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*Stress management intervention : evaluation of effectiveness and designation of a model*

BARLOW, Claire A.

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STRESS MANAGEMENT INTERVENTION:  
EVALUATION OF EFFECTIVENESS AND  
DESIGNATION OF A MODEL

CLAIRE A. BARLOW

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF  
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## **ABSTRACT**

Interest in the area of stress management intervention has grown rapidly over the past decade, particularly within the commercial and business sectors. The implications of this can clearly be seen in the vast number of stress management programmes which have emerged during this time. Typically, these programmes consist of a number of cognitive-behavioural techniques which aim to reduce the individual's psychological and/or physiological symptoms of stress, eliminate or modify the stressor, or to change the cognitive appraisal of the stressor.

Despite the plethora of stress management programmes in the commercial market, very little research has focused on determining the effectiveness of such packages. Furthermore, much of the research which has been undertaken has been methodologically flawed. This has probably occurred as a result of the researchers' failure to consider theoretical approaches towards the evaluative area of stress management intervention. Consequently, those models of stress management intervention which have been proposed have generally lacked empirical support.

The objectives of the present study were to implement and evaluate a stress management intervention using a balanced and controlled design. The author intended to maximise its effectiveness by running the programme over five weeks, a period considerably longer than many interventions, using the expertise of a qualified psychologist and physiotherapist. Thirty-four members of staff from Sheffield Hallam University volunteered to take part in the interventions, with thirty-one members of staff acting as control subjects. All participants, both experimental and control, were from the academic, administrative and technical sectors of the University. The intervention consisted of sessions on the theory of stress and its consequences, relaxation training, cognitive restructuring, assertiveness training and time management.

The programme was evaluated in the short-term using the participants' scores on a number of standardised psychological tests and self-designed evaluative questionnaires, together with the participants' blood pressure readings. A four-month follow-up was also included into the design of the research.

Consideration of the results from this study, together with criticisms of previous theoretical approaches to stress management interventions, led the author to design a Process Model of stress management intervention. This model focused on the short- and long-term outcomes of an intervention, and on the individual and their specific needs. A single-case study approach to stress management, using qualitative and quantitative research methods, was used to empirically test the Process Model. The author argued that the results from this study supported her model, and suggested that the model be used in the design of future evaluative studies of stress management intervention.

## **1.1 Introduction**

The first stage of any evaluative study of a stress management intervention should be the development of a definition of stress, since evaluation of an intervention is based upon the concept of stress reduction. A researcher must therefore endeavour to specify both in theoretical and empirical terms, what he/she means by the word 'stress'.

The body of literature which has focused on the concept of stress is immense. Researchers from such varied disciplines as medicine, psychology, sociology, physiology and endocrinology have long debated the theoretical underpinnings of the stress process. However, confusion and controversy still very much prevail with regard to its true nature and, as yet, no one model or definition appears to have been accepted by all.

A definition of stress is important not simply at a conceptual level, but also at an empirical level. If there is no such thing as stress, then one surely cannot measure it! Engel (1985) suggested that "*... stress is neither a noun, nor a verb, nor an adjective. It is an escape from reality*" (p.10). If stress does exist, then one must understand how it is manifested in order that one can quantify it and observe its effects.

The theoretical approaches taken so far around the stress model basically fall into three categories : response-based, stimulus-based and interactive.

## **1.2 Stress as a response**

Walter Cannon (1935) was the first to consider stress as an 'emergency response'. He proposed that sympathetic arousal in response to a stressor allowed the individual to fight or flee from danger. In other words, he considered the response to stress as adaptive and directly related to survival.

Cannon's (1935) work led to the formulation of the General Adaptation Syndrome by Hans Selye (1956). He found from a series of experiments that when crude ovarian extracts were injected into rats, a 'triad' of changes occurred. These included adrenal cortical enlargement, atrophy of the thymus and other lymphatic structures, and deep bleeding ulcers of the stomach and duodenal lining. Selye later found that extracts of placenta, pituitary, kidney, spleen, formalin, heat, x-rays, trauma, pain and many other stimuli also produced the same triad of changes. He stated "*I could find no noxious agent that did not elicit the syndrome*" (Mason, 1975, p.6)

The General Adaptation Syndrome was divided into three temporal phases, which Selye (1956) called the alarm reaction, the stage of resistance, and the stage of exhaustion. Selye (1956) believed that during the alarm reaction stage, the individual mobilises the body's resources in order to fight or flee from danger. Arousal results from the secretion of ACTH by the pituitary gland, which in turn causes the release of epinephrine, norepinephrine and cortisol into the bloodstream by the adrenal glands. If a strong stressor continues, the second stage of the GAS, that of resistance occurs. During this stage, the body attempts to adapt to the situation. Physiological arousal is reduced, but is still at a level higher than normal. Although the individual may not actually show outward signs of stress, their ability to cope with new stressors will be impaired, and they will be more likely to suffer from illnesses related to reduced immune function. The final stage of the GAS, that of exhaustion, occurs when a stressor continues over a long period of time. Energy reserves are depleted until the individual may no longer be able to resist the adverse effects of a stressor, and disease and death are increasingly likely to result.

Selye (1956) argued that this syndrome was non-specific, in that all aversive physical stimuli produced the same physiological response. He argued that stress was "*the sum of all non-specific changes caused by function or damage*" (1956, p. 65)

Selye's (1956) proposal of the General Adaptation Syndrome was at first widely supported. Indeed, Engel reported in the early 1950's that *"Professor Selye has presented a concept which is almost breathtaking in its scope"* (Mason, 1975, p.8). The advent of biochemical methods with which to directly measure adrenal cortical hormones in plasma and urine, gave researchers the opportunity to empirically test Selye's (1956) theory more accurately than previously, when only indirect methods such as glandular weight and metabolic effects of hormones were available. The studies found that the levels of these hormones were often elevated in response to a whole range of aversive stimuli. (Mason, 1971)

However, during the 1960s, the whole concept of non-specificity was questioned by many of those working within the area of psychoendocrinology. Mason (1968) argued that most of Selye's (1956) experimental situations were likely to involve some degree of emotional reaction. He carried out a study whereby the temperature in a chamber housing a chair-restrained monkey was rapidly increased from 70°F to 85°F within a few minutes. An elevation in the monkey's level of 17-hydroxycorticosteroid was indeed reported. However, Mason (1968) argued that the rapid increase in temperature would have evoked extreme psychological discomfort in the monkey, and the experiment was not therefore a valid reflection of the effects of an aversive physical stimulus on the endocrine system. Mason (1968) carried out a follow-up study, attempting to eliminate any spurious psychological variables. This time, the temperature rise was gradual, at a rate of 1°F per hour. The results showed a suppression of the monkey's level of 17-OHCS.

Although Mason (1971) recognised that these and similar results from animal studies must be regarded as tentative until evaluated in terms of human subjects, he suggested that *"the primary mediator underlying the pituitary-adrenal cortical response to 'stress research' may simply be the psychological apparatus involved in emotional or arousal reactions to threatening or unpleasant factors in life situations as a whole"* (p.329). Mason (1968) further argued that this primary mediator may in fact be a behavioural

response of emotional arousal or hyperalerting preparatory to flight or fight a physical stimulus. Therefore, if a physical stressor was perceived as very threatening, Mason (1968) proposed that psychoendocrine responses may occur universally, and would be superimposed upon the endocrine and other bodily responses to the pure 'physical' stimulus. Research has since focused on the relationship between and within the behavioural, physiological and subjective response areas under the general assumption that stress response is likely to be variable across individuals and situations.

### **1.3 Stress as a stimulus**

The stimulus-based model of the stress process was aptly described by Sir Charles Symonds in 1947, when discussing psychological disorders in RAF flying personnel. He stated that, *"it should be understood once and for all that (flying) stress is that which happens to the man, not that which happens in him; it is a set of causes, not a set of symptoms"* (In Cox, 1978, p.52) The model describes stress in terms of stimulus characteristics of the environment which are recognised as disturbing. Cox (1978) compared the model to Hooke's Law of Electricity, which states that if the strain produced by a given stress passes beyond the 'elastic limit' of the material, then permanent damage will result. Similarly, if a person experiences an intolerable amount of stress, physiological or psychological damage will occur.

Mason (1975) reported that quite ironically, Selye originally perceived stress in terms of a stimulus. His decision to define stress as a bodily response is not clear, although Mason (1975) suggested that it might have been as a result of a desire to focus more on the non-specificity response triad which he had proposed.

The definition of stress as a stimulus is very simplistic, and allows one to determine at what point damage may occur. However, Cox (1978) argued that humans are not machines, and therefore will not react in the same way to all stimuli. Indeed Mason (1975) stated that *"knowledge of stimulus conditions does not necessarily allow prediction of psychological or psychophysiological responses, because of pervasive individual differences with regard to such factors as past history, threat appraisal and coping or defensive styles"* (p.28). It was this recognition of the role of specific environmental and individual factors in the stress response which led to the development of an interactive model of the stress process.

#### **1.4 Stress as an interaction between the person and the environment**

A review of the literature on stress revealed a growing consensus amongst those working in the field, that stress should be defined in terms of the interaction between the individual and their environment. The transactional approach considers aspects of the potentially stressful environment together with the individual's cognitive and behavioural processes. It is this approach which shall be used as a definition of stress in the present research.

Lazarus (1966) was one of the first researchers to examine the cognitive and behavioural processes which are believed to occur upon the onset of a stressor. He outlined two processes, appraisal and coping, which formed the foundations of the interactionist model.

##### **1.41 Primary and secondary appraisal**

Primary appraisal occurs when an individual evaluates a situation, and assesses whether or not it threatens their well-being. Lazarus and Launier (1978) described

primary appraisal as consisting of three basic categories. A situation could be appraised by the individual as being irrelevant, benign-positive, or as stressful. If an event is perceived as being stressful, it is further appraised in terms of harm-loss, referring to the extent of the damage which has already occurred, as a threat, referring to the expectation of future harm-loss, or as a challenge, in which the individual perceives an opportunity for growth.

During secondary appraisal, the individual evaluates the resources which are available to help them to cope with the potentially stressful situation. Sarafino (1990) pointed out that although an individual tends to evaluate the coping resources available to them (secondary appraisal) after an event has been perceived as stressful (primary appraisal), he acknowledged that *"the two processes are highly interrelated"* (p.80) and secondary appraisal of one's limited resources can in fact lead to primary *"appraisals of threat where they would not otherwise occur"* (Coyne and Holroyd, 1982, p.109) As explained by Vingerhoets and Marcelissen (1988) a state of stress will tend to occur when an individual perceives a discrepancy between the demands of a situation and his/her capabilities. It is therefore not simply the characteristics of the situation, but also the individual's appraisal of it, which determines the response, and whether or not a state of stress will develop. Vingerhoets and Marcelissen (1988) proposed that this explains why *"one man's poison may be another's food and drink"* (p. 284).

#### **1.42 Coping**

The second of Lazarus's (1966) core processes is that of coping. Many conceptual definitions of coping have been proposed, most of which have explained the term as part of the person-environment interaction which occurs when an individual appraises an event as being stressful (Latack and Havlovic, 1992). For example, a fairly global definition of coping was suggested by Coyne, Aldwin and Lazarus (1981) who argued

that coping "*refers to efforts, both cognitive and behavioural, to manage environmental and internal demands and conflicts affecting an individual that tax or exceed a person's resources*" (p.440).

Kahn, Wolfe, Quinn, Snoek and Rosenthal (1964) proposed a two dimension typology of coping, namely Class 1 Coping, which included problem solving, and Class 2 Coping, which involved dealing with emotional or anxiety reactions. More recently the terms problem-focused and emotion-focused coping, which were proposed by Lazarus and Folkman (1984) have become widespread. Problem focused coping is defined in terms of efforts to manage the stressor, such as seeking medical attention or changing job. Emotion-focused coping focuses on ways of dealing with the emotions caused by the stressor. This includes activities such as seeking emotional support or using alcohol to try to forget about the problem.

There is evidence to suggest that problem-focused coping may be more adaptive than emotion-focused strategies. For example, Billings and Moos (1984) found that problem-focused coping was associated with lower levels of depression than emotion-focused coping. However, as pointed out by Meichenbaum (1985), the key to effective stress reduction may be in the diversity and flexibility of an individual's coping repertoire. Meichenbaum (1985) argued that different types of coping strategies may be required in different situations. For example, he stated that in uncontrollable situations, emotion-focused coping methods such as acceptance and denial may be most effective. This should be considered in terms of the techniques offered within a stress management intervention.

#### **1.43 Psychosocial factors which moderate an individual's response to stress**

Over the last twenty years, researchers have become interested in examining those psychosocial factors which moderate an individual's response to a potentially stressful

event (Cohen and Lazarus, 1983; Kobasa, 1986; Elliot, Trief and Stein, 1986; Houston, 1986). These factors include individual variables such as personal control, hardiness, self-esteem, type A/type B behaviour patterns and social support.

#### **1.431 Personal control**

Rodin (1986) defined personal control as the feeling that one can make decisions and take effective action in order to produce desirable outcomes and avoid undesirable ones. Individuals who believe that they have control over events which happen to them in their lives are described as having an internal locus of control. However, those people who believe that events which they experience are due to luck, chance or fate have an external locus of control. (Rotter, 1966)

The research literature surrounding the mediatory role of locus of control in the stressor-strain relationship is somewhat contradictory. Johnson and Sarason (1978) found a correlation between negative life stress and depression and anxiety amongst externally-oriented individuals only. However, Schill et al (1982) divided externals into 'congruent' and 'defensive' categories, whereby the former were described as internalising this cognitive style and the latter used it as a verbal technique. The authors found that it was the defensive externally-oriented individuals who were most vulnerable to stress because, they argued, defensive externals were less likely to seek social support.

Prospective studies on the role of locus of control on the stressor-strain relationship do not appear to support the view that externally-oriented individuals are more vulnerable to stress, however. Sanderman (1988) considered the effects of locus of control on individuals' levels of strain, and the interaction effects with life events over the period of the study. It was found that there was neither a main effect for locus of control, nor an interaction effect with life events. It would therefore appear from this research that

locus of control did not have a moderating effect on individuals' levels of strain throughout the period of the study. Ormel and Sanderman (1989) argued that this type of prospective design is a more rigorous test of the role of locus of control than retrospective or cross-sectional studies. Further prospective studies are therefore required to support the findings of previous research, and to allow a greater understanding of the role of locus of control on the stressor-strain relationship. It would be particularly interesting to consider the role of locus of control with other individual variables, in order to determine whether there may be interactive effects between such variables and individuals' levels of stress over time.

#### **1.432 Hardiness**

Criticisms of the research showing a direct link between stress and illness led Kobasa (1979) to examine those factors which she believed explained why some individuals have highly stressful lives, in terms of the number of potential stressors they encounter, but do not become ill. Kobasa (1979) proposed that such people *"have a personality structure differentiating them from persons who become sick under stress"* (p.3)

This 'personality structure' was defined in terms of hardiness, a broad concept which included the characteristics of control, commitment and challenge. Control was defined as above, in terms of an individual's belief that they influence events in their lives. Commitment was defined as an active involvement in activities at work, home and at leisure. Finally, challenge was seen in terms of an individual's perception of an event as an opportunity for growth and expansion, rather than as a threat.

Using a number of standardised tests to measure the components of hardiness, stress and illness, Kobasa (1979) found that amongst a group of middle and upper level executives, those subjects who reported high stress but low illness showed a greater degree of hardiness than those executives who reported high stress and high illness.

The former group showed a *"stronger commitment to self, an attitude of vigorousness toward the environment, a sense of meaningfulness, and an internal locus of control"* (Kobasa, 1979, p.1).

A number of studies have considered the effect of hardiness, combined with other factors, on individuals' health outcomes. For example, Kobasa, Maddi, Puccetti and Zola (1985) examined the way in which hardiness, exercise and social support protect individuals from becoming ill. Retrospective and prospective data of executive men's scores on scales of hardiness, and amount of exercise and social support revealed protective effects against illness for all three factors, with hardiness showing the greatest effects.

Gentry and Kobasa (1984) pointed out that although research has consistently shown the protective effects of the control and commitment components of hardiness, the research is much less divisive in terms of the challenge component. Furthermore Sarafino (1990) highlighted the fact that the research on hardiness has tended to be based upon white middle-class professionals. He argued that hardiness may not have the same effects on the health outcome of groups of different gender, age, ethnicity and socio-economic status. Further research into the moderating role of hardiness in the stressor-strain relationship is clearly required.

#### **1.433 Self-esteem**

Rector, Roger and Nussbaum (1993) stated that many of the items relating to the commitment and challenge components of hardiness were taken from the Alienation Test (Maddi, Kobasa and Hoover, 1979). They argued that examination of these items suggested that a *"more robust, higher-order factor may underlie the two dimensions"* (Rector, Roger and Nussbaum, 1993, p.3). They believed that this higher-order factor was self-esteem.

Self-esteem can be defined as *"the degree to which a person positively values him/herself and the extent to which they believe they are capable and worthy"* (Rector, Roger and Nussbaum, 1993, p.3) Although several studies have suggested that self-esteem mediates the stressor-strain relationship (Hobfoll and Lieberman, 1987; Rector, Roger and Nussbaum, 1993), the majority have used correlational analysis to determine the relationship between self-esteem and health outcome. However, a study by Rector and Roger (1994) manipulated participants' self-esteem and then exposed them to a stressful event. They found that those subjects in the high self-esteem group reported less stress, less negative affect and made fewer errors on a task than those in a neutral self-esteem group.

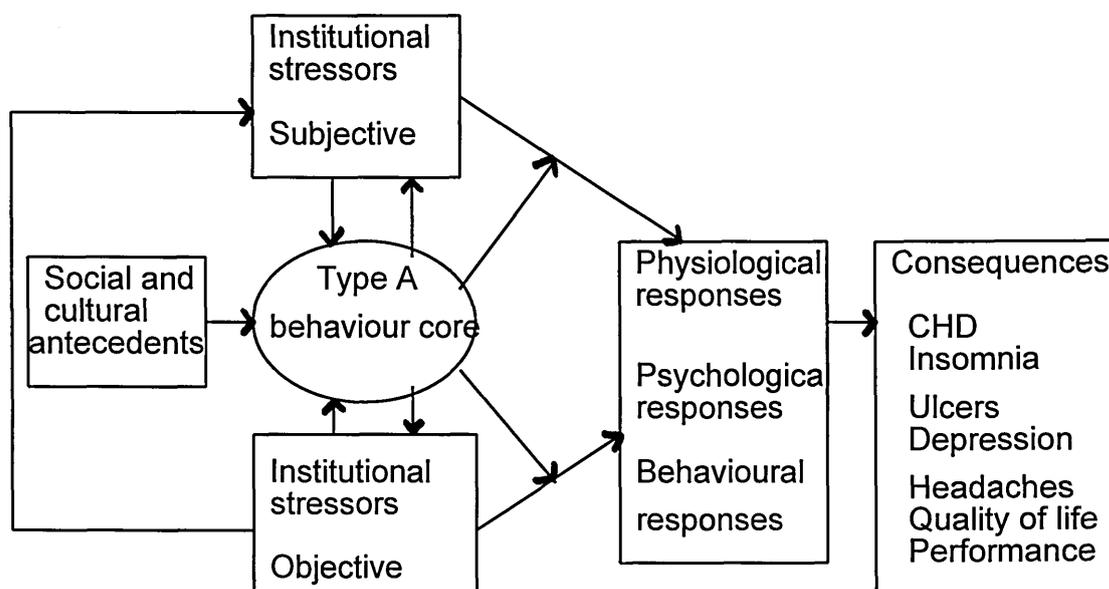
However, in a follow-up study, Rector and Roger (1994) found that males in the lower self-esteem group appeared to actively defend their self-esteem, as demonstrated by the results on the manipulation check. Defending their self-esteem served to reduce the physiological arousal which would have otherwise occurred, but caused this group to report more negative affect during completion of the task. Rector and Roger (1994) suggested that those people with low self-esteem may experience increased reactivity to stress initially, followed by physiological effects associated with anger as they attempt to defend their low self-esteem. They stated that whilst the female neutral self-esteem group also reported feelings of anger, the males were more likely to defend their self-esteem. The authors therefore argued that different explanations are required to account for the stress reactivity of men and women.

#### **1.434 Type A/Type B behaviour patterns**

The type A behaviour pattern was developed by Friedman and Rosenman (1974) to describe those individuals who were very competitive, impatient and easily became angry or hostile. In contrast, type B individuals were described as more easy-going,

and as less competitive and hostile. Much research has shown that type A individuals react more strongly in the presence of a stressor than do type B individuals. For example, several studies have found that type A individuals show greater increases in blood pressure, heart rate, cortisol, epinephrine and norepinephrine than type B individuals (Manuck, Craft and Gold, 1978; Williams, Lane, Kuhn, Melosh, White and Schanberg, 1982) However, research has also shown that individuals showing the type A behaviour pattern are more likely to encounter stressful events in their lives. For example, Baker, Dearborn, Hastings and Hamburger (1984) found that type A individuals were more likely to work in fast-paced, competitive environments and have higher workloads than type B individuals. A vicious circle therefore results whereby type A individuals not only react more negatively in stressful situations, but also actively seek out environments which are potentially stressful.

Ivancevich and Matteson (1988) proposed an integrated model of type A behaviour and stress, as shown in Figure 1.1.



**Figure 1.1 : Integration model of Type A behaviour and stress : Antecedents, responses and consequences**

The model considers the antecedents, the responses and the consequences of this type of behaviour. For example, the authors argued that it is necessary to consider how a person acquires the type A behaviour pattern, in order that ways of preventing its development can be sought. Sarafino (1990) described the way in which individuals' experiences in educational and occupational settings might foster the type A behaviour pattern. He cited an example whereby aggressive behaviour, such as in fighting for a job promotion or for higher grades, is rewarded. It is important that these social and cultural antecedents of the type A behaviour pattern are examined further in order to obtain a clearer picture of the development of this behaviour pattern.

#### **1.435 Optimism/pessimism**

Over the last decade, research has focused on the role of dispositional optimism as a moderator in the stressor-strain relationship. Dispositional optimism can be defined as generalised expectancies of favourable outcomes, with pessimism clearly being defined as generalised expectancies of unfavourable outcomes. (Scheier and Carver, 1985)

In a study by Scheier and Carver (1985), college undergraduates completed a measure of dispositional optimism and a checklist of physical symptoms at two different times during a stressful period in their lives. An inverse relationship between optimism and symptom reporting was found, suggesting that optimists may respond to stress in a different way than pessimists.

This hypothesis formed the basis of a study by Scheier, Weintraub and Carver (1986). They considered the way in which optimists and pessimists cope with stress. The results found modest positive correlations between optimism and problem-focused coping, seeking of support and emphasising positive aspects of stressful situations. When the stressor was uncontrollable, optimism was also associated with acceptance/resignation.

Pessimism, however, correlated positively with denial, distancing, focusing on stressful feelings and disengagement from one's previous goal with which the stressor was interfering. The authors therefore suggested that optimists tend to partake in more adaptive coping behaviours than pessimists, and that this can, at least in part, explain the higher stress levels of pessimists. This clearly has implications in terms of the design of stress management interventions for optimists and pessimists.

#### **1.436 Emotional control**

Cameron and Meichenbaum (1982) suggested that *"the habit of mentally rehearsing failures and concurrently engaging in self-denigrating thoughts might interfere with at least some dimension of the unwinding process"* (p.702). Roger and Neshoever (1987) argued that this type of behaviour is reflected by the personality variable of emotional control. They defined emotional control as *"the tendency to inhibit the expression of emotional responses"* (Roger and Neshoever, 1987, p.527), and developed a scale with which to measure this personality variable. This scale consisted of three factors, namely Rehearsal (r), Emotional Inhibition (EI), Aggression Control (AC) and Benign Control (BC). Further research found that Rehearsal in particular provided a moderatory role within the stressor-strain relationship. Roger (1988) found that individuals who had a tendency to continue to think about emotionally upsetting events in their lives showed prolonged heart rate recovery, and had high levels of cortisol following a stressful event. Roger (1988) argued that these findings are significant in the light of evidence that prolonged physiological arousal is related to increased susceptibility to various pathological diseases.

### **1.437 Social support**

Sarafino (1990) defined social support as *"the perceived comfort, caring, esteem, or help a person receives from other people or groups"* (p.107). Sarafino (1990) suggested that there were four types of support, namely emotional, esteem, tangible or instrumental and informational. Emotional support involves the expression of empathy and caring toward the individual, in order to comfort and reassure them. Esteem support was defined in terms of the expression of encouragement and agreement with an individual's ideas, and positive regard for them. Tangible or instrumental support involves direct help for the individual such as helping to sort out funeral arrangements. Finally informational support involves offering advice and suggestions.

The sources of support can vary widely between individuals, from a spouse and family members, to work colleagues or self-help groups. Research by Sherman and Lieberman (1981, In Lieberman, 1982) found that upon the death of a child, parents sought help from a variety of sources. Of 663 parents considered in the study, all but four per cent had sought some kind of help. In forty-two per cent of cases, the parents had sought help from multiple sources including both formal and informal sources, with only eighteen per cent seeking help solely from informal sources such as family and friends.

The role of social support as a mediating factor within the stressor-strain relationship has received much attention within the research literature. LaRocco, House and French (1980, In House, 1984) considered the effects of emotional and tangible or instrumental support on the levels of anxiety, depression and irritation of over 2000 men working in a variety of white- and blue-collar environments. The results showed that the greater the social support available, the less psychological strain was reported by individuals. Reduced job stress was found to be more strongly related with the social support individuals received from their supervisors and colleagues than from their

family and friends. This clearly has implications in terms of stress management within the workplace.

Two theories have been proposed to explain the moderating role of social support in the stress-strain relationship. (Sarafino, 1990) The buffering hypothesis suggests that social support protects the individual against the adverse effects of high levels of stress. Sarafino (1990) pointed out that the buffering effects of social support appear to be evident only or mainly in highly stressful situations.

Cohen and Wills (1985) proposed that the buffering effects of social support may be due to the fact that individuals with high levels of social support will be less likely to perceive a situation as stressful than those with low levels of support. They may find situations less threatening because they know that someone will be there to help them. Alternatively, social support might buffer the effects of stress through their response to a situation after they have appraised it as stressful. Cohen and Wills (1985) argued that people with high levels of social support might know someone who will help them, and therefore perceive themselves as having the resources available to cope with a stressful situation.

The second theory proposed to explain the moderating effects of social support on individuals' response to stress, is termed the direct effects hypothesis. This theory suggests that social support is beneficial to individuals' health both in low and in high stress situations. Cohen and Willis (1985) argued that individuals with high levels of social support might have high self-esteem due to a feeling of belonging. Their positive outlook on life may then make them less vulnerable to infection, in either low or high stress situations. Alternatively people with high levels of social support may try to lead a more healthy lifestyle because they feel that others depend on them and care about them.

Although much work has focused on the moderating role of social support, both at work and at home, further research is required. As highlighted by Burke (1987), unanswered questions still remain, for example concerning definitions and measures of social support, and the functions of social support. Social support is a rather global concept, and the author would suggest that researchers should endeavour to break it down and consider its individual components in terms of type, source and function.

## **1.5 Sources of stress and their measurement**

### **1.51 Major life events**

Integral to the interactionist model of stress, is the primary environmental source of the stress. A plethora of research has focused on a wide number of stressful environments, both at home and at work, and considered what it is about these environments which causes the individual to feel threatened and unable to cope.

Life events research has a long and varied background, including studies of the effects of natural and man-made disasters (Lindemann, 1944) to the consideration of discrete events which require adaptation or change (Holmes and Rahe, 1967). For example, Quadagno, Dixon, Denney and Buck (1986) found that the time following the birth of a baby can be a very stressful period.. This could be caused by a variety of factors including lack of sleep, a disordered lifestyle and the taking on of a new role as a parent. Sarafino (1990) also pointed out that the timing of life changes may be important, particularly if events do not occur as expected. He argued that this in itself may be stressful, since people may perceive themselves as failures if events do not occur at the expected times, or they may be denied support from friends in similar situations.

The life events approach to stress formed the basis of the Social Readjustment Scale (Holmes and Rahe, 1967), which consists of a list of major life events which were drawn up on the basis of clinicians' experiences with patients. Values were then assigned to each event, based on hundreds of subjects' ratings of how much adjustment each event would require. An individual's total stress score is then calculated as the sum of the values assigned to each of the events they reported as having experienced over a specified period of time.

The Social Readjustment Scale (Holmes and Rahe, 1967) has been criticised however for its failure to recognise the different meanings that an event such as the death of a spouse, assigned the highest value of 100, has to the individual. Some may perceive this event as very stressful, particularly if the death was sudden. However, others may consider such a death as a relief if the person was ill and in pain for a very long period of time. If the interactionist approach to stress is used as the model of stress, as in the present research, one must acknowledge an individual's own perception of a life event and what it means to them. Sarason, Johnson and Siegel (1978) considered this issue in the construction of their life events scale, the Life Experiences Survey. To complete this scale, the individual has to rate each of the fifty-seven items on a seven-point scale from extremely negative to extremely positive. A total change score is then calculated as the sum of the individual scores for each item. This method of measuring the extent of life events experienced by individuals therefore incorporates the individual's appraisal of the event into its total score.

### **1.52 Daily hassles**

Although the life events approach to stress has received a considerable amount of support, several researchers have argued that the minor stressors of everyday life are more likely to have a negative effect on an individual's psychological health. (Savery and Wooden, 1994) Kanner, Coyne, Scheafer and Lazarus (1981) have found from

their research that the frequency and intensity of such minor events or hassles have a stronger relationship with individuals' psychological and somatic health than do life events. They explained these findings in terms of the cumulative effect of these hassles, whereby the individual becomes unable to adapt to their environment.

This approach to stress led to the development of a measure of minor everyday events called the Daily Hassles Scale (Lazarus and Folkman, 1989). The scale consists of a list of 117 items which individuals rate on a four-point scale as 'none or did not occur', 'somewhat severe', 'moderately severe' or 'extremely severe'. A frequency score is calculated as the number of items endorsed, with a severity score, being the average severity rating on the scale.

A study by Ivancevich (1986) considered the relationship between daily hassles and life events, and the health symptoms, absenteeism rates and productivity of 185 employees of an organisation. It was found that the relationship between daily hassles scores, and symptoms of poor health and absenteeism, were stronger than the relationship between life events, and poor health and absenteeism.

More recent research by Savery and Wooden (1994) found that there was a stronger relationship between frequency of daily hassles and injuries in the workplace than between life events and injuries. The authors argued that the findings have implications for stress management. They proposed that interventions should aim to help people cope better with daily hassles, both at home and at work, in order to reduce their levels of stress, and stress-related outcomes. It must be considered however that the researchers employed their own measures of life events and daily hassles, based upon items included in previous scales. Validation of these scales is therefore necessary before any firm conclusions can be drawn from the research.

