality in relation to the intraspinal or intraforaminal components… conforms to normal anatomical appearances … Minor degenerative pathology is seen, but this is unlikely to be of significance in relation to the patients' clinical problem."

A C.A.T. Milogram was also performed, which was "absolutely normal". Dr Wilson's' final opinion was that the patient had "Intractable low back pain, which is unresponsive to any therapy…"

Notes on computer archive suggest a six year history of chronic lower back pain with over 243 days of sick leave taken in the past year. A medical-board was conducted in February 1997 and he was re-classified to the rank of G3-K2 with physical restrictions, light duties and sedentary tasks to protect his back.

b) Medication Usage:

Johan reported using anti-inflammatories (Voltarin), dosage 400 mg, as well as painkillers (Stopayne), periodically since his initial pain episode in 1991. He was

aware that “they were not good for [him]”, and had always tried to limit his dosage and take it only when he “absolutely needed it”. The medication reportedly offered “temporary relief”.

c) Psychometric Data and D.S.M. – IV Diagnosis

At the initial assessment and base-line recordings conducted over a two week period, mean pain on the subjective pain rating scales was moderate - 6.2 (max -10). Mean activity , measured on the activity lists was greatly impaired - 4.3 (max – 10). Mean depression, recorded using the Beck Depression Inventory was 24,78 (indicating mild depression), and finally, mean anxiety recorded using the Beck Anxiety Inventory was 15.78 indicating mild levels of anxiety.

D.S.M. – IV Diagnosis

Axis I: Pain Disorder (307.80 Associated with psychological features), chronic

Axis II: No Diagnosis

Axis III: No Diagnosis

Axis IV: Occupational problems (e.g. change of work).

Axis V: G.A.F. 50 (current).

5.3. PRESENTING PROBLEM

On assessment, it appeared that Johan’s pain had significantly disrupted his life. He was, at the time, on sick leave and was “at home more often than at work”. His chief complaint was “lower-back pain, that moves in an upwardly direction, and intensifies when sitting or standing too long in one position”. He complained

of the pain affecting his sleep, he reported trouble falling asleep and waking up during the night because of the pain". He claimed that the pain began in 1991 from "an injury at work, whilst moving a heavy safe, when the pain just suddenly began". His initial explanation for the pain (using explicit medical terminology) was physically based: "my pain is due to "partly worn facets and discs, with irritation in the nerves". He noted that his pain occurred several times a day (as opposed to his being in continuous pain).

Pain was intensified by: staying in one position for too long, walking too far or over-exercising. Pain was decreased by: lying down – two to three times a day for an hour, and self medicating with anti-inflammatories and painkillers. Dr. Wilson referred Johan with chronic lower back pain (mainly on the left side and referred pain in the right leg) that was unresponsive to conventional medical treatment.

Current complaints: He suffers from lower back pain as the day progresses, but not on awakening. Towards the end of the day his time spent sitting is less than 30 minutes. He can stand for fifteen minutes, is unable to lift light-weight objects and cannot even carry his fifteen month old child. In addition, he complains of numbness in his feet and toes, as well as neck, shoulder and inter-scapular pain. Coughing (smoking related) exacerbates the pain.

5.4. CASE CONCEPTUALISATION

5.4.1.Predisposing Factors:

There appear to be few predisposing factors in Johan's history. He reports having grown up in a well adjusted home, which he described as "a warm one, with a good childhood". He has not suffered with pain of any kind up until 1991 during his employment in the military.

5.4.2. Precipitating Factors:

Based on the evidence, it seems that Johan's pain began with a physical causation (when lifting a heavy object) and has come to be maintained by psychological factors (since physical examinations have failed to provide structural evidence).

5.4.3. Maintaining Factors

The reaction to the perceived impairment has included changes in mood, cognitions, behaviour and physiological functioning. His levels of inactivity, for example house-hold chores, interaction with his children and leisure activities (e.g. fishing) have been greatly reduced as a result of the intensity of his pain.

Johan's cognitive distortions intensified the impact of his dysfunctional beliefs. He is prone to the distortions of misattribution (e.g., "If I have pain, then, there is something wrong with my spine"), as well as catastrophizing (e.g., "There's no use, I'm in constant pain, that carries on… It's never gonna get better ").

Johan's preoccupation with his pain and fears associated therewith have resulted in a decrease in activity that has several effects: The unoccupied time provided additional opportunity for depressing ruminations, as his pain behaviours increase (namely increased time spent lying down, reliance on medication, moaning and groaning).

Pain is experienced and negative thoughts and feelings are activated (e.g. "I cannot cope with the pain, it's getting worse and worse…"). These negative self-statements in turn intensify the perceived levels of pain and the cycle reproduces itself, becoming increasingly worse. In addition to this, the cycle of inactivity impacts in reinforcing the belief that activity causes pain. Activity is thus avoided at all costs. The pain levels cause him to catastrophise as he focuses on the physical pain, intensifying his inactivity.

Whether or not Johan has been malingering in order to avoid work duties within the military, remains to be uncovered, although this seems to be a strong possibility in light of the evidence. It is of interest how quickly his pain behaviours changed on leaving the military system. With his new job as an estate agent, his pain levels were much the same, but he was, nonetheless, motivated to go to work, and his activity levels increased somewhat.

What seems most relevant in terms of the features significant to the development of the problem, with regard to malingering, is the extent of absenteeism - a total of 243 days absent in a period of one year.

What was most apparent was Johan's negative attitude towards the military and his disapproval of the treatment he had received from the authorities. He continually criticized the 'system' for its inefficiency and its inability to sufficiently take care of its personnel. Moreover, he appeared to be angry and frustrated that he had not received his disability grant (approximately R20 000) following the medical board.

5.5. SYNOPSIS OF TREATMENT PROGRAM:

The case conceptualisation and treatment formulation were designed within a cognitive-behavioural model. The initial psycho-educational sessions were closely structured. The intervention for Johan, unfortunately, ended prematurely, when he chose to terminate mid-way through the program. Possible reasons for this will be offered in the discussion. Johan attended the first four sessions. Thereafter he continually altered his appointment times and subsequently failed to arrive for his appointments. The researcher attempted to contact Johan telephonically to inquire as to his progress and whereabouts, but he continued to make excuses in an attempt to justify his absence. We re-scheduled several times however, the pattern repeated itself. When I eventually confronted him with regard to his attendance failure, he chose to terminate.

5.5.1. Sessions 1and 2 Psycho-education

Johan's initial expectation about his recovery was: "Unlikely". This indicated his initial lack of motivation and hopelessness, as his pain was so longstanding, debilitating and intractable. Previous treatment attempts included visits to

anaesthetists, general practitioners, orthopedic surgeons, physiotherapists, and a psychologist (1996). “I have seen so many specialists, they couldn’t do it for me… my problem is beyond them….” The above statement confirms his hopelessness and despair as well as his reliance on the medical profession for pain relief.

a) Goals

Goals that were collaboratively agreed upon during initial contracting were: to increase activity through a graded exercise program (with the Physiotherapy Department); to increase social activity, through increased recreational activities, less time spent lying down and sleeping; and finally to undergo a process of medication reduction.

As was the case with Steven, the psycho-educational training assisted Johan to reconceptualize the pain process and understand more about pain mechanisms. We identified that he had previously focused on the Sensory Model of pain. Viewing his pain sequentially assisted him in an openness towards addressing the collective effect of situational variables, psychological and social factors that influenced the pain experience. Once this process was clearly understood, self-monitoring exercises were conducted in order to collect data regarding the circumstances, duration and intensity of his pain. Time schedules confirmed that he was not in pain constantly, but that the pain varied throughout the day, being worst when at work.

b) Graded Exercise:

An exercise program was provided by the Department of Physiotherapy. This included pelvic tilts, leg lifts, knee bends, hip abduction sit-ups, shoulder flexion and abduction, and walking. Johan succeeded in adhering to the program and his activity levels increased somewhat (refer to graphs section 5.7).

c) Medication Reduction:

Johan succeeded greatly in reducing his medication intake. He relied exclusively on one analgesic prescribed by Dr Wilson, as opposed to his previous reliance on multiple analgesics and anti-inflammatories. He however failed to stick with taking his medication at prescribed times, and chose to use it p.r.n. i.e. when "absolutely necessary".

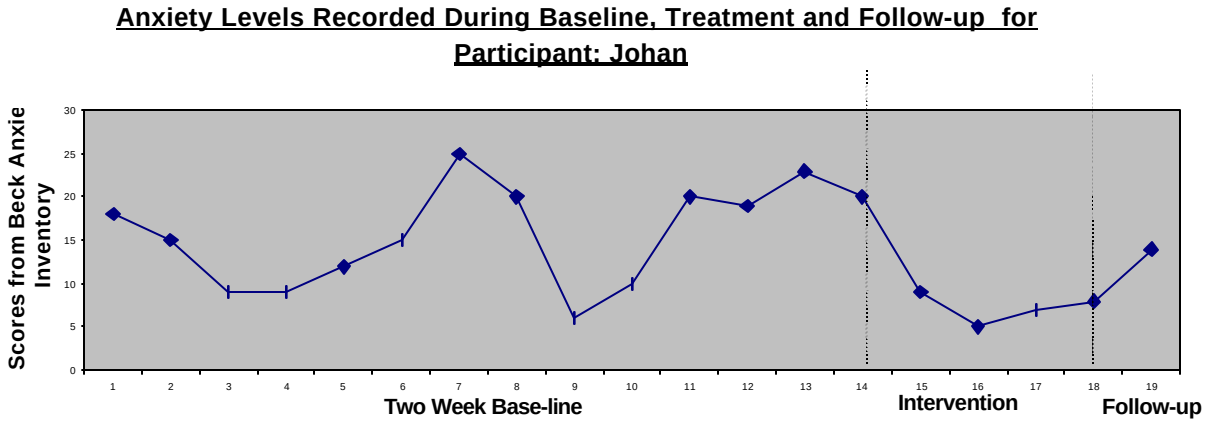
c) Relaxation Training:

Progressive Muscle relaxation and guided imagery were taught, which assisted him greatly in relaxing and controlling his pain levels.

Due to his leaving the program stages 3-5, as previously described in the methodology chapter, were not carried out .

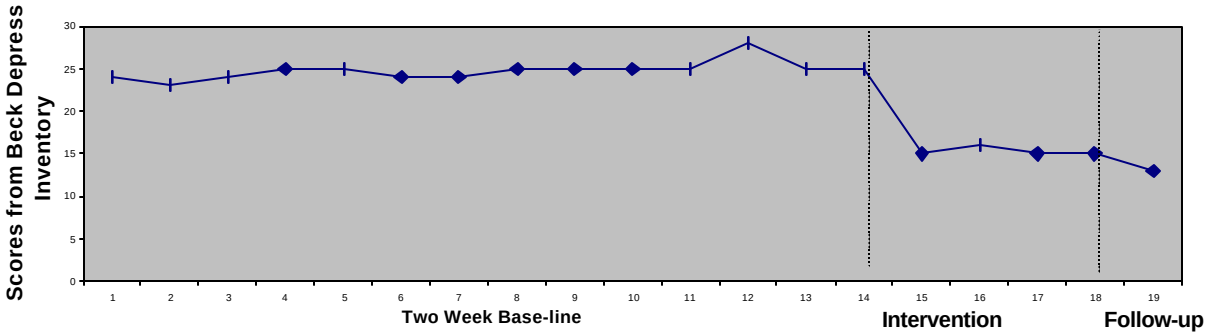
5.6. SUMMARY OF QUANTITATIVE DATA:

5.6.1. Graphs of Repeated Measures



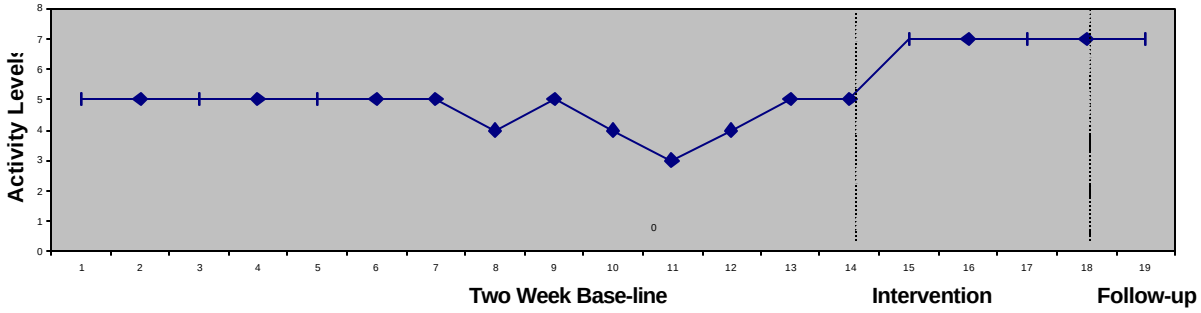
The base-line scores of anxiety collected over the two week pre-treatment phase, reflect fluctuating levels of anxiety with scores ranging between 6 and 23. An average score of 15.7 was obtained (indicating low levels of anxiety). Severity of symptoms were generally recorded at mild and moderate levels, namely: inability to relax, unsteadiness, numbness and tingling. A marked decrease in anxiety is observed during treatment phase, this lifts slightly at follow up, with a score of 14, indicating low levels of anxiety.

Depression Levels Recorded During Base-line, Treatment and Follow-up for Participant: Johan



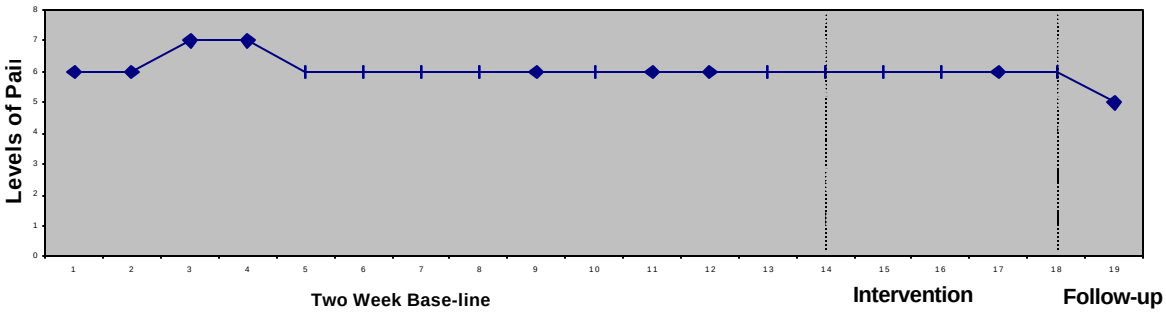
The pre-treatment levels of Depression recorded on the Beck Depression inventory reveal stable scores ranging between 23 and 28, with an average of 24.7, indicating mild levels of depression. Qualitative impressions suggest themes of guilt, irritation, inability to work, preoccupation with somatic functions, sleep disturbance and fatigue. The graphs depict a decrease in depression levels at follow up, with a final score of 13 indicating a normal level of depression.