### **1.53 Occupational stress**

Newman and Beehr (1979) stated that the term 'occupational stress' first appeared as a key word in Psychological Abstracts in 1973. Since this time, a growing body of research has focused on stress at work, and examined the effects it has on the individual's physical and psychological health.

As with models of general stress, the approaches to occupational stress have varied from stress as an objective physical stressor, to stress as a physiological response, to stress as an interaction between the individual and their working environment. (Griffiths, Cox and Barlow, 1995). There is growing consensus amongst researchers around the adequacy of the interactive model, whereby stress results from an individual's perception of an imbalance between the demands of a job and their ability to cope with it.

Research has revealed a wide variety of factors that have been found to be stressful within the working environment. Studies have focused on the effects of exposure to physical hazards such as extreme temperatures and noise (Quick and Quick, 1984) and also on more psychosocial aspects of work, such as perceived lack of control over one's job (Cottington and House, 1987), and poor relationships with managers and colleagues (Quick and Quick, 1984). In a recent report for the UK Health and Safety Executive, Cox (1993) divided psychosocial stressors into nine broad categories which have been shown to be associated with stress and/or ill-health. These categories include the job content, the workload or workspace, the work schedule, interpersonal relationships at work, control, the organisational culture and function, the role of the individual in the organisation, career development and the home-work interface.

The final category in this list, the home-work interface, emphasises the need for a global perspective to be taken towards the stress process. Researchers must be aware of the role of extra-organisational stressors on the individual's response to stressors at

work. Greenhaus and Beutell (1985) reviewed the literature on work/family conflict and concluded that it exists when the time devoted to, the strain resulting from and the behaviour required by one role does not allow one to fulfil the requirements of the other role. This suggests that researchers should envisage occupational stress as an interaction between factors at work, home and at leisure.

## **1.6 The effects of stress**

Research has considered the way in which stress affects not only our physiological system, but also our psychological functioning, including the way we think, feel and behave. There has been debate centred around the issue of whether a link exists between stress and health, with much research focusing on the role of stress in the development of illnesses as diverse as asthma, coronary heart disease and cancer.

### **1.6.1 Physiological effects of stress**

Asterita (1985) stated that two main physiological pathways, the neural and neuroendocrine systems, are activated when an individual responds to stress. Messages which have been encoded as threatening are sent to the hypothalamus from cortical and limbic structures. Those signals with the encoded information which emerge from the posterior section of the hypothalamus then activate the sympathetic division of the autonomic nervous system. Similarly, the signals from the anterior section of the hypothalamus activate the parasympathetic division of the autonomic nervous system.

Activation of the sympathetic division of the autonomic nervous system causes arousal of the body as a whole. This is reflected in the body's increased heart rate, circulation, oxygen supply, metabolism and energy. Asterita (1985) commented that this overall arousal of the body leads to stimulation of the organs needed in the 'flight or fight' response, which if prolonged can result in a stress-related disorder.

Activation of the parasympathetic division of the autonomic nervous system results in effects opposite to those described above. Heart rate is slowed down, pupils constrict and blood vessels dilate. In other words, the body is gradually slowed down.

Asterita (1985) stated that the sympathetic and parasympathetic divisions of the autonomic nervous system often work together as a complete unit, and that when part of a system is activated, all or most of that system is also activated. However there are many occasions when the systems act independently, and where only individual end-organs, or multiple groups of organs are stimulated.

The next stage of the physiological stress process is what Cannon (1935) described as the 'flight or fight' response. The response begins in the dorsomedial amygdalar complex, with neural pathways passing to the lateral and posterior parts of the hypothalamus, down to the thoracic regions, and on to the adrenal medulla. The catecholamines, epinephrine and norepinephrine are then released upon sympathetic stimulation of the adrenal medulla. Secretion of these hormones can have significant physiological effects upon various bodily systems, including one's respiratory system, cardiovascular system, gastrointestinal system, central nervous system, and also one's blood and metabolism.

The final phase of the stress response is activation of the endocrine axis. The main endocrine glands which are affected are the adrenal cortex and the pituitary glands. Increased amounts of ACTH are released by the anterior pituitary, which influences the release of glucocorticoids (cortisol) by the adrenal cortex.

Release of these hormones can have a significant effect on many parts of the body, including one's circulatory, digestive and immune systems. Since immune functioning has been considered as an outcome variable within evaluative studies of stress management interventions, (Kiecolt-Glaser et al, 1992) the author will discuss the way in which stress affects the immune system.

### **1.611 Stress and the immune system**

The immune system can be defined as "*a surveillance mechanism that protects the host from disease-causing micro-organisms*" (Jemmott and Locke, 1984, p.79). The main organs of the immune system are called lymphatic since they are involved in the development and deployment of lymphocytes, the white blood cells which are the main defence against antigens. The other type of white blood cells involved in the immune system are phagocytes, which respond to any type of antigen, and are therefore involved in non-specific immunity.

Lymphocytes, however, are involved in specific immune processes, which are either cell-mediated or antibody-mediated. Cell-mediated immunity involves the attack of infected cells by lymphocytes known as T-cells. There are several groups of these cells, including killer, memory, delayed hypersensitivity, helper and suppresser T-cells. Antibody-mediated immune processes attack antigens directly, using lymphocytes known as B-cells, which produce plasma cells, which in turn result in the development of antibodies.

Five classes of antibodies have been identified, IgG, IgM, IgA, IgD and IgE. They are involved in slowing down antigens in order to make them easier to destroy, recruiting protein substances to destroy the antigen, and finally in forming memory B-cells, which enable the immune system to attack antigens which appear on a repetitive basis (Sarafino, 1990).

Much research has focused on the effects of stress on the body's immune system. (Kiecolt-Glaser et al, 1984; Jemmott and Locke, 1984). In a study by Kiecolt-Glaser et al (1984) first year medical students were asked to fill out questionnaires to measure their levels of stress and loneliness a month before their final exams. A sample of blood was also collected from each student at this time, and also following the students' first two examinations. The results showed that there was a significant decrease in the students' killer T-cell activity following the examinations, relative to their levels a month prior to the examinations. Furthermore, the students who reported high levels of loneliness on the questionnaire had significantly lower killer cell activity in both blood samples than the students who reported low levels of loneliness.

Other research has also showed similar findings of the effects of stress on immune functioning. For example, significantly lower levels of the antibody IgA has been found amongst first-year dental students in times of high stress compared with times of low stress (Jemmott et al, 1983). The way in which stress affects the immune system appears to be through the release of hormones during the stress response. Antoni (1987) reported that epinephrine seems to increase the number of suppresser T-cells, which slow down or stop immunity processes, and decreases the number of helper T-cells, which stimulate lymphocytes to reproduce and attack. Similarly, cortisol appears to inhibit phagocyte and lymphocyte functioning, and can finally lead to the destruction of lymphocyte tissue.

### **1.62 Psychological effects of stress**

Stress not only affects an individual's physiological functioning, but also their psychological functioning, in the way that they feel, think and behave.

Research has found that stress can affect an individual's emotions in a number of ways. Sarafino (1990) described how individuals can become fearful, anxious,

depressed or angry when under stress. These emotions may influence the behaviour of the individual. For example, Donnerstein and Wilson (1976) found that angry people will act more aggressively than those individuals who are not angry. In relation to stress, therefore, an example could be of a person who is caught up in a traffic jam. The individual may perceive the situation as threatening, perhaps because it would result in them being late for an important meeting, reflecting badly on their character and even reducing their chances of promotion. This may cause the individual to become angry with the other people in the traffic jam, blaming them for the situation which they find themselves in. Anger may then lead to aggression as the person becomes more and more angry, resulting in the individual shouting at the other motorists, or hitting their car.

Research has shown that stress can lead to other forms of socially undesirable behaviour. Cohen and Spacapan (1978) found that subjects who had completed a difficult stress-inducing task in a crowded shopping centre were less likely to help an individual who had supposedly lost a contact lens, than subjects who had completed an easy task in an uncrowded shopping centre. Where the former group did help the individual to find their lens, they tended to spend less time helping them than those subjects in the latter group.

Research has also focused on the way stress can affect an individual's cognitions. Cohen, Glass and Singer (1973) found that children who lived in noisy apartments were less able to discriminate between words, and were poorer at reading than the children who lived in less noisy apartments. The authors suggested that these findings were due to the children in the noisy apartments being less attentive to sounds and that this impaired the development of cognitive abilities.

### **1.63 The stress-illness relationship**

Sarafino (1990) reported that the link between stress and illness can be through either a direct or indirect route. The former occurs as a result of changes in the organism's physiological state, and the latter through a person's behaviour.

As described earlier, there has been a considerable amount of work which has considered the effects of stress on an individual's immune functioning. From this work, research has looked at the effects of decreased immune functioning on an individual's health. For example, Schneiderman (1983) found that very high levels of catecholamines appear to lead to an increase in the growth of plaques on the artery walls. This has the effect of narrowing and hardening the arteries, thus increasing an individual's blood pressure and consequently increasing the likelihood of a stroke or heart attack. Similarly, stress has been linked to rheumatoid arthritis, possibly through decreased functioning of the immune system (Asterita, 1985). Other bodily systems have also been considered in the stress-illness link. For example Asterita (1985) noted that increased sympathetic activation as a result of emotional arousal may explain the occurrence of migraine headaches and Raynaud's syndrome.

The indirect route through which stress is believed to affect health, considers the individual's behaviour under stress. For example, research has shown that individuals consume more alcohol, cigarettes and coffee during times of stress. (Conway, Vickers, Ward and Rahe, 1981). Consequently ill-health may occur as a result of these maladaptive coping behaviours.

### **1.7 Measurements of stress**

Clearly the approach one takes towards the conceptual definition of stress will determine the method of measurement. As previously outlined, the author has taken

an interactionist perspective towards the stress process, and as such regards subjective measures as the key to quantifying the amount of stress experienced by an individual.

However, as Bailey and Bhagat (1987) have argued the validity of self-report questionnaires is threatened by a number of factors. These include response styles, whereby the individual has a habitual way of answering questions irrespective of the question itself. This may involve marking the extreme ends of a scale, or remaining neutral in the middle of a scale. Similarly, data may be biased as a result of response sets, in which the individual may give what they consider to be the desired answer to a question. In the present research, participants may feel that they should portray the intervention as having been successful in relieving their stress. Similarly, they may be distrustful of the trainer's claims of confidentiality, and not answer some of the items honestly for fear of giving a bad impression of themselves.

Bailey and Bhagat (1987) therefore suggested that a multi-method approach to stress measurement be undertaken. Their proposed scheme for measuring job stress involved a combination of self-report measures, physiological measures and unobtrusive measures. Unobtrusive measures were defined as non-reactive measures, with data on such variables as absenteeism rates and physical traces of ashtrays with piles of cigarettes in departments, and posters which portray a general image of the working atmosphere, such as 'Friday is Coming' and 'You Want It When?'. Bailey and Bhagat (1987) even suggested that the presence of worn carpet leading to the employee staff room could be an indication of job dissatisfaction!

In the present research, no access was given to the researcher concerning participants' absenteeism rates, and the widespread distribution of participants over the institution meant that observational data was impractical. Self-report and physiological measures of stress were therefore used as the methods of stress measurement. As outlined in

Chapter 4, these included measures of life events, daily hassles and uplifts, general health and blood pressure.

### **1.8 Summary**

Central to any evaluative study of a stress management intervention is the concept of stress itself. It determines not only the theoretical approach to stress management, but also the way in which stress should be quantified. The interactionist model of stress is used in the present research, which recognises the role of environmental and individual factors in the development of stress. Consequently, self-report measures of participants' levels of stress are deemed appropriate in the present research. However, criticisms directed at such measures have led the author to also incorporate a physiological indicator of stress into the design of the research.

CHAPTER 2

EVALUATIONS OF  
STRESS MANAGEMENT  
INTERVENTIONS

## 2.1. Introduction

Interest in the area of stress management has grown rapidly over the past decade, particularly within the commercial and business sectors. The implications of this can clearly be seen in the vast number of stress management programmes that have emerged during this time. Typically, these programmes consist of a number of cognitive-behavioural techniques which aim to reduce the individual's psychological and/or physiological symptoms of stress, eliminate or modify the stressor, or to change the cognitive appraisal of the stressor. The interventions vary quite considerably in terms of their duration, and can range from a workshop lasting only a few hours to a more substantial programme carried out over several weeks.

Despite the plethora of stress management programmes in the commercial market, very little research has focused on determining the effectiveness of such packages. This could clearly be seen as a consequence of the flourishing stress management 'industry'. With competition high within the industry, the purveyors of stress management interventions cannot afford to attract any adverse publicity which may occur as a result of an evaluation of their product.

Newman and Beehr (1979) carried out the first comprehensive review of stress management interventions. They found that of the fifty-two studies reviewed, only six included any empirical research designed to evaluate directly the effectiveness of the interventions; thirty-two relied on professional opinion. Newman and Beehr (1979) concluded that *"perhaps the most glaring impression we received from the review was the lack of evaluative research in this domain. Most of the strategies reviewed were based on professional opinions and 'related' research. Very few have been evaluated directly with any sort of scientific rigor"* (p.35).

Nicholson et al (1988) reviewed sixty-two evaluative studies of stress management interventions, 90.3 per cent of which were claimed to be successful by their authors. However, Nicholson et al (1988) refuted this claim, and stated that , *"Weak designs, questionable instrumentation, and inadequate data reporting hamper our ability to move stress management programs beyond the status of experimental techniques"* (p.639).

Ivancevich et al (1990) revealed that the Medical Literature Analysis and Retrieval System (MEDLARS) database contained more than 1200 articles on the subject of stress between 1976 and 1985. However, there were very few sound assessments of worksite stress management interventions in it. They reasoned that this was due to methodological barriers imposed by typical organisational settings, for example lack of control over extraneous sources of variance.

Ivancevich et al (1990) stated that *"Even a cursory examination of the stress management intervention literature leads one to the conclusion that much of the research is atheoretical."* (p. 257)

## **2.2 Review of evaluative studies of individually-oriented stress management interventions**

The author proposed that the review of evaluative studies of stress management intervention would be best described according to a set of criteria. These criteria emerged as a result of consideration of the different outcomes of interventions measured in the short- and long-term, and the factors which determined those outcomes.

The evaluative studies were therefore reviewed according to the criteria :

**2.3 The outcome variables** - the short-term effects of the stress management intervention, including changes in psychological and/or physiological aspects of the individuals' stress responses, changes in the individual-environmental interface, and changes in environmental factors.

**2.4 The situational variables** - those extrinsic factors which appear to influence the effectiveness of the stress management intervention.

**2.5 The individual variables** - those intrinsic factors which appear to influence the effectiveness of the stress management intervention.

**2.6 The long-term effectiveness** - the long-term psychological and/or physiological effects of the stress management intervention.

### **2.3 Outcome variables**

Within the evaluative area of stress management interventions, the term 'outcome variables' is used to refer to changes which have occurred as a result of the intervention. These changes often include a number of psychological and/or physiological measures of the stress response, usually taken prior to and following the stress management intervention. A minority of evaluative studies have considered changes in the outcome variables at a time after completion of the intervention.

Reynolds and Shapiro (1991) stated that "*Empirical evaluative studies have routinely selected a narrow range of dependent variables, usually those which reflect change at an individual level*" (p.112). Little emphasis has been placed on change at a structural or organisational level, despite the fact that many interventions are financed by industry. The implications of this are that the individuals who have participated in the stress management intervention may feel that they themselves are entirely responsible

for their stress levels, and that only they can utilise ways in which to alter their stress response. Yet research has shown that stressors created by the work environment may contribute to the stress response, and that in fact individuals often do not have control over such extrinsic stressors (Quick and Quick, 1984). Secondly, by placing the focus for change upon the individual, organisations free themselves of any responsibility for contributing towards employees' levels of stress. Any model of stress management intervention must recognise the multidimensional nature of stress, and focus not only on individual change but also on change within the external environment. This is an issue which must be considered and acted upon by the management of organisations funding the stress management interventions.

The outcome variables which have been considered in the evaluative studies to date will be described in terms of:

- changes in the psychological measures of the stress response
- changes in the physiological measures of the stress response.
- changes in individual-environmental interface
- changes in environmental factors

### **2.31 Changes in psychological measures of stress**

#### **2.3101 Coping Ability**

Lazarus (1966) first identified coping as a core process within the interactional theory of stress, and it has since been taken up by Cox (1978) in his model of the process of stress.

A number of studies have directly considered coping ability as a measure of the effectiveness of stress management interventions (Weisen, 1991; Gronningsaeter et al, 1992; Roger, 1992; Raeburn et al, 1993). Research by Weisen (1991) focused on

people living within the community, and found that following participation in the programme there was a significant reduction in the experimental subjects', but not the control subjects', scores for the maladaptive 'Ways of Coping' (Lazarus and Folkman, 1984). It was also found that the experimental participants' scores on the Beck Anxiety Inventory (Beck, 1970) were significantly lower than those of the control subjects' scores following the intervention, and that there was a significant correlation between the experimental participants' post-intervention anxiety scores and their post-intervention maladaptive 'Ways of Coping' scores.

However, Weisen (1991) found no evidence to suggest that the experimental subjects showed any significant improvement in their adaptive 'Ways of Coping' (Lazarus and Folkman, 1984) following involvement in the study. This study therefore brings to light the question of whether stress management interventions can be effective in developing and enhancing adaptive coping skills, or whether they merely reduce maladaptive coping strategies. For example, the experimental subjects' anxiety scores may have been reduced as a result of their cessation of some maladaptive way of coping, such as consuming alcohol, rather than as a result of learning adaptive coping strategies following the stress management intervention. Interventions may therefore be effective in instructing participants of what not to do, but not so effective in teaching them new behaviours.

Research by Roger (1992) evaluated the effectiveness of a stress management programme on a group of thirty-four constables. Twelve of the constables received basic training on stress management, fourteen had already been involved in basic training and were given more intensive training, including exercises in attentional control and relaxation, and the remaining eight constables received no training at all. All groups completed questionnaires on their coping capacity both before and following the programme. It was found that although there was no significant change in the mean score of the coping capacity of the control group following the programme, there was a substantial increase in the mean scores of coping capacity for both of the

experimental groups. The results suggested that whilst basic training significantly improved participants' coping capacity, more intensive follow-up training increased their capacity even further. This point needs to be considered further, in order to determine conclusively whether follow-up training does indeed lead to further improvements in participants' coping capacity and in other physiological and psychological measures of stress. Studies on larger group sizes need to be undertaken, since the group sizes in Roger's (1992) study were rather small, and the research did not control for stressful events which the constables were experiencing during the course of the programme. It would also be appropriate to consider the effectiveness of this type of stress management programme on other ranking officers within the police force, since the stressors which the police encounter may be quite different between ranks. It may be that the effects of this particular programme are not generalisable to other ranking officers, and different approaches may need to be taken for each rank of officer.

Gronningsaeter et al (1992) also carried out an evaluative study of stress management intervention, using coping ability as a measure of effectiveness. A hundred and seventy-one employees of an insurance company were randomly assigned to one of three groups : aerobic exercise, psychological stress management intervention, or a control group. The treatments involved ten weeks of training, including pre- and post tests and a six month follow-up. It was found that only the stress management training resulted in improved coping ability, both at the post-intervention testing period and at the six month follow-up. However, the stress management intervention did not produce any significant changes in the participants' somatic or psychological health, unlike the aerobic exercise which resulted in increased aerobic capacity, improved feelings of well-being and significantly decreased complaints of muscle pain. The authors suggested that this finding could be a reflection of the fact that specific techniques may result in particular outcomes. However they did point out that it may be possible to obtain changes in participants' somatic or psychological health with stress management intervention if prolonged therapy is used. Alternatively, they suggested that the lack of such changes using stress management intervention may be due to

organisational changes occurring within the company which counteracted the positive effects of the intervention. Clearly, more controlled studies need to be undertaken in order to take this factor into account.

The questions arising from this research highlight the importance of a theoretical model of stress management intervention, such that the mechanisms for change are understood more clearly. If, as was suggested by Gronningsaeter et al (1992), particular techniques do result in specific outcomes, then it may be beneficial for stress management intervention to be prescribed according to the nature of the individual's stress response. This is an area which warrants further research yet which has often been overlooked in much of the evaluative work on stress management intervention.

Research by Sallis et al (1987) used an indirect measure of coping ability as one of the dependent variables in their evaluation of a stress management intervention. Subjects who were assigned to one of three groups, namely relaxation training, multicomponent stress management and education/support, were asked to complete the Work Stress Scale (Steinmetz, Kaplan and Miller, 1982) before and after the intervention, and at a three month follow-up. The Scale was designed in such a way that subjects rated their confidence in coping with a number of stressful situations, and was therefore a measure of an individual's efficacy in coping with work stress. The results showed that following the intervention, and at the follow-up, there were no significant decreases in any of the subjects' levels of work stress in all three groups. It could be argued that more intensive and prolonged treatment is required in order to change an individual's perception of their ability to cope with stress.

## 2.3102 Anxiety

Several evaluative studies of stress management interventions have used changes in levels of anxiety as the dependent variable. (Ganster, Mayes, Sime and Tharp, 1982; Richardson, Beall and Jessup, 1983; Sallis et al, 1987; Nicholson, Belcastro and Duncan, 1989; Weisen, 1991; Avants, Margolin and Salovey, 1991; Hains, 1992; Raeburn, Atkinson, Dubignon, McPherson and Elkind, 1993).

As mentioned previously, Weisen (1991) found that following a stress management programme, participants showed significantly lower anxiety levels than control subjects, with both groups showing similar anxiety scores prior to any intervention. A significant correlation was found between the reduction in participants' anxiety scores and the reduction in their maladaptive 'Ways of Coping' scores. The author suggested that this appears to be indicative of a positive relationship between reduction of maladaptive ways of coping and alleviation of symptoms of anxiety. If this should prove to be the case, it has important implications for the dynamics of stress management intervention, such that alleviation of anxiety may be best brought about by methods which promote reduction of maladaptive coping behaviours. This once again highlights the need for further research into the underlying processes of change occurring as a result of stress management intervention.

Similar results showing the effects of stress management intervention on levels of anxiety have been found on groups of adolescents by Richardson, Beall and Jessup (1983) and Hains (1992). In the study by Richardson, Beall and Jessup (1983), fifty-three high school students participated in eleven days of stress management intervention over a three week period, including instruction on the perceptual and physical management of stressors. It was found that following intervention, and at a five week follow-up, the participants showed significant reductions on an anxious-reactive personality scale as compared to the control subjects. However, it could be

argued that a five week period does not constitute long-term follow-up, and that such effects may not have been consistent over a much longer period of time.

Similar results were reported in the study by Hains (1992), in which twenty-five adolescent boys were assigned to either a cognitive-intervention group, an anxiety management group, or to a waiting control list group. Following the intervention, it was found that there were significant reductions in the state and trait anxiety scores of the boys in the cognitive and anxiety management groups compared with the changes shown by the boys in the waiting control list group. The reduction of the boys' scores in the intervention groups were maintained at an eleven week follow up, although caution must be heeded in the interpretation of these results, since comparisons with the control group could not be made as they themselves were receiving the techniques at this stage. The authors pointed out that even the significant post intervention results may not have occurred as a result of the techniques alone, but may have been caused by non-specific factors such as attention from the group leaders. Hains (1992) admitted that there may have been a degree of bias in the participants' scores since the author himself was one of those involved in delivering the interventions. Larger and more controlled studies are required in order to determine conclusively whether stress management interventions are effective in reducing the anxiety levels of adolescents.

Research by Sallis et al (1987) compared the effectiveness of relaxation, multicomponent stress management and education/social support. Seventy-six volunteers were randomly assigned to one of the three treatment groups, with measures of anxiety being taken prior to and immediately following the eight-week intervention. A three month follow-up was also carried out. Significant reductions in the participants' levels of anxiety were found in all three groups following the intervention, and at the follow-up. The authors suggested that the psychological benefits of the three types of intervention may have been due to non-specific factors, such as attention from group leaders, or group support. Alternatively, they suggested that the education/support intervention may have taught the participants useful skills which

enabled them to reduce their levels of anxiety. The present author also proposes that the education/support may not have directly equipped the participants with anxiety/stress-reducing techniques, but that it may have allowed the participants to recognise the onset of their stress response such that they were able to then utilise their own strategies for managing stress. The questions arising from this research focus on the need for a more comprehensive understanding of the mechanisms of change underlying stress management interventions.

Ganster, Mayes, Sime and Tharp (1982) used levels of anxiety as a dependent variable in their evaluation of a sixteen hour stress management programme carried out over eight weeks. Forty experimental participants were taught to recognise and alter their perceptions of work stressors, and were instructed on progressive muscle relaxation. Analyses of covariance found that there were no significant differences between the anxiety levels of the experimental participants and those of the control subjects both following the intervention and at a four month follow-up. Although treatment effects were found for two other dependent variables, depression and epinephrine levels, the authors did not advocate the general adoption of such programmes. Even where statistically significant treatment effects were observed, Ganster et al (1982) argued that the sizes of the effects were not dramatic, and that sixteen hours of training was probably close to the minimum required for reliable changes in strain to occur.

However, many stress management interventions are carried out for only a few hours over two or three days. It is good for the image of a company if it is seen as being aware of the health of its employees and organising stress management programmes. However, it is not in the company's interests for such programmes to be of any considerable length, since this would result in a temporary reduction in the workforce. To many organisations, this would imply a decrease in production, and hence lower profit margins. The irony, however, is that a vast amount of money is lost each year because of a stressed workforce, due to absenteeism, a high turnover of labour, and an inefficient workforce. Indeed, the Labour Force Survey of 1990 (Hodgson, Jones, Elliott and Osman, 1993) found that stress caused by work was the second largest

cause of occupational ill-health. Clearly an unhealthy workforce is an inefficient workforce, and therefore has implications in terms of reduced productivity.

Ganster et al (1982) also argued that on ethical grounds, individually-based stress management interventions should not be implemented. They stated that, "*it represents an inoculation approach, and does not, in fact, remove objective stressors from the employee's organisational environment*" (p.541). The individual orientation of many stress management interventions is reflected by the lack of outcome variables focusing on organisational change within the evaluative research. Yet it has been shown that organisational change can lead to reduced employee strain. Timio and Gentilli (1976) found that changing the nature of the pay system from piecework to a fixed salary for assembly line workers resulted in significant reductions in their levels of catecholamines. Since such effects were far greater than the effects found on employee strain as a result of the stress management intervention in the Ganster et al (1982) study, the authors argued that high priority should be given to organisational change within stress management programmes.

### **2.3103 Depression**

Much research has linked depression to stress, such that stress is believed to be a precipitating factor in the onset of depression ( Brown, 1979; Lloyd, 1980a). In fact, Paykel (1979) proposed that truly endogenous depressions, which are triggered by factors other than stress, make up only about fifteen per cent of cases. It therefore seems appropriate to employ depression as an outcome variable of stress management interventions, since any changes in an individual's levels of stress are likely to be reflected in their levels of depression.

A number of non-clinical evaluative studies which have used depression as an outcome variable, have found that following a stress management intervention participants'

levels of depression have been significantly reduced (Sallis et al, 1987; Stiles, Shapiro and Firth-Cozens, 1988; Hains, 1992)

Stiles, Shapiro and Firth-Cozens (1988) used a cross-over design to evaluate the effectiveness of two types of counselling approaches, namely interpersonal/psychodynamic treatment, and cognitive/behavioural treatment. Although not strictly labelled as stress management, the cognitive/behavioural treatment did incorporate many of the techniques used in traditional stress management programmes, including anxiety-control training and cognitive restructuring. Forty clients, thirty of whom were diagnosed as being depressed, and the remainder as having mainly anxiety disorders, underwent eight sessions of each treatment. They were asked to rate their mood after each session on a number of mood scales. The participants' moods were also rated by the counsellor and by an external rater according to the same scales. A Positivity index was calculated from the mean scores on the scales sad-happy, angry-pleased, uncertain-definite, unfriendly-friendly, and afraid-confident. It was found that following the cognitive/behavioural treatment, the clients' post-session moods were rated as more positive than their mood following the interpersonal/psychodynamic treatment, by both the clients themselves and by the external raters. Although the mood scales used were not standardised measures of depression, they do indicate some degree of positive feeling. However, one criticism of the study is that the clients' moods were not rated before the treatment sessions, and a more carefully controlled study of this type would be appropriate. Clients' moods could be rated before and after the interventions, such that any difference between the interventions could be measured as a function of differences between the *change* in clients' moods.

In research by Antoni et al (1991), forty-seven asymptomatic healthy gay men were randomly assigned to either a cognitive-behavioural stress management group or to an assessment-only control group, five weeks before being notified of HIV-1 antibody status. Blood samples were collected from each participant, together with data from the

Profile of Mood States (McNair et al, 1981) completed by the participants 72 hours before and one week after serostatus notification. It was found that the seropositive control subjects became significantly more depressed over this period of time, but that the seropositive experimental participants did not show any significant changes in their levels of depression. In fact the increase in the mean depression scores for the seropositive control subjects was more than double the increase for the seropositive experimental subjects.

Antoni et al (1991) studied the relationship between the frequency of relaxation practice at home and post-notification depression levels. They found that the more the participants practised relaxation, the less depressed they were. Antoni et al (1991) therefore argued that the psychological buffering effects of the stress management intervention may have been due in part to the relaxation skills that were learned and practised. Alternatively, they suggested that this inverse relationship between practice and depression may have been due to a general willingness to comply with the treatment guidelines set. This, they argued, may have been as a result of perceived efficacy in the treatment's effectiveness, or as a result of an active coping attitude. Further research is needed to determine whether the effectiveness of stress management intervention in reducing levels of depression is in part a function of practice, compliance or a combination of the two. A clearer understanding of the possible mechanisms for change behind these factors is also required. Obviously this is a complex issue, since the proposed mechanisms for effectiveness are likely to be dependent upon the theoretical perspective taken with regard to the aetiology of depression.

It is worth noting that not all studies have shown promising results with regard to the effects of stress management intervention on levels of depression. The study by Ganster et al (1982) did initially find that following participation in a stress management programme, the experimental participants showed lower levels of depression than the control subjects, and found that these levels had not regressed to pre-test levels at a

four month follow-up. However, such effects were not replicated when the control subjects participated in the stress management intervention, and the authors did not advocate adoption of the programme as a means of reducing stress or depression.

### **2.3104 Hostility**

The evaluative study carried out by Sallis et al (1987) used hostility as one measure of the effectiveness of the stress management intervention. It was found that subjects' levels of hostility, as measured by the MMPI Hostility subscale (Cook and Medley, 1954) were significantly reduced following participation in an eight week programme of either relaxation training, multicomponent stress management, or education/support. As previously mentioned, further research is needed to determine how such changes came about, particularly since no differential effects were found between the various interventions used.

### **2.3105 Anger**

The study by Hains (1992) used state anger, trait anger and anger expression as the dependent variables in the evaluation of cognitive-behavioural stress management techniques on adolescent boys. The scores on each of these scales were taken from the State-Trait Anger Expression Inventory (Spielberger, 1988), which the boys completed before and immediately following the intervention, and also at an eleven week follow up. The State Anger scale measured the intensity of angry feelings at a particular time; the Trait Anger scale measured the boys' general feelings of anger or the disposition to experience anger; and the Anger Expression scale combined the scores on three scales which measured the frequency with which angry feelings were suppressed, how often a boy expressed anger towards people or objects in the

environment, and the frequency with which a boy attempted to control the expression of anger. Following the intervention, it was found that the reductions in the state anger and anger expression scores of the boys who were involved in cognitive restructuring and anxiety management training were significantly greater than the reductions shown in the scores of the boys in the control group. These results were maintained at follow up amongst the boys in the intervention group, although comparisons with the control group were not possible due to their involvement in the stress management techniques. Larger and more controlled studies, including groups of girls, are required to determine whether stress management intervention is effective in the reduction of anger amongst adolescents.

### **2.3106 Frustration**

The evaluative study by Richardson, Beall and Jessup (1983) used frustration as one of the measures of effectiveness of the stress management intervention. Significant differences in levels of frustration were found as a function of time, but such effects were not confined to the experimental group. It could be argued that for significant changes to take effect, prolonged treatment is required. Alternatively, frustration may not be a valid measure of the effectiveness of stress management intervention. It should be noted that no indication was given of the psychometric test used to measure levels of frustration, and so one is unable to comment of the validity and reliability of the scale.

One criticism of the study is that no indication was given of the times used in the analysis which yielded a significant time effect. Furthermore, the direction of this significant effect was not stated. It is not therefore clear as to whether the experimental and control subjects became more or less frustrated over the duration of the study. This is important, since if both the experimental and control subjects became more frustrated over the duration of the study, it could be implied that involvement in the

study itself was frustrating, regardless of whether or not one participated in the stress management intervention. Conversely, if lower frustration levels were found in both groups following involvement in the study, it may be that involvement in the study per se accounted for such results. It may be that both groups became more aware of their frustration levels by completing the required tests, and that they employed their own strategies for reducing such levels. Alternatively, changes in levels of frustration in participants from both groups, whether it be an increase or a decrease over time, may simply have been as a result of some external factor.

### **2.3107 Irritation**

In research by Ganster, Mayes, Sime and Tharp (1982) irritation was used as one of the measures of psychological strain experienced by participants. However, following intervention in the stress management programme, no significant differences were found between the experimental and control participants' levels of irritation, as measured by the three-item scale developed by Cobb (1970). Like frustration, it may be that irritation is not a valid measure of the effectiveness of stress management programmes, or that prolonged treatment is required to produce any significant effects. Alternatively, it may be that the scale used was not sensitive enough to any changes, and that it consequently was not a valid measure of frustration.

### **2.3108 Psychophysiological disorders**

Psychophysiological disorders, or psychosomatic complaints as they were originally called, refer to illnesses which occur as a result of the interplay between psychosocial and physiological processes (Sarafino, 1990). Research has shown that stress is often accompanied by somatic complaints such as headaches, nausea, sweating of the palms, flushing of the face and dizziness (Schor, 1986). It is therefore appropriate that

such symptoms of stress should be used as a measure of the effectiveness of stress management interventions.

Ganster, Mayes, Sime and Tharp (1982) carried out a study to evaluate the effectiveness of a stress management intervention, using participants' total scores on a seventeen item scale of somatic symptoms as the dependent variable. The scale was completed by the experimental and the control participants before and after the intervention had taken place, and at a four month follow-up. It was found that both immediately after the intervention, and at the follow-up, there was no significant difference between the experimental and the control subjects' total scores on the scale of somatic symptoms. It could be argued that more intensive and prolonged treatment is required for such changes to take effect.

### **2.3109 Emotional exhaustion**

A study by Higgins (1986) evaluated the effectiveness of two stress management programmes, namely one comprising of progressive relaxation and systematic desensitisation, and the other of time management, rational emotive therapy and assertiveness training. Fifty-three working women were randomly assigned to either one of the two treatment groups, or to a control group. The experimental groups received six hours of treatment sessions over a period of six weeks. All subjects completed the Emotional Exhaustion scale from the Maslach Burnout Inventory (Maslach and Jackson, 1981) immediately before and after the stress management intervention had taken place. It was found that the subjects from both treatment groups showed significantly lower levels of emotional exhaustion following the intervention than compared to the control subjects. Higgins (1986) therefore argued that occupational stress management interventions can be effective in reducing workers' levels of stress, and refuted Ganster et al's (1982) proposal that brief interventions would not be at all effective. However, Higgins(1986) did not address

Ganster et al's (1982) argument that such individually-oriented programmes are somewhat unethical in that they do not consider change within the organisation, and in effect put the responsibility for change entirely upon the individual themselves. Furthermore, by the author's own admission, Higgins' (1986) study did not include a follow-up, and therefore one cannot be certain as to whether such effects would be maintained in the long-term.

Research by McCue and Sachs (1991) also found that a stress management programme was effective in improving participants' ratings of emotional exhaustion. The study was directed at a group of physicians, who took part in a four-hour workshop, and completed the Maslach Burnout Inventory two weeks before and six weeks after participation in the programme. However, as the authors pointed out, the research was flawed in terms of unequally sized experimental and control groups, with forty-three experimental subjects and only twenty-one control participants. As with Higgins' (1986) study, it could also be argued that the effects observed may not have been maintained over a longer period of time, particularly since the workshop lasted for only four hours. Further research into the effects of stress management in terms of emotional exhaustion is warranted.

### **2.31 Irrational beliefs**

Ellis (1962) once quoted the philosopher Epictetus as saying that *"Men are disturbed not by things, but by their views of things"* (p.78). He therefore proposed that it is one's irrational beliefs which lead to an unhealthy mind and body, rather than external events happening around us. It would therefore seem appropriate for stress management to be directed at changing these irrational beliefs in order that one might change the way in which one perceives the events one experiences.

In a study by Kushnir, Malkinson and Ribak (1994), a group of twenty-three student occupational health practitioners were involved in a stress management programme over a period of two college semesters. A group of twenty-five student practitioners acted as the controls. The first semester involved three hour weekly sessions on rational emotive therapy (Ellis, 1962). During the second semester, participants were instructed to plan and implement a field project on a stress-related subject, using the knowledge they had learnt on RET from the first semester.

It was found that at the end of the second semester, the health professionals who had received the stress management training showed significant reductions in irrational beliefs relative to the control group. The authors argued that this greater awareness of emotional and cognitive processes would make the health professionals better able to help themselves and others in their working lives. This is an area which could be looked at in more detail, by considering patients' perceptions of the treatment they received from those health professionals who had taken part in a stress management intervention. It would also be appropriate to determine whether there were any differential programme effects between different types of health professionals, rather than considering health professionals as a single group.

### **2.311 Psychosocial ability**

The study by Kushnir, Malkinson and Ribak (1994) also used social competence as a dependent variable in their evaluation of a stress management programme. All of the participants and control subjects completed a seven point scale of psychosocial ability, which considered their confidence in treating psychosocial problems, their ability to understand and interpret psychological data, and also others' responses to oneself. It was found that following the second semester, the experimental participants showed significantly higher scores of psychosocial ability relative to the control group. The authors argued that this finding was important in the light of evidence that health-related

behaviours and outcomes such as patient satisfaction and perception of physician's competence are strongly related to the physician's interpersonal skills. Further research is needed in order to determine more conclusively whether stress management may be effective in enhancing health professionals' interpersonal skills, and whether the widespread application of such programmes may be beneficial to both the health professional and their patients.

### **2.312 Happiness**

Research by Raeburn, Atkinson, Bubignon, McPherson and Elkind (1993) evaluated the effectiveness of a community stress management programme in New Zealand over a five year period. The programme consisted of ten, ninety minute sessions of stress management, including mental and physical relaxation, instruction on nutrition and fitness, time management and basic cognitive therapy. Following the intervention, it was found that the treatment group reported significantly higher scores on the Kammann Affectometer II scale (Kammann et al, 1970) of global happiness compared with the control group. Further improvements were observed on this scale at the twelve month follow-up. However, the authors admitted that this was very much a case study, as opposed to controlled research, since only nineteen participants acted as controls compared with 429 experimental participants. More controlled research is therefore necessary.

## **2.32 Changes in physiological measures of stress**

### **2.321 Blood pressure**

Selye (1956) argued that one indication of stress was an overstimulation of the autonomic system, which controls an individual's blood pressure, pulse rate and galvanic skin response.

Several studies have therefore employed blood pressure levels as the dependent variable in their evaluations of stress management interventions (Drazen, Nevid, Pace and O'Brien, 1982; Bruning and Frew, 1985; McGrady, Woerner, Argueta Bernal and Higgins, 1987; Sallis, Trevorrow, Johnson, Hovell and Kaplan, 1987; Johnston, Gold, Kentish, Smith, Vallance, Shah, Leach and Robinson, 1993).

In research by Drazen et al (1982) twenty-two white collar mild hypertensives were assigned to one of three groups, namely a treatment group of rational emotive therapy and assertiveness training, a treatment group comprising of anxiety management training, or a control group which received hypertension education counselling. The treatment groups consisted of forty minute sessions held weekly over a period of ten weeks. Following the intervention, it was found that there were significant reductions in the diastolic blood pressures of those subjects in the treatment groups, but not in the control subjects. These results were generally maintained at the eight week follow-up. The authors argued that although the results provided encouraging support for the use of behavioural stress management interventions for mild hypertensives in the working environment, the effects were somewhat limited. The only significant reductions in systolic pressure were found in subjects from the rational emotive therapy and assertiveness training group. This finding is supported by the results from the research by Bruning and Frew (1985), in which stress management intervention was found to be effective in reducing subjects' levels of systolic blood pressure. Drazen et al (1982) also found that the blood pressure reductions in the control group, although not

statistically significant, were comparable to those found in the treatment groups. The authors suggested that the levels of significance of such reductions may have been attenuated by patient attrition. Caution needs to be taken therefore when drawing any conclusions from this research.

McGrady et al (1987) suggested that reductions in blood pressure following stress management intervention may be limited to subjects with hypertension. They compared the effectiveness of biofeedback assisted relaxation training on a group of eight essential hypertensives, and a group of eight normotensives. Following a programme of between twelve and twenty, fifty to sixty minute sessions of biofeedback-assisted relaxation training, plus home relaxation practice, it was found that only the hypertensives group showed significant reductions in their systolic, diastolic and mean blood pressure levels, both at home and in the clinic. A criticism of the research, acknowledged by the authors, must be the small number of subjects involved, and it is difficult to draw any firm conclusions from this one study alone. A larger study conducted by Sallis et al (1987) however supported the findings of McGrady et al (1987). Using a sample of participants, all of whom had normal or below normal resting blood pressures, it was found that after eight weeks of relaxation training, and at a three month follow-up, there was no significant reduction in the participants' levels of blood pressure. Similarly, Albright, Andreassi and Brockwell (1991) found from their evaluation of nine sessions of instruction and practise of various relaxation techniques, that only the hypertensive subjects showed significant decreases in systolic and diastolic blood pressures following intervention in the programme. Criticisms of the research, however, are that only sixteen people were involved in the study, and there was no control group. Further research is needed in this area to determine more conclusively whether the effectiveness of stress management interventions on participants' blood pressure is limited to a hypertensive population.

Johnston et al (1993) argued that evaluative studies involving hypertensive patients should undergo a period of habituation to the measurement of blood pressure, before participating in stress management intervention. They incorporated a process of habituation into their research, over a twelve week period, and concluded that the reduction in the blood pressure levels of the hypertensive subjects following the stress management intervention may have been due to habituation to the measurement of blood pressure rather than to any specific effects caused by the intervention itself. Employment of habituation procedures into the methodology of future studies is therefore advised before any firm conclusions can be drawn on the effectiveness of stress management interventions on a hypertensive population.

### **2.322 Cardiac output**

There is a clear link between stress and coronary heart disease. Quick and Quick (1984) found that high work loads, job responsibility, and job dissatisfaction are all associated with a high incidence of coronary heart disease. Garrity and Marx (1979) found in a retrospective study that subjects with myocardial infarction tended to have high levels of life events in the months before the attack. It is known that chronically high levels of the hormones released during a stressful experience can damage the arteries and heart, promote atherosclerosis, and lead to hypertension and arteriosclerosis. Cardiac arrhythmia can also occur as a result of stress. (Sarafino, 1990)

The evaluative study of a three week stress management intervention by Richardson, Beall and Jessup (1983) considered heart rate as an indicator of the stress experienced by the participants. They found that both after the intervention, and at the five week follow-up, the reduction in the participants' heart rates (from their resting level) on the command "relax" was more significant than that shown by the control group. Furthermore, the experimental participants maintained significantly lower heart rates

during a laboratory induced stressor than the control group, both after the intervention and at the follow-up. This suggests that stress management intervention can significantly reduce an individual's heart rate both in the short-term and over a longer period of time. However, the follow-up was carried out only five weeks after the completion of the intervention, and it would be interesting to determine whether such levels are maintained over a much longer period of time.

Research by Albright, Andreassi and Brockwell (1991) evaluated the effectiveness of nine sessions of instruction and practise of various relaxation techniques carried out over a period of two months, involving a group of ten hypertensive and six normotensive participants. It was found that following the intervention, the heart rates of the group as a whole were significantly reduced. Furthermore, the participants' reactivity to an IQ quiz was significantly reduced in terms of their heart rate following intervention in the stress management programme. However, only sixteen people were involved in the study, ten of whom were hypertensive, and there was no control group. Further research on the effects of stress management on individuals' heart rate is needed before any firm conclusions can be made suggesting a definitive relationship between the two. It also needs to be explored as to how such changes come about. Since heart disease and the hormones catecholamines and corticosteroid are linked, the research on the effects of stress management on such hormones is clearly relevant to the work on stress management and heart rate. However, behavioural factors of coronary heart disease such as high levels of smoking, coffee consumption, and alcohol use, are also associated with stress. (Epstein and Jennings, 1986; Shapiro, Lane and Henry, 1986) It may be that any positive effects of stress management on heart rate could be as a function of a reduction in an individual's maladaptive coping behaviours. Weisen (1991) in fact found that following a stress management intervention, there was a significant reduction in the experimental participants' maladaptive coping behaviours.

Evaluative studies of stress management intervention have also used cardiac output as a dependent variable in order to compare different techniques. In a study by Bruning and Frew (1985), sixty-two employees of a hospital supply manufacturing firm were randomly assigned to one of four groups, namely training in management skills (goal setting, time management, conflict resolution and dealing with people), clinically standardised meditation, aerobic exercise, or a control group. Measures of the subjects' pulse rates were taken prior to participation in the intervention, and again after thirteen weeks of training sessions, each session lasting between sixteen and twenty hours. The participants were then allocated to a second programme of training, which consisted of one of the procedures previously outlined, which the participants had not already been involved in. The control subjects received all three types of training intervention during the second programme of training. Measures of participants' pulse rates were then taken following ten weeks of the second programme of training.

The results indicated that all three types of intervention were effective in that they significantly reduced participants' pulse rates compared with the control groups. More detailed analysis of the data showed that the management skills training resulted in the greatest reduction in participants' pulse rates relative to the other two treatments. However, a combination of exercise followed by meditation led to the greatest reduction in pulse rates overall, compared with the other two combinations of treatments. The authors did note that the combination effects of exercise and meditation may have been a spurious finding, since the results were not replicated with the meditation-exercise combination. However, the research does bring to light questions concerning the effectiveness of combinations of techniques. Kagan, Kagan and Watson (1995) found from their evaluation of several stress management techniques that when treatments were combined, their effects were not additive but interactive. They argued *"It is possible that in the past, both practitioners and researchers have combined programmes that are not complementary and weaken each other's effects"* (p.76).

Issues such as whether experience in one technique facilitates or inhibits the efficacy of

another technique therefore need to be addressed further in evaluative research of stress management interventions.

Similar findings to those of Bruning and Frew (1985) on the effectiveness of stress management on participants' pulse rates, was reported by Forbes and Pekala (1993). Their study considered the effectiveness of progressive muscle relaxation, deep abdominal breathing and hypnosis on the pulse rates of a group of 231 nursing students. It was found that both progressive muscle relaxation and hypnosis were effective in reducing the students' pulse rates over the course of the interventions. However, the order of the treatment was not counterbalanced, and a control group was not present. More controlled research on the effectiveness of stress management on participants' pulse rates is required.

### **2.323 Skin temperature**

Peripheral skin temperature is measured using a hand-held thermometer, and is an indication of physiological arousal. It was used as a dependent variable in the evaluation of three stress management techniques, namely progressive muscle relaxation, deep abdominal breathing and hypnosis (Pruitt, 1992). Two hundred and thirty-one nursing students completed each of the three techniques, with pre- and post-intervention measures of skin temperature being taken for each individual technique. It was found that there was a significant increase in the skin temperature following both progressive muscle relaxation and hypnosis, suggesting that there was a reduction in physiological responsivity. There was also a significant increase in participants' skin temperature following deep abdominal breathing relative to the baseline measure taken when participants were sitting quietly. The authors admitted that the limitations of this research, however, were that the order of the techniques was not counterbalanced, and that the duration of each of the techniques was variable. Furthermore, there was no control group with which the experimental participants' scores could be compared.

### **2.324 Skin conductance**

Skin conductance levels (scl) measure the ease with which a mild electrical current passes over the surface of the skin. High conductance, whereby perspiration causes low electrical resistance, tends to be associated with higher sympathetic nervous activity and emotional arousal, whereas low conductance is associated with low levels of physiological arousal.

Alexander, Swanson, Rainforth, Carlisle, Todd and Oates (1993) evaluated the effectiveness of transcendental meditation on the skin conductance levels of the employees of two companies. Baseline levels of skin conductance were taken with the participants sitting quietly with their eyes open for two half-minutes. They then completed a mental test, rested again, and completed the test for a second time. Over the next three months, the experimental participants were instructed on transcendental meditation, including twice daily practice, weekly meetings and two weekend seminars. The same process of measuring participants' levels of skin conductance was then carried out as before, except that the experimental participants were instructed to practise transcendental meditation between the two mental tests. It was found that the reduction in the experimental participants' skin conductance levels at the three month follow up was significantly greater than that shown by the control group. However, a long-term follow up whereby the participants no longer attended weekly meetings was not included in the study, and would be appropriate in further research to determine whether the participants continued to practise the meditation, and if so, whether it was effective in reducing the skin conductance levels of participants.

### **2.325 Muscle tension**

Muscle tension is measured using the electromyograph (EMG), which records the electrical activity in muscles. People often react to stress by contracting the head and

neck muscle, sometimes leading to muscle-contraction headaches. (Sarafino, 1990)

Measures of muscle tension using the EMG apparatus has therefore been used as an indicator of the stress levels of participants involved in a stress management intervention (Richardson, Beall and Jessup, 1983; McGrady et al, 1987). The study by Richardson, Beall and Jessup revealed that after three weeks of stress management intervention, and at a five week follow up, there was found to be no significant difference between the EMG readings of the experimental group and the control group, both at rest and during a laboratory-induced stressful situation. Techniques such as exercise, progressive muscle relaxation, yoga, meditation and biofeedback, which promote physical relaxation and tension reduction, were included in the intervention. However, more intensive and prolonged instruction in these techniques may be required before any positive effects result. It may be necessary for participants to introduce these techniques into their everyday lives, such as at work and in the home, rather than simply practising them in the laboratory. Since muscle contraction is likely to be an unconscious response to a stressful event, participants probably need to be made aware of the situations in which they are stressed. Subsequently, they can then practise muscle relaxation techniques in these stressful situations, which over a longer period of time may indeed result in reduced EMG readings. Some evidence for the importance of practise in the reduction of EMG readings comes from a study by McGrady et al (1987). A group of eight normotensives and eight hypertensives were involved in between twelve and twenty sessions of EMG feedback and autogenic-type relaxation exercises, each session lasting for fifty to sixty minutes. The participants were also instructed to practice the relaxation exercise twice daily for a period of fifteen minutes. It was found that both groups showed significant reductions in their EMG readings following the treatment session. Similar results were found amongst a group of twenty-five hospital cleaners, who were instructed to practise relaxation training for fifteen minutes on a daily basis. (Toivanen, Helin and Hänninen, 1993). Significant reductions in the participants' levels of neck-shoulder tension were observed after three and six months, relative to the levels of tension shown by a control group. Although these studies do not provide conclusive evidence that the practice of relaxation

exercises is the key element in the effectiveness of relaxation on EMG readings, they do suggest that there may be a positive relationship between the two. However, both studies were on a small scale and more extensive research is needed in this area to determine whether practice of relaxation is the significant factor in the effectiveness of relaxation exercises on the reduction of muscle tension.

### **2.326 Hormones**

Selye (1974) described the way in which cortisol, a glucocorticoid, is released from the adrenal cortex, and catecholamines, namely epinephrine and norepinephrine, are released from the adrenal medulla during times of stress.

Measures of these hormones have therefore been used as indicators of stress to evaluate the effectiveness of stress management interventions. (Ganster et al, 1982; McGrady et al, 1987)

#### **2.3261 Catecholamines**

The research by Ganster et al (1982) employed levels of catecholamines in subjects' urine samples as the dependent variable. It was found that following eight weeks of stress management intervention, the reduction in the experimental participants' levels of epinephrine was significantly greater than that shown by the control subjects. At the four month follow-up, there was a significant increase in participants' epinephrine levels relative to the levels found immediately after the intervention. However, these levels were still significantly lower than the baseline levels taken before the intervention.

The difficulty in drawing any firm conclusions from this research lie with the design of the study. By the authors' own admission, the follow-up part of the study was not of a

true experimental design, since it only involved the first treatment group, who consequently acted as their own controls. Treatment effects therefore become confounded with history effects. There was a significant reduction in participants' levels of norepinephrine between the baseline and the follow up. However, as the authors acknowledged, catecholamine levels are known to vary significantly across seasons (Selye, 1974). Without a control group with which to make comparisons, one is not able to make any firm conclusions about the long term effects of stress management intervention on levels of epinephrine and norepinephrine.

### **2.3262 Cortisol**

Research by McGrady et al (1987) considered the effectiveness of a stress management intervention as a function of the change in participants' levels of plasma and urinary cortisol. A group of eight hypertensive and eight normotensive subjects were involved. Following between twelve to twenty sessions of EMG feedback and relaxation exercises, it was found that only the hypertensive group showed a significant reduction in their levels of cortisol. This group also showed a significant reduction in their blood pressure readings, and the authors suggested that a relationship may occur between the change in blood pressure and the change in cortisol levels following stress management intervention for the hypertensive group only. The implications of these results, should they be replicated, question the effectiveness of stress management intervention on normotensives' levels of cortisol. It may be that intervention is only effective in reducing hypertensives' levels of cortisol. However, as the authors acknowledged, this study only involved a small number of participants, who were not matched for age. More carefully controlled research is needed in this area to clarify this possible relationship between blood pressure and levels of cortisol in hypertensives following stress management intervention.

### 2.327 Immunity

A number of studies have described the way in which stress can affect an individual's immune system. It has been found that following a period of stress, there is a significant reduction in natural killer (NK) cell activity (Kiecolt-Glaser et al. 1986). These cells are believed to have important antiviral and antitumour functions (Glaser et al 1987). Stress has been shown to reduce the proliferative response of lymphocytes cultured with a mitogen, which stimulates cell replication. This is important since the proliferative response of the lymphocytes is believed to reflect the immune system's ability to respond to infectious agents such as bacteria.

Kiecolt-Glaser et al (1985) compared the effectiveness of progressive relaxation, social contact and no intervention on NK cell activity and HSV antibody titers. Forty-five older adults were randomly assigned to one of the three groups, with blood samples and self-report data being collected before, and after the intervention, and at a one-month follow-up. The participants were seen individually according to the treatment session three times a week for a month. It was found that only the subjects involved in progressive muscle relaxation showed significant increases in NK cell activity and decreases in HSV antibody titers.

Stress management intervention was also found to be effective in enhancing individuals' immunity in research by Antoni et al (1991). They evaluated the effectiveness of cognitive-behavioural stress management on the immune functioning of a group of asymptomatic healthy gay men who were being notified of HIV-1 seropositivity. The men were randomly assigned to either the stress management intervention, or to an assessment-only control group. Blood samples and psychometric data were obtained seventy-two hours before, and one week after serostatus notification. The results showed that those subjects who were involved in the stress management intervention and were found to be seropositive, exhibited significant increases in helper-inducer T-lymphocytes and NK cell counts and a slight increment in

the mitogen response. However, during the period from before to after serostatus notification, it was found that the seropositive control subjects showed slight decreases in lymphocyte cell counts and mitogen responsivity. The number of helper-inducer cells is important because they have an inducer function in B-lymphocyte proliferation and differentiation sequence which is necessary for synthesis of immunoglobulins. Immunoglobulins provide a critical defence against infectious agents, such as bacteria and viruses.

The results from these two studies were not replicated in research carried out by McGrady et al (1992) however, in which no significant differences were found between the blastogenic response of a mitogen exhibited by those subjects involved in relaxation training and the response shown by the control subjects. The research by McGrady et al (1992) was based upon a group of young medical students, involved in stress management during the period in which they undertook college examinations. Kiecolt-Glaser and Glaser (1992) therefore suggested that the differences in the results from this study compared with previous findings may be accounted for by the fact that young healthy subjects were involved. They argued that stress management interventions may only have a minimal impact on the immunity of a young, healthy, nonstressed population. They argued that a clinical population would be more motivated to practice the stress management techniques, and that there would be more scope for stress reduction than compared with a group of nonstressed, healthy individuals. Further research is therefore warranted in order to determine whether stress management is effective in enhancing the immunity of younger people experiencing acute periods of stress, or whether its positive effects are limited to an older and relatively more stressed population.

## **2.33 Changes in individual-environmental interface**

### **2.331 Job satisfaction**

Sallis et al (1987) considered job satisfaction as a dependent variable in their evaluative study of an occupational stress management intervention. They found that following an eight week programme of either relaxation, multicomponent stress management or education and support, subjects did not show any significant improvement in their levels of job satisfaction, as measured using the four-item scale based on the factors of the Cornell Job Description Index (Smith, Kendall and Hulin, 1969). One argument could be that the scale was not sensitive enough to detect any changes, particularly since it included only four items, assessing satisfaction with work, promotions, co-workers and supervision. A more detailed and specific scale may have been more effective as an instrument with which to measure job satisfaction. Alternatively, more prolonged and intensive treatment may have been required in order to bring about any significant changes in participants' levels of job satisfaction.

### **2.332 Functioning at work**

Research by Michie and Sandhus (1994) considered the effectiveness of stress management intervention on a group of first-year clinical medical students. It was found that following three two hour weekly sessions of stress management, the increase in the experimental participants' scores on the 'functioning at work' scale was significantly greater than that shown by those students on a waiting list. However, it must be noted that only nine students in each of the groups completed the questionnaire during the entire course of the study. Furthermore, the 'functioning at work' scale consisted of a single item from a larger questionnaire. Although the questionnaire had previously been validated, a more extensive questionnaire would be appropriate in order to test the reliability of items relating to the 'functioning at work'

variable. Changes in scores over the year were calculated using a number of independent t-tests, which found that the experimental participants' scores on all variables had remained steady but that there were significant reductions in the control subjects' scores of satisfaction with and perceived functioning at work, and their perceived functioning in their personal lives. Analyses of variance would have been more appropriate in order that comparative changes between the two groups could have been determined across all variables.

### **2.333 Use of health services**

A clinical study by Lewin et al (1992) suggested that stress management intervention may be effective in reducing the amount of contact which patients with acute myocardial infarction had with their general practitioners, and in reducing the readmittance rate of patients to hospital. One hundred and seventy-six patients were randomly assigned to either a standard care group which received a placebo information package and informal counselling, or to a self-help rehabilitation group, in which participants were engaged in six weekly sessions of exercise, relaxation, and specific self-help for anxiety, depression, panic disorder and other psychological problems often experienced by postmyocardial patients. Although this study focused specifically on a population who suffered from acute myocardial infarction, it may have implications for the use of health services by other groups of people suffering from stress-related illnesses. Medical advice about symptoms of stress such as high blood pressure, depression and anxiety is likely to be sought from a general practitioner. This exhausts health service funds, and overloads general practitioners, which may result in a reduction in the quality of service delivery and an increase in the stress levels of the health professionals. Stress management intervention may therefore provide a way of significantly reducing the number of contact hours which doctors have with their patients. Further research which considers the effects of stress management

interventions on the use of health services, by those suffering from stress-related illnesses is required.

## **2.34 Changes in environmental factors**

### **2.341 Absenteeism**

Stress has been linked to high rates of absenteeism, since it can reduce an individual's immune functioning, leaving them vulnerable to a number of physical illnesses (Asterita, 1985), and can also effect their psychological functioning, resulting in low morale and job dissatisfaction (Spector, Dwyer and Jex, 1988).

Evaluative research by Roger (1992), considered absenteeism as a measure of the effectiveness of a stress management programme carried out on a group of constables from the North Yorkshire Police. Illnesses were recorded over an eleven month period by those 75 constables who participated in the programme, and also by 72 officers who served as control subjects. It was found that the reduction in the absenteeism levels of those constables who had participated in the intervention was significantly greater than the change in the levels of absenteeism shown by the control group.

In a follow-up study, thirty-four constables were involved in a programme of stress management training. Twelve constables were engaged in a basic programme of training ( group 1), fourteen received more intensive training (group 2), and eight received no training at all (control group). Following the intervention, when asked how many days they had been off sick during the period of the study, it was found that there were no significant differences between the groups. However, when asked in confidence how many days they had been off work despite being physically well enough to return (secondary absenteeism), there was a trend across the degree of training, showing that training had a significant effect on secondary absenteeism.

Roger (1992) argued that although secondary absenteeism can be due to malingering, it can also be caused by stress through reduction in morale and job satisfaction. Stress management could therefore be seen as an investment in the health of the workforce and consequently in organisational productivity.

## **2.4 Situational variables**

From their review of the literature on evaluative studies of stress management interventions, Nicholson et al (1988) highlighted the need for situational variables to be considered as determining factors in the efficacy of stress management interventions. They argued that there was insufficient data from the studies to determine whether programme effects would vary by setting, or indeed by the population.

A few evaluative studies have considered situational variables as determining factors in the effectiveness of stress management programmes. The studies will be described in terms of the variables which they have considered.

### **2.41 Nature of the stressor**

The nature of the stressor refers to its degree of severity, its duration, its source and the extent to which an individual exerts control over it.

Preston-Shoot and Braye (1991) found that the stress management workshops which they implemented for social workers were most positively evaluated by those people experiencing only moderate amounts of stress within their job. They argued that those social workers with much higher levels of stress would probably only find the workshops effective if they were supported by other more external approaches to coping with stress, such as organisational or structural changes. This research highlights the fact that the programme effects of a stress management intervention may not be

generalisable to a wider population, even to those individuals within the same occupation.