Activity levels Recorded during Base-line, Intervention and Follow-up for Participant: Johan



The activity level graphs depict relatively stable levels of activity ranging between 3 to 5. With the intervention, and at follow up, these levels raise to 7.

Pain Levels Recorded During Baseline, Treatment and Follow-up for Participant Johan



The pain levels reveal stable levels of pain throughout, with a slight decrease in subjective pain from six to five.

5.6.2. McGill Pain Questionnaire

Present Pain Intensity (PPI)

PPI at assessment:	4 (horrible).
PPI at Follow up:	2 (discomforting).

A demonstrable effect (two points) is reflected in the difference between PPI scores collected at assessment and finally at follow up.

Number of Words Chosen (NWC)- Pain Rating Index (PRI)

NWC AT ASSESSMENT:		NWC AT FOLLOW-UP
PRI Sensory (max 42)	21	11
PRI Affective (max 14)	6	3
PRI Evaluative (max 14)	5	1
PRI Misc. (max 17)	10	4
PRI Total (max 78)	42	19

The results of the Pain Rating Index depict highest sensory scores, with affective, evaluative and miscellaneous scores being lower. These scores are all higher than the mean scores obtained from previous studies thus indicating greater severity (see Tables in Appendix F). This suggests that Johan's focus is on the sensory experience of his physical pain. The high affective PRI suggests perception of subjective levels of sensory distress. The scores at follow up suggest a significant decrease on all measures of the PRI, indicating a lowered subjective perception of pain, along with lowered affective, evaluative and miscellaneous scores - indicating a slight intervention effect.

5.7. SYNOPSIS OF TREATMENT FOLLOW-UP:

On follow-up it was evident that Johan's levels of anxiety and depression were significantly lower than on assessment. Possible reasons for this include; his present work satisfaction having left the military (which was placing a significant amount of stress on him), and the fact that some of the skills acquired in stages 1 and 2 were maintained and generalized. His medication usage was substantially lower: "I take the odd pain pill now and then, but I don't like to, 'cause it's bad for my stomach.."

His comments about the program were:

> " For anyone in my situation, it's a good thing to do the program, because it gives a positive outlook on the things you used to have a negative outlook on. It's definitely helped me mentally, not so much

physically, but I've changed my mental attitude. So even though the physical pain didn't get much better I could handle it better".

Johan gained awareness of his negative attitude towards his pain, specifically his overgeneralization that the pain was ever present. Correcting this distortion assisted him to be more positive with regard to his pain. He reported:

"I'm thinking more positively, not being so negative about my situation, knowing the pain will pass makes me feel confident".

When questioned on why he had decided to terminate, his response was: "When I left the military, I was no longer entitled to medical benefits and did not want to get into any nonsense with the system". (This however was cleared with the Head of Department of psychology as well as the Officer Commanding of his unit, permission was granted for him to continue the program despite having left the military). When asked whether he thought he would have improved had he continued, he regretfully admitted that he would probably have benefited from continued treatment.

5.7.1.Goals Achieved:

"Finally I left the system, and am working for Aida … I'm doing alright, but sometimes it's difficult because of the pain, but mentally I'm stronger. The pain used to get me under, I had severe thoughts, negative thoughts. I don't think about the pain as much as I used to, I ignore it. If it's really bad,

> I'll lie down for a while. When the pain does get bad, I'll relax myself the way you taught me, and this helps me. This was a very important part of the lectures…. A lot of it is tension, if you can teach yourself to relax, (currently uses relaxation techniques three – four times per week) then there's less pain".

Johan's current conception of pain was still medically/physically based, despite his previous adoption of multifaceted view of pain: "Well, as Dr. Wilson said, I have an irritated nerve, and middle vertebrae disc disease". When asked what he understood this to mean, he responded: "Well the disc is worn and that's why I get pain". The fact that his conception of the pain had shifted from a multi-faceted view to a sensory-view indicates a failure to maintain the initial change in conceptualization.

What was interesting were his final remarks at the end of the follow-up, when I asked of his plans for the future with regard to his pain management, he confessed:

> " I'll see how it goes, it doesn't get me under at this stage, if it gets worse, I'll go see a specialist, maybe have surgery….but I don't think anything will change, that's why I stopped, because it was hopeless. I realized what you were trying to do, I saw the changes, but I knew there wouldn't be much improvement".

This seems to contradict his earlier statement of benefiting from ongoing treatment.

5.8. INTERPRETATION OF THE RESPONSE TO AND EFFECTIVENESS OF TREATMENT:

Despite the fact that Johan did not complete the entire program, there is a slight difference in his pain levels at follow-up. A drop in his P.P.I. evidences this. The P.P.I. fluctuates considerably as a function of psychological factors at the moment, mood, anxiety level, attention and so forth (Melzack, 1974). A drop of two points from assessment to follow up does indicate a slight intervention effect. The Beck Depression and Beck Anxiety Inventories, reflect a decrease in respective scores indicating a marked improvement from assessment to follow-up. In addition, the subjective activity ratings reveal an increase in his activity of 2 points from assessment to follow-up. Thus the quantitative data reflects a marked improvement from assessment to follow-up, despite not having completed the program.

Johan succeeded only partially in completing the treatment program. For a number of reasons, he chose to withdraw mid-way through the program. The following section will offer tentative explanations for the observed treatment failure and the limited treatment success.

At the outset, it is noteworthy to consider that findings suggest that as much as 30 percent of participants who enter a chronic pain treatment program show no improvement at the end of treatment and follow-up (Turk & Meichenbaum, 1994). Foa and Emmelkamp (1983) state that, a report on failure, without offering an hypothesis for it (other than declaring lack of motivation on part of the participant)

is unlikely to enhance our knowledge. Thus it is important to consider patient and treatment variables that may account for the therapeutic failures. Such factors may enhance our understanding of Somatoform Disorders as well as assist in developing alternative assessment and treatment criteria.

5.8.1. Failure or Partial Failure?

The evidence from this case reveals partial success and sustained improvement at follow-up.

Failure is defined as the absence of meaningful clinical change. When treatment fails to ameliorate one problem area, but leads to change in another, then the person is only a failure in the former and a success in the latter (Foa & Emmelkamp, 1983). In addition, Johan would be classified as a refusal. A refusal occurs when a participant applies for treatment and later refuses to follow through. According to Garfield (1980, in Foa & Emmelkmp, 1983) one third of individuals attending a psychotherapy clinic refused treatment.

When participants who do not complete a course of treatment considered to be adequate by the therapist are defined as dropouts and generally as labeled failures. Foa and Emmelkamp (1984) note that although some of these participants will not benefit greatly from therapy, some may drop out simply because they have achieved their goal – perhaps this was true for Johan. They recommend that a participant only be labeled a dropout, when the treatment goals agreed upon by therapist and participants have not been achieved and

when the therapist believes additional sessions are essential, and will result in further improvement. They add that when participants terminate treatment before reaching the agreed-upon goal, they should be considered non-responders, if no expectation for improvement exists on the part of the therapist.

For Johan, there was partial change in the dependent variables, from base-line to follow-up, namely a slight decrease in anxiety, and depression, as well as a decrease in subjective pain levels and finally an increase in activity levels. For this reason, Johan would not be classified as a non-responder, but as a partially responding drop-out.

5.8.2. Internal Validity

Given that there is evidence for sustained improvement at follow-up, alternative explanations which may have contributed to the positive treatment effect need to be considered.

i) Non specific therapy factors:

a) Spontaneous Remission:

Spontaneous remission needs to be considered as a possible alternative explanation to the treatment outcome. As with Steven, the history provides evidence that Johan's pain was chronic, rather than acute. Further, from the initial base-lines measures collected, it is evident that the scores were relatively constant and did not improve with the simple passage of time (Kratochwill, Mott & Dodson, 1984). With the introduction of treatment, the levels vary. From the quantitative data collected, it is evident that the changes that occurred, assessed

by a series of repeated measurements, are immediate, and significant (although slight). Thus spontaneous remission as an alternative explanation for the improvement is ruled out.

b) Client Expectations:

Client expectations offer a further alternative explanation for the remission of symptoms. Expectancy effects can be self-fulfilling and thereby contribute to positive treatment effects. Implicit in psycho-education and the collaborative nature of cognitive behaviour therapy, the therapist attempts to generate realistic client expectations (as opposed to idealized expectations). Generally, those who believe that treatment will help will do better than those who lack faith in it. Unlike Steven, Johan began the treatment with negative expectations regarding his recovery. He nonetheless shows improvement at follow-up despite his negative expectations at the beginning of treatment. This factor thus minimizes the possibility of client expectations as alternative explanation for the positive treatment outcome.

c) Therapist's Concerned Interest

The therapist being empathic and supportive has been cited as an alternative explanation for a positive therapeutic outcome (Edwards, 1990). The issue of the qualities of the therapist and the participant liking the therapist are evidence of a good working therapeutic alliance. This non-specific therapy factor has been widely observed and needs to be taken into account when considering internal validity (Edwards, 1990; Kratochwill et al, 1984). Cognitive behaviour therapy

relies heavily on establishing a collaborative, empathic, supportive relationship between practitioner and client. This relationship was achieved between the researcher and Johan, and is a central aspect of cognitive behaviour therapy. It seems unlikely however that the specific changes that contributed to this would have occurred spontaneously as a result of the warmth of the therapeutic relationship. It will be argued in the following sections that the individual treatment components (psycho-education; goal setting and contracting; self-monitoring, stress management; and physical exercise) played a role in breaking the pain-cycle.

ii) Extra Therapy Factors: Leaving the Military

Extra-therapy factors are hypothesized to have had some impact on the treatment outcome and need to be noted as they do provide evidence of threats to internal validity. With regard to Johan's medical-board, he was re-classified and was **not** granted a full medical board. It was the opinion of the board that it was "unjustified to proclaim him totally medically unfit". It was Dr Wilson's suspicion that he may have been malingering (wanting a full medical board) and manipulating the system. The implications of the re-classification were that his duties would demand a lesser physical demand. Johan was however hoping that he would be medically boarded and paid out in full - a substantial settlement of over R20,000. This however did not occur. The consequence was that a mere six months after the board's decision, Johan began making plans to leave the military. By the time the treatment sessions began, he had confirmed with the Commanding Officer that he would leave the military. A possible non-specific

treatment factor for Johan was that as a result of leaving the military, he no longer 'required' the secondary gain of the "injured on duty back" (Du Toit, 1993). When he realized that he would not be paid out, and that his compensation claim had failed, he left the military, and his pain behaviour improved significantly, as did his activity rating. The act of leaving the military and beginning a new job as an estate agent, therefore acts as an extra-therapy factor which was hypothesized to contribute to the treatment response.

In addition, his positive attitude and motivation related to his job satisfaction in his new job as an estate agent, are further possible non-specific treatment factors, which may have resulted in the observed improved outcome.

5.8.3. Specific Skills Acquired as A Result of the Treatment Program

Aside from the non-specific treatment factors and extra-therapy factors, certain changes did occur at follow-up that indicate a positive treatment effect. Specific aspects of the treatment that have been generalized and maintained and contributed to Johan's improvement were the following:

a) Psycho-education

The psycho-educational aspect of the treatment assisted in re-educating Johan and altering his conceptualization from a sensory view of pain to a more multi-faceted view, with cognitive, affective and socioenvironmental factors, considered as contributors to the experience of pain. Although his focus at follow-up still indicates a medical-physical conception of the pain, he had managed to begin to

address the collective effect of situational variables, psychological and social factors that influenced his pain experience. The fact that he reports a change in his "mental attitude" (at follow-up) confirms the fact that internal change has occurred on some level, and the fact that he has managed to exert some degree of control to his previous negative cognitions. His report at follow-up provides evidence of the changes that were internalized:

> "…it gives a positive outlook on the things you used to have a negative outlook on. It's definitely helped me mentally, not so much physically, but I've changed my mental attitude. So even though the physical pain didn't get much better I could handle it better…I'm thinking more positively, not being so negative about my situation, knowing the pain will pass makes me feel confident".

b) Skills Acquisition and Consolidation

Although limited in nature, due to terminating mid-way through the program, certain skills were acquired during the treatment and consolidated at follow-up.

i) Stress Management - Relaxation Training

Stress management, through progressive muscle relaxation (Jacobson, 1938) and guided imagery, was shown to be effective for Johan. Reducing physical tension, assisted in reducing pain intensity levels (Turk & Meichenbaum, 1994). The relaxation exercises helped alleviate the pain and strengthened the belief that Johan could exert control during periods of stress and pain. Johan reported that he had continued with the relaxation exercises and was performing them

three or four times a week. Qualitative evidence in support of this statement was provided at follow-up when he claimed:

> ” The relaxation exercises have helped me cope better when I have pain. I just breathe deeply, and visualize the calmness and the pain gets less…”

ii) Physical Exercise

Prior to the implementation of treatment, Johan had adopted an exaggerated belief regarding the nature of his symptoms. The implementation of low impact aerobic exercise and stretching were beneficial to management success. The home program proved to be an effective modality for Johan, assisting in providing the impetus for increased activity. By breaking the cycle of inactivity and simultaneously challenging his cognitive distortions related to the fear of activity, behavioural changes were achieved, revealing increased activity at follow-up.

5.4. Concluding Comments Regarding the Effectiveness of Treatment.

Although Johan withdrew prematurely from the program, it is evident from the components of the intervention discussed above (namely the psycho-education, relaxation management, and exercise program), that he did in fact benefit from certain aspects of the treatment program. Although he did not succeed in altering his pain levels significantly, he has managed to live with his pain, and manage more effectively, by assuming a more active life, with lowered levels of anxiety and depression. It is noteworthy that despite the fact that no formal cognitive re-structuring occurred, the psycho-education still helped generate awareness of the

interactions of thoughts and feelings that occur in response to pain situations. Thus an unexpected positive treatment effect occurred, which provides evidence for the efficacy of psycho-education. In addition to the effectiveness of the respective treatment components, the act of leaving the military may have acted as an extra-therapy factor that aided in the improvement of his condition and motivated him to get out of the rut that he had been as a result of working in a system that no longer suited his needs. The change of career was a vital one for Johan to re-assume responsibility for his life.

6. RESULTS FOR PARTICIPANT MARY

The final participant presented in the study, is Mary. As will be shown, Mary failed to engage in a collaborative relationship with the therapist, rejecting the case conceptualization offered. She persistently clung to the medical/disease model to which she attributed her pain. Although Mary chose to withdraw from the treatment, her case is useful to present as it offers a description of a resistant pain patient.

Mary is a 65-year-old woman, who worked as a nursing sister. She recently retired not due to her age, but rather due to her chronic debilitating pain. She has been out of work for six months. She has been married for 34 years, to an airforce officer, who retired two years ago. They have two married children in their mid thirties.

6.1. CASE HISTORY

As with Johan, due to the limited nature of the intervention and thus limited available data, only a brief case history is presented.

Mary is the eldest of three sisters. She grew up on a farm outside a small village in Beaufort West. As a result of limited contact with a large community, she recalled spending lengthy periods of time “alone with the family”. It is apparent that the family was extremely close, and possibly enmeshed. This however was not confirmed due to her evasiveness and guardedness in her responses to my

questioning. She described her family as follows: “We’re a very… too close a family”.