Research by Avants, Margolin and Salovey (1991) suggested that the type of stress management technique employed should be dependent upon the chronicity of the stressor involved. They found from their evaluations of stress management workshops that two relatively passive techniques, namely distraction imagery and listening to music, resulted in the most anxiety relief. They suggested that more active techniques may require a level of motivation which highly stressed individuals do not possess.

A study by Kagan, Kagan and Watson (1995) evaluated the effectiveness of three different types of stress management programmes based on either physiological (for example relaxation), coping-with-people (for example assertiveness training) and interpersonal awareness (for example cognitive therapy) processes, and also combinations of all three. Three hundred and seventy-three employees in an emergency medical service of a fire department were involved in the research. They completed a number of psychological and job performance measures before and after each treatment, and also at a six to nine month follow-up. It was found that over all the techniques used, stress was significantly reduced for all measures in the short-term, and for all but the personal accomplishment variable in the long-term. When the techniques were considered separately or in combinations, however, it was found that over the long-term, the combination of the techniques directed at coping-with-people and interpersonal awareness, and also the combination of techniques focusing on physiological processes and interpersonal awareness were more effective than physiologically based techniques alone for participants who had high levels of work stress. This would suggest that interpersonal awareness plays a key role in reducing the strain of individuals whose source of stress is at work. This may be reflective of the nature of the work involved, in that the fire-fighters have little control over the stressors in their job, but could consider changing the way they perceive the stressful events which they encounter.

Auerbach (1989) argued that the degree to which the stressor poses emotion focused or problem focused coping demands for the individual must be considered. Emotion focused coping was defined as *"attempts to palliate or eliminate dysphoric emotions elicited by a stressor by using mechanisms such as denial and wishful thinking"* ; problem focused coping was defined as *"activities directed toward modification, avoidance, or minimisation of the impact of the stressor or a cognitive activity that leads to the belief that the stressor can be controlled"* (p.388). Auerbach (1989) reasoned that the most efficient coping strategies necessary to deal with a stressor must be considered when choosing the type of stress management intervention to be employed. For example, Auerbach (1989) noted the evidence for the utility of emotion focused coping in short-term low-control situations. Meyerowitz, Heinrich, and Schag (1983) found from their research that denial can be an effective way of coping with certain aspects of cancer. However, as Auerbach (1989) pointed out, situations such as cancer involve a complex array of stressors such as job discrimination, fears of death, and interpersonal problems as well as management of the illness. Consequently, Auerbach (1989) argued that *"an analysis of the mix of coping demands posed by these situations"* needs to be made before the implementation of a stress management intervention.

The literature on the proposed relationship between the nature of the stressor and coping demands is based very much on a clinical population. Much more research is needed to ascertain whether the results from the clinical research are generalisable to a non-clinical population. The little research which has been carried out certainly suggests that there is a need for the nature of the stressor to be considered when implementing a particular type of stress management intervention. However, further research is needed to determine the specific relationship between the nature of the stressor and the most effective coping strategy required, such that the source, severity, duration, and controllability of the stressor are all taken into consideration in the implementation of the stress management intervention.

### **2.42 Timing of the intervention**

The only literature to have considered the role of timing as a determining factor in the effectiveness of stress management interventions lies within the clinical domain, and even this is somewhat scarce. Hofer, Wolff, Friedman, and Mason (1972) found that in situations where arousal is high and the potential for control is low, such as in the diagnosis of an illness, emotion focused coping strategies such as denial may be effective in the early stages following diagnosis, but may be counterproductive later on. This research focuses on the changing nature of the stressor, and the possible need for a review of the most effective coping strategy to be used over a period of time. Even in the short-term, stress management interventions appear to consider the stressful situation as static, and fail to develop ways of dealing with the complex and dynamic nature of stress. The author would therefore suggest that researchers should consider the nature of the stress experienced by participants, and how this develops and changes over time.

### **2.43 Non-specific factors**

Several researchers within the field of stress management have argued that any effects observed following an intervention occur as a result of non-specific factors (Murphy, 1984a; Sallis, Trevorrow, Johnson, Hovell and Kaplan, 1987). Murphy (1984a) argued that non-specific factors such as the credibility of the treatment, the type of instructions given to the subjects, the quality of the participant-therapist relationship and the comfort of the participants during the intervention determine the efficacy of a stress management intervention. Controversy surrounds this issue, as many within the field argue that the effects of interventions occur as a result of specific factors related to the techniques (Reynolds, Taylor and Shapiro, 1993; Lehrer et al, 1994). A recent review of the literature (Lehrer et al, 1994) suggested that all techniques elicit a general relaxation response, with specific techniques inducing specific effects. The author

would argue that the effects of an intervention may therefore be due to a combination of specific and non-specific factors, with specific factors having specific effects, and non-specific factors inducing a general relaxation response. Further research is required to consider this issue in more detail.

## **2.5 Individual variables**

Although the non-clinical evaluative literature on stress management interventions has focused a great deal more on the determining role of individual as opposed to situational variables, much of the work is speculative. Nicholson et al (1989) pointed out that *"given the variety of possible stress management approaches it is important to determine which individuals are most likely to be helped by which programs"*. (p.77). However, their advice has gone largely unheeded, possibly as a result of the lack of a theoretical framework to the whole evaluative area of stress management intervention.

The author therefore felt that it was important to consider individual variables as a criteria of the review of the evaluative studies of stress management intervention. Although more research is required to support the findings of evaluative studies which have considered the role of individual variables, the work carried out to date certainly suggests that such variables do play an important part in determining the efficacy of a stress management intervention.

### **2.501 Compliance**

Goldstein (1960) argued that principles such as practice, feedback and motivation, which are instrumental in the learning process. Matteson and Ivancevich (1987) therefore suggested that such principles be incorporated into the structure of stress management programmes. They pointed out, *"they will not guarantee its success, but*

*they will ensure a reasonable chance to improve an employee's knowledge of stress, skills to cope with stress, and attitudes toward stress". (p.200)* However, very few evaluative programs have considered such aspects of human nature as determining factors in the effectiveness of stress management interventions.

Peters, Benson and Porter (1977a) found from their evaluative study of relaxation training, that there were significant relationships between the degrees of change on reported measures of health, performance and well-being, and individual practice rates. The largest reduction in the number of symptoms of stress occurred amongst those individuals who had trained in relaxation, and who practised on average six to eight times per week. Although further practice was not associated with additional change, less practice was associated with less change. On a Performance Index, three to five practice sessions per week was associated with the same change as higher practice rates for those individuals in the relaxation training group. Finally, for the Sociability-Satisfaction Index, significant changes were associated with nine or more practice sessions per week.

It would therefore appear that the rate at which an individual practices the techniques they have learnt can have a significant determining factor in the effectiveness of the intervention. However, the research also suggests that the relationship between practice rates and degree of change is dependent upon the particular outcome being considered. Furthermore, even within a single outcome measure, the direct relationship between practice and degree of change appeared to cease at a certain point, beyond which any additional practice did not result in further change.

The research was supported by the results of Kiecolt-Glaser et al's (1986) study which found that relaxation practice rates significantly predicted the percentage of helper/inducer cells following intervention. In other words, higher practice rates were associated with increased immunity following intervention. Similarly, research by Pruitt (1992) which considered the effectiveness of a stress management intervention on a

group of US army employees, found that those who practised the relaxation techniques on a regular basis, showed significantly greater reductions in their levels of systolic blood pressure than those individuals who had practised less than once a week.

However, Carrington et al (1980), and Murphy (1983, 1984a) found no relationship between frequency of practice and reduction in subjective symptoms of stress or reduction in the levels of arousal. It may be that the results vary as a function of confounding factors such as the nature of the stressor, or the personality of the participants. The complexity of the relationship between practice rate and degree of change in the stress response therefore needs to be studied further, so that any confounding variables can be taken into account. It must be acknowledged however, that the implications of practice should be considered carefully in the designation of a stress management programme, since as Beehr and O'Hara (1987) pointed out, practice is *"often not easy, or is embarrassing, or of low social acceptability in our culture, or requires changing strongly engrained habits"* (p.106). Therefore, the motivation to comply with the guidelines set may be determined by a number of extrinsic factors which should be considered with the stress management programme.

### **2.502 Expectation**

There is evidence from the psychotherapy literature that patient expectancy is associated with increased reduction in symptom intensity (Friedman, 1963).

Furthermore, Goldstein (1960) found that symptomatic change in individuals awaiting psychotherapy was a function of favourable patient expectancy and non-specific professional interventions such as intake interview and psychological testing.

The relationship between individual expectations and the efficacy of stress management interventions has rarely been studied or commented upon, however.

Beiman (1976) found that the within-session effects of a single session of progressive

muscle relaxation were negligible when negative expectations of the intervention were given. Lehrer and Woolfolk (1984) commented that expectancies do not seem to account for the differential effects of various stress management interventions. However, they argued that there may be an interaction between the effects of expectation and internal locus of control in making training more effective.

### **2.503 Locus of Control**

Research undertaken by Lewis, Biglan and Steinbock (1978) showed that subjects who were high in internal locus of control had high expectations for the efficacy of the intervention, and also practised more at home. It was consequently found that those subjects showed greater reductions in trait anxiety than the more externally-oriented subjects.

However, Ollendick and Murphy (1977) found that following a single session of progressive muscle relaxation, the most significant reductions in heart rate and state anxiety were amongst the externally-oriented individuals. It was also shown that cognitive restructuring led to the greatest effects for the internally-oriented individuals. Lehrer and Woolfolk (1984) pointed out that these different findings may be accounted for by the fact that in the latter study, the subjects were not asked to practise at home, and therefore the internally-oriented individuals' belief that they were able to control their symptoms of stress was not able to influence their rate of practice, and hence the degree of change within the outcome measures. Alternatively, the differences may have occurred as a result of the directiveness of the techniques' approaches. Certainly in the psychotherapy literature, it has been found that internally-oriented individuals are more responsive to non-directive than to the directive approach, with the reverse tending to be the case amongst externally-oriented individuals (Abramowitz, Abramowitz, Roback and Jackson, 1974). Further research is therefore needed into the role of locus of control in the efficacy of stress management interventions, for as

Ollendick and Murphy (1977) proposed, "*additional research might lead to a cataloguing of specific treatment procedures geared to specific personality dispositions*". (p.227)

#### **2.504 Type A behaviour**

Research by Roskies (1987) found that a behaviourally-oriented programme was more effective in reducing participants' levels of stress than a psychoanalytic programme for type A individuals. Roskies (1987) in fact recommended that cognitive-behavioural programmes are used to treat individuals with type A behaviour pattern. This focuses on the fact that although type A is labelled as a behaviour pattern, it is also clearly a cognitive process, since it is an individual's perception of an event which causes them to react in a hostile, angry, irritable or competitive manner.

In the light of this research, it would be interesting to consider whether specific cognitive-behavioural techniques are more or less effective than others in reducing the stress of type A individuals.

The author would argue that type A behaviour should not only be considered in terms of the type of stress management techniques used, but also in the style of implementation. Suinn (1982) argued that stress management training with type A individuals should be brief, intense and rapid, since changing a well-developed type A behaviour pattern may itself induce anxiety. The author would suggest that future research therefore compares not only different techniques with type A individuals, but also different methods of implementation.

## 2.505 Optimism

Research by Avants, Margolin and Salovey (1991) considered the role of a number of individual difference variables, including monitor/blunting style, cognitive/somatic anxiety expression, dispositional optimism, awareness of physiology, and imagery vividness on the effectiveness of stress management programmes. They found that only the pessimism and cognitive anxiety expression effected the degree of anxiety reduction following intervention. Those individuals who expressed their anxiety through cognitive means were less able to relax than those subjects who expressed their anxiety somatically, following the intervention. However, the pessimistic individuals showed greater anxiety reduction than the optimistic individuals following involvement in any of the stress management techniques considered. These results are quite surprising, given that pessimism, as measured by the Life-Orientation Test (Scheier and Carver, 1987), is cognitive in nature. Avants, Margolin, and Salovey (1991) concluded that *"Perhaps the lesson here is that clinicians should not be discouraged from recommending stress management techniques to patients who tend to view life somewhat negatively"* (p.19).

Schwarzer (1994) argued that coping might be an important mediator between optimism and adaptive outcomes. Aspinall and Taylor (1992) found that the adaptation of optimistic students to college was more positively associated with active coping, and more negatively with avoidant coping. Schwarzer (1994) therefore proposed that optimists may cope better in terms of instrumental action but less so in terms of withdrawal. However, since participation in stress management intervention is an instrumental action, it is surprising that Avants, Margolin and Salovey (1991) found that the pessimists gained more in terms of anxiety reduction from the intervention than the optimists. However, it was also found that the pessimists had higher anxiety levels upon entering the stress management programme. The author therefore proposes that these results could be explained by the fact that there was more scope for change in levels of anxiety amongst the pessimistic individuals. Further research is needed to

clarify the relationship between optimism, coping, and efficacy of stress management intervention.

### **2.506 Gender**

The role of gender in the efficacy of stress management interventions has rarely been discussed. Ivancevich et al (1990) suggested that it be considered as an independent variable in the designs of evaluative research. However, this advice has gone largely unheeded.

Sharpley and Scuderi (1990) found that there were no significant differences in the heart rate reactivity of student men and women to a mental arithmetic test, and that the wide range of heart rate reactivities for the whole sample suggested that some individuals of both sexes showed very high levels of responsivity to the stressor. The authors therefore concluded that stress management programmes should be directed at both sexes, particularly since there is evidence that women who have the aggressive and high-achieving lifestyle which was once associated with career-oriented men, are also likely to suffer from arterial diseases (Hetzl and McMichael, 1987). Sharpley and Scuderi (1990) also reported that older men seemed to cope better with the mental arithmetic test than the fitter younger men. However, older fitter women showed higher heart rate reactivity to the test than the younger women. The authors argued that these differences between the sexes need to be considered in the implementation of stress management programmes for students.

Gronningsaeter et al (1992) considered the role of gender in the outcome of their stress management intervention. They found that at a six month follow-up, the women reported significant reductions in their feelings of control and social support, and the men reported reductions in their levels of job satisfaction. The authors gave no explanation for these sex differences. However, it is clear that further research is

needed to consider in more detail the role of gender in determining the efficacy of an intervention. The author would suggest that specific techniques may have different effects upon individuals' physical and psychological systems, as a function of their gender.

### **2.507 Familiarity with the techniques**

The research by Gronningsaeter et al (1992) also found that following a programme of aerobic exercise, the women showed the most significant improvement on a number of physiological indices. Given that there were no significant sex differences on the pre-intervention scores, or in the adherence rates of the two groups, the authors concluded that familiarity and higher expectations of the effects of the intervention by the women may have accounted for the differences in the results between the two groups. Further research is needed to determine whether expectation of the efficacy of a stress management technique is, in part, a function of an individual's familiarity with the intervention.

### **2.508 Coping style**

Martelli et al (1987) considered whether the type of stress management intervention employed should be dependent upon a patient's coping style. They studied forty-six patients undergoing prosthetic oral surgery. Better adjustment and lower self-reported pain were found when those subjects who preferred a high degree of information were given problem focused coping interventions, and those patients who preferred a low degree of information were given emotion focused coping strategies. Although this research was based upon a clinical population, where the stressor was predictable, it may provide some answers into the most effective ways of dealing with individuals' everyday stressors within a non-clinical population.

The author would argue that an individual's coping style should also determine the way in which an intervention is implemented. She hypothesises, for example, that individuals who have fixed coping styles, such as emotion-focused coping behaviours, will find it very difficult to learn and undertake other forms of coping behaviours, such as problem-focused coping styles. They will be required to cease using their habitual coping behaviours, and to begin to adopt very different ways of coping with events. This itself may prove quite stressful to the individual, and the way in which the programme is delivered to the individual should be considered carefully. It may be that individuals with fixed coping styles will need to learn alternative ways of coping in a very gradual way over a long period of time.

### **2.509 Response to stress**

Research has suggested that particular techniques have specific effects upon the individual's physical and psychological systems. (Benson, 1975; Reynolds, Taylor and Shapiro, 1993; Lehrer, Carr, Sargunraj and Woolfolk, 1994) Lehrer et al (1994) therefore proposed that the efficacy of a stress management intervention is dependent upon whether the techniques focus on the part of the individual's response to stress that is maladaptive. However, there are those who disagree with this line of thought, (Davidson and Schwartz, 1976; Murphy, 1984a; Sallis, Trevorrow, Johnson, Hovell and Kaplan, 1987) causing much debate within the field of stress management.

The controversy arose when Benson (1975) argued that all techniques elicit a single relaxation response. Davidson and Schwartz (1976) immediately contested this viewpoint, proposing instead that techniques have specific effects upon an individual's psychological and physiological systems. However, Murphy (1984a) argued that non-specific factors such as the individual's expectancy for therapeutic gain may account for positive outcomes of stress management interventions. Similarly, he proposed that factors such as sitting in a comfortable chair, credibility of the treatment, and the quality

of the individual-trainer relationship may determine the outcome of stress management programmes. This argument was supported by Sallis, Trevorrow, Johnson, Hovell and Kaplan (1987), who found from an evaluation of the three techniques, relaxation, multi-stress management and education and support, that no one technique was more effective than the others.

Research by Reynolds, Taylor and Shapiro (1993) considered the impact of a number of different stress management techniques on an individual's physical and psychological systems. They concluded that the introductory session and time management had few specific impacts, but that relaxation and cognitive techniques, together with techniques which dealt with emotions each had distinctive and predictive positive impacts. However, the authors highlighted the need for consideration of the processes of change occurring as a result of stress management interventions. The present author proposes that this is likely to be the key to the whole issue concerning the specificity of effects of the techniques. Rather than merely considering the relationship between the technique and its outcome, future research would be wise to determine the mechanisms of change occurring during the period following implementation to the evaluation of the intervention. A recent review of the evaluative research carried out on stress management interventions argued that stress management techniques do have specific effects. However, they noted that all techniques appear to induce a relaxation response in the individual. (Lehrer et al, 1994). Based upon this finding, the present author would suggest that the non-specific components of techniques may be responsible for this general relaxation response, but that specific effects may be generated by the specific factors of the different techniques used. For example, she would propose that cognitive restructuring would be effective in terms of changing an individual's appraisal of an event, but that non-specific factors associated with the treatment procedure, such as being absent from work, and sitting in comfortable surroundings, would induce a general relaxation response in the individual. This hypothesis clearly warrants further investigation.

An example of where an individual's response to stress could be important in determining the efficacy of an intervention, is in cases where the individual has a habit of mentally going over the stressful events in his/her life. Research by Roger (1988) found that individuals who have a tendency to mentally rehearse stressful events, experience prolonged heart rate recovery and elevated cortisol levels. Roger (1988) argued that this finding has implications for stress medicine, in view of the relationship between prolonged physiological arousal and increased susceptibility to pathological conditions. In terms of stress management, the author would suggest that individuals who score highly on emotional control, according to the Emotional Control Questionnaire (Roger and Neshoever, 1987), may require specific training in relation to management of their emotions, in order for a stress management intervention to be most effective. This has been incorporated into stress management programmes developed by Roger (1992), using training in attention control and detachment to allow the individual to develop more effective ways of coping with stress.

### **2.51 Physical and psychological well-being**

Although the effectiveness of stress management interventions is discussed here in terms of a non-clinical population, it must be considered that the physical and psychological well-being of the person engaged in a stress management intervention could, in part, determine the outcome. McGrady et al (1987) evaluated the effects of a stress management intervention on a group of hypertensive and normotensive subjects. They found that only the hypertensive group showed significant reductions in blood pressure levels and cortisol levels.

Kagan, Kagan and Watson (1995) considered the role of depression in their evaluation of a stress management programme on a group of emergency fire-fighters. They found that a combination of techniques directed at coping-with-people (for example assertiveness training) and interpersonal awareness (for example cognitive therapy),

and also a combination of physiologically based techniques (for example relaxation) and techniques directed at coping-with-people were more effective for highly depressed participants than techniques that were either directed at physiological reactions or at coping-with-people, alone. It would therefore appear that combinations of techniques can be complementary, and that the health of the subjects needs to be considered in the choice of the techniques to be used. Further research into the role of physical and psychological health as contributing factors in the effectiveness of stress management interventions is required.

### **2.511 Self-esteem**

Rector and Roger (1994) suggested that individuals with low self-esteem are likely to become more stressed in a given situation than an individual with higher self-esteem. Individuals with low self-esteem may find a situation threatening because they feel that they have not got the internal resources to deal with it. The author would argue that this variable is likely to determine the efficacy of an intervention, since techniques such as assertiveness and time management depend upon an individual's perception of themselves and their rights.

### **2.6 Long-term efficacy**

Beehr and O'Hara (1987) commented in their review of evaluations of stress management interventions, that very little research had considered the long-term benefits of the interventions. Certain issues have therefore arisen from the evaluative studies, such as what length of time constitutes long-term follow-up, whether practice of the techniques is required to maintain the effects, and also what roles motivation and relapse prevention play in the long-term efficacy of stress management interventions.

The role of practice has been discussed in evaluative research of stress management interventions within the period of the programme itself. However, very little work has considered whether practice is required following the intervention in order to maintain the effects over a longer period of time. Budzynski et al (1973) found that the benefits of relaxation were only sustained if an individual continued to practise the technique after completion of the programme. However, Andrasik et al (1984) argued that post-intervention practise may not be required in order to maintain the effects of biofeedback and progressive muscle relaxation.

Ivancevich et al (1990) noted that relapse prevention had rarely been discussed within stress management programmes. Marlatt and Gordon (1985) included a programme for dealing with the possibility of relapse into their stress management intervention. This involved a learning trial phase, occurring immediately after the intervention had been completed, in which the participants tested their new habit patterns against old patterns and therefore risking relapse. An attempt was made to prevent this relapse by getting the individual to teach their new skills to someone else. No account was given off the effectiveness of this technique, and further research is needed to consider the implications of relapse more carefully in stress management interventions.

## **2.7 Conclusions**

It is evident from this review, that there are a number of methodological and theoretical flaws present in much of the evaluative research on stress management interventions. Many of the studies do not include a balanced design and do not have a control group. Furthermore, situational and individual variables, which may contribute towards the effectiveness of a stress management intervention are not considered. Very few studies have looked at the long-term effects of stress management interventions, and also the factors which may determine the maintenance of any effects.

These methodological flaws are perhaps a reflection of the lack of a theoretical framework of the evaluations of stress management interventions. The theoretical work which has been documented (Barrow and Prosen, 1981; Stoyva and Anderson, 1982; Ivancevich et al, 1990) has received little, if any consideration by those working within the evaluative field of stress management intervention, and therefore any proposals which have been made have not been implemented into the designs of recent research. If stress management intervention is to be recognised as an effective means of coping with stress, then much more emphasis needs to be placed on scientific principles within the research undertaken. This constitutes balanced controlled designs, incorporating reliable and valid outcome measures, and consideration of factors which may contribute towards the effectiveness of the stress management intervention. Only then can one determine whether stress management interventions are effective in helping an individual to cope with stress, or in reducing the negative consequences of stress upon the individual's physical and psychological systems.

CHAPTER 3

REVIEW OF MODELS OF STRESS

MANAGEMENT INTERVENTION

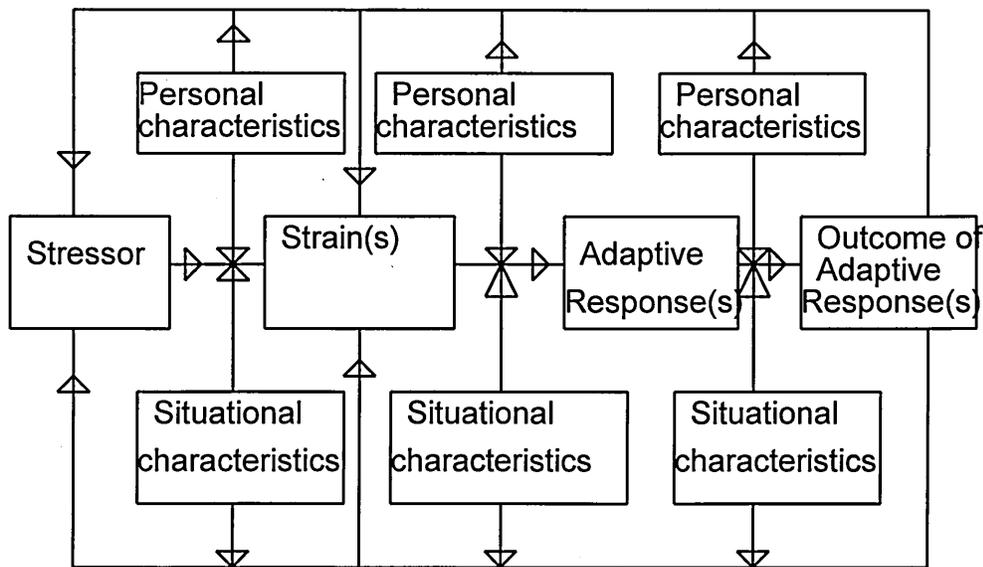
### **3.1 Introduction**

With growing interest in the area of stress management intervention, academics have become increasingly aware of the need for evaluative research to be carried out. However, much of this research has been atheoretical, resulting in little consensus on the methodological approach to be taken between the different studies.

A number of models of stress management intervention have been proposed, but have remained very much at the theoretical level, with little empirical testing of the components involved. In order for stress management intervention to move beyond the realms of popular psychology and become recognised as an effective treatment of stress, researchers must begin to base their work on sound theoretical principles and practices.

### **3.2 Newman and Beehr's (1979) evaluative model of stress management intervention**

A fairly comprehensive model for evaluating the effectiveness of stress management techniques within the workplace was proposed by Newman and Beehr (1979). The model, shown in Figure 3.1, was particularly interesting because it was the first to focus on the need for individual and situational variables to be considered in evaluative research of stress management intervention.



**Figure 3.1 Newman and Beehr's (1979) general model for evaluating strategies for handling job stress**

Strain = Human and organisational consequences of stress

Adaptive Response(s) = Strategy for handling job stress

Outcome(s) of Adaptive Response = Effect on stressor(s) and/or strain(s)

However, despite more than fifteen years of evaluative research having been undertaken since this model was devised, very few studies have heeded the authors' advice and attempted to determine those individual and situational variables which influence the effectiveness of stress management programmes.

Although the model was a credible first attempt to outline the processes of stress management intervention, it failed to perceive stress management as anything other than a curative treatment for stress. As shown in Figure 3.1, the stressor is the first component of the model, with the adaptive response only occurring once the individual has experienced the strain caused by the stressor. The author would emphasise the importance of preventative stress management, so that individuals are equipped with ways of coping with potential stressors before they cause distress.

The authors recognised that time did not appear explicitly in their model of stress management. However, they argued that it should be considered as an important situational variable in evaluative research of stress management interventions. Time must be considered in terms of the period evolving between the appraisal of an event as being a threat to the individual's well-being and the implementation of a stress management programme. The research which has focused on this variable has been based very much on a clinical population, for example in considering the most appropriate coping strategies during the initial period following diagnosis of an illness (Hofer, Wolff, Friedman and Mason, 1972). Research which is based on a non-clinical population is needed in order to determine how the timing of the intervention in relation to the onset of the stressor influences the effectiveness of the stress management intervention.

Since stress management is a dynamic process, timing must also be considered within the framework of the intervention. Newman and Beehr's (1979) model considered the outcome of an adaptive response to a single stressor, or set of stressors, at the beginning of the stress management programme. However, continuing stressors were not considered within the framework of the model, even though the physiological and psychological effects which they may produce are likely to change the nature of the outcome of the original adaptive response. Evaluative studies must therefore control for perceived stressors throughout the period of the research, since the outcome of the intervention may be effected by additional environmental stressors.

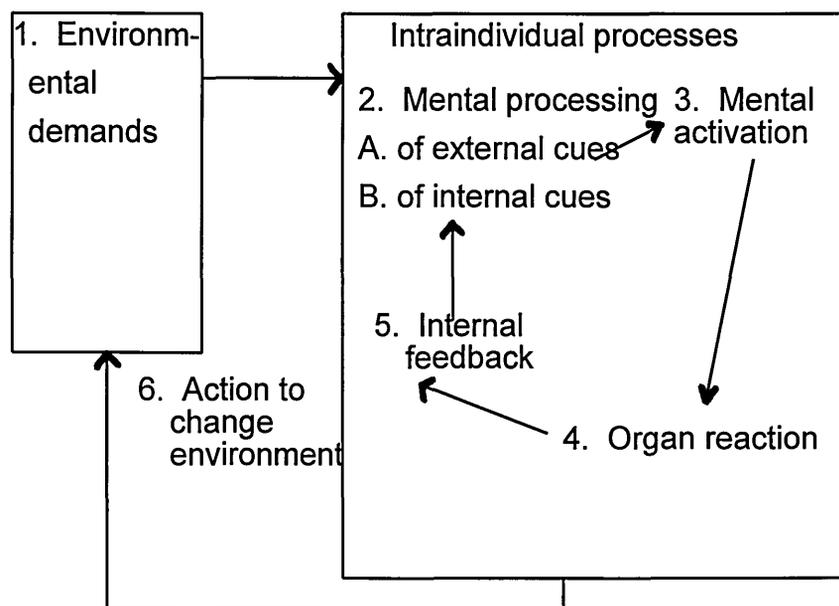
Although Newman and Beehr's (1979) model recognised the effects which individual and situational variables may have on the stressor, strain, adaptive response and outcome of the adaptive response, it did not consider the effects of the adaptive response and its outcome on individual and situational variables. Researchers need to determine, for example, whether long term stress management has any effects on the behaviour of Type A individuals, or on participants' motivation to practice stress management techniques. These are important issues within stress management,

particularly when researchers are considering the long-term effects of interventions. Personal and situational characteristics may not be stable over the period of evaluation, and any changes occurring within the period of evaluation should be recognised within the research.

### **3.3 General models of stress management**

#### **3.31 Barrow and Prosen's (1981) model of stress and counselling interventions**

Barrow and Prosen (1981) proposed a model of counselling interventions, shown in Figure 3.3, which was based upon the interactionist approach to stress, as indicated in Figure 3.2. The authors put forward a series of techniques which aimed to alter either the environment (for example, greater support groups), mental processing (for example cognitive restructuring), or nervous system activation and processing of internal cues (for example, relaxation and biofeedback).



**Figure 3.2 Barrow and Prosen's (1981) information-processing model of stress**

<b>Environmental Demands</b>		<b>Internal Processes</b>
<b>Altering the environment (Changing Point 1 via Point 6)</b>	<b>Altering mental processing (Point 2A)</b>	<b>Altering nervous system activation and processing of internal cues (Points 3,5 and 2B)</b>
<b>Decision-making and problem-solving counselling</b>	<b>Cognitive modification</b>	<b>Relaxation training</b>
<b>Time perspective counselling</b>	<b>Clarification skills</b>	<b>Meditation</b>
<b>Training in interpersonal skills (assertiveness, leadership, helping)</b>	<b>Values clarification Goal setting</b>	<b>Sensory awareness training</b>
<b>Self-management procedures</b>	<b>Lifestyle assessment and counselling</b>	<b>Biofeedback</b>
<b>Support groups</b>	<b>Problem solving training</b>	

**Figure 3.3 Counselling interventions for points in the stress cycle**

This approach to stress management intervention expanded upon the previous model by Newman and Beehr (1979), in that it allowed for management of stress before physiological and psychological distress occurs. The authors based the framework of the model of counselling interventions upon the specificity of effects hypothesis, suggesting that specific techniques have specific effects upon an individual's physical and psychological functioning. However, Barrow and Prosen's (1981) model of counselling interventions failed to recognise the way in which individual and situational variables, other than the individual's response to stress, might also influence the type of

technique to be used. A more global conceptualisation of the stress process is required, in order that variables such as the individual's coping style, motivation, and locus of control are considered as determinants in the selection of the appropriate interventions to be used.

### **3.32 Stoyva and Anderson's (1982) model of stress and stress management intervention**

Stoyva and Anderson (1982) proposed that an individual's reaction to a stressor consists of two major phases, namely the active coping phase, and secondly, the rest phase. They argued that both phases occur during a stress reaction, together with fairly frequent alternation between the two. According to Stoyva and Anderson (1982), those individuals who engage in stress management intervention tend to be "*strongly or excessively involved with the active coping phase*" (p.37), and find it difficult to shift to the rest mode. Evidence to support this theoretical approach towards the stress process was taken from research on patients with a variety of stress-related disorders, who all appeared to show high levels of arousal. For example, Stoyva and Anderson (1982) cited research on patients suffering from chronic anxiety who showed high levels of physiological arousal (Malmö, 1975) and poor sleepers and insomniacs who showed high levels of arousal during sleep (Monroe, 1967).

Stoyva and Anderson (1982) further suggested that each coping-rest phase of the stress process consisted of physiological, cognitive and behavioural responses. The authors argued that this three system analysis of the stress process then allowed a clinician or trainer to diagnose the level at which part of the stress reaction is maladaptive. Consequently treatment would then focus on this level of the stress process using appropriate techniques. For example, if an individual showed high levels of physiological arousal, relaxation would be diagnosed as the appropriate treatment to be used. Stress management would therefore take the form of "*retraining the capacity*

to rest" (p.750). Alternatively, if the individual showed maladaptive behavioural coping responses, a technique such as assertiveness training may be deemed appropriate. Stress management would then take the form of "*reshaping the coping response*" (p.754)

This approach to stress management intervention is similar to that proposed by Barrow and Prosen (1981), since they both suggested that the appropriate technique is determined solely by the nature of the individual's reaction to a stressor. For example, if an individual reacts to a stressor by tensing their muscles, a technique such as progressive muscle relaxation will be proposed as the appropriate technique to be used. Similarly, if the individual is found to be appraising the stressor in a maladaptive way, cognitive restructuring will be suggested as the technique to be implemented. Clearly, again, the validity of Stoyva and Anderson's (1982) model of stress management is dependent upon the outcome of the debate surrounding the issue of the specificity of effects of stress management interventions. Further research within this area is required not only to determine the specificity of effects issue, but also to allow one to develop a comprehensive model of stress management which is based upon reliable research findings.

### **3.33 Latack and Havlovic's (1992) framework of coping strategies and stress management intervention**

Latack and Havlovic (1992) used the classification of coping strategies proposed by Lazarus and Folkman (1984) for their framework of coping strategies, with problem-focused coping being defined as direct ways of changing stressful situations or transactions, and emotion-focused coping as ways of dealing with emotions resulting from stress. Latack and Havlovic (1992) suggested that the type of stress management technique used should be determined by whether the stressor demands problem or emotion-focused coping strategies. Within these classifications, coping strategies were

divided into cognitive and behavioural methods. Cognitive methods were then classified as focusing on control or escape, and behavioural methods as focusing on social, solitary, control or escape ways of coping. This approach therefore considers the nature of the stressor experienced by the individual, and the amount of control they have over the situation. It is a more global approach to stress management than the previous two models reviewed, since it considers factors other than merely the nature of the individual's reaction to the stressor.

### **3.331 Clinical applications of stress management intervention by Meichenbaum (1985)**

This method of tailoring the technique to the needs of the individual has been used in clinical studies by Meichenbaum (1985). The techniques offered to patients were based upon the nature of the stressor, in terms of the degree to which it posed problem-focused or emotion-focused coping demands. Meichenbaum (1985) emphasised the need for programmes to *"offer the variety of coping techniques in a cafeteria style, whereby clients can experiment in determining what works best for them"* (p.54). In other words, this method of application of a stress management intervention focuses on the needs of the individual, their preferences and the context in which the intervention is implemented. Meichenbaum (1985) argued that *"the goal is to nurture a flexible coping repertoire and to work with clients in a collaborative fashion"* (p.54).

The author would argue that this flexibility is a crucial determinant of the efficacy of any stress management programme. Initial proposals which are put forward concerning the design of a programme should be based upon previous empirical work and theoretical principles. However, in practise, the design of the programme may require modification as the individual's needs change and develop over time. Consequently, it

is essential that a programme allows for this flexibility, and that the client is allowed to "*experiment in determining what works best for them*" (Meichenbaum, 1985, p.54).

### **3.34 Sowa's (1992) model of stress management intervention**

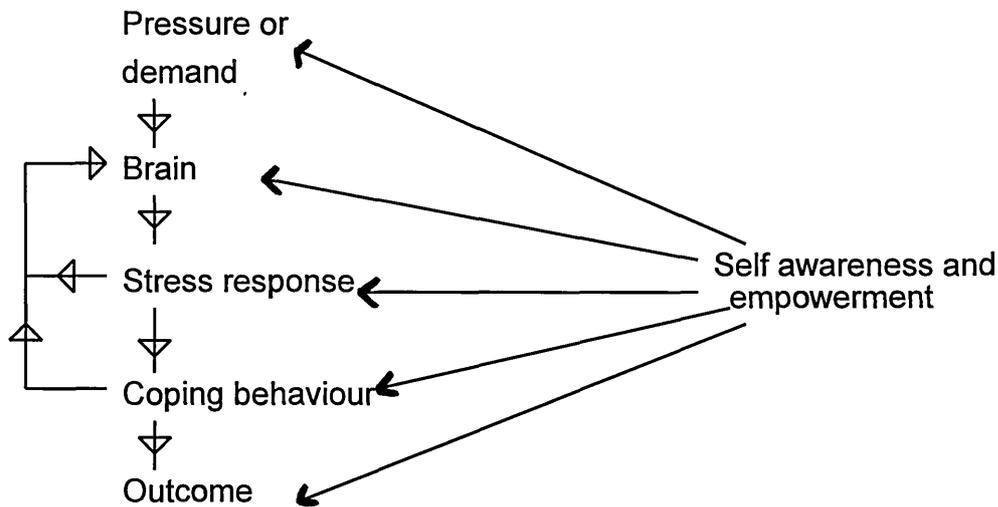
Sowa (1992) considered the importance of an individual's perception of a stressor, in determining the stress management techniques to be used. Stressors were classified by the individual as being important or unimportant and as being controllable or uncontrollable. Stress management techniques proposed for important controllable techniques included behavioural rehearsal, imagery and relaxation. Sowa (1992) argued that the stressors which are perceived by the individual as being important and uncontrollable are the most difficult to manage. Such events could include bereavement or a serious illness. Cognitive therapies are proposed as the most effective means of dealing with such stressors. When controllable stressors are perceived by the individual as being unimportant relative to other events in their lives, such as chores and unnecessary meetings, the individual is advised to "Let go" of these hassles. However, if such events are of considerable concern to the individual, such as traffic jams or a neighbour's opinion, then the hassles are reclassified as being important. From there, the client is advised to try to identify ways in which they might be able to take control of the situation, or alternatively, the client is taught to perceive the event as being unimportant. For example, with the neighbour's opinion, individuals may be taught to change their perception of the importance of other people's opinions.

This framework of stress management intervention was tested empirically by comparing it with a general stress management programme. It was found that those subjects whose stress management programme was based upon the framework proposed by Sowa (1992) reported significantly less stress following the intervention than those subjects who received a general stress management package. It would therefore appear that the effectiveness of the stress management intervention is determined, at least in part, by the suitability of the programme as a function of the individual's

perception of the controllability and importance of the stressors. Although the framework of stress management intervention proposed by Sowa (1992) may begin to answer the question concerning which techniques should be used in the management of which stressors, as perceived by the individual, evidence would suggest that other variables also need to be considered, such as the individual's preferred coping style (Martelli et al, 1987) and the timing of the intervention (Wolfer and Vistainer, 1975). Furthermore, the categorisation of the stressors may change during the period of the intervention, and require different techniques at different times. The empirical study which was used to support the model only considered the short-term outcome of the interventions. In the long-term, continual classification of stressors may be required so that different techniques can be introduced.

### **3.35 Gregson and Looker's (1994) model of stress management**

The framework of stress management proposed by Gregson and Looker (1994) was based around the transactional model of stress. As shown in Figure 3.4, the model focuses on the various levels of intervention, including the stressor itself, the cognitive appraisal of the stressor, the stress response, the coping behaviour, and the response to the coping behaviour.



**Figure 3.4 Gregson and Looker's (1994) framework of stress management interventions**

Similar to the models proposed by Barrow and Prosen (1981), and Stoyva and Anderson (1982), this framework is based upon the proposal that specific techniques have specific effects, and hence the type of technique selected is dependent upon the nature of the problem. For example, Gregson and Looker (1994) argued that where an individual's response to stress is problematic, physiological modification is required, such as relaxation training. Similarly, if an individual is having trouble coping with stress, it would be necessary for them to engage in behavioural modification, such as problem-solving skills. Although the most recent review of the specificity of effects literature supports the view that particular techniques have specific effects (Lehrer et al, 1994), controversy surrounds this issue, with several researchers stating that the effects of stress management are a result of non-specific factors (Murphy, 1984a).

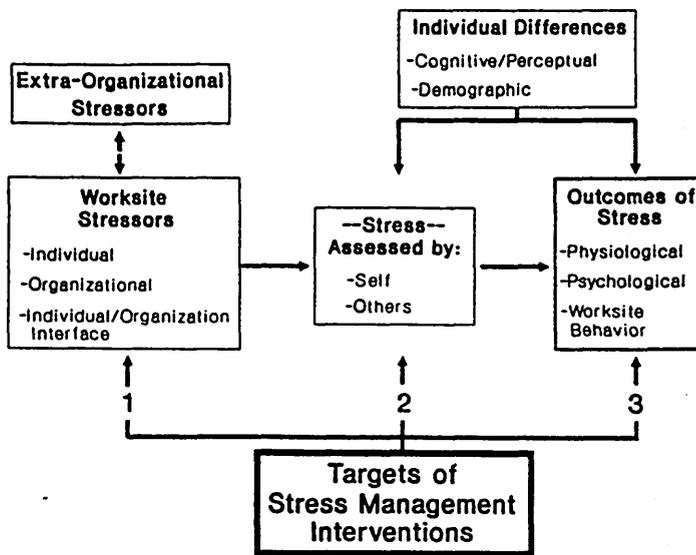
### **3.4 Models of worksite stress management intervention**

Although the first model of stress management intervention based upon the working environment was devised by Newman and Beehr in 1979, there has been a lack of further theoretical developments within this area until quite recently. This is somewhat surprising, given the significant increase in research within the whole area of occupational psychology and occupational health over the last decade. However, with few academics highlighting the need for theoretical advances within the domain of stress management intervention, researchers appear to have felt little pressure or desire to follow any scientific principles and practices.

Although the present research is not based solely on management of stress at work, it is still an issue of concern within the research. It therefore seems appropriate to review the theoretical approaches which have been taken with regard to occupational stress management, particularly where individually-oriented techniques are suggested.

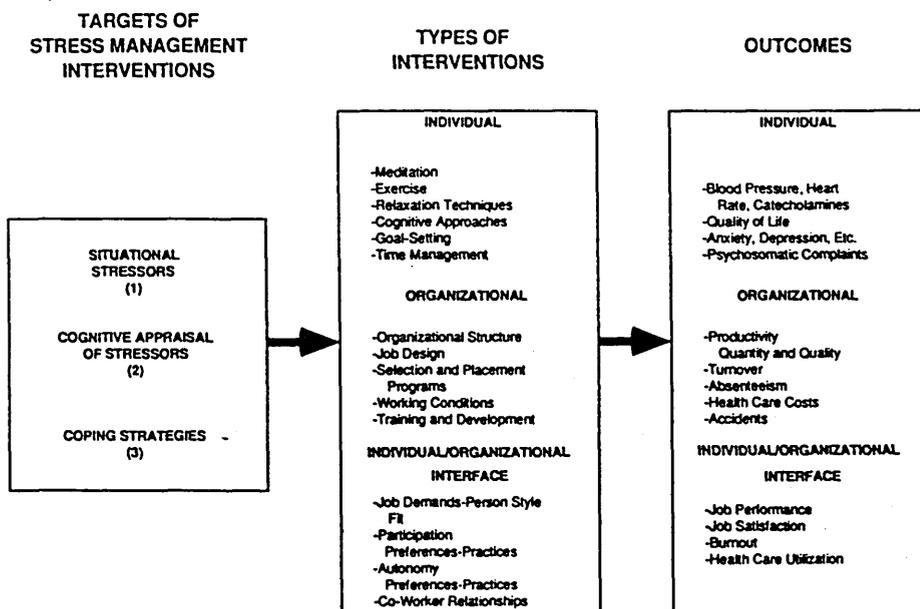
#### **3.41 Ivancevich, Matteson, Freedman and Phillips's (1990) framework of worksite stress management intervention**

Ivancevich et al (1990) categorised stress management interventions at work as attempts to reduce the intensity or number of stressors present at work, helping employees modify their appraisal of potentially stressful situations, and helping workers to cope more effectively with the outcomes of a stress reaction. These three points of intervention are shown in Figure 3.5, the framework of stress management proposed by Ivancevich et al (1990).



**Figure 3.5 Worksite stress management intervention framework**

Ivancevich et al (1990) expanded upon this initial framework, and designed a model of stress management intervention which outlined the types of interventions and their outcomes, as indicated in Figure 3.6.



**Figure 3.6 Stress management intervention : Targets, types and outcomes**

The framework of stress management intervention developed by Ivancevich et al (1990) recognised the role that individual differences play in moderating the stress response. They acknowledged that such differences may determine the efficacy of the interventions implemented amongst different groups of individuals. Although four examples were given of individual differences, namely race, gender, type A behaviour and hardiness, the list was not, by the authors own admission, exhaustive. Research suggests that other factors may, in part, determine the effectiveness of an intervention, including the individual's coping style (Martelli et al, 1987) and the frequency with which they practice the techniques (Kiecolt-Glaser et al, 1986).

This model is significant in that it focused on the role of the organisation within stress management intervention. Although individually-oriented interventions such as time management and relaxation were suggested as ways in which employees could try to manage their stress, organisational strategies such as changing the working conditions of employees, and providing additional training were also proposed. Interventions which consider the individual/organisational interface were further suggested, such as fitting the demands of the job with the working style of the employee, and allowing workers more autonomy and participation in their jobs. The outcomes of each of these types of intervention were considered in terms of their effects upon the individual's psychological and physiological systems, the organisation and the individual/organisational interface.

Several researchers have become increasingly aware of the need for a more global outlook to the whole area of occupational stress management, such that individuals are not perceived as being solely responsible for their levels of distress. However, the majority of evaluative research within the area of stress management remains focused upon individual change, allowing organisations to be free of any responsibility for their employees' levels of distress. This may be a function of management's perception of the causes of stress within the workplace. Singer, Neale, Schwartz and Schwartz (1986) carried out a survey on representatives from over 200 companies and union

groups, asking them for their views on stress and stress management. The results found that management tended to define stress in terms of an individual's responses, and therefore supported programmes based upon individual change. However, the members of the union group generally saw stress as a function of situational and environmental stimuli, and supported interventions which aimed to change the structure and procedures within the organisation. Although individual change is important, and is the focus of the present research, academics and professionals must also recognise the role of the organisation in contributing to employee stress, and consequently the way in which organisational changes can help to alleviate the distress caused by conditions at work.

A criticism of Ivancevich et al's (1990) model of stress management intervention is that it did not consider time as a determining variable of the effectiveness of a programme. There was no indication of the appropriate timing of an intervention, in terms of the period evolving between the onset of the stressor and the implementation of a programme. Furthermore, time was not considered as a function of the outcome of the stress management programme. This is particularly important for inclusion in a model of stress management intervention, in light of the fact that the majority of evaluative research to date has only considered the short-term effects of interventions. For evaluative research to be guided by theory, evaluation must be defined in terms of the processes occurring over the long-term as well as the short-term. Consequently this definition of evaluation must be incorporated into any model of stress management intervention.

### **3.42 Karasek's (1992) model of occupational stress interventions**

Karasek's (1992) model of workplace stress management intervention continued the theme of organisational change proposed by Ivancevich et al (1990). However, its approach extended beyond the workplace, and focused on the external environment,

considering economic and social factors within society. These factors place considerable pressure upon organisations in terms of increased productivity, hence creating a workaholic culture. This, in turn, effects the structure of jobs and communication channels within the organisation. A stress response then occurs when the individual feels that they can no longer cope with this situation, leading to possible illness. Karasek (1992) proposed a number of different interventions within the model, beginning with those which focused on the production process and ending with rehabilitation when the individual becomes ill. It is a somewhat eclectic approach towards stress management, and is unique in its recognition of external forces which contribute to an unhealthy workplace. Clearly, any changes within these external forces are determined by political decisions at the highest level. However, it is worth highlighting the relationship between the organisation and external environment, since there is an issue about how much the organisation can implement change when it is under pressure by these social and economic forces. Clearly change within the organisation is only possible when it does not lead to reduced productivity and profit margins, which somewhat limits the scope of actions which can be taken. Perhaps there is a more philosophical and political issue here about the nature of society, and whether stress is indeed very much a product of today's society.

### **3.43 Fontana and Valente's (1993) reversal theory approach towards stress management**

The role of the organisation in contributing to its employees' levels of distress has been further considered by Fontana and Valente (1993), who adopted a reversal theory approach towards the causes of stress. They believed that individuals with rigid personalities are unable to reverse from one metamotivational mode to the opposite mode, an ability which the authors viewed as being an effective coping mechanism in stressful situations. For example, they argued that a person dominant in the mastery mode, who is authoritarian and hierarchical, is unable to revert to the sympathy mode

when required, and therefore experiences stress at such times. The authors proposed that stress management could take one of three forms based upon this model of stress. These included changes in the dominant metamotivational mode of the institution, or of the individual, or decisions to take employment elsewhere. They acknowledged that changes in the metamotivational mode of the institution can only usually be carried out when such changes would not result in reduced efficiency or productivity. Changes such as revision of organisational policies and management style are included in this category. Individual change is based around examination of the reasons for individuals' lack of ability to switch between metamotivational modes, with the use of role plays and simulation exercises to try to achieve this ability. The authors acknowledged that the third alternative approach to stress management, that of seeking employment elsewhere, obviously involves important career decisions. However, they argued that workshops could help an individual to make these career moves, by identifying alternative working situations, and the consequences of applying for and gaining a different job.

Although this approach to stress and stress management is useful in identifying individual variables which may lead to an adverse stress reaction, no empirical research has evaluated the short or long-term effects of the interventions proposed by the model. The present author would argue that the potential value of the model as a guide to the implementation and evaluation of stress management interventions lies within its practical application. It is this which the author proposes may prove difficult. The theory is based upon the individual, and their assessment of dominance in a metamotivational mode, both within themselves and their organisation. However, the author feels that this would be unlikely to be used as the basis for change within the organisation. Furthermore, the third alternative of the individual seeking employment elsewhere may not be applicable to many people working within the present climate of high unemployment. Individuals may therefore be left feeling frustrated that although they have identified the problem, the solution is simply not viable. Consequently Fontana and Valente's (1993) model, although theoretically sound, is not a very realistic

approach to stress management intervention when applied to the modern world in which we live.

#### **3.44 Dewe's (1994) framework of stress management intervention**

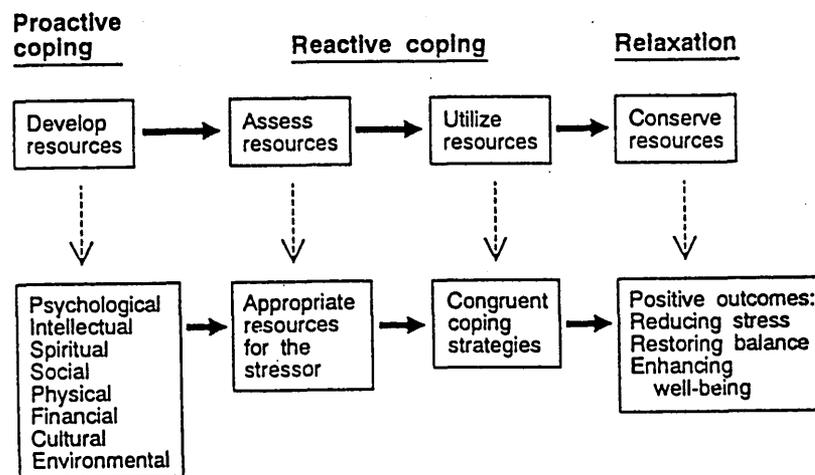
Dewe (1994) argued that stress management interventions can be conceptualised in three ways. Interventions can be at the primary level, in that they are aimed at a reduction in work and/or environmental stressors, at the secondary level, where they are directed at enabling the individual to modify their appraisal of a potential stressor, and finally at the tertiary level, consisting of employee assistance programmes which generally aim to help individuals cope more effectively with the consequences of stress. Hart (1987) argued that *"stress management should seek to be comprehensive in nature, operating across all three levels of intervention"*. (p.16). However, Dewe (1994) stated that comprehensiveness should imply consideration of the transactional nature of the relationship between the individual and their working environment. He argued that unless job demands are common to all employees, changes in working conditions may in fact add to individuals' stress. This is particularly significant in the light of evidence that differences in the perception of stressors by employees occur between institutions in the same industry or business sector (Kahn and Cooper, 1993), and also between different groups within the same organisation (Cooper and Bramwell, 1992). Dewe (1994) also argued that individually-oriented programmes fail to recognise the differences between the individuals involved in the intervention, and are therefore likely to be unsuccessful for at least some, if not all of the employees. Dewe (1994) proposed that one should not perceive the individual and their environment as separate systems, but rather consider the transactional nature of the relationship between the two. In this way, Dewe (1994) argued that occupational stress management interventions should therefore consider this transactional relationship between the individual and their environment within its framework, and promote *"greater matching of the individual and the environment"* (p.30).

This argument, which focuses on the organisational/individual interface, appears valid. It acknowledges differences between individuals and their environments, and therefore tailors a programme to an individual's specific needs. Dewe (1994) argues that if one takes a transactional perspective towards stress management interventions, then one must consider both the individual's primary and secondary appraisal of a situation. In terms of primary appraisal, that is the meanings which individuals give to events, researchers must consider the way in which individuals perceive different situations at work. In other words, one must not assume, for example, that a heavy work load is a stressor, unless an individual perceives it as being a threat to their well-being. This issue relates to Sowa's (1992) model of stress management, which emphasises the need for consideration of the individual's perception of a situation. This is important within the context of stress management, since it may determine the type of stress management intervention to be used. Although some conditions at work may be stressful to the majority of employees, and therefore need to be considered in terms of organisational change in the design of a stress management programme, in certain cases the problem may also lie in the way some individuals perceive certain events at work. In such instances, cognitive restructuring may need to be implemented as a stress management technique, in order to help those individuals perceive events in a less threatening way.

Dewe (1994) also argued that secondary appraisal is important within the transactional model of stress management intervention. This refers to the availability of coping resources, and therefore what action an individual can take in order to reduce the probability that an adverse stress reaction will occur. Dewe (1994) stated that the nature of the coping strategy will be influenced by the availability of coping resources and the individual's perception of the amount of control they have over a situation. In terms of stress management, Dewe (1994) argued that interventions must involve identification of positive factors associated with an individual's job, as well as targeting the negative aspects. In this way, an individual will be made aware of the resources

which are available to help them to cope with potential stressors. Interventions may also enable individuals to expand their coping resources, perhaps by establishing friendships and networks within the organisation which will help them to cope with potential stressors. This has been termed 'proactive coping' by Wong (1993), whose resource-congruence model of effective coping is shown in Figure 3.8.

**3.45 Wong's (1993) resource-congruence model of effective adaptation**



**Figure 3.8 : A schematic presentation of the resource-congruence model of effective coping**

Wong (1993) proposed that stress management intervention should be *"better than merely putting out fires"* (p.60). He argued that individuals should build on their resources, both internal and external, in order to *"minimise the need to put out fires"* (p.60). When a potential stressors occurs, individuals should then assess these resources, and select the appropriate strategy according to the nature of the stressor.

Wong (1993) argued that a reduction in stress will occur when an individual possesses adequate resources and chooses the appropriate coping strategy (congruent coping). This supports Dewe's (1994) proposal that positive aspects of an individual's environment should be recognised and expanded upon.

Dewe (1994) believed that interventions must also consider the degree of perceived control which individuals have over their work. Dewe (1994) argued that programmes must consider issues such as where control lies within a working situation, and what action can be taken to give individuals more control over their environment. A criticism here is that Dewe (1994) assumes that control at work will have a positive moderating effect upon an individual's level of stress. However, according to the theory of congruency (Brownell, 1982; Marino and White, 1985), the locus of control of an individual should be matched with the degree of control the environment allows that individual. For example, if an individual is externally-oriented, they should work within an environment which allows them little control over their work. It is important not to assume that allowing an individual greater control over their environment will necessarily be a positive step in helping them to manage their stress. Control should only be an issue therefore when there is a lack of congruency between the person's locus of control and the degree of control that an individual has over their environment. Stress management may then take the form of allowing an individual more or less control over their environment.

Wong (1993) also considered control as a possible determining factor in the selection of a stress management programme. He argued that self-reliance or problem focused coping techniques should be used where the stressor is controllable by oneself. However, where an individual lacks control, social support and dependence on others should be sought. This is supported by the evaluative research of stress management interventions. For example, Auerbach (1989) argued that emotion-focused coping appears to be effective in short-term low-control situations. Seeking support can be

viewed as an emotion-focused technique, since it fails to act upon the stressor, but instead deals with the emotions experienced by the individual.

Dewe (1994) concluded that within many working situations, individuals may have little choice but to use emotion-focused coping strategies. He argued that problem-focused strategies may be inappropriate due to the structure of organisations and the nature of an individual's job. This argument appears to be an attempt to bring the proposed theory of stress management intervention into the real world environment. Dewe (1994) argued that researchers must consider stress management as a transactional relationship between the individual and their working environment. However, he concludes by acknowledging that where the organisation is not willing or able to play a part within the framework of stress management, the onus is upon the individual to find ways in which they can reduce their levels of stress. Dewe (1994) stated that it may not be appropriate for individuals to use problem-focused coping strategies at work *"not because they do not have the coping skills but because issues like control and power fail to be seen as elements in any intervention programme"* (p.29) This issue highlights the huge gap that exists between theory and practice within the area of stress management. Theorists are aware of the need for management and organisations to be involved in the whole process of occupational stress management, but also acknowledge that this often fails to take effect in reality.

The author of the present research recognises the need for organisational intervention and supports the demand by several researchers for organisations to take responsibility for their role within workplace stress management programmes. However, she would also argue that the role of individually-oriented stress management interventions should not become obsolete. They certainly have a role to play, both within the context of a working environment, when organisational interventions are inappropriate or not possible, and also within the non-work environment, such as at home with family, or in social situations. Considering the methodological flaws present in many of the evaluative studies of individually-oriented stress management programmes, there is

clearly a need for a theoretical framework to guide the evaluation of individually-oriented stress management interventions. The models proposed to date should be expanded upon in the light of the criticisms directed at them in this chapter, in order that there is a greater understanding of the individual and situational variables determining the efficacy of individually-oriented stress management interventions.

## **4.1 Subjects**

Forty-five members of staff from Sheffield Hallam University volunteered to participate in a stress management programme. However, eleven members failed to attend the workshops, and/or complete ninety per cent of the measures, and were not included in the data set. The experimental group therefore consisted of the remaining thirty-four volunteers. All participants were given permission by their departmental or school managers to attend training sessions during working hours. The average age of the experimental participants was 38.27 years ( $\sigma = 10.26$ ). There were twenty-six women and eight men.

Thirty-three members of staff from the University volunteered to act as control subjects. However, two subjects failed to complete ninety per cent of the measures over the period of the study, and were not included in the data set. The control group therefore consisted of thirty-one members of staff. The average age of the control participants was 38.41 years ( $\sigma = 7.72$ ). There were twenty-five women and six men.

All of the participants in this study, both experimental and control, were from the academic, administrative and technical sectors of the University.

## **4.2 Stress management intervention**

The experimental participants were assigned to one of four treatment subgroups (Groups E1, E2, E3 and E4).

The control participants were assigned to one of two subgroups (Groups C1 and C2). Group C1 was designated as the control for experimental Groups E1 and E2; Group C2 acted as the control for experimental Groups E3 and E4. The subjects from the control

subgroups participated in the study at the same time as their respective experimental subgroups.

From the review of non-clinical stress management courses described in Chapter 2, the author considered the most popular techniques used within such courses, and designed the present stress management workshop in such a way as to represent a 'typical' stress management programme. She then attempted to maximise the effects of the workshop by carrying it out over five weeks, a period considerably longer than many programmes, and by involving a trainer who was a qualified psychologist and counsellor, together with a qualified physiotherapist.

The programme was delivered on consecutive days over a period of five weeks to experimental Groups E1 and E2. The week following completion, the workshop was then run for a third and fourth time for experimental Groups E3 and E4.

The first training session took place one morning over a period of four hours, and was entitled 'Introduction to Stress'. A psychologist instructed participants on topics relating to stress, such as its causes, symptoms, consequences and management. This was followed by a discussion amongst the participants concerning the causes of stress within their own working environment. Feedback from this discussion was then delivered to the researcher.

The next four training sessions each took place on a weekly basis, for a period of three hours. The first began in the afternoon following the 'Introduction to Stress' session. The sessions included relaxation training (Mitchell, 1988), in which participants were instructed on the theory and practice of relaxation by a physiotherapist. Participants were allowed to practise the technique during the training session, and were given an audiotape recording of the technique's instructions to use in their own time. The physiotherapist also encouraged participants to ask questions relating to their own specific relaxation difficulties, and advice was given where possible.

The session on cognitive restructuring was based upon Ellis' (1962) Rational-Emotive Therapy. It aimed to replace participants' stress-provoking thoughts and beliefs with more constructive and rational ones. The way in which this could possibly change a person's appraisal of threat or harm, and consequently reduce the amount of stress they were under, was considered.