Mary’s mother is 87 years old. She moved into an old-age home six months prior to the treatment. Her father had been critically ill, and was suffering with a heart condition over the past year. At the time of treatment, he was in the Intensive Care Unit at a local hospital in Cape Town. Her father subsequently died during the treatment program at age 88, due to a heart failure. She described her parents as “loving wonderful people”, whom she claimed that she had “been accused of taking too much responsibility for”. Again, due to reasons of vagueness and defensiveness, it was difficult to determine the degree of responsibility she assumed.

She described her childhood years with fondness, claiming that she had a “happy childhood and adolescence”. There is however conflicting evidence which suggests that she may have been prone to depressive episodes, however information is limited due to her guardedness. She claimed that she would often feel “sad” and “would wake up without any enthusiasm.” She reports however, that she “thought little of it and ignored the feelings”. Further questioning on this matter was received with resistance and guardedness.

Mary attended boarding school, and went on to Nursing college where she completed a diploma in nursing training. She met her husband soon after graduating. They dated for two years prior to their marriage. Her two sons were

born during her early twenties, and she recollects having a “wonderfully close relationship with them both”.

Given the nature of her husband’s military career, there were several transfers between Cape Town, Pretoria and South West Africa during her thirties and forties. Detailed information of the re-locations is scant due to her reluctance to disclose. She merely described the moves as “stressful”, and reasoned that: ”Such is the plight of a wife of an airforce officer…”. When questioned further, she would rationalize and change the subject.

In 1984, she claimed to have become “very emotional” after her hysterectomy, which was conducted due to the presence of endometriosis. She attributed her depressed state to the fact that her gynaecologist did not give her hormone replacement therapy. What was discovered prior to writing up the study, was that after her hysterectomy she was hospitalized for two weeks at 2-military hospital after a suicide attempt (over-dose of pain-killers). This information was not offered during our time together.

Mary recalled the time when her current pain episode began. Her youngest son (31 years old), got married and moved out of home, at the end of January (1997). Her parents came to stay with her and her husband for twelve days. She took them home on Friday, February 7$^{th.}$, she recalled this day, as it was her mother’s birthday. The following day, the 8th of February, she woke up with the sensation of a “hot iron-like pain in [her] coccyx”.

It is interesting to note how eloquently she described her pain episodes, with detail of location, duration etc. This detail was qualitatively different in contrast to her brief descriptions of other aspects of her history. This factor confirms previous findings that indicate the degree to which the pain becomes primary in the person's reality, becoming a progressively self-sustaining condition (Frymoyer & Waddle, 1991).

6.2. DIAGNOSTIC CONSIDERATIONS AT INTAKE

a) Medical Assessment

MRI scans showed "protrusions on L8 & L9." However, according to Doctor Du Toit, "there is nothing that should cause compression or pain"

S.1, L.5 is narrow, but no lesion of the disc is visible.

b) Medication Usage

Mary's husband supplied the following list of medication:

1) Premarin 1.25 mg – Hormone Replacement Therapy - daily in the morning following complete hysterectomy, 15 years ago.
2) Prozac 20 mg – daily in the morning for depression
3) Morphine (concentration 2g/l) -15 ml morning and night, and occasionally during the night for pain.
4) Rhohynol – one tablet in the evening (to sleep) when retiring.
5) Agiolax – after meals as required, for the relief of chronic constipation
6) Doloxene – two capsules occasionally in place of Morphine for pain relief.

c) Psychometric Data and D.S.M. – IV Diagnosis

From the initial assessment and base-line recordings conducted, mean pain ratings on the subjective pain rating scales were moderate - 6 (max – 10). Mean activity levels, measured on the activity lists were greatly impaired - 3 (max – 10). Mean depression levels, recorded using the Beck Depression Inventory were 17, indicating mild depression, and finally, mean anxiety levels recorded using the Beck Anxiety Inventory were 6, indicating levels of anxiety within the normal range.

D.S.M. – IV Diagnosis

Axis I: 296.3.2 Major Depressive Episode

(severe, without psychotic features, in remission).

Pain Disorder (307.80 Associated with psychological features), chronic

Axis II: No Diagnosis.

Axis III: Gynaecological problems (Hysterectomy).

Axis IV: Occupational Problems (resignation due to pain).

Axis V: G.A.F. 40 (current).

6.3. PRESENTING PROBLEM

Mary was referred by the Orthopaedics Department with a lengthy history of chronic lower back pain. Her first pain episode began “suddenly’ in November 1996. She visited the out-patient clinic at the Simons’ Town Medical Base and was prescribed analgesics by the Doctor on call. Her pain remitted within approximately two weeks. Her current problem began nine months ago in

February 1997. She woke up with “severe burning pain” in her lower back, with pains in her legs, coupled with a lame feeling in her legs. She described her pain as “continuous and severe, burning and laming”. The severity of pain necessitated her giving up her job as a nursing sister. She could not sit for more than a few minutes in a chair, or ride in a car without experiencing severe pain and discomfort.

On assessment it appeared that Mary’s pain was totally debilitating. She evidenced some degree of emotional distress because of her inability to continue with her job (to which she did not foresee herself returning, due to her continued pain), perform housework and engage in a variety of previously enjoyed activities with her husband.

Pain was intensified by staying in one position for too long, sitting for extended time periods, walking too far or over-exercising.

Pain was decreased by lying down – two to three times a day for an hour, using prescribed medication (anti-inflammatories and painkillers).

Pain behaviours included verbal complaints, constant shifting on the bed (she could not sit in a chair, so we had to arrange an office for her that had an examination table/bed), facial grimacing, with moans and groans, a limp on the left leg, avoidance of physical activities, lying down, and finally, dependence on pain medications.

6.4. CASE CONCEPTUALISATION

Due to the fact that there is little/no evidence for the physical cause for her pain, a medical diagnostic framework has not been adopted, and a primary cognitive-behavioural conceptualisation was therefore adopted. Mary, and her husband, however, had strong convictions that the cause for the pain was "purely physical" (as the pain just started suddenly without any cause), and continually rejected the cognitive-behavioural conceptualisation. She persistently claimed "I know something is wrong" when referring to her back. This statement reflects her preoccupation with the belief that her pain was structurally induced, and provides evidence of her tendency towards somatic conviction and disinclination to consider psychological and social factors (see section 2.3). This pre-occupation with her pain and her focus on the physical aspects of her pain, made it impossible for her to engage in the treatment program.

6.4.1. Pre-disposing Factors:

From the history Mary provides there may appear to be evidence of a mood disorder. Evidence from the limited case history seems to indicate that this may goe back even further, into her childhood, where she reported feeling "sad" and "would wake up without any enthusiasm." She reported however, that she "thought little of it and ignored the feelings".

As discussed in section 2.4, it is hypothesized that depressive symptomatology assists in creating vulnerability to pain, by increasing pain sensitivity and lowering pain tolerance thresholds.

From the history and mental state examination, as well as the Beck Depression inventories (average baseline: 16.5) it is apparent that Mary is mildly depressed. This was confirmed by the Orthopedic Surgeon who had prescribed Prozac to alleviate her depressive symptomatology. Despite the medication, her symptomatology continued. Mary continues to "ignore her feelings" and is perhaps frightened of them. She often became agitated when I tried to steer her in the direction of affect, and would be defensive, guarded, and reluctant to engage with emotional content.

6.4.2. Precipitating Factors:

It is possible that the adjustment to her youngest son marrying and moving out of home, acted as a catalyst and initiated a process, which resulted in the presenting problem. When I attempted to explore this adjustment issue, she resisted the notion and changed the subject.

6.4.3. Maintaining Factors:

The reaction to the perceived impairment may have included changes in mood, cognitions, behaviour and physiological functioning. Her levels of activity have been greatly reduced as a result of the intensity of her pain. In addition, her limited coping skills may contribute towards the maintenance of her chronic pain (Brand, 1996). Specifically, she displays passivity, helplessness, dependence on medication as well as dependency on others (i.e. her husband and medical practitioners).

An additional maintaining factor, is the stressor of her father's illness. She described her father's medical condition and his subsequent hospitalization as an "added stress". His medical condition, thus acts as a further maintaining factor.

Mary's cognitive distortions may have intensified the impact of her dysfunctional beliefs. She seems to engage primarily in distortions of misattribution, clinging firmly to the belief that her pain is physically induced (e.g., "there must be something wrong with my spine, but I don't know what…If I know what's wrong, then maybe I can live with it.", "There's something causing the pain, there's definitely a cause"). Mary also tends to catastrophise (e.g., "I am totally handicapped...", ., "I've worked all my life, suddenly it's all come to a stand-still, I'm not capable"), these cognitive distortions tend to increase her hopelessness and despair regarding her condition.

Her preoccupation with her pain and fears associated therewith have resulted in a decrease in activity that has several effects: The unoccupied time provided additional opportunity for depressing ruminations, as her pain behaviours increase (namely increased time spent lying down; dependence on her husband; reliance on medication; moaning and groaning etc.). Pain is experienced and negative thoughts and feelings are activated (e.g. 'I cannot cope with the pain", "I'm sick of being in pain"). These negative self-statements in turn intensify the perceived levels of pain and the cycle reproduces itself, becoming increasingly worse. In addition to this, the cycle of inactivity impacts in reinforcing the belief that activity causes pain. Activity is thus avoided at all costs. The pain levels tend

to cause her to catastrophise as she focuses on the physical pain, intensifying her inactivity.

6.5. SYNOPSIS OF TREATMENT PROCESS

The treatment offered did not follow a strictly cognitive behavioural treatment program, as the case conceptualisation was almost entirely rejected. Instead, client-centred supportive counselling was offered. It is nonetheless useful to include in the study as it offers interesting and meaningful insight into the phenomenology of the participant. In addition, it illustrates the difficulty of engaging the participant in a collaborative relationship, overcoming her resistance, somatic conviction (for she was convinced that the problem is physical) and in her inability to take responsibility for her healing process. Mary constantly refused to share the conceptual approach and goals of the program. A genuine collaborative therapeutic relationship was not achieved, as she rejected the case conceptualisation. Initially, due to her desperation, she was nonetheless willing to participate in the program.

A brief synopsis of the treatment offered follows:

Sessions 1 and 2 Psycho-education

Her initial expectation about her recovery was “Unlikely” (this, like Johan suggests her initial lack of confidence in the treatment as well as her despair and hopelessness).

In session 1, our initial collaborative therapeutic goals were:

1) How to cope with her pain

   Specific goals included: Gradual improvement, beginning with small changes: increased activity, namely visiting friends, attending auctions, housework and an exercise program given by the physiotherapist. This included pelvic tilts, leg lifts, knee bends, hip abduction sit-ups, shoulder flexion and abduction, and walking.

When she arrived for session two, she had not succeeded in completing the exercises, she tended to give up due to the pain intensity. When I inquired about this, she made excuses, and claimed that "it is useless, the pain will not go away". This statement provides evidence of her lack of confidence in the treatment as well as her despair and hopelessness.

Despite her frustration, she did manage to increase her activity minimally. She had visited friends and did some housework, namely cooking. She tried to do some ironing, although could not persist due to the pain. She could not do the vacuuming, and asked her husband to do it for her. Her pain behaviours persisted and her activity levels remained relatively unchanged (see section 6.7.1 d). She resisted attempts to alter her pain behaviours, and evidenced pain behaviours throughout her attendance. She continually sought pain relief through self-medication, and was intent on seeing medical experts (despite my attempts to dissuade her) to determine a physical cause for her pain.

During the intervention Mary and her husband continually sought second and third opinions from other professionals ranging from neurologists, to anaesthetists. She wanted to “wait and see how is goes with the neurologist that [her] specialist had referred her to.”

She returned to the third session not having attempted to complete her home work for the week. She ruminated about her pain, and would not talk about anything else. She could not sit in the chair, or lie down on the examination table. She seemed agitated and paced up and down the room during the session. Mid-way through the session, she desperately claimed: “It is useless to continue with the program, as my pain is physical”.

I suggested that she attempt to persevere with the program, but she re-affirmed her position, claiming it was useless. She nonetheless requested that she would still like to come and see me “for support, as it was good [for her] to have someone to talk to about [her] pain”.

In consultation with my supervisor (Major Dickson), we agreed that Mary had chosen to refuse to continue with the research treatment program. However, it was still her right (given the nature of the medical scheme offered to military personnel) to request counselling services. We decided that although she would discontinue the treatment program, she might nonetheless benefit from supportive counselling. I therefore agreed to see her in such a capacity.

Between this session and the next, her father died, and we therefore postponed the sessions by two weeks.

During our final session together, Mary spoke briefly of the funeral claiming that "it was sad, but a relief (as he had been suffering)". Most of all she focused on her pain, describing, as before, in detail the location and duration. She continued to ruminate about the fact that she was handicapped by her pain, and complained how frustrated she was due to her pain intensity. She described in detail the planning of the drives with her husband between the Strand and town, giving details of the angle of the chair etc.

The session ended with her expressing hope that the specialist she would be seeing would find something wrong. We scheduled to meet the following week, at which time Mary did not arrive. I called her to inquire why she had not arrived and she confessed that she wanted to terminate due to her lack of hope in the therapeutic process. During this period she had consulted an anaesthetist, who had given her cortisone injections to alleviate her pain and spasm. She agreed to return in two weeks time for a follow-up appointment, so that we could achieve a sense of closure, as well as to collect the final assessment measures to present in the study, despite her withdrawal.

6.6. SYNOPSIS OF TREATMENT FOLLOW-UP:

At the follow-up interview, Mary reported:

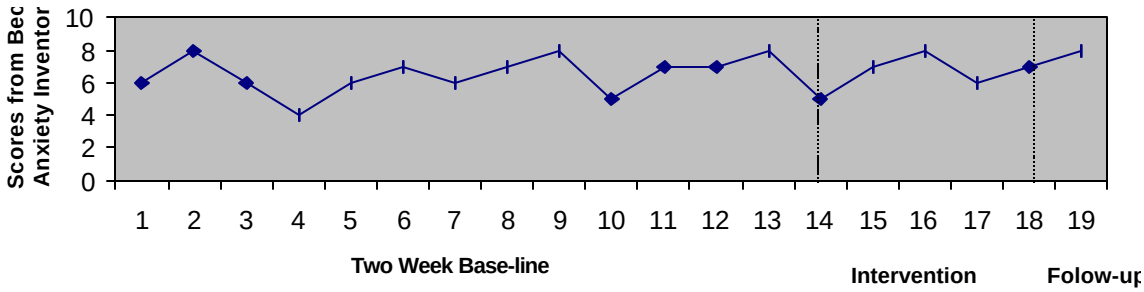
"It was very nice seeing you and getting support. The advice (from the psycho-education) that your back not ruling your life is good… I am trying to get on with what I need to do, and increase the things I do…But what gets to me is that they can't pin-point it. If I knew what was wrong, then maybe I could live with it… Emotionally, I'm a little better. It gets me down that nothing has changed, but there's been improvement in my mental attitude towards it. It doesn't dominate things as much as it used to. It effects everything I do, but my mental approach has improved a bit… My back doesn't rule my life".