During the session on assertiveness training, the psychologist taught participants how to express their needs and feelings in a way that was not threatening to others. The psychologist emphasised the differences between assertive, aggressive and passive behaviour.

The session on time management allowed participants to review how they were using or misusing their time. Techniques such as time logging and goal setting were introduced. The practical implementation of these was then considered by the participants.

The final session took place one morning over a period of four hours. The psychologist and physiotherapist reviewed the basics of their techniques, and answered any queries or problems from the participants. A discussion then took place between the researcher and the participants concerning various aspects related to the workshop. These included issues such as how much the participants had enjoyed or disliked the workshop; how motivated they had felt to practise the techniques between sessions; whether any problems had arisen over the weeks; what improvements they would suggest for future stress management programmes, and what they personally felt they had gained from this particular workshop.

### **4.3 Design**

The order of the four stress management techniques undertaken by each of the experimental participants, was counterbalanced using a Latin-square design. This ensured that all possible orders of the treatment conditions was used, and therefore minimised any carry-over effects.

### **4.4 Measures used**

#### **4.41 Baseline**

The experimental and control participants completed a number of questionnaires a week prior to commencement of the first stress management training session.

##### **4.411 The Life Experiences Survey (Sarason, Johnson and Siegel, 1978)**

The LES is a fifty-seven item self-report measure of life change. Respondents indicate events which they have experienced during the past year. They rate the extent of the impact that each event has had on their life at the time of occurrence, and whether they felt the impact to have a positive or negative effect. The ratings are on a seven-point scale, from extremely negative (-3) to extremely positive (+3). A positive change score is calculated by summing the positive impact ratings, and a negative change score is calculated similarly by summing the negative impact ratings. The total change score is then determined by summing these two values.

The LES was developed as a refinement to the Schedule of Recent Experiences (Holmes and Rahe, 1967). The latter is a forty-three item self-report questionnaire which also determines a total life stress score. However the SRE is based upon the

assumption that all life changes are stressful, irrespective of their desirability. Sarason, Johnson and Siegel (1978) argued that *"even though life change units do seem to produce a quantitative measure of overall life change, in some cases, they may not reflect the actual amount of stress resulting from the experiencing of specific events"* (p.933). This led to the endorsement of positive and negative impact ratings in the LES, and their subsequent summation in the calculation of the total change score.

Sarason et al (1978) reported that test-retest studies, undertaken over a five to six week period, have shown the LES to be a moderately reliable research tool, particularly when negative and total change scores are considered. Furthermore, the validity of the LES has been demonstrated by showing the negative change score to be significantly related to a number of stress-related dependent measures. For example, Sarason et al (1978) found significant correlations ( $p < 0.001$ ) between negative change scores and state and trait anxiety amongst a sample of naval personnel.

#### **4.412 Daily Hassles and Uplifts Scales (Lazarus and Folkman, 1989)**

Lazarus and Folkman (1989) proposed that the life events approach to measuring psychological stress has a number of limitations. They argued that by focusing on the extent of change occurring in a person's life, continuous or recurring demands or conflicts are not accounted for. They also suggested that individual differences in the appraisal of events are ignored, that the events listed in such scales are not representative of the typical changes experienced by many particular groups, and that since many of the events occur rarely, if at all, in most people's lives, they are a poor standard measure of the stress undergone during everyday conditions.

Consideration of such limitations led Lazarus and Folkman (1989) to create a new instrument with which to measure daily psychological stress, namely the Hassles Scale.

This scale consists of 117 items, which respondents rate on a four-point scale as 'none or did not occur', 'somewhat severe', 'moderately severe' or 'extremely severe'.

Lazarus and Folkman (1989) then argued that the occurrence of positive events in a person's life may buffer the detrimental effects of negative hassles. They therefore designed an Uplifts Scale. This scale consists of 135 items which are rated in terms of their frequency as 'none or did not occur', 'somewhat often', 'moderately often' and 'extremely often'.

The scoring on both scales consists of two values: firstly a frequency value, which is the number of hassles or uplifts which have been marked by the respondents; and secondly, a severity value, which is the average severity rating of all the hassles or uplifts recorded by the respondent.

In determining the reliability of the Daily Hassles Scale, Lazarus and Folkman (1989) prefer to use the term stability. They argue that this is a more appropriate term since the hassles scores reflect states, which are variable psychological stress responses. In a study carried out by Kanner et al (1981) three different samples of subjects completed the Daily Hassles Scale each month for a period of nine months. The stability of these sets of data was calculated by correlating the scores from each successive pair of time periods, and then taking an average of these correlations over the nine month period. The results showed that the hassles frequency scores were quite stable over the nine month period (average  $r=0.79$ ). However the hassles severity scores were not so stable (average  $r=0.48$ ), and Lazarus and Folkman (1989) suggested that this may be due to the subjects not endorsing the same hassle items from month to month. Further research would need to clarify this point.

In discussing the validity of the Daily Hassles Scale, Lazarus and Folkman (1989) emphasise that the scale was not designed to measure objective 'stressor' events. Rather, it is a means of measuring subjective levels of stress experienced by the

respondent. Consequently, they argued that the scale has a reasonably high degree of face and content validity.

A study by Kanner et al (1981) compared the data from the Daily Hassles Scale with reported life events covering a period of thirty months prior to the study. A modest relationship was found between the two constructs (maximum  $r=0.36$ ), which suggests that although there is some overlap, many of the Daily Hassles are quite probably independent of the life events. Lazarus and Folkman (1989) therefore proposed that the two constructs supplement each other in providing a valid measurement of subjects' psychological stress.

The validity of the Uplifts Scale has been tested by determining the role of uplifts as a buffer to psychological distress. Very little research has tested this hypothesis. However, a study by Kanner et al (1987) found that in a sample of 232 sixth graders, uplifts scores correlated positively with anxiety in girls, but had a positive buffering effect on the distress and depression in boys. Such results must be tested further in order to clarify the role of uplifts as a buffer to psychological distress.

#### **4.413 General Health Questionnaire-28 (Goldberg and Williams, 1988)**

The GHQ-28 is a twenty-eight item self-report questionnaire designed to detect psychiatric disorders. It is a scaled version of the original sixty item GHQ, on the basis of the results of a principal components analysis. Four main factors were derived, including somatic symptoms, anxiety and insomnia, social dysfunction and severe depression.

There are seven questions in each of the four sections of the questionnaire. Each question asks the respondent to rate their experience of a particular symptom or behaviour on a four point scale from occurring 'less than usual' to 'much more than

usual'. Four values are then calculated using Likert scaling (0-1-2-3) for each of the four factors of the GHQ-28, together with an overall total score.

The GHQ can be used to determine the probability of an individual being identified as a psychiatric case. This is determined by comparing the participant's GHQ score with a threshold score. The threshold score is formed by calculating the number of symptoms at which the probability that an individual will be thought to be a 'case' exceeds 0.5.

The reliability of the GHQ-28 with the general population, has been determined by means of test-retest studies. Layton (1986) found test-retest correlations of 0.58 and 0.51 when the GHQ-60 was administered to 186 school-leavers and 101 men facing redundancy, 11 and 12 months apart. However, it is difficult to detect whether low test-retest correlations reflect unreliability of the GHQ, or a shift in the degree of psychiatric disorder exemplified by the respondent. Goldberg and Williams (1988) have stated that statistical procedures are available which can clarify this distinction, but as yet no attempt seems to have been made to put this to empirical use.

A number of studies have considered the validity of the GHQ-28, by determining a sensitivity value (Goldberg and Hillier, 1979; Banks, 1983; Medina-Mora et al, 1983). This is the probability that a 'true case' of psychiatric disorder will be correctly identified by the GHQ when compared with the results from a criterion interview. The research has shown a range of sensitivity values, from forty-four per cent (Mann et al, 1983) to one hundred per cent (Banks, 1983; Lindsay, 1986; Selzer and Mann, 1987). However, Goldberg and Williams (1988) argued that the three studies which showed one hundred per cent sensitivity values should be treated with caution, since the number of true cases which were interviewed was very small.

#### **4.42 The workshop**

The experimental and control participants completed the Daily Hassles and Uplifts Scales on a weekly basis throughout the whole period of the workshop.

On the third week of the workshop, the experimental and control participants completed Rotter's (1966) Internal/External Locus of Control questionnaire.

##### **4.421 Rotter's (1966) Internal/External Locus of Control**

External control is the belief that reinforcement following some behaviour occurs as a result of luck, chance or fate. Conversely, internal control is the belief that the reinforcement is dependent upon the person's own behaviour or characteristics.

The Internal/External scale measures a generalised tendency or belief in external control. It consists of twenty-nine items, each of which has two alternative statements labelled as 'a' and 'b'. Respondents select one of the two statements which they most strongly believe in. Six of the items are fillers to make the purpose of the test more ambiguous. The remaining items are then scored, with one point being attributed to each 'external control' statement chosen. The total score is thus calculated as the summation of all of the points from the scale.

Rotter (1966) reported unpublished work by Jessor (1964), who carried out several test-retest reliability studies over different time periods and using different populations. Correlation scores ranged from 0.49, for a two month test-retest period, to 0.83 for a one month period. Rotter (1966) argued that the lower reliability for the two month period may have been partly due to the fact that the first test was given under group conditions whereas the second test was individually-administered.

The internal consistency of the scale has also been determined in several studies by Franklin (1963). Although only moderately high correlations of 0.69 to 0.79 were obtained, Rotter (1966) emphasised that this was probably due to the fact that the items were samples of attitudes in a wide variety of different situations.

A number of researchers, including Schwarz (1963), Strickland (1962), and Watt (1962) have compared subjects' scores on the I-E scale with their scores on The Marlow-Crowne Social Desirability Scale (Crowne and Marlowe, 1964). Using samples of college students, correlational values have typically ranged from -0.07 to -0.35. Rotter (1966) argued that the different scores may have reflected differences in testing conditions, with some studies considering only male, and others only female subjects. When males and females were combined, a correlation of -0.22 represented the median for different samples of college students.

On the fourth week of the workshop, the experimental and control participants completed the Jenkins Activity Survey (Jenkins, Zyzanski and Rosenman, 1971).

#### **4.422 Jenkins Activity Survey (Jenkins, Zyzanski and Rosenman, 1971)**

This self-report questionnaire was designed to measure Type A behaviour, which is characterised by "*competitiveness, striving for achievement, aggression, impatience, haste, restlessness and feelings of being challenged by responsibility and under the pressure of time*" (Jenkins, Zyzanski and Rosenman, 1971, p.3).

Respondents answer fifty-two multiple-choice questions. The scoring is then undertaken by assigning numerical points to each response alternative, and then calculating the total sum of points for all of the items. This raw score can then be interpreted into a standard score based on the JAS scores from the Western Collaborative Group Study participants (Rosenman, Friedman, Straus, Jenkins,

Zyzanski and Wurm, 1970), and finally into an equivalent percentile of Type A behaviour.

Jenkins et al (1965) and Rosenman et al (1966) considered the test-retest reliability of the JAS. Test-retest coefficients ranged from 0.60 to 0.70 for retest intervals of one to four years. When the test was administered over a four month period, test-retest coefficients ranged from 0.65 to 0.82. Jenkins et al (1971) stated that these results compared favourably with the reliability of other psychological tests.

The internal consistency of the JAS was also determined in the Western Collaborative Group Study (Rosenman et al, 1970), with coefficients ranging from 0.83 to 0.85, depending on the statistical procedure used.

The validity of the JAS has been determined in a number of studies ((Rosenman et al, 1970; Kittel et al, 1978), by comparing the results from the JAS with ratings from a Structured Interview. The Western Collaborative Group Study (Rosenman et al, 1970) and the Belgian Multi-factorial Heart Disease Prevention Project (Kittel et al, 1978) yielded overall agreement percentages of 73 and 70 respectively.

On the final review session of the workshop, the experimental and control participants completed the Daily Hassles and Uplifts Scales, the Life Experiences Survey, the General Health Questionnaire, a Review questionnaire (Appendix 1A, p.1) and a Motivation questionnaire (Appendix 1B, p.9).

#### **4.423 Blood pressure**

The systolic and diastolic blood pressures of the experimental participants were measured and recorded on the first and final sessions of the workshop using a manual syphgmomanometer.

#### **4.43 Follow-up**

Four months following completion of the workshop, the experimental and control participants completed the Daily Hassles and Uplifts Scales, the Life Experiences Survey, the General Health Questionnaire-28 and a Follow-up Review questionnaire (Appendix 2, p.13).

#### **4.44 Work Locus of Control Scale (Spector, 1988)**

Eighteen months following cessation of the workshops, the experimental and control participants completed Spector's (1988) Work Locus of Control Scale. This is a sixteen item measure of generalised control beliefs in work settings. Participants are required to rate each item on a six-point scale, ranging from 'disagree very much' to 'agree very much'. A number of studies have been carried out to test the reliability and validity of the Work Locus of Control Scale (Michaels and Boatwright, 1984; Storms and Spector, 1987; White and Spector, 1987; Spector, 1988). Coefficients of internal reliability of the Scale taken from different studies have ranged from 0.75 to 0.85. The validity of the Scale has been determined by comparing the relationships between locus of control and organisational variables. It was found that the Scale correlated significantly with measures of job satisfaction, commitment, intention, autonomy, influence, role stress, consideration and initiating structure. The Scale also correlated significantly with general locus of control measures (Rotter, 1966), although the relationship between the Work Locus of Control Scale and organisational variables was stronger than that for the general Locus of Control Scale and organisational variables. Spector (1988) argued that the Work Locus of Control Scale would therefore appear to be a more precise predictor of work behaviour than the general Locus of Control Scale.

## **5.1 Baseline results**

Table 5.11 shows the means and standard deviations of the ages and genders of the experimental and control groups subjects.

**Table 5.11 : Mean and standard deviation of subjects' age and gender**

<b><u>Components</u></b>	<b><u>Experimental subjects</u></b>	<b><u>Control subjects</u></b>
<b><u>Age (Years)</u></b>	<b>38.27, <math>\sigma = 10.26</math></b>	<b>38.41, <math>\sigma = 7.72</math></b>
<b><u>Gender (No. of M and F)</u></b>	<b>8 M, 26 F</b>	<b>6 M, 25 F</b>

Table 5.12 shows the means and standard deviations of the experimental and the control groups' baseline scores on the Daily Hassles and Uplifts Scales.

**Table 5.12 : Mean and standard deviations of the scores on the Daily Hassles Scale**

<b><u>Components</u></b>	<b><u>Experimental group</u></b>	<b><u>Control group</u></b>	<b><u>Population Norms</u></b>
<b><u>Frequency</u></b>	<b>34.25, <math>\sigma = 17.57</math></b>	<b>25.19 <math>\sigma = 14.96</math></b>	<b>20.5, <math>\sigma = 17.7</math></b>
<b><u>Severity</u></b>	<b>7.21, <math>\sigma = 23.55</math></b>	<b>1.28, <math>\sigma = 0.254</math></b>	<b>1.46, <math>\sigma = 0.39</math></b>

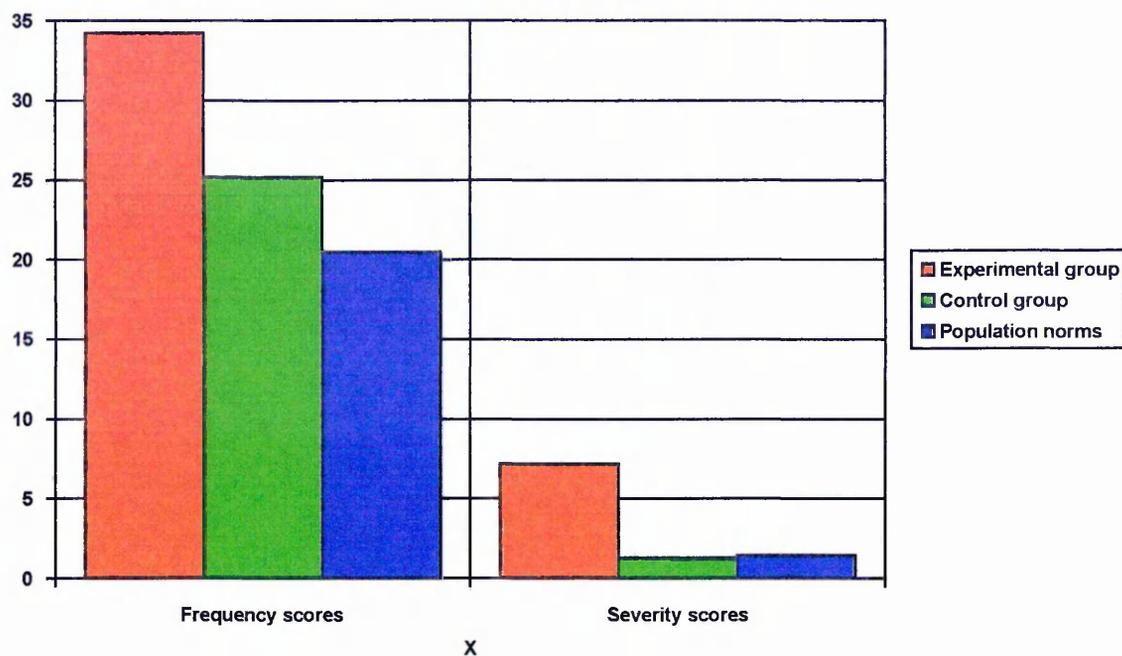
A t-test found that there was a significant difference between the means of the experimental and control group's frequency scores on the Daily Hassles Scale, with the experimental group subjects scoring significantly higher than the control group subjects ( $t = 2.21$  d.f. = 60.03  $p < 0.05$ ). However there appeared to be no significant difference between the means of the experimental and control subjects' severity scores on this scale ( $p > 0.05$ ).

Using normative data, a t-test revealed that there was a significant difference between the means of the experimental and a normative group's frequency scores, with the experimental subjects scoring significantly higher than the normative group on this measure ( $p < 0.001$ ).

However, there was no significant difference between the control group's and the normative group's frequency scores on the Daily Hassles Scale ( $p > 0.05$ )

T-tests were also carried out to determine the difference between the means of the experimental group's and the normative group's severity scores, and between the control group's and the normative group's severity scores. It was found that there was a significant difference between the means of the control group's and the normative groups' severity scores, with the control subjects scoring significantly lower than the normal population on this measure ( $p < 0.01$ ). However, no significant difference was found between the experimental group's and the normative group's severity scores on the Daily Hassles Scale ( $p > 0.05$ )

These results are summarised in Graph 5.11



**Graph 5.11 : Histogram of the experimental, control and normal population's frequency and severity scores on the Daily Hassles Scale**

Table 5.13 shows the means and standard deviations of the experimental and control groups' scores on the Uplifts Scale

**Table 5.13 : Mean and standard deviation of the scores on the Uplifts Scale**

<u>Components</u>	<u>Experimental group</u>	<u>Control group</u>	<u>Population Norms</u>
<b>Frequency</b>	<b>51.73, <math>\sigma = 24.90</math></b>	<b>60.61, <math>\sigma = 23.87</math></b>	<b>49.5, <math>\sigma = 27.8</math></b>
<b>Severity</b>	<b>4.37, <math>\sigma = 16.90</math></b>	<b>1.48, <math>\sigma = 0.294</math></b>	<b>1.77, <math>\sigma = 0.40</math></b>

A t-test found that there was no significant difference between the means of the experimental and control groups' frequency or severity scores on the Uplifts Scale ( $p > 0.05$ )

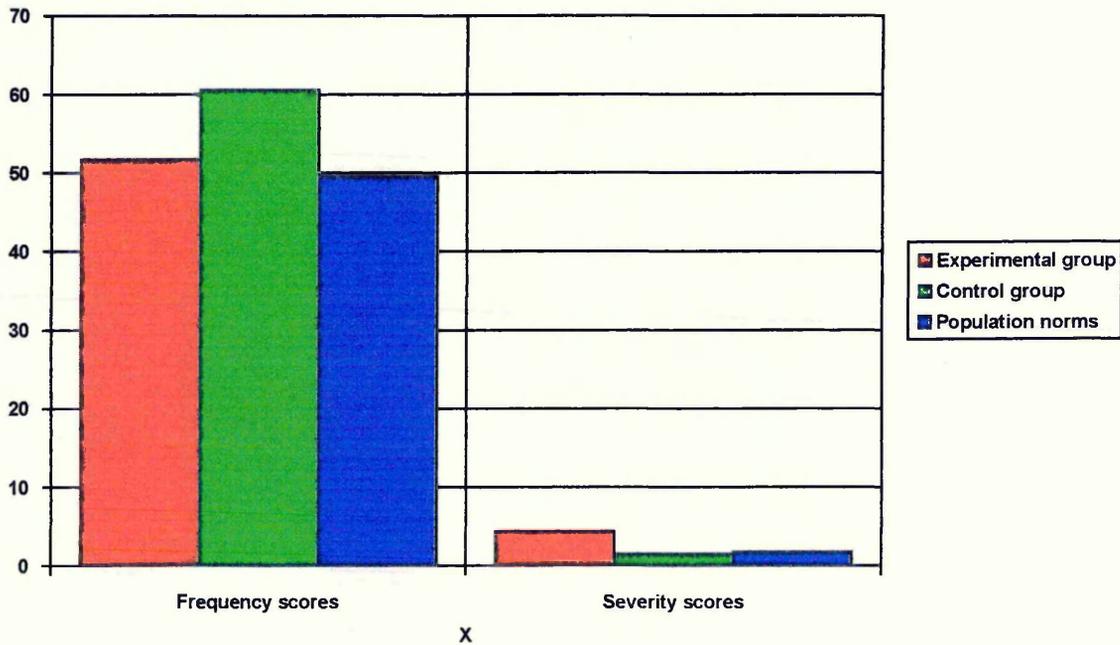
Using normative data, a t-test revealed a significant difference between the means of the control group's and the normative group's frequency scores on the Uplifts Scale



( $p < 0.05$ ), with the control group scoring significantly higher than the normative population.

There was also found to be a significant difference between the means of the control group's and the normative group's severity scores on the Uplifts Scale ( $p < 0.001$ ), with the normative group scoring significantly higher than the control group.

Graph 5.12 summarises these results.



**Graph 5.12 : Histogram of the experimental, control and normal population's frequency and severity scores on the Uplifts Scale**

Table 5.14 shows the means and standard deviations of the experimental and control subjects' scores on the Life Experiences Survey.

**Table 5.14 : Mean and standard deviation of the total scores on the Life**

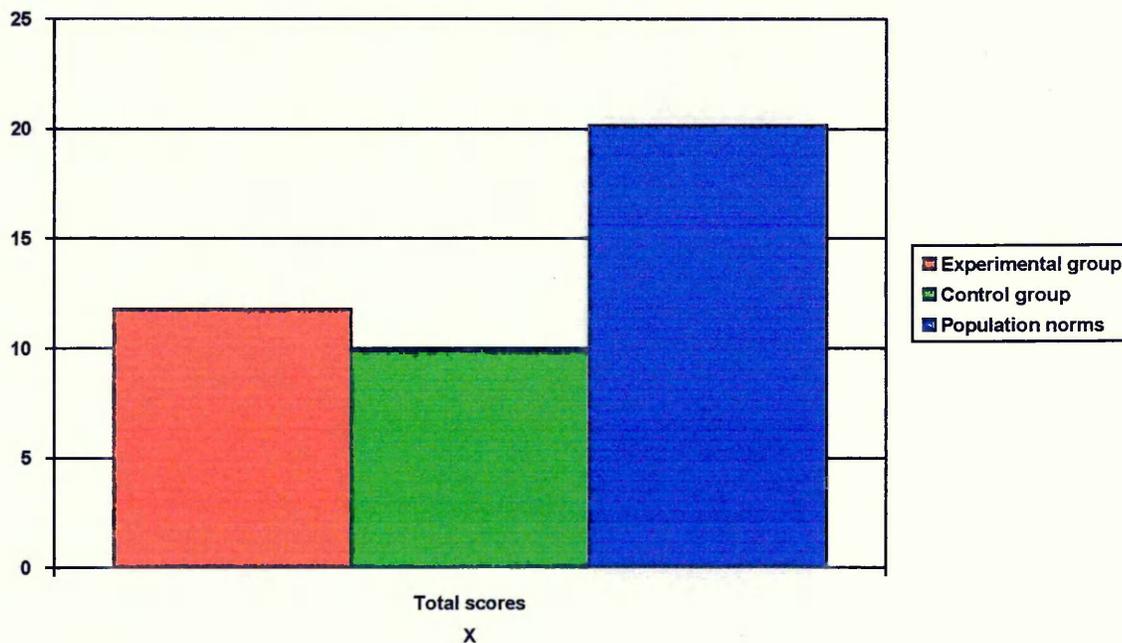
**Experiences Survey**

<u>Measure</u>	<u>Experimental group</u>	<u>Control group</u>	<u>Population Norms</u>
Total LES score	11.79, $\sigma = 9.15$	9.87, $\sigma = 8.72$	20.16, $\sigma = 11.48$

A t-test found that there was no significant difference between the means of the experimental group's and the control group's scores on the LES ( $p > 0.05$ ).

T-tests found that there were no significant difference between the means of the experimental group's and the normative group's scores on the LES ( $p > 0.05$ ), or between the control group's and the normative group's scores on the LES ( $p > 0.05$ ).

Graph 5.13 summarises these results.



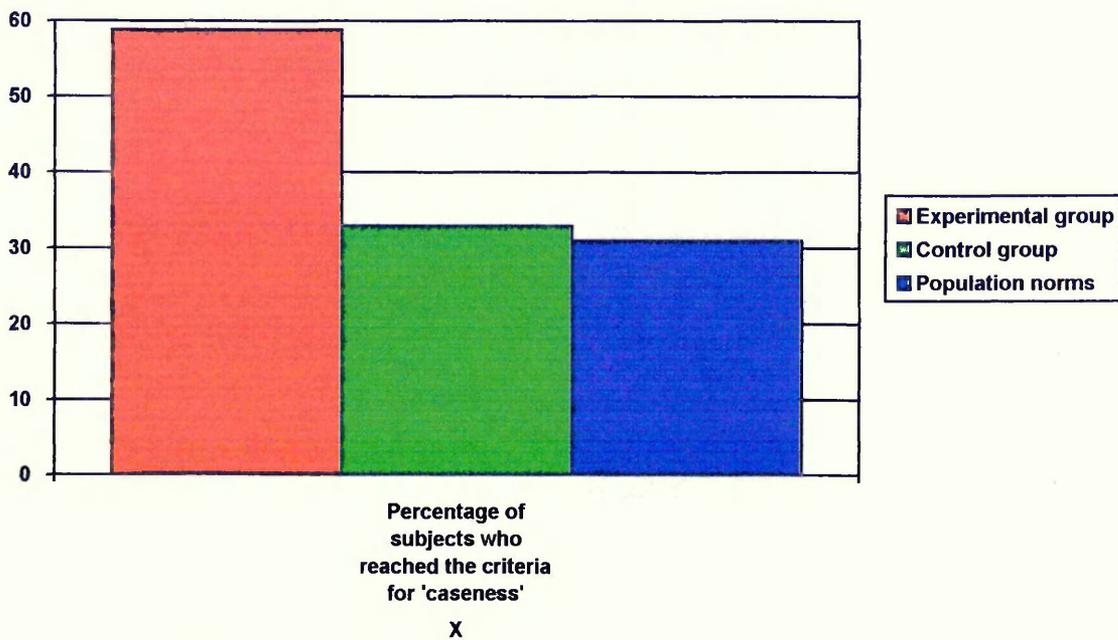
**Graph 5.13 : Histogram of the experimental, control and normal population's total scores on the Life Experiences Survey**

Table 5.15 shows the percentage number of experimental and control subjects who were identified as reaching the levels deemed appropriate by clinicians for psychiatric caseness from their scores on the General Health Questionnaire-28.

**Table 5.15 : Number of subjects identified as reaching the level of psychiatric 'caseness'**

<b><u>Measure</u></b>	<b><u>Experimental group</u></b>	<b><u>Control group</u></b>	<b><u>Population Norms</u></b>
<b>% of subjects reached criteria for caseness</b>	<b>58.8</b>	<b>33</b>	<b>31</b>

A chi-squared test found that the experimental group subjects were not statistically more likely to be identified as a psychiatric case from the GHQ-28 than were the control group subjects ( $\chi^2 = 3.193$  d.f. = 1). However, there was a greater tendency for the experimental group to be identified as a psychiatric case. Graph 5.14 summarises these results.



**Graph 5.14 Histogram of the percentage of subjects who reached the criteria for psychiatric 'caseness'**

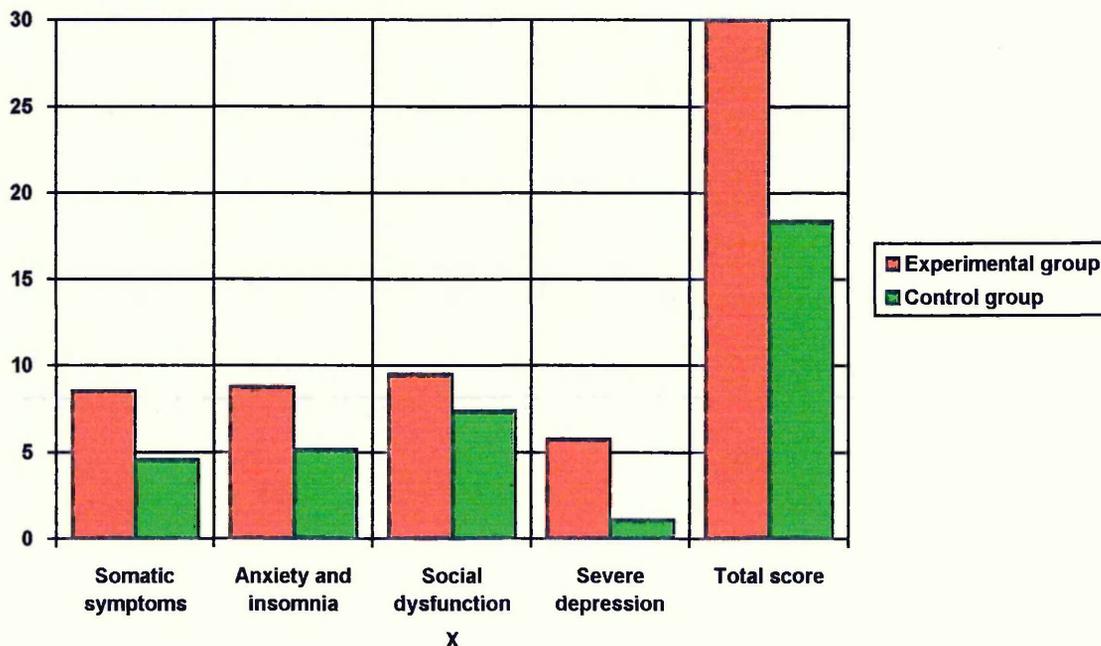
Table 5.16 shows the means and standard deviations of the experimental and the control groups' scores on each of the four factors of the GHQ-28.

**Table 5.16 : Means and standard deviations of the four factors of the GHQ-28**

<u>Measure</u>	<u>Experimental group</u>	<u>Control group</u>
Somatic symptoms	8.58, $\sigma = 4.27$	4.60, $\sigma = 3.22$
Anxiety and insomnia	8.81, $\sigma = 4.75$	5.20, $\sigma = 3.83$
Social dysfunction	9.52, $\sigma = 3.55$	7.43, $\sigma = 2.58$
Depression	5.79, $\sigma = 16.2$	1.13, $\sigma = 1.96$
Total score	30.0, $\sigma = 18.4$	18.4, $\sigma = 8.66$

T-tests found that there were significant differences between the means of the experimental group's and control group's scores on three of the factors of the GHQ-28 (somatic symptoms  $p < 0.0001$ ; anxiety and insomnia  $p < 0.001$ ; social dysfunction  $p < 0.01$ ) and between their total scores ( $p < 0.001$ ). The experimental group's scores on each of these factors were significantly higher than those of the control group.

These results are summarised in Graph 5.15



**Graph 5.15 : Histogram of the experimental and control group's scores on the General Health Questionnaire-28**

Table 5.17 shows the means and standard deviations of scores on Rotter's(1966) scale of externality.

**Table 5.17 : Means and standard deviations of the scores of externality on Rotter's (1966) Locus of Control Scale**

<u>Measure</u>	<u>Experimental group</u>	<u>Control group</u>	<u>Population Norms</u>
Externality	13.94, $\sigma = 3.59$	12.62, $\sigma = 5.19$	8.29, $\sigma = 3.97$

A t-test found no significant differences between the means of the experimental and control group's scores of externality ( $p > 0.05$ ).

However, there were significant differences between both the means of the experimental group's and the normative group's scores of externality, and between the control group's and the normative group's scores of externality ( $p < 0.001$  and  $p < 0.001$  respectively). The scores of externality for both the experimental group and the control group were significantly higher than those obtained from the normative group.

Table 5.18 shows the means and standard deviations of the experimental and control groups' scores on the Work Locus of Control scale

**Table 5.18 Means and standard deviations of the scores of externality on the Work Locus of Control Scale**

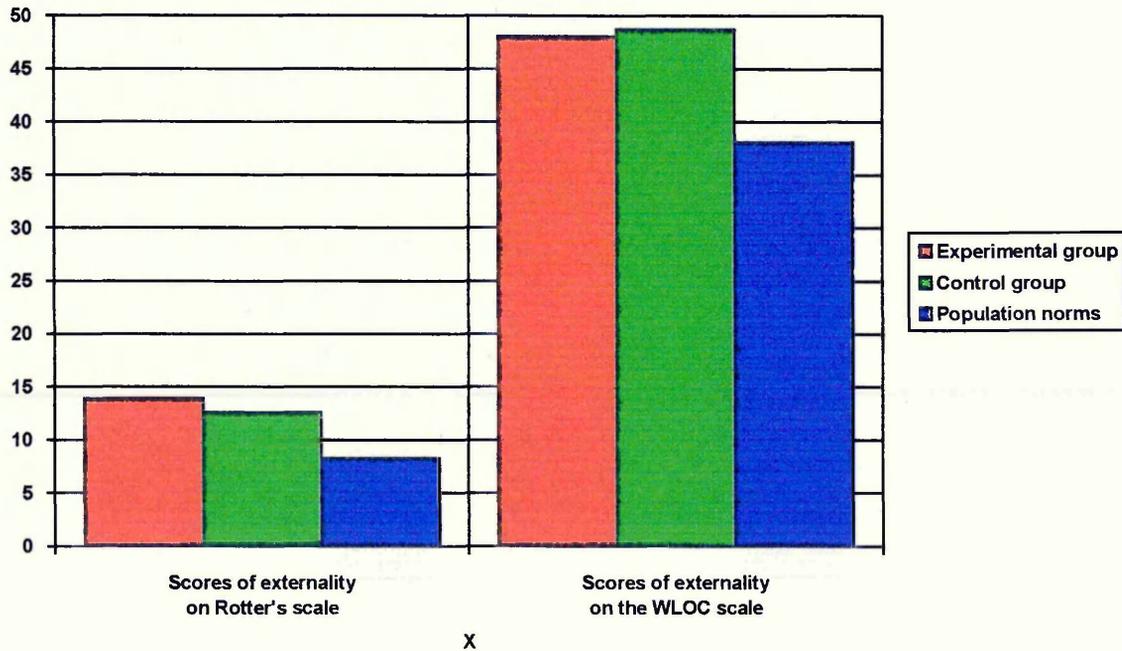
<u>Measure</u>	<u>Experimental group</u>	<u>Control group</u>	<u>Population Norms</u>
WLOC Externality	48.11, $\sigma = 9.37$	48.76, $\sigma = 10.90$	38.1, $\sigma = 9.6$

A t-test found that there was no significant difference between the experimental and control participants' mean scores on the Work Locus of Control scale. ( $t = 0.064$  d.f. = 39,  $p > 0.05$ ).

However, significant differences were found between the experimental participants' and normative population's mean scores, and between the control participants' and the normative population's mean scores on the Work Locus of Control scale. ( $t = 4.496$  d.f. = 1183  $p < 0.001$ ;  $t = 4.45$  d.f. = 1186,  $p < 0.001$  respectively).

The degree of association between the participants' locus of control scores on Rotter's (1966) scale and their scores on the Work Locus of Control scale was determined using Pearson's correlation coefficient, which was found to be significant. ( $r = 0.3716$   $p < 0.01$ )

These results are summarised in Graph 5.16.



**Graph 5.16 : Histogram of the experimental, control and normal population's scores of externality on Rotter's (1966) Scale and the Work Locus of Control Scale**

The feedback from the discussions on work stressors is summarised in Table 5.19.

**Table 5.19 : Feedback from discussions of work stressors**

**EXTERNAL PRESSURES**

**1. PHYSICAL ENVIRONMENT**

Overcrowding, noise, pollution, poor ventilation, lack of personal safety, no relaxation, no relaxation centres/staff rooms, no counselling service for staff

**2. JOB CHARACTERISTICS**

Inconsistent demands from bosses, lack of consultation, lack of co-operation, lack of training, conflicting and rigid deadlines, last minute changes in priorities, lack of responsibility, external bodies not meeting deadlines, poor technology, job monotony

**3. SOCIO-CULTURAL ENVIRONMENT**

Job insecurity, lack of qualitative feedback, inefficiency amongst colleagues, no proper career development plan, inconsiderate managers, workaholic culture

**INTERNAL PRESSURES**

**4. COGNITIVE/EMOTIONAL**

Guilt when being assertive, guilt at time off, no time to recharge, guilt if standards are not met, lack of motivation, lack of job satisfaction

**5. BEHAVIOURAL**

Not being assertive, not asking for help, inefficient work habits

## **5.21 Short-term evaluation of effectiveness of stress management intervention**

A series of analyses of covariance tests were used to determine the change in the experimental participants' scores, following the stress management workshop, relative to the change in the control subjects' scores. The author suggested that it was important to include a covariate, because of the significant differences found between the experimental and control group's baseline scores prior to the intervention.

Tables 5.211 and 5.212 summarise the analyses of covariance results for the Daily Hassles Scale. The frequency and severity scores obtained at the end of the workshop were used as the dependent variables, and the baseline data for each appropriate measure were used as the covariates. GROUP1 (experimental or control group) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for either the frequency or the severity scores. (F(group 1, frequency)= 0.432  $p > 0.05$ ; F=(group 2, frequency) = 1.124  $p > 0.05$ ; F(group1.group2, frequency) = 0.369  $p > 0.05$ ; F(group 1, severity) = 1.695  $p > 0.05$ ; F(group 2, severity) = 0.153  $p > 0.05$ ; F(group1.group2, severity) = 0.159  $p > 0.05$ )

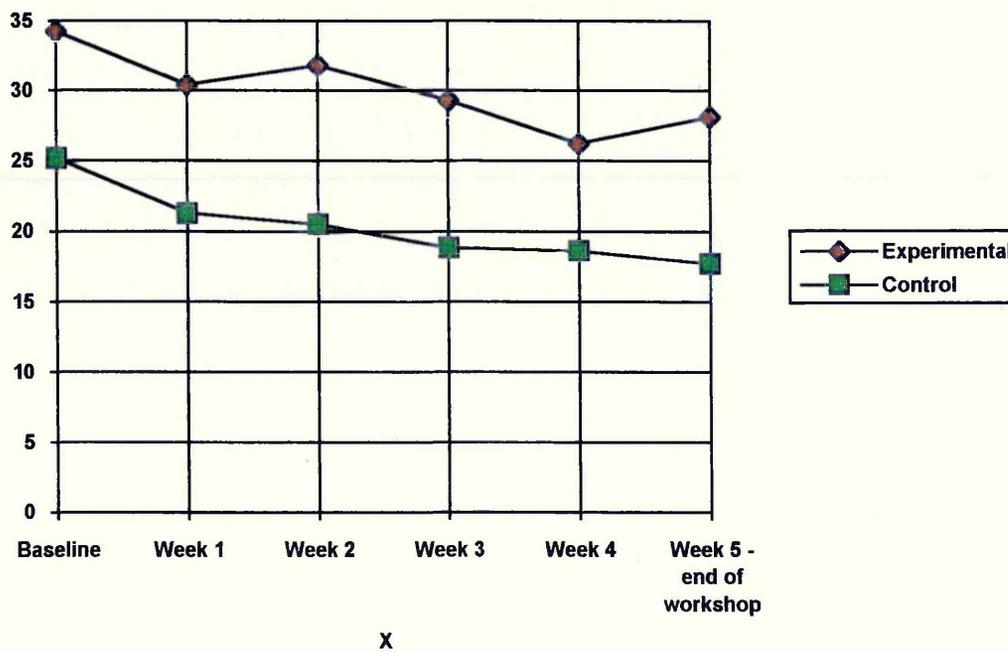
**Table 5.211 : Summary of ANCOVA for the frequency scores on the Daily Hassles Scale**

<b><u>Source of variation</u></b>	<b><u>Sum of Squares</u></b>	<b><u>Degrees of freedom</u></b>	<b><u>Mean Square</u></b>	<b><u>F</u></b>	<b><u>Significance of F</u></b>
<b>Covariate DHF1</b>	<b>8889.874</b>	<b>1</b>	<b>8889.874</b>	<b>83.460</b>	<b>0.000</b>
<b>Main Effects</b>	<b>175.137</b>	<b>2</b>	<b>87.569</b>	<b>0.822</b>	<b>0.445</b>
<b>GROUP1</b>	<b>46.019</b>	<b>1</b>	<b>46.019</b>	<b>0.432</b>	<b>0.514</b>
<b>GROUP2</b>	<b>119.683</b>	<b>1</b>	<b>119.683</b>	<b>1.124</b>	<b>0.294</b>
<b>Interactive effects</b>	<b>39.305</b>	<b>1</b>	<b>39.305</b>	<b>0.369</b>	<b>0.546</b>
<b>GROUP1</b>					
<b>GROUP2</b>					

**Table 5.212 : Summary of ANCOVA for the severity scores on the Daily**

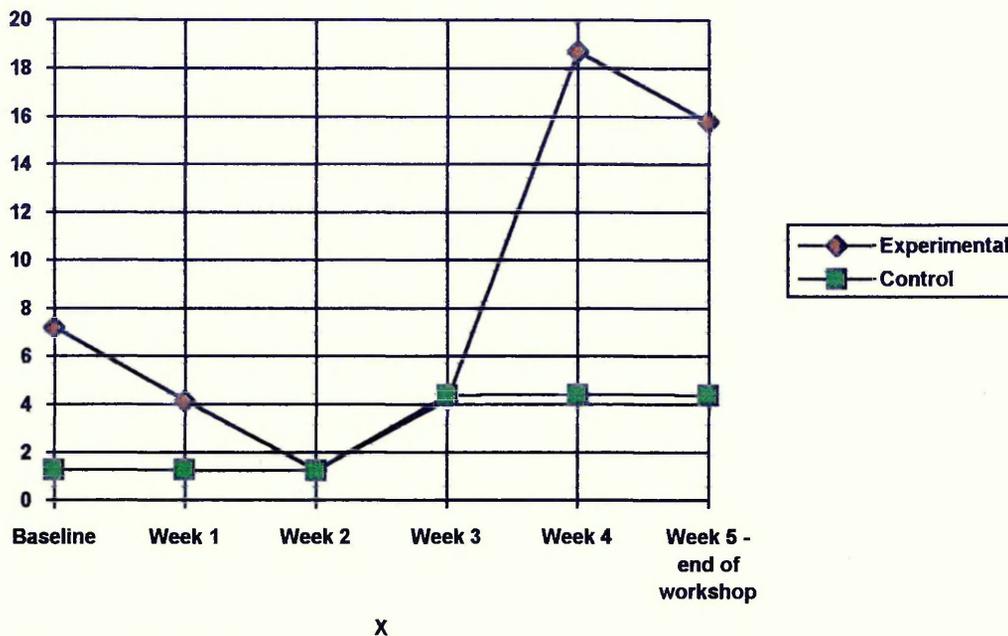
**Hassles Scale**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate DHS1	3388.535	1	3388.535	4.220	0.044
Main Effects	1447.774	2	723.887	0.902	0.411
GROUP1	1361.177	1	1361.177	1.695	0.198
GROUP2	123.145	1	123.145	0.153	0.697
Interactive effects	127.422	1	127.422	0.159	0.692
GROUP1					
GROUP2					



**Graph 5.201 : Experimental and control subjects' mean frequency scores on the Daily Hassles Scale**

Graph 5.201 shows the lack of any significant change in the experimental participants' frequency scores on the Daily Hassles Scale relative to the change in the control subjects' scores on this measure.



**Graph 5.202 : Experimental and control subjects' mean severity scores on the Daily Hassles Scale**

Graph 5.202 shows that although there was a visible increase in the experimental participants' severity scores, there was also an increase in the control subjects' scores. It was found that there was no significant change in the experimental participants' severity scores on the Daily Hassles Scale relative to the change in the control subjects' scores on this measure.

Tables 5.221 and 5.222 summarises the analyses of covariance results for the Uplifts Scale. The frequency and severity scores obtained at the end of the workshop were used as the dependent variables, and the baseline data for each appropriate measure were used as the covariates. GROUP1 (experimental or control group) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for either the frequency or severity scores. ( $F(\text{group 1, frequency}) = 3.181 p > 0.05$ ;  $F(\text{group 2, frequency}) = 0.371 p > 0.05$ ;  $F(\text{group1. group2, frequency}) = 0.146 p > 0.05$ ;  $F(\text{group 1, severity}) = 0.163 p > 0.05$ ;  $F(\text{group 2, severity}) = 0.104 p > 0.05$ ;  $F(\text{group1. group2, severity}) = 0.237 p > 0.05$ ).

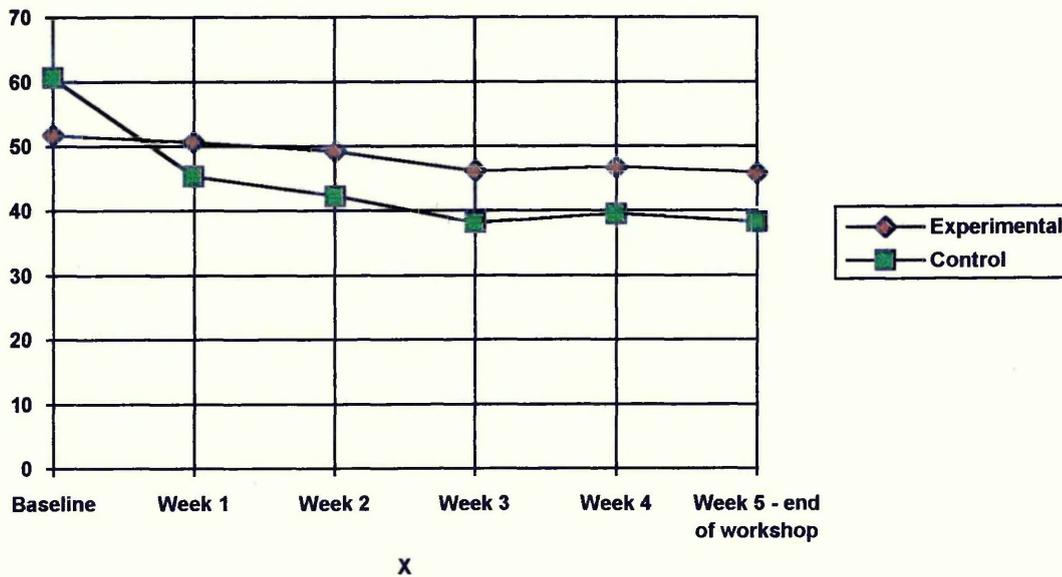
**Table 5.221 : Summary of ANCOVA for the frequency scores on the Uplifts**

**Scale**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate UF1	9574.857	1	9574.857	22.460	0.000
Main effects	1579.032	2	789.516	1.852	0.167
GROUP1	1356.078	1	1356.078	3.181	0.080
GROUP2	158.374	1	158.374	0.371	0.545
Interactive effects	62.248	1	62.248	0.146	0.704
GROUP1					
GROUP2					

**Table 5.222 : Summary of ANCOVA for the severity scores on the Uplifts Scale**

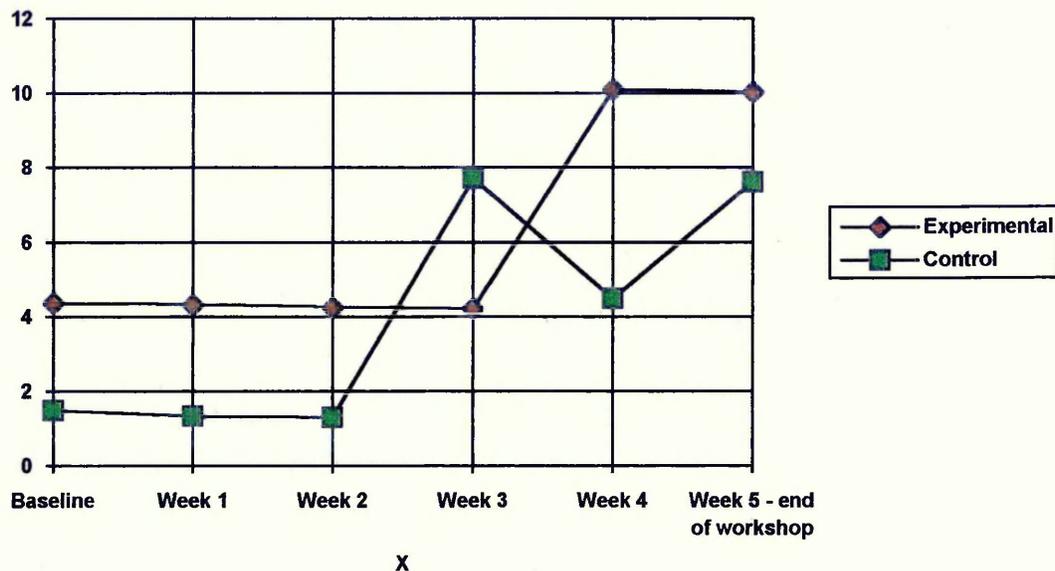
<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate US1	59.537	1	59.537	0.080	0.778
Main effects	191.806	2	95.903	0.129	0.879
GROUP1	120.900	1	120.900	0.163	0.688
GROUP2	77.126	1	77.126	0.104	0.748
Interactive effects	175.739	1	175.739	0.237	0.628
GROUP1					
GROUP2					



**Graph 5.203 : Experimental and control subjects' mean frequency scores on the**

**Uplifts Scale**

Graph 5.203 shows that there was no significant change in the experimental participants' frequency scores on the Uplifts Scale relative to the change in the control subjects' scores on this measure.



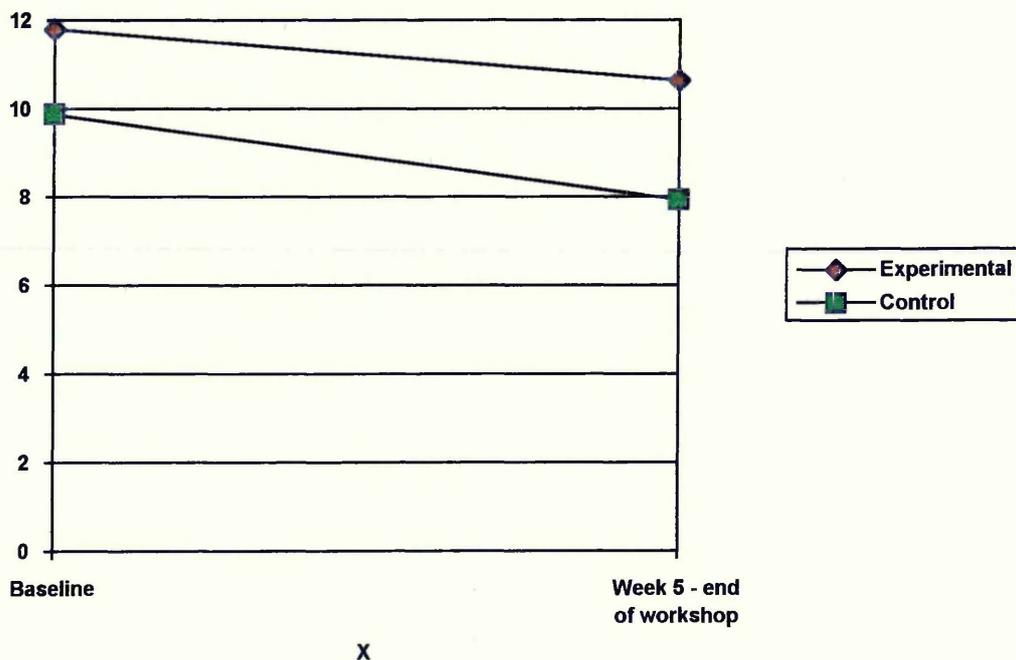
**Graph 5.204 : Experimental and control subjects' mean severity scores on the Uplifts Scale**

Graph 5.204 shows that although there was a visible increase in the experimental participants' severity scores on the Uplifts Scale, there was also a comparable increase in the control subjects' scores on this measure. There was therefore no significant change in the experimental participants' severity scores relative to the change in the control subjects' scores on this measure.

Table 5.23 summarises the analysis of covariance results for the Life Experiences Survey. The LES scores obtained the end of the workshop were used as the dependent variables, with the baseline scores being used as the covariate. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the LES scores ( $F(\text{group 1}) = 1.541$   $p > 0.05$ ;  $F(\text{group 2}) = 2.534$   $p > 0.05$ ;  $F(\text{group 1. group 2}) = 0.027$   $p > 0.05$ ).

**Table 5.23 : Summary of ANCOVA for the LES scores**

<u>Source of variation</u>	<u>Sum of Squares</u>	<u>Degrees of freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate LES1	1705.273	1	1705.273	53.181	0.000
Main effects	126.437	2	63.219	1.972	0.149
GROUP1	49.426	1	49.426	1.541	0.220
GROUP2	81.267	1	81.267	2.534	0.117
Interactive effects	0.878	1	0.878	0.027	0.869
GROUP1 GROUP2					



**Graph 5.205 : Experimental and control subjects' mean scores on the Life Experiences Survey**

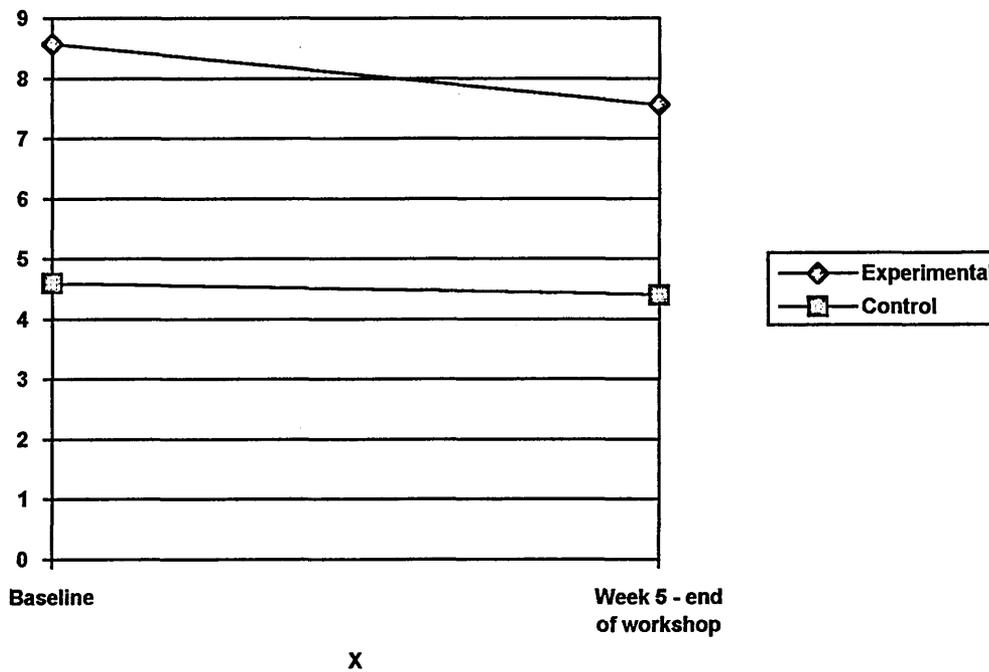
Graph 5.205 shows that although there was a visible decrease in the experimental participants' scores on the Life Experiences Survey, there was also a comparable decrease in the control subjects' scores on this measure. There was therefore no significant change in the experimental participants' scores on this measure relative to the change in the control subjects' scores.

Table 5.241 summarises the analysis of covariance results for the somatic symptoms factor of the General Health Questionnaire. The scores obtained for this factor at the end of the workshop were used as the dependent variables, with the baseline scores being used as the covariate. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for this factor of the GHQ-28. (  $F(\text{group 1}) = 0.948$   $p > 0.05$ ;  $F(\text{group 2}) = 0.530$   $p > 0.05$ ;  $F(\text{group 1. group 2}) = 0.506$   $p > 0.05$ ).

**Table 5.241 : Summary of ANCOVA for the somatic symptoms factor of the GHQ-**

**28**

<b>Source of variation</b>	<b>Sum of Squares</b>	<b>Degrees of Freedom</b>	<b>Mean Square</b>	<b>F</b>	<b>Significance of F</b>
<b>Covariate GHQ1</b>	<b>388.826</b>	<b>1</b>	<b>388.826</b>	<b>32.739</b>	<b>0.000</b>
<b>Main effects</b>	<b>17.368</b>	<b>2</b>	<b>8.684</b>	<b>0.731</b>	<b>0.486</b>
<b>GROUP1</b>	<b>11.256</b>	<b>1</b>	<b>11.256</b>	<b>0.948</b>	<b>0.335</b>
<b>GROUP2</b>	<b>6.291</b>	<b>1</b>	<b>6.291</b>	<b>0.530</b>	<b>0.470</b>
<b>Interactive effects</b>	<b>6.005</b>	<b>1</b>	<b>6.005</b>	<b>0.506</b>	<b>0.480</b>
<b>GROUP1 GROUP2</b>					



**Graph 5.206 : Experimental and control subjects' mean scores on the somatic symptoms factor of the General Health Questionnaire-28**

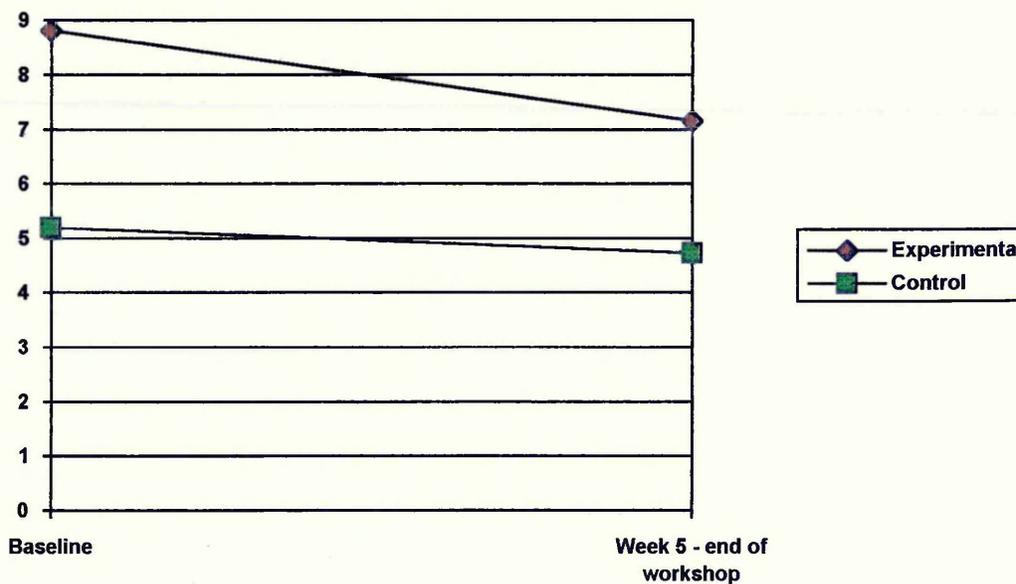
Graph 5.206 shows that there was no significant change in the experimental participants' somatic symptoms scores on the General Health Questionnaire-28 relative to the change in the control subjects' scores on this measure.

Table 5.242 summarises the analysis of covariance results for the anxiety and insomnia factor of the General Health Questionnaire. The scores obtained for this factor at the end of the workshop were used as the dependent variables, with the baseline scores being used as the covariate. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for this factor of the GHQ-28.  $F(\text{group 1}) = 0.098$   $p > 0.05$ ;  $F(\text{group 2}) = 0.503$   $p > 0.05$ ;  $F(\text{group 1, group 2}) = 0.218$   $p > 0.05$ .