6.7 SUMMARY OF QUANTITATIVE DATA

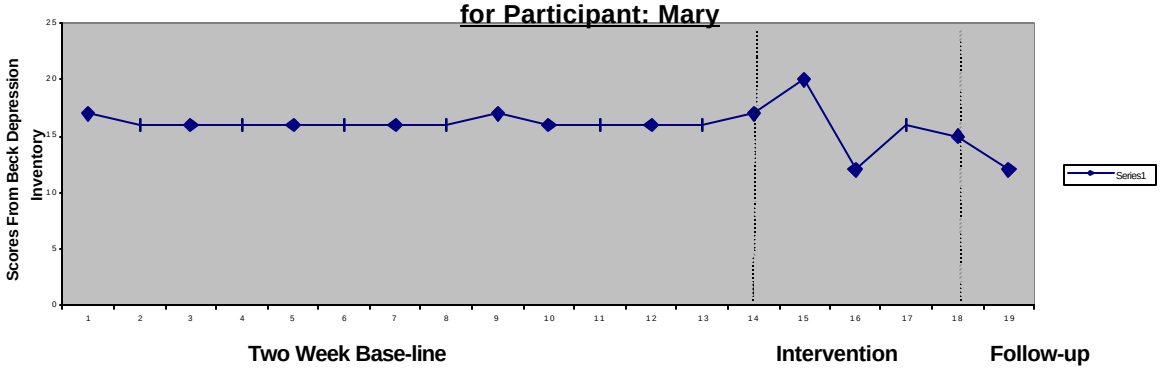
6.7.1 Graphs of Repeated Measures

The graphical representation of anxiety recorded on the Beck Anxiety Inventory reflects normal levels of anxiety, with a mean score of 6. Her rating at follow up reflects maintenance of normal levels of anxiety.

Anxiety levels recorded during Baseline, Treatment and Follow-up for Participant: Mary

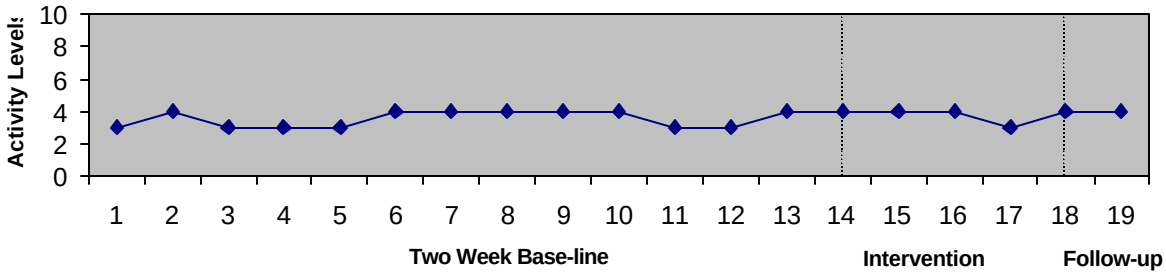


Depression Levels Recorded During Baseline, Treatment and Follow-up for Participant: Mary



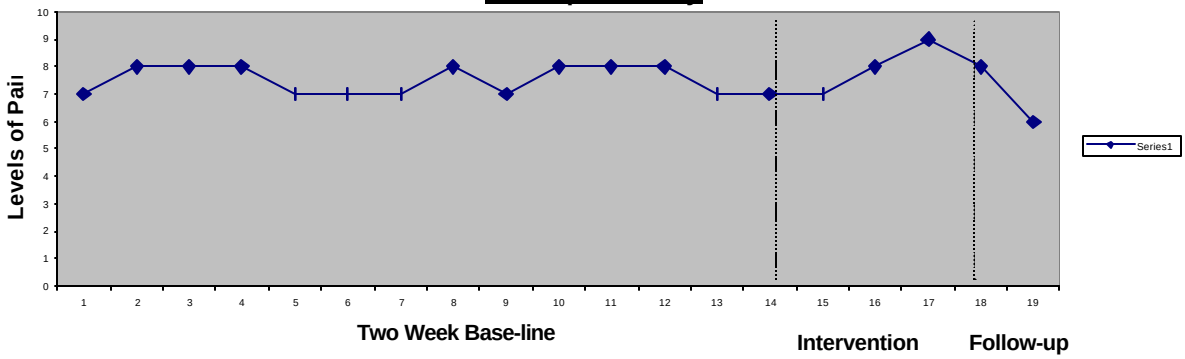
The graph of depression, recorded on the Beck Depression Inventory reflects a stable pre-treatment score of 17 (indicating mild depression), there is a decrease at follow up to a score of 12, indicating normal levels. Mary interestingly enough, attributes this to: "...feeling hopeful that the chiropractor will be able to help me with my pain.."

Activity levels Recorded during Base-line, Intervention and follow-up for Participant: Mary



Activity levels reveal a consistently low level of subjective activity, with a mean score of 3, indicating severe impairment. These levels did not alter with the intervention.

Pain Levels Recorded During Base-line, Treatment and Follow-up for Participant: Mary



Pain levels recorded on the subjective pain inventories suggest a relatively constant level of pain. They seem to have peaked during the treatment, which could possibly be attributed to the stress of her fathers' death. There is a slight decline at follow-up to a level of 6, indicating moderate levels of pain. This change however could be due to medical intervention that she received, namely an epidural spinal injection.

6.7.2.McGill Pain Questionnaire

Present Pain Intensity (PPI)

PPI at assessment:	5 (excruciating).
PPI at Follow up:	3 (mild).

A slight effect (two points) is reflected in the difference between PPI scores collected at assessment and finally at follow up. This may be attributed to the epidural injection she received prior to follow-up.

Number of Words Chosen (NWC)- Pain Rating Index (PRI)

NWC AT ASSESSMENT:		NWC AT FOLLOW-UP
PRI Sensory (max 42)	26	21
PRI Affective (max 14)	8	6
PRI Evaluative (max 14)	5	3
PRI Misc. (max 17)	9	7
PRI Total (max 78)	48	37

From the results above, it is evident at assessment, that the scores in contrast to the established mean scores (see Tables in appendix F) in all five categories were high. The sensory and affective scores specifically are highest. These high scores indicate the perception of subjective levels of both sensory as well as affective distress. Mary's profile reflects a high sensory and affective component to her pain (indicated by a greater use of sensory and affective descriptors). This

high score reflects the degree of affect and sensory experience associated with her pain. This observation is confirmed by the depression and anxiety inventories as well as her subjective complaints of physical and psychosocial disability.

According to the users' portfolio (Weinman, Wright & Johnston, 1995), a higher score is indicative of a higher pain report. Clearly, the pain report on assessment indicates high levels of pain, a total score of descriptive pain of 48 (maximum possible score = 78). At follow-up, there is a minimal decrease of nine points, reflecting very little change in sensory, affective and evaluative components.

6.8. INTERPRETATION OF THE RESPONSE TO AND EFFECTIVENESS OF TREATMENT:

The refusal and subsequent drop-out of this participant (and her husband) indicates the firmness of the entrenched belief that her pain was physically based, and as such demonstrates an unwillingness to accept the treatment rationale (Foa & Emmelkamp, 1984). Throughout our time together, they focused on the physical aspects of the pain, and continually sought alternative specialist opinions. This made treatment exceptionally difficult. Further the patient failed to form an equal collaborative relationship. Mary's existing coping skills were limited, as a result she came to rely on her husband to make basic decisions for her.

Prior to completing the write-up of this study, a letter was mailed by Mary's husband, stating:

> "…I am pleased to say that it looks as we have identified my wife's problem. Last week, in desperation, we consulted a chiropractor, after completing a few simple tests, he confirmed that the problem was with her left sacro-iliac joint. He has given her two treatments and we are hopeful of a recovery….".

This letter strengthens the couple's belief in the sensory model, and gives them the "proof" that they were seeking that the pain was physically induced. The data is unfortunately inconclusive, and it is unknown whether her condition did in fact improve.

Failure is defined as the absence of meaningful clinical change. In addition to her failure, Mary would be defined as a refusal due to the fact that consensus was not reached between her and therapist, and there was insignificant change in the treatment variables.

Mary's lack of insight as well as discomfort in discussing emotional issues made it difficult to form an adequate case conceptualisation, and compounded the problem of assessment. Similarly the intervention was limited due to her inability to collaborate. Foa and Emmelkamp (1984) describe similar phenomenology with resistant pain patients. Mary continually resisted engaging with affective states regarding her condition. Researchers have observed the fact that chronic pain patients frequently deny problems related to their pain, and resist psychological evaluation (Brand, 1996). Mary's case seems to provide evidence that there may have been underlying emotional factors involved in the aetiology and

maintenance of her chronic pain, which she was reluctant to address at the time of treatment.

Young (1984) presented an analysis of client characteristics that slowed down therapeutic progress. Factors that apply to Mary included: the inability to focus on key automatic thoughts, the inability to accept the limits of the therapist/patient roles, poor tolerance of emotional discomfort, the inability to consider alternative perspectives, the unwillingness to do homework, and the unwillingness to accept responsibility for the problem.

Follick, Zitter and Ahorn (1983) recommend that participants who fail to "buy" the treatment approach should not undertake treatment, as they are a high percentage of those who drop out or fail due to failure to alter their goals and expectations. Patients who believe that their problem is primarily physical are difficult to engage in treatment, since they do not believe that psychological treatment is appropriate. This belief leads to non-compliance (Salkovskis, 1989).
It was evident that Mary was merely seeking pain relief, but was unwilling to consider alternative strategies to improve her condition. This factor contributes strongly to her treatment failure (Brand, 1996; Craig, 1994; Foa & Emmelkamp 1983). Her persistent 'doctor shopping' during the time she saw me provides evidence for this. In light of the extensive medical work-up conducted it seems unlikely that Mary's pain had an organic cause. It would have been interesting to investigate whether relief was achieved with their 'new' diagnosis. The participant however could unfortunately not be reached prior to final write-up.

Although unlikely, due to the extent of the physical examinations, the possibility does exist that a misdiagnosis may have in fact occurred. It seems that until such time as Mary is willing to shift her focus from the Sensory to the Sequential Components model, little relief will be achieved.

7. CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The intervention utilized a holistic cognitive behavioural, multi-disciplinary team approach to confront the multiple aspects of the pain experience, namely: medical assistance for structural diagnosis and medication supervision; the Department of Physiotherapy for the physical/exercise aspect, and finally psychological services for the cognitive/behavioural and emotional aspects. The case conceptualization and treatment programs were designed to fit the specific needs of each participant.

The respective success and failure of the participants represents a continuum of possible outcome within the cognitive behavioural treatment approach. As described in the results, Steven successfully completed the program with improvement in all areas of the dependent variables. It is hypothesized that the cumulative effect of the various components of the treatment were responsible for the changes maintained at follow-up. In contrast, Johan only partially succeeded in responding to the program, whereas Mary failed to sustain any significant change.

Pain is part of a complex constellation of cognitive, behavioural and emotional responses to interpersonal and life situations. All three participants presented provide evidence of the multiple impact that chronic pain had over their lives. Several features of existing theory are confirmed by these findings. First, the role of negative cognitions and feelings which impact on pain behaviour, was

demonstrated with all three participants. Second, the effects of the inhibition of expression of negative affect, namely alexithymia, as a predisposing and maintaining factor were confirmed by the cases, particularly that of Steven. The findings from the study support and confirm the theoretical underpinnings of the C.B.T. model and demonstrate its effectiveness when applied to a motivated participant. The role of psycho-education, benefits of increased physical activity and stress management training to break the 'pain cycle' were confirmed by the case of Johan (as well as Steven). Finally, the role of the avoidance of behaviour (specifically physical exercise) was confirmed by all three participants, and is noted as a finding which is supported by the literature.

It has been shown that many chronic pain patients lack important adaptive skills. An intervention that focuses primarily on extinction of pain behaviour without remediation of deficit skills (e.g., cognitive restructuring, assertiveness training, anxiety management etc.) will be less successful. This was confirmed in the case of Mary and to a lesser extent Johan.

The findings of Steven's case study suggest that the associated schema dynamics (with regard to the significance of the role of dealing with early memories) and schema change contributed to an additional dimension of the existing models described. The identification of E.M.S.'s of abandonment, emotional deprivation, and emotional inhibition were shown to have significant impact in the aetiology and maintenance of Steven's somatic chronic pain. It is suggested that a systematic integration of schema-focused work within a

cognitive behavioural treatment program may be useful in enhancing affective and interpersonal change. The successful outcome in Steven's case suggests that further study into schema focused thoughts and the associated schema dynamics suggested by Young and Lindemann (1992), would be a significant area of further research. This may include addressing affective strategies to cope with high levels of emotion generated by maladaptive schemas, as well as interpersonal strategies to deal directly with the relationships within which schemas are maintained.

The respective outcomes confirm that individual participant outcome is largely dependant on the 'readiness' of the participant to actively engage in collaboration with the therapist. The levels of motivation, commitment, attitude towards treatment, and finally willingness to assume responsibility for the management of their pain is a critical predictor of a positive treatment outcome. Since as much as 30% of participants fail to benefit from pain programs (as evidenced by the present study, despite the limited sample size), it would be useful to search for variables that assist in predicting who will benefit from a treatment program. It is recommended that motivational interviews, similar to those used with substance abuse patients as described by Van Bilsen and Wilke (1988), would be a useful preliminary intervention aimed at tackling resistance prior to the initiation of treatment.

The implications of the study for South African medical practice suggest the need for the re-education of medical practitioners within the Sequential Components'

model of chronic pain. It was my experience when conducting this study, that medical practitioners were largely uninformed of the biopsychosocial aspects of chronic pain. In addition, a 'shift' in the doctor - patient interaction is advised to facilitate the most beneficial service to the patient. This implies a shift in the current dialogue to one of openness and clarity of what modern medicine can and cannot achieve so far as chronic, intractable pain is concerned. Typically South African patients tend to be passive and expect the medical practitioner to take responsibility for their pain management. This finding was confirmed in all three cases. Only once a shift takes place within the patient, (which needs to be advocated by the medical practitioner) and the patient assumes responsibility for his/her pain can therapeutic change be achieved. This 'shift' in attitude it is suggested, needs to be encouraged by the medical practitioner, by redressing the status quo. In the present study, the impact of the advice of the medical professional was evident with regard to the cause of the pain, and the associated fears regarding treatment, activity etc. Particularly, the practitioner needs to consider relevant questions about how behaviour, thoughts, feelings and coping styles have been influenced by the pain. In addition, sensitivity is required with regard to the labelling of patients with such terms as "intractable chronic pain". Only once this is undertaken will it be possible to 'truly' confront the problem of potential pain relief and control. This will enhance greater satisfaction on behalf of the patient and practitioner. For such change to occur, it is suggested that medical practitioners be educated with regard to alternative models to the Simple Sensory model of pain (on which they tend to so rigidly rely), and that they re-conceptualise the disease process from a biopsychosocial perspective. This

would require dialogue and sharing of information between the medical and psychological professions with regard to the education of the pain process and the potential effectiveness of the C.B.T. model for chronic pain.

It has been shown that the cognitive behavioural treatment model can be used holistically and may be conceptually integrated into the medical model. Developed correctly, science and C.B.T. disciplines can potentiate each other. The end goal is an inter-disciplinary approach, with a sharing of knowledge in a collaborative manner. Clearly there is a need to re-consider the aetiology of dis-ease, the diagnosis, treatment and the manner in which the practitioner manages and interacts with his/her patient - treating more than the symptoms, but considering the whole make-up and individual constitution. Moreover, this involves a responsibility (and less passivity) on behalf of the patient, to make certain choices. Further, it would be desirable to be cautious and examine the value systems with which we develop and apply technology. Until a mental or other alternative therapy outperforms traditional Western practice, it will not become the treatment of choice. Although patients might long for such approaches, most doctors still fear and mistrust them (Chopra. 1988).

Finally, it is noteworthy that one major problem with the conception of illness is its diversity. Research broadly encompasses the genetic, biochemical, neurological, phenomenological, sociological and psychological fields. Diversity alone however is not the problem; rather what it has created, namely specialisation and isolation, is. The argument therefore is an integrative approach, combining the expertise of

all of the above-mentioned schools of inquiry, viewing the individual as a holistic entity, comprising of the physical; physiological; emotional; mental/cognitive (intellectual); the social and spiritual.

8. REFERENCES

American Psychiatric Association (1994). Diagnostic and Statistical Manual of Mental Disorders. (4th ed.). Washington DC: American Psychiatric Association.

Avanoff, G. M. (1992). Evaluation and Treatment of Chronic Pain (2nd ed.). Baltimore: Williams & Williams.

Baumann, S.E. (1996). More about Somatoform disorders. Continuing Medical Education, 14(3), 339-341.

Beck, A. T, & Steer, R. A. (1993). Beck Anxiety Inventory Manual. San Antonio, Psychological Corporation: Harcourt, Brace & Company.

Beck, A. T, & Steer, R. A. (1993). Beck Depression Inventory Manual. San Antonio, Psychological Corporation: Harcourt, Brace & Company.

Benson, H. (1976). The Relaxation Response. New York: Avon.

Beutler, L. E., Engle, D., Oro'-Beutler, M. E. & Daldrup, R. (1986). Inability to express intense affect: a common link between depression and pain. Journal of Consulting and Clinical Psychology, 54(6), 752-759.

Brand, A. (1996). The psychological evaluation of the pain patient. Continuing Medical Education, 14(3), 299-308.

Bromley, D. B. (1986). The Case Study Method in Psychology and Related Disciplines. Chichester: Wiley.

Brown, D. & Pedder, J. (1992). Introduction to Psychotherapy (2nd ed.). London: Routledge.

Bru, E., Mykletun, R., Berger, W. & Svebak, S. (1994). Effects of different interventions on neck, shoulder and low-back pain in hospital staff. Psychology and Health, 9(5), 371-382.

Burns, J. W., Wiegner, S., Derleth, M., & Kiselica, K. (1997). Linking symptom specific reactivity to pain severity in chronic low back pain patients: A test of mediation and moderation models. Health Psychology, 16(4), 319-326.

Burns, J. W. (1997). Anger management style and hostility: Predicting symptom specific physiological reactivity among chronic low back pain patients. Journal of Behavioural Medicine, 20(6), 505-522.

Burns, J. W., Johnson, B, J., Devine, J., Mahoney, N. & Pawl, R. (1998). Anger management style and the prediction of treatment outcome among male and female chronic pain patients. Behaviour Research and Therapy, (5), 1051-1062.

Chopra, D. (1988). Creating Health. Boston: Houghton Mifflin Company.

Craig, K. D. (1994). Emotional aspects of pain. In, M. D.Wall & R. Melzack (Eds.). Textbook of Pain (pp.261-274). Edinburgh: Churchill Livingstone.

Cuencas, Z., McCoy, C., Selby, D. & McManemin, F. (1991). Behavioural Medicine: An interdisciplinary model in a clinic for chronic lower-back pain. Salud Mental, 14(3), 25-32.

Dillingham, T .R. (1995). Evaluation and management of low back pain: an

overview. Spine: State of the Art Reviews, 9(3), 147-158.

Du Toit, J. G. A. (1993). The “injured on duty” back. Serving the Profession, 16(4), 8-13.

Edwards, D. J. A. (1990). Research and Reality: How clinical theory and practice are actually developed - case study method in cognitive behaviour therapy. Paper presented at a conference on Knowledge and Method. Pretoria: Human Sciences Research Council.

Edwards, D. J. A. (1996). Case study research method: The cornerstone of theory and practice. In, M. Reinecke, F. Dattilio & A. Freeman (Eds.). Cognitive Therapy With Children and Adolescents: A Casebook for Clinical Practice. (pp. 10-37). New York: Guilford.

Edwards, D. J. A. (1997). Types of case-study work: A conceptual framework for case-based research. Journal of Humanistic Psychology, 38, 36-70.

Elton, N. H., Hanna, M & Treasure, J. (1994). Coping with Chronic pain – some patient’s suffer more. British Journal of Psychiatry, 165, 802-807

Erskine, W. A. R., Raine, E. R., & Lindegger, G. (1986). Assessment and management of chronic pain. South African Medical Journal, 65, 621-625

Fields, H. (1987). Pain. McGraw-Hill: New York.

Foa, E. B. & Emmelkanp, P. M. G. (1983). Failures in Behaviour Therapy. John Wiley and Sons: New York.

Folkman, S., Lazarus, R. S., Gruen, R. J. & Delongis, A. (1986). Appraisal, coping, health, status and psychological symptoms. Journal of Personality and Social Psychology, 50, 571-579.

Follick, M. J., Zitter, R. E., & Ahern, D. K. (1983). Failures in the operant treatment of chronic pain. In, E. B. Foa & P. M. G. Emmelkamp (Eds.) Failures in Behaviour Therapy (pp. 311-334). New York: Wiley.

Fordyce, W. (1976). Behavioural Methods for Chronic Pain and Illness. St. Louis: Mosby.

Fordyce, W. (1994). Pain and Suffering: What is the Unit? Special Issue: Proceedings of Chronic Pain in society. Quality of Life Research An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation, 3(1), 51-56.

Freeman, A., Pretzer, J., Fleming, B. & Simon, K. (1990). Clinical Applications of Cognitive Therapy. New York: Plenum Press.

Frymoyer, J. W. & Waddle, G (1991). Acute and Chronic Pain In, G. Pope. Occupational Low Back Pain Assessment, Treatment, and Prevention (pp. 71-94). Moskey Year Book: St Louis.

Goleman, D. & Gurin, J. (1993). Mind Body Medicine. Consumer Reports Books: New York.

Gordon, T. (1975). Parent Effectiveness Training. New York: New American Library.

Hawton, K., Salkovskis, P. M., Kirk, J., & Clark, M. (1989). Cognitive Behaviour Therapy for Psychiatric Problems: A Practical Guide. Oxford University Press: Oxford.

Hrudey, W. (1991). Overdiagnosis and overtreatment of lower-back pain. Journal of Occupational Rehabilitation, 1(4), 303-312.

Huskisson, E. C. (1983). Visual analogue Scales. In, R. Melzack. (Ed). Pain Measurement and Assessment. (pp. 33-37). Raven Press: New York.

Jacobson, E. (1938). Progressive Relaxation. University of Chicago Press: Chicago.

Jensen, M. P., Turner, J. A., Romona, J. M. & Karoly, P. (1991). Coping with chronic pain: a critical review of the literature. Pain, 47, 249-283.

Johansson, C., Dahl, J., Jannert, M., Melin, L & Andersson, G. (1998). Effects of a cognitive-behavioural pain-management program. Behaviour Research and Therapy, 36, 915-93.

Kaplan, H. I, & Sadock, B.J. (1991). Synopsis of Psychiatry. Williams and Wilkins: Chicago.

Kawanishi, Y (1992). Somatization of Asians: an artefact of Western medicalization? Transcultural Psychiatric Research Review, 29, 5-35.

Klaber-Moffett, J.A., Hughes, G.I., & Griffiths, P. (1993). A longitudinal study of low back pain in student nurses. International Journal of Nursing Studies, 30(3), 197-212.

Klapow, J. C., Slater, M. A., Patterson, T. L., & Atkinson, J. H. (1995). Psychosocial factors discriminate multidimensional clinical groups of chronic pain patients. Pain, 63(3), 349-355.

Kratochwill, T. R., Mott, S. E., & Dodson, C. L. (1984). Case Study and single-case research in clinical and applied psychology. In A. S. Bellack & M. Hersen (Eds.), Research Methods in Clinical Psychology (pp. 55-99). New York: Pergamon.

Lindegger, G. C. (1987). The marital and family system in the treatment of chronic pain. Psychotherapeia, 14(1), 35-37.

Linsen, A. C. J., Zitman, F. G. (1984). Patient evaluation of a cognitive behavioural group program for patient with lower back pain. Social Science and Medicine, 19, 1361-1367.

Linton, S. (1984). A controlled study of the effects of applied relaxation plus operant procedures in the regulation of chronic pain. British Journal of Clinical Psychology, 23, 291-299.

Lloyd, P. (1996). Pain rehabilitation seminars – patient education as an intervention strategy for chronic pain sufferers. Continuing Medical Education, 14(3), 325-332.

Maudsley Case History: Psychiatric Examination: Notes on Eliciting and Recording Clinical Information on Psychiatric Patients. The Departments of Psychiatry, The Institute of Psychiatry and The Maudsley Hospital, London (second edition). Oxford University Press : Oxford.

McNairy, S. L., Maruta, T., Ivnik, R. J., Swanson, D.W., & Ilstrup, D. M. (1984). Prescription medication dependence and neuropsychological function. Pain, 18, 169-178.

Melzack, R. & Wall, P. D. (1965). Pain Mechanisms: A New Theory. Science, 150, 971-979.

Melzack, R. (1975). The McGill Pain Questionnaire: Major properties and Scoring Methods. Pain, 1, 277-299.

Melzack, R. (1983). Pain Measurement and Assessment. Raven Press: New York.

Nicholas, M. K., Wilson, P. H., & Goyen, J. (1992). Comparison of cognitive-behavioural group treatment and an alternative non-psychological treatment for chronic low back pain. Pain, (48), 339-347.

Pilowsky, I. (1986). Psychodynamic aspects of the pain experience. In, R. A. Sternbach. (Ed.), The Psychology of Pain, (2nd ed.). (pp. 445-460). New York: Raven Press.

Reber, A, S. (1985). Dictionary of Psychology. London: Penguin Books.

Saarijarvi, S. (1992). Effectiveness of psychotherapy in low-back pain: A selective review of controlled studies. Psychiatria-Fennica, 23, 95-102.

Salkovskis, P. M. (1989). Somatic Problems. In, K. Hawton, P. M. Salkovskis, J. Kirk & D. M. Clark. (Eds.), Cognitive Behaviour Therapy for Psychiatric Problems (pp. 235-276). Oxford: Oxford University Press.

Sarno, J. (1991). Healing Back Pain. New York: Warner Books.

Sarno, J. (1978). Therapeutic exercise for back pain In, J. Basmajian. (Ed.). Therapeutic Exercise, (3rd ed.) (pp. 47-53).Baltimore: Waverly Press.

Scott, P. (1996). Concepts in Pain Mechanisms and Management. South African Journal of Sports Medicine, 7, 127-139.

Sore backs a major headache for assurers (1998, April, 18). The Star, p.24.

Steele, R. (1991). The pain patient. Spine: State of the Art Reviews, 5(3), 123-

136.

Sternbach, R. A. (1986). The Psychology of Pain. (2nd ed.). New York: Academic Press.

Sulivan, M. J. L., Reeson, K., Mikail, S. & Fisher, R. (1992). The treatment of depression in chronic low back pain: Review and recommendations. Pain, 50, 5-13.

Taylor, S. J. & Bogdan, R. (1984). Introduction to Qualitative Research Methods: The Search for Meanings (2nd Ed.). New York: Wiley.

Turk , D. C., Meichenbaum, D., & Genest, M. (1983). Pain and Behavioural Medicine: A Cognitive-Behavioural Perspective. New York: Guilford Press.

Turk, D. C. & Rudy, T. E. (1986). Assessment of cognitive factors in chronic pain: a worthwhile enterprise. Journal of Consulting and Clinical psychology, 54(6), 760-768.

Turk, D. C. & Meichenbaum, D. H. (1994). A cognitive-behavioural approach to pain management. In, P. D. Wall & R. Melzac. (Eds.). (1994). Textbook of Pain (pp. 1001-1009). Edinburgh: Churchill Livingston.

Turner, J. A. (1982). Psychological interventions for chronic pain: a critical review. Pain, 12, 355-364.

Turner, J. & Denny, M. (1993). Do antidepressant medications relieve lower-back pain? Journal of Family Practice, 37(6), 545-553.

Tyrer, S. (1992). Psychiatric assessment of chronic pain. British Journal of Psychiatry, 160, 174-180.

Van Bilsen, H. & Wilke, E. (1988) Drug and alcohol abuse in young people. In, F. Graham. (Ed.) Cognitive Therapy for Children and Families (pp. 246-261). Cambridge: Cambridge University Press.

Vollhardt, L. T. (1991). Psycho-neuro-immunology: a literature review. American Journal of Orthopsychiatry, 61(1), 417-429.

Weinman, J., Wright, S., & Johnston, M. (1995). Measures in Health Psychology; A Users' portflio. Pain and Pain Behaviours. Berkshire: Nfer-Nelson.

Weisenberg, M. (1994). Cognitive aspects of pain. In, P.D. Wall & R. Melzack (Eds.), Textbook of Pain (pp. 261-274). Edinburgh: Churchill Livingstone.

Young, J. (1984). Cognitive therapy for personality disorders and difficult patients. Unpublished paper.

Young, J. E. (1990). Cognitive Therapy for Personality Disorders: A Schema Focused Approach. Sarasota, Florida: Professional Resource Exchange, Inc.

Young, J. & Lindemann, M. (1992). An integrative schema-focused model for personality disorders. Journal of Cognitive Psychotherapy: An International Quarterly, 6(1), 11-25.

Weickgenant, A. L., Slater, M. A., Patterson, T & Atkinson, J. H,. (1993). Coping activities in chronic low back pain: Relationship with depression. Pain, 53 (1), 95-103.

9. APPENDICES

APPENDIX A:
A COGNITIVE- BEHAVIOURAL TREATMENT PROGRAM FOR CHRONIC LOWERBACK PAIN: A MANUAL FOR THE PRACTITIONER

INTRODUCTION

Pain is a personal experience, which usually begins with injury or disease. The discomfort it produces is intensified by the emotional response to the meaning, persistence, intensity and debilitating aspects of the experience.

Pain is the most frequent presenting complaint that leads patients to health care providers. After headaches, lower back pain is the most common cause of intractable pain, and is a condition that affects an estimated 50-80 % of the worlds' population, ranking first among all health problems in frequency of occurrence.

Most acute pain is limited in duration (less than six months), is amenable to treatment and usually can be cured. When pain however persists, and is chronic (present for six months or more), there is often uncertainty and confusion about its origin and likely causes. There is even a greater uncertainty as to when and how it will terminate, if ever.

The results of chronic pain are muscle weakness and atrophy, tendon and ligament shortening, and joint immobility. Normal physical activities become painful, limiting the sufferer's ability to function. With no relief available, many fall into the trap of "doctor shopping" in search of a cure, overdependence on

medication, depression and social withdrawal. Family and sexual relationships are also commonly affected due to the unrelenting pain.

This workbook and treatment program is designed for the chronic pain sufferer, offering a rational approach to understanding chronic pain and its management. Throughout it emphasises the key point is that of the patient taking responsibility for carrying out his or her own treatment. This can be achieved by setting realistic goals and learning specific skills. It is evident from research studies that chronic pain is seldom cured, and that one must "learn to control the pain, rather than let it control him/her" as an alternative to progressive disability.

The treatment program draws upon principles of psycho-education, and cognitive behaviour therapy. The program focuses on four basic areas:

1) Information (to enhance the patient's understanding and help them cope with their pain).

2) Physical management of pain (including medication reduction, physical exercise and stress management).

3) Psychological management of pain (including examination of beliefs, and attitudes about chronic pain).

4) The development of coping skills through communication and assertiveness training.

Note:

The program is not designed to eliminate pain completely, but rather to reduce the intensity of pain as a function of increased activity, physical reconditioning, and the acquisition of cognitive and behavioural coping skills. The treatment is designed to help patient's learn to live more effective and satisfying lives despite the presence of varying degrees of discomfort.

SESSION 1

Rules of the Program

- Attendance to each session.
- Attempt all homework assignments.
- Give new activities at least two weeks trial.
- Make and complete a weekly contract.

Overview of Self-help Principles:

Self-help = Being willing to learn about and assume responsibility for daily care of pain. The sessions are designed to give participants knowledge and skills in order to take an active part in their pain management.

Contracting:

Short-term goal setting is imperative. Participants are encouraged to make weekly contracts.

The rules of contracting are as follows:

1) Identify something they want to do. Use *Problem Solving Techniques* (see below).
2) Be realistic.
3) Specify what, when, how many, or how much.
4) Write it down and check it daily.

Problem Solving:

1) Identify the problem.
2) Brain-storm as many solutions as possible.
3) Check each solution for potential compatibility, effectiveness etc.
4) Narrow down the list of possibilities - i.e. create a short-list.
5) Choose an option from the short-list.
6) List each step involved in order to solve the problem.
7) Implement the strategy.

Being Responsible includes:

- *Responding with ability!*
- Setting goals and working towards them.
- Taking an active part in planning and executing daily tasks.

Goal Setting

Goals, wherever possible, should be stated in positive terms, so that it is clear what is being worked towards rather than away from. Goals should be specific and detailed. (What?, When?, Where?).

Self Monitoring and Behaviour Change

The aims of self monitoring are to assist in providing detail about the nature of the pain behaviour. The behaviour is noted and recorded as accurately as possible. The information is utilised to set specific goals, and to monitor progress.

Time Scheduling

Record the activities and time duration in the table below. Record the intensity of pain for each hour. Use a scale of 0-10 (0 = no pain, 10 = unbearable).

TIME OF DAY	SITTING Activity	TIME	WALKING & STANDING Activity	TIME	RECLINING Activity	TIME	PAIN LEVEL (0-10)
12-1 AM							
1-2 AM							
2-3 AM							
3-4 AM							
4-5 AM							
5-6 AM							
6-7 AM							
7-8 AM							
8-9 AM							

9-10 AM							
10-11 AM							
11-12 AM							
12-1 PM							
1-2 PM							
2-3 PM							
3-4 PM							
4-5 PM							
5-6 PM							
6-7 PM							
7-8 PM							
8-9 PM							
9-10 PM							
10-11 PM							
11-12 PM							

1) Medication Reduction

Evidence suggests that patients are often heavily medicated and are dependent on analgesic medication. The goal is to therefore reduce medication and eventually eliminate all unnecessary medication. Due to the threat of side effects from withdrawal, medical consultation may be necessary. The use of multiple medications is discouraged due to the threat of interactional effects and side effects. A central or primary doctor is therefore necessary to monitor the medication.

To encourage self-control and responsibility medication is to be used at regular, specific intervals, and reduced systematically. They should not be taken “just because it seems necessary”

List current medication consumption including dosage, type and amounts taken per day.

MEDICATION	CURRENT DOSAGE	NO. OF TIMES TAKEN /DAY

2) Increased Activity and Recreational Activities

To gradually begin doing things participants used to do before their pain began.

List two or three activities that they would like to do:

1) _____

2) _____

3) _____

Less time spent lying down.

How much time does the participant spend lying down when they are in pain? Could they perhaps be doing something else? If so, What? Using problem solving techniques, list other activities they would chose to do.

3) Reduction in the use of the Health Care System

_____

_____

_____

4) Graded Exercise Program

Structured physical exercise can be an extremely effective method of reducing stress. Exercise provides a physical release of the effects of stress and when this is accomplished there is usually a relaxing or calming effect.

In collaboration with the Department of Physiotherapy, a basic, graded exercise-activity program appropriate to the physical status, age and gender of the

participant will be developed. Initial goals are set at a level, which are easily attainable, and increased at a gradual rate.

The program will consist of initial low impact aerobic exercises (walking, cycling or swimming), building up to 20-30 minutes three times a week at an intensity congruent with their age and fitness levels. A home physiotherapy program will be taught, educating participants how to stretch the muscles identified with the muscle trigger points. These stretches are to be performed three times for six seconds, and three times per day.

5) Increase Tasks at Home and Work

List the tasks that have been limited due to pain. Begin to attend to these tasks as soon as possible, attempting them. Be aware of thoughts and feelings associated with the task, listing them on the record of Daily negative automatic thoughts and feelings.

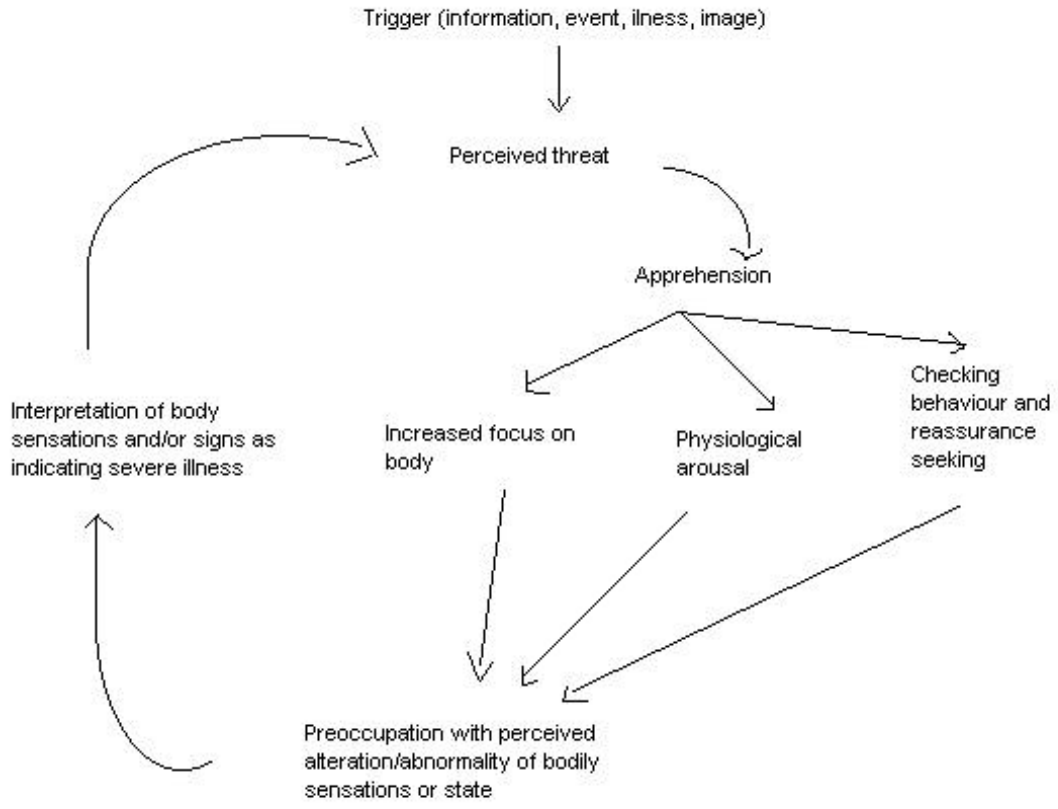
Models of Pain

The Sensory Model of Pain:

The Sensory Model defines pain as externally caused, and assumes a 'linear' relation between sensory and pain experiences. This model assumes the amount of subjective pain will be equivalent to the intensity of activity in the pain responsive organs. However, changes in extreme pain are seldom a function of the stimulus or sensory value of that pain, but are more often a function of the patient's coping ability and emotional involvement with the pain. In practise, the amount of anguish an individual displays is a complex reflection of psychological factors, such as: expectancies, prior history with pain and prior associations with individuals who coped with pain.

The Sequential Model of Pain:

The Sequential Model proposes that pain stimuli produce sensory responses that activate emotionally laden memories. The collective effect of these emotional and sensory components is subjectively experienced as pain.



HYPOTHESISED MAINTAINING MECHANISMS IN SOMATIC PROBLEMS
Salkovskis1989.,

The Vicious Pain Cycle:

The "pain/stress cycle", or the "pain/anxiety/tension cycle" is a vicious circle. Pain provokes anxiety, which in turn induces prolonged muscle spasm at the pain location and at trigger points. Pain is experienced and negative thoughts and feelings are activated. These in turn increase the pain and the cycle reproduces itself and intensifies as this occurs.

Multiple Issues Associated with Chronic Pain Include:

- Depression.
- Anxiety.
- Work interference.
- Domestic and recreational activities.
- Impact on self-esteem.
- Impact on relationships.

These factors should be addressed with the participant and elaborated upon.

Homework:

1) Complete the Time Scheduling tables.
2) Begin medication reduction program.
3) Perform three activities or tasks that have ceased as a result of pain.
4) Initiate exercise program (in consultation with the Physiotherapy department).

SESSION 2

Review of homework

Psycho-education Continued:

Pain Behaviour:

Pain behaviour include: Passivity; helplessness; overuse of medication; dependency on others; repeated visits to doctors; rest periods of inactivity; reduced work, leisure and social activities. Increased preoccupation with the symptoms of pain, which comes to dominate the ones thoughts. Fearful speculations arise about the cause of the pain, as and the belief exists that pain is a warning signal of some ongoing disease process. Pain behaviours are identified and noted so as to begin a process of decreasing and eliminating them.

Emotional States:

Emotional states that generally accompany chronic pain include: anger; guilt; fear; frustration and helplessness. These may in turn be related to widely diverse social, situational and interpersonal issues.

Cognitive States (Thinking):

Pain patients typically display negative thought patterns and belief systems about their pain. Sufferers often 'catastrophise' about their pain (anticipation or misinterpretation of events as particularly severe). This undermines their sense of self-efficacy, and reinforces the belief that defines them as inadequate copers. In addition, they use styles of overgeneralization (assuming similar outcomes to different experiences), and selective abstraction (selectively attending to negative aspects of experience). Beliefs and coping have a strong relationship to adjustment to chronic pain. Patients who believe that they can control their pain,

who avoid catastrophising and who believe that they are not severely disturbed, function better than those who do not.

The focus then shifts from finding the cause to understanding the symptom and its precipitating and perpetuating factors in a broader context. A link is tentatively forged with the identified psychological and social stressors, and the patient is encouraged to reflect on the psychological effects of these stressors. The symptom, most often the pain, can then be interpreted more broadly as a signal of distress.

The concept of self-efficacy is important as it has an influence on the motivational role in pain control. Studies show that a key predictor of patient success at the conclusion of treatment is perceived self-efficacy.

Homework Exercise:

1) Continue medication reduction program.
2) Proceed with activities or tasks that have ceased as a result of your pain.
3) Continue exercise program increasing tasks gradually (as prescribed by physiotherapist).
4) Begin a daily diary, monitoring and listing **pain behaviours** (overt expressions of pain and suffering – e.g. moaning and groaning, limping, etc.).
   (**Rationale: -** This exercise will begin to highlight the central role that pain has come to have in their lives, and serves as a catalyst for behaviour change.)
   "When I experience severe pain, I....."
   _____
   _____

SESSION 3

Feedback/problem Solving:

Review of contract from previous week, what worked, what did not.

Review of homework exercises. Description of problems which arose in meeting the contract. Brainstorming possible solutions to problems. Solution and strategy

to be added to contract for next weeks' homework assignment and to be attempted.

Introduction to Pain Management:

Explanation of pain being a signal from the body related to multiple causes. The pain cycle is explained. Issues include:

Disease pain, tense muscles, psychological stress, depression and fatigue.

This is followed by a discussion that depending on thoughts, feelings and action in response to pain, participants can increase or decrease their discomfort.

Homework:

Answer the following questions:

What chronic pain means to the participant…

_____

_____

_____

When was the most severe pain episode?

_____

_____

How long did it last?

_____

When did it begin?

_____

When did it end?

_____

Was it life threatening?

_____

Are there situational factors involved with their pain? (I.e. are there specific situations/circumstances when your pain is worse?) If so, list them:

_____

_____

_____

_____

What have some of the life circumstances associated with their pain been?

_____

_____

What reduces pain and what intensifies it?

_____

_____

_____

_____

Before starting this program, when last did the participant do any physical exercise? What did they do? How did they respond to it?

_____

_____

_____

Goal setting: To Increase Activity.

Introduction and Recording of Register of Daily Automatic Thoughts and Feelings.

SESSION 4

Feedback from previous session, review of homework tasks, review of daily register of automatic thoughts and feelings

Understanding Stress

Stress is the physical and emotional reaction to change. If participants perceive the change to be threatening, or they do not understand it, it can cause physical effects on the body. The healthy reaction to stress not only involves the way participants perceive it, but also the way they reverse or counteract its physical effects.

The stress reaction gears them up inside and in order to prevent this pent-up energy from accumulating in their body, they have to 'shift gears'. This means slowing down and using relaxation and breathing techniques as well as exercise.

Progressive Muscle Relaxation

Progressive muscle relaxation techniques are done initially with the participant to teach the technique, this is recorded on audio-tape to be used at home or at work on a daily basis twice a day).This technique consists of alternately tensing and then relaxing different groups of muscles, forcing them to focus on how to relax. Here are some simple steps, which are instructed to the participant:

"Sit in a comfortable chair or lie on the floor with, your feet against the wall, with your eyes closed. Make a tight fist with your right hand, hold it for about five seconds and experience the tension. Unclench and let the tension flow out, noting how it feels different to relax. Do the same with your left hand and the muscles in your upper arms and shoulders. Tense your neck, hold and relax, noting the feel of the relaxed tension. Frown as hard as you can and relax. Smile as hard as you can and relax (remember how it feels to smile and be sure to use these muscles more than your frowning muscles). Raise your toes (or push against the wall) feeling the leg tension and relax. Again notice how the tension

drains away. Take a deep breath, feeling the tension in your chest. Exhale and relax. Breathe in again and hold, then exhale and concentrate on how calm you are. Daydream and think of a peaceful, pleasant setting and enjoy it for a while. Now count slowly to four and open your eyes. You'll be fully alert and relaxed".

Deep Breathing

Deep breathing is another simple technique used to help combat the tension build-up experienced. Participants are told to follow these easy steps:

"Sit in your chair or stand comfortably, but erect. Place the palms of your hands against your stomach. Breathe in slowly through your nose, but allowing your stomach to expand forward against your hands. Hold this deep breath for a few seconds. Slowly exhale through your mouth, slightly pursing your lips together and feel tension draining away. When you have exhaled as much as you can repeat the technique".

Participants should repeat this cycle a couple of times at the beginning and work up to taking four or five breaths in this manner after some practice. They should be cautioned not to breathe too fast as this may cause hyperventilation or light-headedness.

SESSION 5

Review of homework.

Dealing with Depression: The pain cycle is reviewed. Participants are asked to brainstorm symptoms of depression. Coping methods to deal with depression are brainstormed.

Introduction of Distraction Techniques:

The principle of distraction (i.e. that it is difficult for the mind to focus on two things) is explained. Examples of distraction techniques are brainstormed,

exercises are done in which participants rate their pain before and during the technique.

Guided Imagery: To add to previous relaxation techniques acquired. This relaxation technique is described and participant is guided through a guided visualisation exercise.

SESSION 6

1. Feedback/ problem solving. Review of Homework.

2. ABCD Model/Topography of feelings:

The association between thoughts and feelings are communicated. From the daily registers, negative automatic thoughts are discussed and participants are made aware of cognitive distortions they may be utilising. Connections are drawn between the importance of language in the understanding of feelings and pain. (This is based on the assumption that chronic pain patients frequently have alexothymia -no language to describe their feelings). Affective/feeling words are brainstormed.

3. Identifying negative thoughts and attitudes – Self-talk.

This is an extension of 2 above, where self-talk is introduced as the habitual things participants say to themselves. Negative self-talk leads to pain, increased depression and lower activity levels. Examples of positive and negative self-talk are given. This is followed by a brainstorming session where participants identify their own negative self-statements related to their pain. They are taught to practise changing their statements negative statements into positive ones.

Negative Thinking:

It is easy to indulge in negative thinking when patients have chronic pain. The pain drags on and part of their reaction to that situation comes in the form of thoughts and feelings of fear and frustration. These negative thoughts can be so automatic that they may not be aware of how frequently they occur and how debilitating they are. Participants need to begin to take time to examine their negative thinking and understand its effect on their ability to manage their pain.

Negative thoughts have the effect of increasing anxiety and pain because the patient focuses on catastrophe and resentment, creating a reality where the worst seems bound to happen and leaves them feeling like a helpless victim. The body reacts by tensing with fear and anger. As the body tightens, the pain increases.

In the space below, participants are required to recall some of their negative thoughts:
Examples:
" I have no control over my pain…"
" I'll never get better…"
"This is going to get worse and worse, till I go crazy…"

_____
_____
_____
_____

Negative thoughts such as these create a 'downward spiral' of depressed thinking. Once they get started, the momentum of their negative thoughts continues to carry them further down. Unless this pattern is broken, the spiral escalates, as they become more desperate and depressed.

What the participant thinks thus effects how they feel. The way they experience their emotions, and their perception of a situation literally determines their reactions to it. Through cognitive restructuring (changing the way participants think), they can learn to change the negative internal dialogue that fuels their anxiety depression, and anger, which inevitably makes their pain worse.

Sometimes it is difficult to determine which comes first, the negative thoughts, the negative feelings or the pain. It is however safe to say, that whenever they think negative thoughts about their pain, they will probably have a resulting negative physical reaction. Conversely, whenever they feel physical pain, they will

probably think negative thoughts about it, setting off a vicious cycle.

Homework Assignment:

Over the next week participants are required to list their negative thoughts, and negative feelings in response to various situations. (See Daily register of negative automatic thoughts).

Styles of negative thinking.

1) All–or-nothing thinking

Participants see things in black and white categories. “Good” or “bad”, “pain” or “pain-free”. E.g. “If I’m not better by tomorrow, then It’s not working and I’m a failure”.

2) Overgeneralization

Participants see a single negative event as a never-ending pattern of defeat

3) Mental Filter

They pick out a single negative detail and dwell on it exclusively so that their vision of all reality becomes darkened.

4) Disqualifying the positive

Patients reject positive experiences by insisting “they don’t count’ for some reason or other. In this way they can maintain a negative belief that is contradicted by their everyday experiences.

5) Jumping to conclusions

Participants make a negative interpretation even though there are no definite facts that convincingly support their conclusion.

a) Mind Reading – they arbitrarily conclude that someone is reacting negatively to them, and they do not bother to check this out.
b) The fortune-teller Error – they anticipate that things will turn out badly and they feel convinced that their prediction is an already established fact.

6) Catastrophizing

Participants predict catastrophic consequences, believing them to have a high

probability, when in fact the probability is in fact low.

7) Emotional Reasoning

They assume that their negative emotions necessarily reflect the way things are "I feel it, therefore it must be true".

8) Should statements

Participants try to motivate themselves with "shoulds" and "shouldn'ts". The emotional consequence is guilt. When they direct "should" statements to others, they feel anger, resentment and frustration.

9) Labelling and mislabelling

This is an extreme form of overgeneralization. Instead of describing the error, they attach a negative label to themselves:" I'm a loser". When someone else's behaviour annoys them, they attach a negative label to him/herself. Mislabelling involves describing an event with language that is highly coloured and emotionally loaded.

10) Personalization

They see themselves as the cause of some negative external event that in fact they were not primarily responsible for.

Replacing Negative Thoughts

Three methods will be described to assist in replacing negative thoughts:

1) Thought Stopping

This approach attempts to stop negative thoughts cold. Participants are required to devise for themselves a list of quick responses to replace the negative and unproductive thoughts. As soon as they notice themselves having a negative thought, they are taught to simply say: "Stop!", and replace it with something else. Examples of attentive, rational responses follow. Add others to list if they seem appropriate.

- "I can cope…"
- " Relax, I can manage the pain…"

- I am learning new coping skills everyday…"
- I am not a bad person because I have this pain…"

Participants may Add some positive thoughts of their own:

_____

_____

_____

They can also replace angry rebuttal statements for the negative thoughts. Below are some examples:

- "Stop this negative crap…"
- "Shut up with all the negative stuff…"
- "To hell with this catastrophic nonsense…"
- "Screw this blaming bull…"
- "No more of this helpless stuff…"

Participants may add more of their own:

_____

_____

2) The ABCD Model

This model can be a useful tool to assist with understanding negative thoughts about the pain.

A = The *"Activating Event"*, or stressor (e.g. the muscle spasm in their back)

B = Their *"Belief System"* or their thoughts and attitudes about the stressful event. (E.g. they may think: "Oh dear, now I won't be able to move for weeks, I can't do anything anymore…")

C = The *"Consequence"* of the activating event (i.e., your feelings). When they think poorly of themselves, as in B, they feel guilty, frustrated or depressed.

D = *"Disputing".* By disputing, Patients can change the sequence of events they discover in B, which affect how badly they feel in C.

*3) **Questioning negative Thoughts and Correcting Distortions***

Based on D of disputing, in the ABCD model, below are a list of questions they may consider to critically question their automatic thinking:

- “Am I overgeneralising?”
- “Am I taking this too personally?”
- “Is there another explanation?”
- “What evidence do I have for this conclusion?”
- “Am I confusing a feeling with a fact?”
- “Am I discounting evidence without good reason?”
- “Am I focusing on irrelevant factors?”
- “Am I making a mistake in thinking what causes what?”
- “What is the worst that could happen?”
- “Am I overlooking my strengths and resources? “
- “Am I focusing on feeling bad, rather than on identifying and solving the problem?”
- “Am I making the problem worse by using absolute or exaggerated words like “always”, “forever”, “should”, “must”, “need”, “can’t”?

Summary of Reversing Negative thinking:

- Reversing negative thinking can be a useful tool for pain reduction as it helps reduce anxiety, which in turn reduces pain levels.
- It eliminates compounding of the pain problem
- It opens up other options for pain management.
- With practise, it becomes habit.
- It can be applied to other problem areas.
- It can enhance their relationships with others.
- It makes them feel better.

SESSION 7

Review of previous session, homework etc.

Communication Skills.

The importance of good communication is discussed. Specifically the use of "I" versus "You' messages. Communication problems are identified and discussed. Problem solving techniques are generated to deal with these difficulties.

Template provided: When You (say nasty things), I feel (disappointed, hurts, sad, angry), and I would like you to (consider what the consequences of your behaviours might be).

Managing Conflict

Below are three styles of managing conflict. Participants are requested to try and identify which mode they most often employ.

PASSIVE REPONSES:	AGGRESSIVE RESPONSES:	ASSERTIVE RESPONSES:
• Submissive • Avoids trouble • Offers no opposition • Avoids/ignores conflict situation • Does not express feelings	• Attacks • Hostile • Destructive • Causes conflict • Puts others down • Threatens or punishes • Fights/quarrels • Violates others rights • Insensitive • Uses sarcasm	• Stands up for rights or opinions • Can be direct without threatening • Negotiates or compromises • Not over-apologetic • Can cope with justified criticism • Deals with problem situation • Not demanding • Not offensive/rude.

Homework – practising communication skills.

SESSION 8

Feedback/problem solving

Putting it all together:

The pain cycle is reviewed, self-management techniques and what has been learned are reviewed. Participants are faced with the question: “What does chronic pain mean to me?” Responses are compared with responses from the first session. Accomplishments are shared and acknowledged.

Planning Ahead

Participants are encouraged to devise strategies of pain self-management: deciding what they want to accomplish; plan or contract; carry out; check the results; and make corrections as needed. Further goals are discussed with regard to their pain management as well as other aspects of their lives.

****

APPENDIX B:

DIAGNOSTIC CRITERIA FOR SOMATOFORM DISORDERS (D.S.M. - IV)

1) Diagnostic Criteria for 300.81 Somatization Disorder

A. A history of many physical complaints beginning before the age of 30 years that occur over a period of several years and result in treatment being sought or significant impairment in social, occupational or other important areas of functioning.

B. Each of the following criteria must have been met, with individual symptoms occurring at any time during the course of disturbance:

(1) *Four pain symptoms:* a history of pain related to at least four different sites or functions (e.g. head, abdomen, back, joints, extremities, chest, rectum, during menstruation, during sexual intercourse or during urination).

(2) *Two gastrointestinal symptoms:* a history of at least two gastrointestinal symptoms other than pain (e.g., nausea, bloating, vomiting, other than during pregnancy, diarrhea, or intolerance of different foods).

(3) *One sexual symptom:* a history of at least one sexual or reproductive symptom other than pain (e.g., sexual indifference, erectile or ejaculatory dysfunction, irregular menses, excessive menstrual bleeding, vomiting throughout pregnancy).

(4) *One pseudoneurological symptom:* a history of at least one symptom or deficit suggesting a neurological condition not limited to pain (conversion symptoms such as impaired coordination or balance, paralysis or localized weakness, difficulty swallowing or lump in throat, aphonia, urinary retention, hallucinations, loss of touch or pain sensation, double vision, blindness, deafness, seizures, dissociative symptoms such as amnesia or loss of consciousness other than fainting)

C. Either (1) or (2):

(1) After appropriate investigation, each of the symptoms in criteria B cannot fully be explained by a known general medical condition or the direct effects of a substance (e.g., drug of abuse a medication)

(2) When there is a related general medical condition, the physical complaints or resulting social or occupational impairment are in excess of what would be expected from the history, physical examination or laboratory findings).

D. The symptoms are not intentionally produced or feigned (as in Factitious Disorder or Malingering).

****

2) Diagnostic criteria for Undifferentiated Somatoform Disorder

A. One or more physical complaints (e.g., fatigue loss of appetite, gastro-intestinal or urinary complaints).

B. Either (1) or (2)

(1) After appropriate investigation, the symptoms cannot be fully explained by a known general medical condition or the direct effects of a substance (e.g., drug of abuse, a medication).

(2) When there is a related general medical condition, the physical complaints or resulting social or occupational impairment is in excess of what would be expected from the history, physical examination, or laboratory findings).

C. The symptoms cause clinically significant distress or impairment in social occupational or other Important areas of functioning.

D. The duration of the disturbance is at least three six months.

E. The disturbance is not better accounted for by another mental disorder (e.g., another Somatoform disorder, Sexual Dysfunction, Mood Disorder, Anxiety Disorder, Sleep Disorder, or Psychotic Disorder).

F. The symptom is not intentionally produced or feigned (as in Factitious Disorder or Malingering).

3) Diagnostic Criteria for Pain Disorder

A. Pain in one or more anatomical site is the predominant focus of the clinical presentation and is of sufficient severity to warrant clinical attention.

B. The pain causes clinically significant distress or impairment in social, occupational or other important areas of functioning.

C. Psychological factors are judged to have an important role in the onset, severity, exacerbation, or maintenance of the pain.

D. The symptom or deficit is not intentionally produced or feigned (as in Factitious Disorder or Malingering).

E. The pain is not better accounted for by a Mood, Anxiety, or Psychotic Disorder and does not meet the criteria for Dyspareunia.

Code as Follows:

307.80 Pain Disorder Associated with Psychological Factors:

Psychological factors are judged to have the major role in the onset, severity, exacerbation, or maintenance of the pain. (if a general medical condition is present, it does not have a major role in the onset, severity, exacerbation, or maintenance of the pain.) This type of Pain Disorder is not diagnosed if criteria are also met for Somatization Disorder.

Specify if:

Acute: Duration less than six months

Chronic: Duration of six months or longer.

307.89 Pain Disorder Associated with Both Psychological Factors and a General Medical Condition:

Both psychological factors and a general medical condition are judged to have important roles in the onset, severity, exacerbation, or maintenance of the pain. The associated general medical condition or anatomical site of the pain is coded on axis III.

Specify if:

Acute: Duration less than six months

Chronic: Duration of six months or longer.

4) Diagnostic Criteria for Factitious Disorder

A. Intentional production or feigning of physical or psychological signs or symptoms.

B. The motivation for the behaviour is to assume the sick role.

C. External incentives for the behaviour (such as economic gain, avoiding legal responsibility, or improving physical well being, as in malingering) are absent.

Code based on type:

300.16 With Predominantly Psychological Signs and Symptoms: If psychological signs and symptoms predominate in the clinical presentation.

300.19 With Predominantly Physical Signs and Symptoms: If physical signs and symptoms predominate in the clinical presentation.

300.19 With Combined Psychological and Physical Signs and Symptoms: If both psychological and physical signs and symptoms present but neither predominates in the clinical presentation.

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5) V65.2 Malingering

The essential feature of malingering is the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution, or obtaining drugs. Under some circumstances, malingering may represent adaptive behaviour - for example feigning illness while a captive of the enemy during wartime.

Malingering should be strongly suspected if any combination of the following is noted:

1. Medicolegal context of presentation (e.g., the person is referred by an attorney to the clinician for examination)
2. Marked discrepancy between the person's claimed stress or disability and the objective findings.
3. Lack of cooperation during the diagnostic evaluation and in complying with the prescribed treatment regimen.
4. The presence of Antisocial Personality Disorder.

APPENDIX C – ASSESSMENT

Daily Self Monitoring:

Please complete the following self-administered scales over a two week period, on a daily basis to obtain your "baseline" levels.

Name:_____ Date: _____

1) Pain Visual Analogue Scale: (Rate your experience of pain - every two hours - by placing an X on the line below. 0= no pain, 10 = worst pain imaginable).

Time of day **Level of pain**

12 p.m.

_____

0 1 2 3 4 5 6 7 8 9 10

10 p.m.

_____

0 1 2 3 4 5 6 7 8 9 10

8 p.m.

_____

0 1 2 3 4 5 6 7 8 9 10

6 p.m.

_____

0 1 2 3 4 5 6 7 8 9 10

4 p.m.

_____

0 1 2 3 4 5 6 7 8 9 10

2 p.m.

_____

0 1 2 3 4 5 6 7 8 9 10

12 p.m.

_____

0 1 2 3 4 5 6 7 8 9 10

10 a.m.

_____

0 1 2 3 4 5 6 7 8 9 10

8 a.m.

_____

0 1 2 3 4 5 6 7 8 9 10

6 a.m.

_____

0 1 2 3 4 5 6 7 8 9 10

2 a.m.

_____

0 1 2 3 4 5 6 7 8 9 10

2 a.m. _____

0 1 2 3 4 5 6 7 8 9 10

2) Daily Activity Interference Visual Analogue Scale:

Rate your daily activity levels by placing an X on the line (0 = no interference, 10 = completely incapacitated).

_____

0 1 2 3 4 5 6 7 8 9 10

3) Medication Index

List your daily dose of medication, including type of drug and amount consumed.

Name of drug :

Dosage :

Time/s taken :

4) Please fill in the Mc Gill Pain Inventory.

5) Please fill in the Beck Anxiety Inventory.

6) Please fill in the Beck Depression Inventory.

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APPENDIX D:

Chronic Lower Back pain: A Cognitive - Behavioural Research Programme
Facilitated by Michael Wohlman (Intern Counselling Psychologist Two Military Hospital, Wynberg).

Attention: To you who are in pain:

There is no more controversial subject in medicine today than the diagnosis and treatment of back pain. Pain is defined as an unpleasant physical and emotional experience associated with actual or potential tissue damage. Chronic lower back pain, by definition is of a longer duration than acute pain, is more diffuse in nature and far more complex.

Despite advances in the understanding of basic physiology, anatomy and the increasingly sophisticated medical and surgical treatments, chronic pain still exists. In all likelihood you are reading this document in response to your pain, and the hope to be pain-free. Most chronic pain patients have been exposed to a multitude of diagnostic assessments, medical work-ups, and a whole variety of treatments, but to no avail, the pain is still present, affecting many aspects of their lives - including family, work, social, recreational as well as physical. The situation seems hopeless, health care providers from whom they expect to find relief appear to give up on them, and this adds to their hopelessness.

Chronic pain tends to cause debilitating discomfort becoming more increasingly associated with emotional distress, depression and failure to cope. As pain continues, the individual becomes pre-occupied with the pain and interpersonal functioning is adversely affected. Emotional states that may accompany chronic pain include anger, guilt, fear, frustration and helplessness. These may in turn be related to widely diverse social, situational and interpersonal issues. The problem is often exacerbated by the inability to express these negative feelings, creating tension and intensifying the pain The recognition of the emotional component is therefore crucial to the total management of chronic pain. This is often the most difficult aspect of the pain experience.

The research programme I am investigating aims to address the above issues. The programme is based on the work by two American psychologists (Turk and Meichenbaum), who seem to have had success with a Cognitive-Behavioural programme. The programmes' objectives are (a) to assist you with moving out of the passive role, and to become active and resourceful, no longer viewing yourself as patients or 'sufferers'. (b) Teaching you how to take charge and improve the quality of your life. (c) Teaching you how to alleviate some of the problems created by the presence of pain. (d) Teaching practical methods you can use to help reduce the severity of the pain you experience. Through the

programme you will obtain information that will assist you in reducing your pain.

Due to the fact that pain is such a personal experience, the key point of the programme is to take personal responsibility to set realistic goals and learn specific skills. The programme reinforces the fact that 'chronic pain is seldom cured, and you must therefore learn to control the pain rather than let it control you".

The programme consists of individual one-hour 'sessions' with Mr. Wohlman and will begin with a detailed history taking and assessment phase. Thereafter, it will continue, moving on to specific stages that will last approximately eight weeks. We will meet on a weekly basis attempting to understand models/theories of pain, the meaning of pain in your life, emotional and behavioural aspects of pain (e.g., medication and inactivity) and specifically to learn skills to cope and control the pain without surgery and decreased medication.

The cognitive-behavioural model emphasises that thoughts, emotions and behaviours form a "cognitive triangle" - where each effects the other. By gaining awareness of your thoughts, behaviours and feelings, attempts can be made to alter these, thereby having a positive influence over your levels of pain and control thereof. Throughout the process, levels of pain as well your emotional state will be monitored using simple inventories that will be completed each session.

Due to the sensitive nature of the subject, it is possible that difficult emotional material will emerge and that you may find threatening to cope with. This is where you will need 'courage' to confront you emotions and be willing to 'surrender to the process' and to really begin to gain control over your emotions as well as your pain. I will be available to support you as much as possible, but ultimately, you are responsible for your pain.

Should you wish to participate in the project, I would require you to be committed and motivated to attend and complete the programme. Strict ethical standards (as recommended by the S.AM.D.C) will be adhered to ensuring client care, as well as strict confidentiality.

If you are willing to participate, please sign the consent form overleaf.

Thank you.

Yours sincerely

Michael Wohlman.

APPENDIX E:

Daily Record of Dysfunctional Thoughts

Explanation: When you experience an unpleasant emotion, note the situation that seemed to stimulate the emotion. If the emotion occurred while you were thinking, daydreaming etc., please note this.) Then note the automatic thoughts associated with the emotion. Record the degree to which you believe this thought: 0% = not at all, 100% = completely. In rating the degree of emotion: 1 = a trace; 100 = the most intense possible.

Date	Situation Describe: 1) Actual event leading to unpleasant emotion or, 2) Stream of thoughts, daydream, or recollection, leading to unpleasant emotion.	Emotion(s) 1) Specify emotion(s). 2) Rate Degree of emotion 1-100.	Automatic thought(s) 1) Write automatic thought that proceeded emotion. 2) Rate belief in automatic thought(s), 0-100%.	Rational Response 1) Write rational response to automatic thought(s). 2) Rate belief in rational response, 0-100.	Outcome 1) Re-rate belief in automatic thought(s), 0-100% 2) Specify and rate subsequent emotions. 0-100.
	Playing with Jason felt pain when trying to pick him up.	Frustrated. (70).	I'll never be able to lead a normal life, image of being a helpless cripple in a wheel chair. (95%).	Don't be silly, you will not be a cripple in a wheel chair, and you're not helpless. Stop being a victim. The pain will improve. 75	I can still play with Jason, I just need to be less physical with him. (30%). Relief. Felt love for my son. Less frustrated (30)
	Argument with My mother about weekend arrangements. On phone I was aware of pain in my neck and back	Disappointed. Frustrated. (80)	She only sees things her way. She doesn't really give a damn about me. (90%).	She actually does love me, she just has a funny way of showing it. She finds it difficult to support me and is being selfish. I must not let her problems be mine. (85).	Made connection with back and emotions. Did some deep breathing, felt calm and in control., decrease in pain in level.(25%). Relief. (30).
	Woke up in pain.	Angry	Thought " oh no, not again, more	It's not that bad, the level is	Felt a little relieved.

McGILL PAIN QUESTIONNAIRE

NFER NELSON

Client's name: ..... **Age:** .....

File no.: ..... **Date:** .....

Clinical category (e.g. cardiac, neurological, etc.): .....

Diagnosis: .....

.....

.....

Analgesic (if already administered):

1. Type .....
2. Dosage .....
3. Time given in relation to this test .....

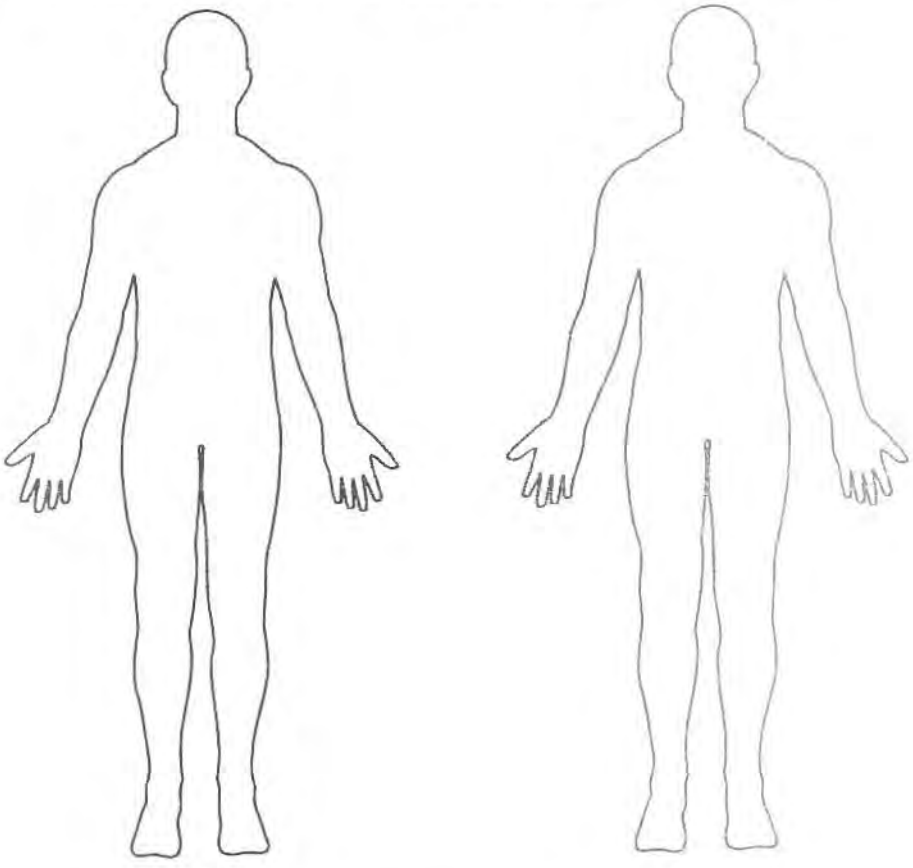
This questionnaire has been designed to tell us more about your pain. Four major questions we ask are:

1. Where is your pain?
2. What does it feel like?
3. How does it change with time?
4. How strong is it?

It is important that you tell us how your pain feels now. Please follow the instructions at the beginning of each part.

Part 1. Where is your pain?

Please mark, on the drawing below, the areas where you feel pain. Put E if external, or I if internal, near the areas which you mark. Put EI if both external and internal.



FRONT BACK

Part 2. 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	2	3	4
Flickering	Jumping	Pricking	Sharp
Quivering	Flashing	Boring	Cutting
Pulsing	Shooting	Drilling	Lacerating
Throbbing		Stabbing	
Beating		Lancinating	
Pounding			
5	**6**	**7**	**8**
Pinching	Tugging	Hot	Tingling
Pressing	Pulling	Burning	Itchy
Gnawing	Wrenching	Scalding	Smarting
Cramping		Searing	Stinging
Crushing			
9	**10**	**11**	**12**
Dull	Tender	Tiring	Sickening
Sore	Taut	Exhausting	Suffocating
Hurting	Rasping		
Aching	Splitting		
Heavy			
13	**14**	**15**	**16**
Fearful	Punishing	Wretched	Annoying
Frightful	Gruelling	Blinding	Troublesome
Terrifying	Cruel		Miserable
	Vicious		Intense
	Killing		Unbearable
17	**18**	**19**	**20**
Spreading	Tight	Cool	Nagging
Radiating	Numb	Cold	Nauseating
Penetrating	Drawing	Freezing	Agonizing
Piercing	Squeezing		Dreadful
	Tearing		Torturing

Part 3. How does your pain change with time?

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

1	2	3
Continuous	Rhythmic	Brief
Steady	Periodic	Momentary
Constant	Intermittent	Transient

2. What kind of things *relieve* your pain?

3. What kind of things *increase* your pain?

Part 4. How strong is your pain?

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

1	2	3	4	5
Mild	Discomforting	Distressing	Horrible	Excruciating

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? .....

Table 1: Mean rank, scale and weighted-rank values of Pain Rating Index (PRI) for individuals with low-back pain and musculoskeletal pain

Group	Category	Mean Rank Values	Mean Scale Values	Mean Weighted-Rank Values
Low-back Pain (N=81)	PRI–Sensory	18.2	16.9	17.0
	PRI–Affective	4.4	7.9	7.6
	PRI–Evaluative	3.0	2.9	3.0
	PRI–Miscellaneous	6.1	6.7	6.5
	PRI–Total	**31.6**	**34.4**	**34.1**
Musculoskeletal Pain (N=64)	PRI–Sensory	17.4	16.5	16.2
	PRI–Affective	3.7	6.3	6.3
	PRI–Evaluative	2.9	2.9	2.9
	PRI–Miscellaneous	6.2	6.5	6.7
	PRI–Total	**30.2**	**32.2**	**32.1**

Table 2: Mean Present Pain Intensity (PPI), Number of Words Chosen (NWC) and Pain Rating Index, Rank values (PRI–R)*

Pain syndrome	N	Mean age	Mean PPI	Mean NWC	Mean PRI–R				
					S	A	E	M	T
Menstrual	25	20	2.4	6.7	12.6	2.4	2.5	M	17.5
Arthritis	19	55	1.9	8.1	10.3	2.5	1.9	4.1	18.8
Cancer	16	56	2.8	8.8	17.3	2.3	4.1	2.3	26.0
Dental	15	33	2.3	8.3	11.8	1.7	2.2	3.8	19.5
Back Pain	14	48	2.6	10.9	14.0	3.5	3.3	5.5	26.3
Phantom limb	6	54	3.0	8.3	17.2	3.2	3.3	1.3	25.0
Post-herpetic	5	72	3.0	10.4	14.4	2.4	2.4	3.4	22.6

**The categories of the PRI–R are: S=sensory; A=affective; E=evaluative: M = Miscellaneous; T=total.*