**Table 5.242 : Summary of ANCOVA for the anxiety and insomnia factor of the**

**GHQ-28**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate GHQ2	417.690	1	417.690	33.007	0.000
Main effects	7.482	2	3.741	0.296	0.745
GROUP1	1.240	1	1.240	0.098	0.755
GROUP2	6.365	1	6.365	0.503	0.481
Interactive effects	2.753	1	2.753	0.218	0.643
GROUP1 GROUP2					



**Graph 5.207 : Experimental and control subjects' mean scores on the anxiety and insomnia factor of the General Health Questionnaire-28**

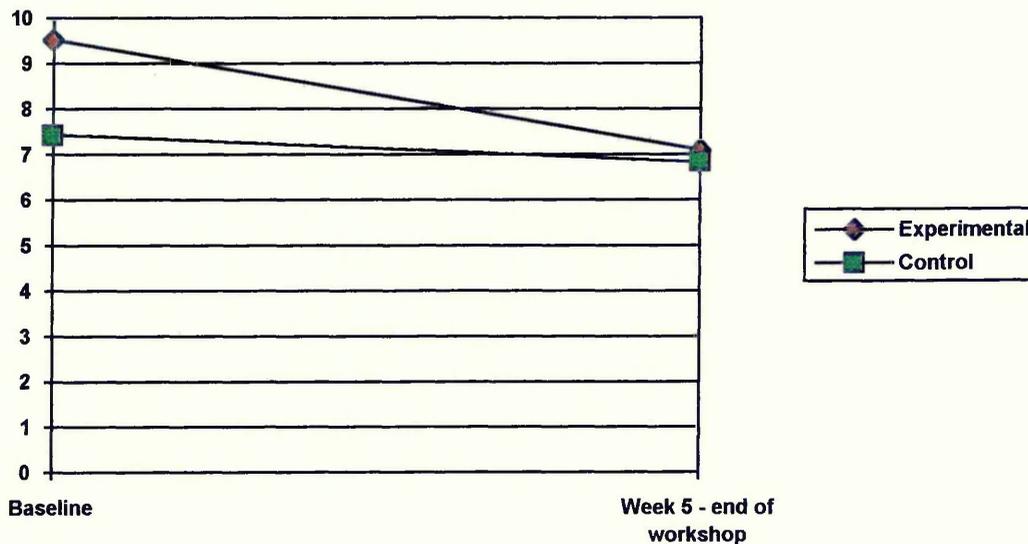
Graph 5.207 shows that although there was a visible decrease in the experimental participants' anxiety and insomnia scores on the General Health Questionnaire-28, the change was not great enough to be significant, relative to the change in the control subjects' scores on this measure.

Table 5.243 summarises the analysis of covariance results for the social dysfunction factor of the General Health Questionnaire-28. The scores obtained for this factor at

the end of the workshop were used as the dependent variables, with the baseline data being used as the covariate. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the social dysfunction factor of the GHQ-28. (  $F(\text{group 1}) = 0.552$   $p > 0.05$ ;  $F(\text{group 2}) = 0.278$   $p > 0.05$ ;  $F(\text{group 1, group 2}) = 0.057$   $p > 0.05$  )

**Table 5.243 : Summary of ANCOVA for the social dysfunction factor of the GHQ-28**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate GHQ3	82.925	1	82.925	8.328	0.006
Main effects	7.681	2	3.841	0.386	0.682
GROUP1	5.492	1	5.492	0.552	0.461
GROUP2	2.766	1	2.766	0.278	0.600
Interactive effects	0.563	1	0.563	0.057	0.813
GROUP1 GROUP2					



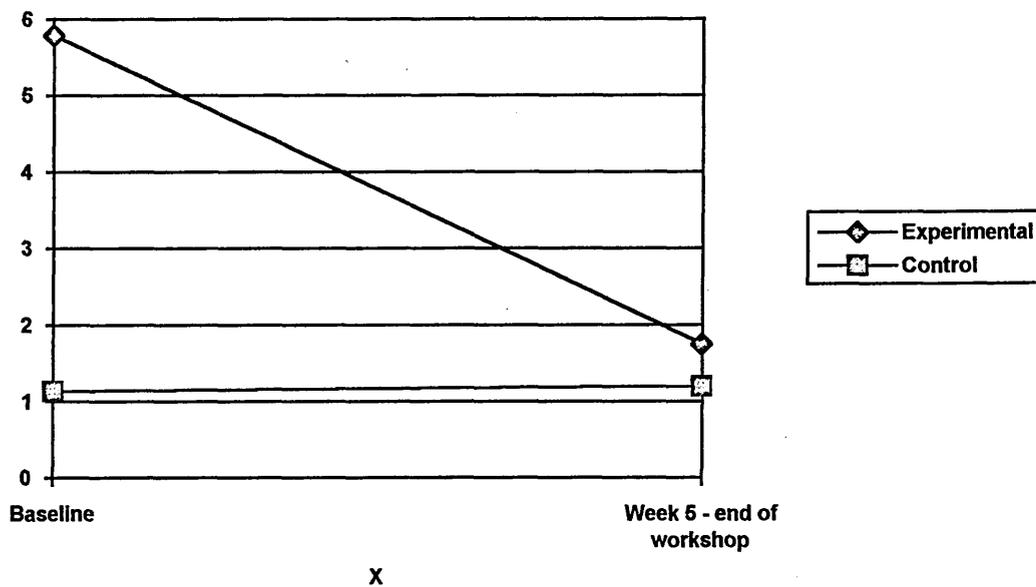
**Graph 5.208 : Experimental and control subjects' mean scores on the social dysfunction factor of the General Health Questionnaire-28**

change was not great enough to be significant, relative to the change in the control subjects' scores on this measure.

Table 5.244 summarises the analysis of covariance results for the severe depression factor of the General Health Questionnaire-28. The results obtained for this factor at the end of the workshop were used as the dependent variables, with the baseline scores being used as the covariate. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the severe depression variable of the GHQ-28. (  $F(\text{group1}) = 0.497$   $p > 0.05$ ;  $F(\text{group 2}) = 0.041$   $p > 0.05$ ;  $F(\text{group 1. group 2}) = 2.715$   $p > 0.05$  )

**Table 5.244 : Summary of ANCOVA for the severe depression factor of the GHQ-28**

<b>Source of Variation</b>	<b>Sum of Squares</b>	<b>Degrees of Freedom</b>	<b>Mean Square</b>	<b>F</b>	<b>Significance of F</b>
<b>Covariate GHQ4</b>	<b>8.166</b>	<b>1</b>	<b>8.166</b>	<b>1.311</b>	<b>0.257</b>
<b>Main effects</b>	<b>3.389</b>	<b>2</b>	<b>1.695</b>	<b>0.272</b>	<b>0.763</b>
<b>GROUP1</b>	<b>3.095</b>	<b>1</b>	<b>3.095</b>	<b>0.497</b>	<b>0.484</b>
<b>GROUP2</b>	<b>0.257</b>	<b>1</b>	<b>0.257</b>	<b>0.041</b>	<b>0.840</b>
<b>Interactive effects</b>	<b>16.909</b>	<b>1</b>	<b>16.909</b>	<b>2.715</b>	<b>0.105</b>
<b>GROUP1</b>					
<b>GROUP2</b>					



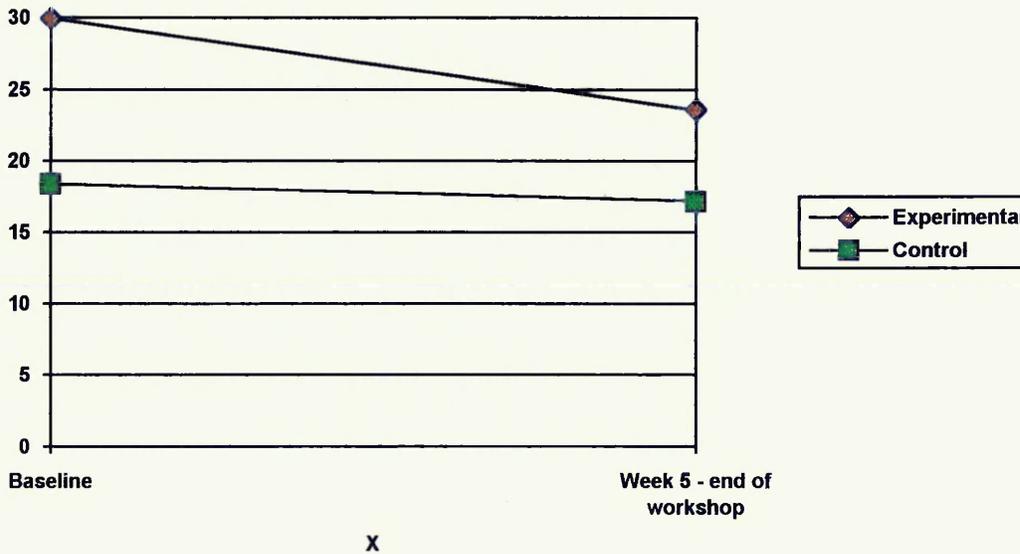
**Graph 5.209 : Experimental and control subjects' mean scores on the severe depression factor of the General Health Questionnaire-28**

Graph 5.209 shows that although there was a visible decrease in the experimental participants' scores on the severe depression scores of the General Health Questionnaire-28, the change was not great enough to be significant, relative to the change in the control subjects' scores on this measure.

Table 5.245 summarises the analysis of covariance for the total scores on the General Health Questionnaire-28. The results obtained for the total scores at the end of the workshop were used as the dependent variables, with the baseline scores being used as the covariate. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the total scores on the GHQ-28. (  $F(\text{group 1}) = 0.000$   $p > 0.05$ ;  $F(\text{group 2}) = 0.166$   $p > 0.05$ ;  $F(\text{group 1. group 2}) = 0.459$   $p > 0.05$  ).

**Table 5.245 : Summary of ANCOVA for the total scores on the GHQ-28**

<b>Source of Variation</b>	<b>Sum of Squares</b>	<b>Degrees of Freedom</b>	<b>Mean Square</b>	<b>F</b>	<b>Significance of F</b>
Covariate GHQ5	2867.477	1	2867.477	38.725	0.000
Main effects	12.306	2	6.153	0.083	0.920
GROUP1	00.024	1	0.024	0.000	0.986
GROUP2	12.305	1	12.305	0.166	0.685
Interactive effects	34.024	1	34.024	0.459	0.501
GROUP1					
GROUP2					



**Graph 5.21 : Experimental and control subjects' mean total scores on the General**

**Health Questionnaire-28**

Graph 5.21 shows that although there was a visible decrease in the experimental participants' total scores on the General Health Questionnaire-28, the change was not great enough to be significant, relative to the change in the control subjects' scores on this measure.

A t-test found that there were no significant changes in the experimental participants' mean systolic and diastolic blood pressure scores over the period of the intervention (t (systolic) = 1.84, p> 0.05; t (diastolic) = 1.15 p> 0.05). The means and standard deviations of the participants' blood pressure scores are summarised in Table 5.14.

**Table 5.25 Mean and standard deviation of the experimental group's systolic and diastolic blood pressures**

	<b><u>SYSTOLIC BLOOD PRESSURE</u></b>		<b><u>DIASTOLIC BLOOD PRESSURE</u></b>	
<b><u>Time of intervention</u></b>	<b><u>Mean</u></b>	<b><u>Standard Deviation</u></b>	<b><u>Mean</u></b>	<b><u>Standard Deviation</u></b>
<b>Prior to intervention</b>	<b>125.8333</b>	<b>16.568</b>	<b>70.6333</b>	<b>9.786</b>
<b>Following intervention</b>	<b>122.2000</b>	<b>13.895</b>	<b>69.7333</b>	<b>9.032</b>

**5.22 Summary of analyses of covariance for short-term effectiveness of SMI**

No main or interactive effects were found for any of the variables considered. The stress management intervention would therefore appear to be ineffective in terms of reducing the number of stressors perceived, increasing the participants' perceptions of uplifts, or reducing the physical and/or psychological symptoms of stress experienced by the participants.

The means and standard deviations of the experimental participants' responses to the Review Questionnaire (Appendix 1A, p. 1) are shown in Table 5.26.

**Table 5.26 : Summary of the Review Questionnaire**

<b>QUESTION</b>	<b>DESCRIPTION</b>	<b>MEAN</b>	<b>STANDARD DEVIATION</b>
1.	How much enjoy SMI?	4.35	0.75
2.	Did SMI help you to cope with stressors?	3.92	0.75
3.	Did SMI help relieve symptoms of stress?	3.60	0.99
4.	How much enjoy "Introduction to Stress"?	4.15	0.82
5.	How useful was "IS"?	4.25	0.70
8.	How much enjoy Cognitive Restructuring?	3.98	1.90
9 (a).	How much use CR?	3.40	1.06
9 (b).	Did CR help manage stress?	3.52	1.01
12.	How much enjoy Time Management?	3.50	0.87
13 (a).	How much use TM?	3.48	1.00
13 (b).	Did TM help manage stress?	3.83	1.16
16.	How much enjoy Relaxation	4.33	1.96
17 (a).	How much use Relax.?	4.50	2.54
17 (b).	Did Relax. help manage stress?	3.73	1.16
20.	How much enjoy Assertiveness?	4.75	2.10
21 (a).	How much use Assert.?	3.35	0.90
21 (b).	Did Assert. help manage stress?	3.57	0.80

<b>QUESTION</b>	<b>DESCRIPTION</b>	<b>TECHNIQUE/ SCALE</b>	<b>FREQUENCY</b>
24.	Technique most employed?	Relaxation	11
		Cog. Restructuring	11
		Assertiveness	4
		Time Management	3
		Flight/Avoidance	1
25.	Technique employed rarely/never?	Relaxation	7
		Time Management	5
		Assertiveness	3
		Cog. Restructuring	2
26.	Technique(s) use in future	Assertiveness	22
		Relaxation	21
		Time Management	19
		Cog. Restructuring	17
27.	Compared to original expectation, how did SMI compare?	Better	13
		Much better	7
		Same	4
		Worse	3
		Better/same	1

Table 5.27 summarises the experimental participants' responses on the Motivation Questionnaire (Appendix 1B, p.9). Thirty-two participants completed this questionnaire.

**Table 5.27 : Summary of the Motivation Questionnaire**

<b>1) Please indicate your reasons for participating in the stress management workshop</b>	
<u>OPTION</u>	<u>FREQUENCY</u>
I have been feeling stressed recently	24
I have been suffering from stress-related illnesses recently	8
I have suffered from stress-related illnesses in the past	10
I was curious to find out what stress management courses had to offer	19
I felt the time off work to attend the course would in itself help to relieve stress	10
I simply wanted time off work	2
<b>Other reasons for participating in the stress management workshops?</b>	
I have attended a stress management course before and thought it would help to compare the two and re-emphasise the important points	
Sharing techniques with others - colleagues, partner and children	
I have done bits of stress management in other courses but wanted something more coherent	
Encouraged over the years to be less stressed	

To find ways to recognise and avoid stress

To be able to identify stress in others (e.g. colleagues) and how I might be able to help or relieve the situation

Needed impetus of group situation to motivate me to be less up-tight

Because of the workshop is/was successful, I might not only feel better, but be more effective and achieve more

To recognise stress and alter things (if possible) before stress-related illness occurs

I am doing a course at SHU and felt the course would allow me to cope with additional stress through understanding and increasing my ability to use stressful situations positively

Sale of property, financial security, emotional security

Relieve any stress I might cause others

To help me control my temper and be more co-operative

Frustration due to ineffectiveness; desire to relate my own experiences to others'; need to learn techniques to aid stress reduction

I wanted to explore the extent to which feeling stressed is 'my fault' or under my control

**2) Is there a particular area of you life that you feel you could change to become less stressed?**

I don't think there is just one area of my life. Generally, I'm a worrier. I worry about everything, together with things that I can't do anything about, which really makes me stressed

No! Already done this! Stopped trying to be 'Supermum' and looking after everyone else with no time for myself

Coping with home and work life

To become more positive about 'bad' situations and rationalise stressful events

To recognise the signs of stress and to control it, both at work and at home

It is to do with my physical appearance (I've put on a lot of weight over the past two years) and I'm aware that I have been overeating and drinking too much alcohol even though I know this makes things worse. I haven't the strength of mind to do anything about it. However the source of stress seems to be work related and I'm determined to change this now and break the cycle

New job location

Change jobs - more money would help me get on with things I want to do. Feel that I've got the brakes on at the moment

Need as many coping strategies as possible to enable me (and others) to deal with my health problems

To become less reactive to people i.e. learn to be me regardless of the other person's personality/dominance

I must change my job

Family worries

Domestic - in process of selling/buying a house

Need to relax physically and to be less reactive to events

Work environment; trying to manage my course work

Need to become more relaxed at work and less anxious and worried generally

Work, particularly how I arrange my time

Organise my home life better

Improve my interpersonal skills and delegate more often

Work

Type of job/workload

Work - the way I organise things, getting anxious

Be more active in leisure time; attitude to my career

Maybe my private life

Work (all of it)

Work problems - taking them home and letting them interfere with home life

I am under a range of pressures, some of which will probably reduce anyway in the foreseeable future. I am not sure how to hasten any reduction

**3) How motivated do you feel to change this area of your life?**

Total Mean = 4.3

**4) How has your motivation to change this area of your life altered whilst you have been participating on the stress management course?**

<u>OPTION</u>	<u>FREQUENCY</u>
Much less motivated	0
Less motivated	0
No change	7
More motivated	17
Much more motivated	2

### **5.31 Long-term evaluation of effectiveness of stress management intervention**

Since no significant changes were observed in the experimental participants' scores over the short-term, the author suggested that analyses of covariance tests be used to determine the change in the experimental participants' scores over the long-term, relative to any changes in the control subjects' scores over this period. These tests would therefore take into account any differences between the experimental and control groups' scores following completion of the intervention.

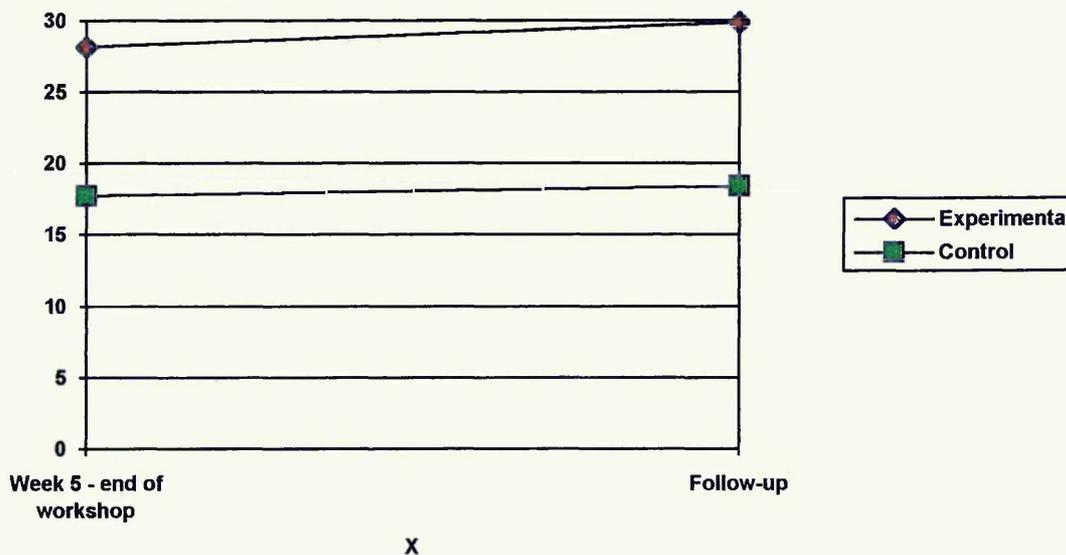
Tables 5.311 and 5.312 summarise the analyses of covariance for the participants' scores from the Daily Hassles Scale. The frequency and severity scores obtained at the four month follow-up review were used as the dependent variables, and the scores measured at the end of the workshop were used as the covariate. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for either the frequency or the severity scores on the Daily Hassles Scale. (F(group 1, frequency) = 1.29  $p > 0.05$ ; F(group 2, frequency) = 0.422  $p > 0.05$ ; F(group 1. group 2, frequency) = 1.486  $p > 0.05$ ; F(group 1, severity) = 2.804  $p > 0.05$ ; F(group 2, severity) = 0.012  $p > 0.05$ ; F(group 1. group 2, severity) = 0.781  $p > 0.05$ ).

**Table 5.311 : Summary of ANCOVA for the frequency scores on the Daily Hassles Scale**

<b><u>Source of Variation</u></b>	<b><u>Sum of Squares</u></b>	<b><u>Degrees of Freedom</u></b>	<b><u>Mean Square</u></b>	<b><u>F</u></b>	<b><u>Significance of F</u></b>
<b>Covariate DHF6</b>	<b>10650.790</b>	<b>1</b>	<b>10650.790</b>	<b>111.439</b>	<b>0.000</b>
<b>Main effects</b>	<b>173.860</b>	<b>2</b>	<b>86.930</b>	<b>0.910</b>	<b>0.410</b>
<b>GROUP1</b>	<b>123.298</b>	<b>1</b>	<b>123.298</b>	<b>1.290</b>	<b>0.262</b>
<b>GROUP2</b>	<b>40.374</b>	<b>1</b>	<b>40.374</b>	<b>0.422</b>	<b>0.519</b>
<b>Interactive effects</b>	<b>142.021</b>	<b>1</b>	<b>142.021</b>	<b>1.486</b>	<b>0.229</b>
<b>GROUP1 GROUP2</b>					

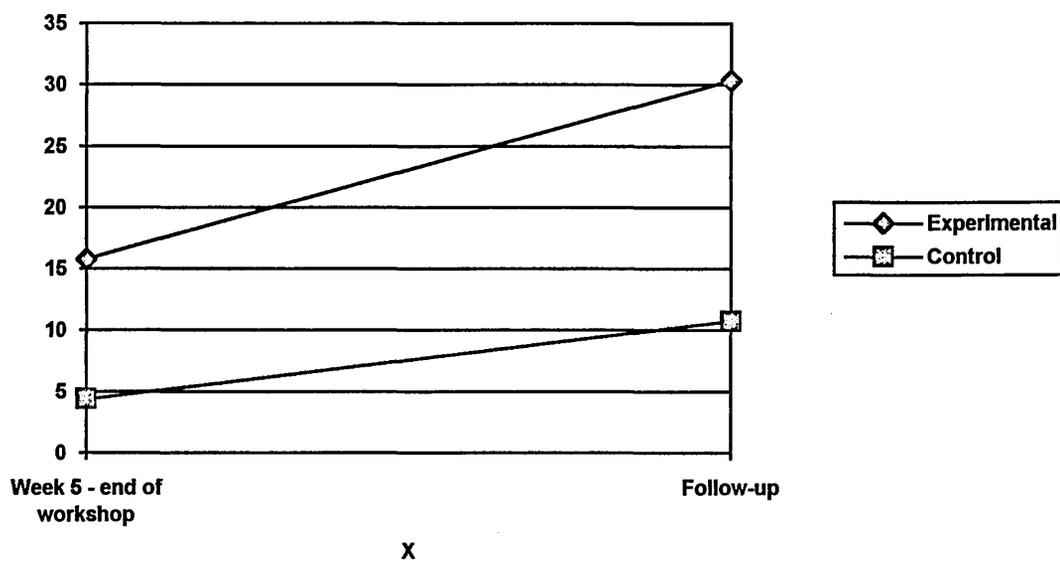
**Table 5.312 : Summary of ANCOVA for the severity scores on the Daily Hassles Scale**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate DHS6	5827.280	1	5827.280	3.878	0.054
Main effects	4256.653	2	2128.326	1.416	0.251
GROUP1	4213.160	1	4213.160	2.804	0.099
GROUP2	18.077	1	18.077	0.012	0.913
Interactive effects	1174.092	1	1174.092	0.781	0.380
GROUP1					
GROUP2					



**Graph 5.31 : Experimental and control subjects' mean frequency scores on the Daily Hassles Scale over the long-term**

Graph 5.31 shows that there was a slight increase in the experimental participants' frequency scores on the Daily Hassles Scale over the long-term. However, this change was not significant relative to the change in the control subjects' scores on this measure.



**Graph 5.32 : Experimental and control subjects' mean severity scores on the Daily Hassles Scale over the long-term**

Graph 5.32 shows that there was a visible increase in the experimental participants' severity scores on the Daily Hassles Scale over the long-term. However, this change was found to be not significant, relative to the change in the control subjects' scores on this measure.

Tables 5.321 and 5.322 summarise the analyses of covariance results for the scores on the Uplifts Scale. The frequency and severity scores obtained at the four month follow-up review were used as the dependent variables, with the scores from the end of workshop review being used as the covariates. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the frequency scores on the Uplifts Scale ( $F(\text{group 1, frequency}) = 3.622$   $p > 0.05$ ;  $F(\text{group 2, frequency}) = 1.992$   $p > 0.05$ ;  $F(\text{group 1, group2, frequency}) = 0.007$   $p > 0.05$ )

However, a significant main effect for GROUP1 (experimental or control) was found for the severity scores on the Uplifts Scale ( $F(\text{group 1, severity}) = 5.856$  d.f. = 1  $p < 0.05$ ). Observation of the experimental group's mean severity scores found that there was an increase in their scores from the end of the stress management intervention to

month follow-up (Mean score for experimental group at end of workshop = 10.04 Mean score for experimental group at follow-up = 30.37) However, the control group's mean severity scores on the Uplifts Scale over this period of time remained almost constant (Mean score for control group at end of workshop = 7.63 Mean score for control group at follow-up = 7.66) It would therefore appear that the increase in the experimental participants' severity scores on the Uplifts Scale in the long-term was significant, relative to the increase in the control group's scores on this measure.

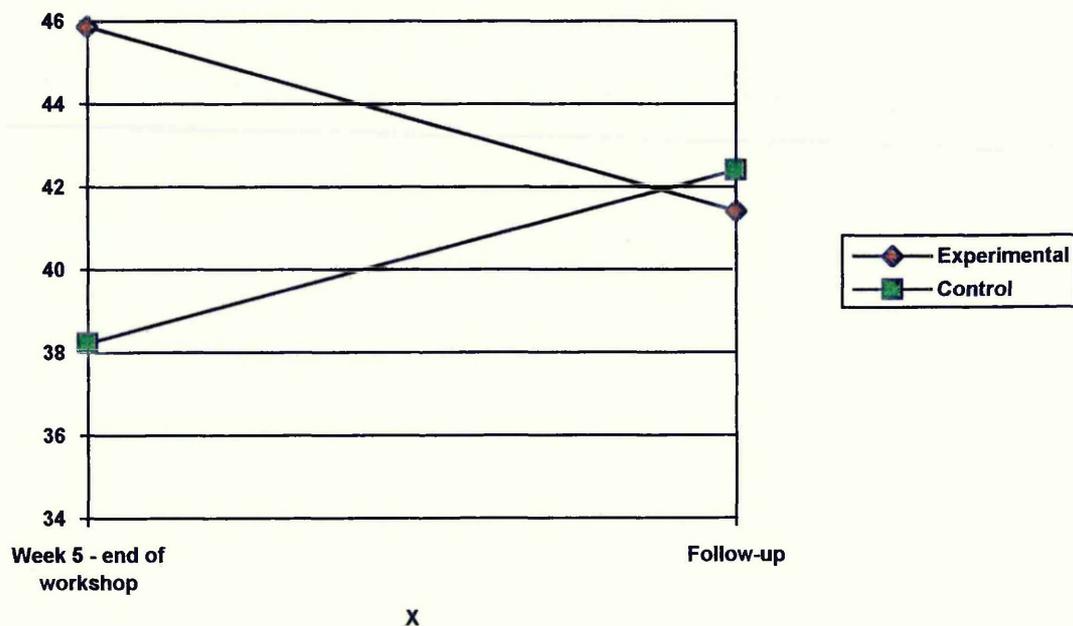
No significant main effect was found for GROUP2 (Type A or Type B) on the severity scores of the Uplifts Scale, nor was any significant interactive effects found between GROUP1 and GROUP2 on this variable (  $F(\text{group 2, severity}) = 0.105$   $p > 0.05$ ;  $F(\text{group 1. group 2, severity}) = 0.138$   $p > 0.05$ ).

**Table 5.321 : Summary of ANCOVA for frequency scores on the Uplifts Scale**

<b>Source of Variation</b>	<b>Sum of Squares</b>	<b>Degrees of Freedom</b>	<b>Mean Square</b>	<b>F</b>	<b>Significance of F</b>
<b>Covariate UF6</b>	<b>22844.331</b>	<b>1</b>	<b>22844.331</b>	<b>119.331</b>	<b>0.000</b>
<b>Main effects</b>	<b>1140.033</b>	<b>2</b>	<b>570.017</b>	<b>2.984</b>	<b>0.060</b>
<b>GROUP1</b>	<b>691.883</b>	<b>1</b>	<b>691.883</b>	<b>3.622</b>	<b>0.063</b>
<b>GROUP2</b>	<b>381.081</b>	<b>1</b>	<b>381.081</b>	<b>1.995</b>	<b>0.165</b>
<b>Interactive effects</b>	<b>1.406</b>	<b>1</b>	<b>1.406</b>	<b>0.007</b>	<b>0.932</b>
<b>GROUP1</b>					
<b>GROUP2</b>					

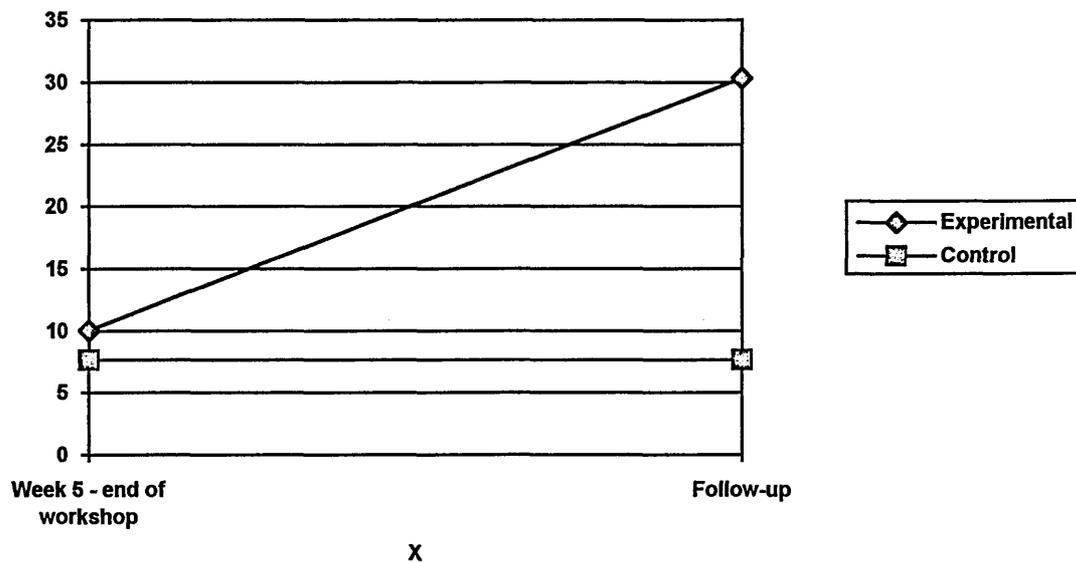
**Table 5.322 : Summary of ANCOVA for the severity scores on the Uplifts Scale**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate US6	9151.714	1	9151.714	7.019	0.010
Main effects	7732.822	2	3866.411	2.965	0.059
GROUP1	7634.986	1	7634.986	5.856	0.019
GROUP2	136.754	1	136.754	0.105	0.747
Interactive effects	180.465	1	180.465	0.138	0.711
GROUP1 GROUP2					



**Graph 5.33 : Experimental and control subjects' mean frequency scores on the Uplifts Scale over the long-term**

Graph 5.33 shows that there was a visible decrease in the experimental participants' frequency scores on the Uplifts Scale over the long-term. However, this change was found not to be significant relative to the change in the control subjects' scores on this measure.



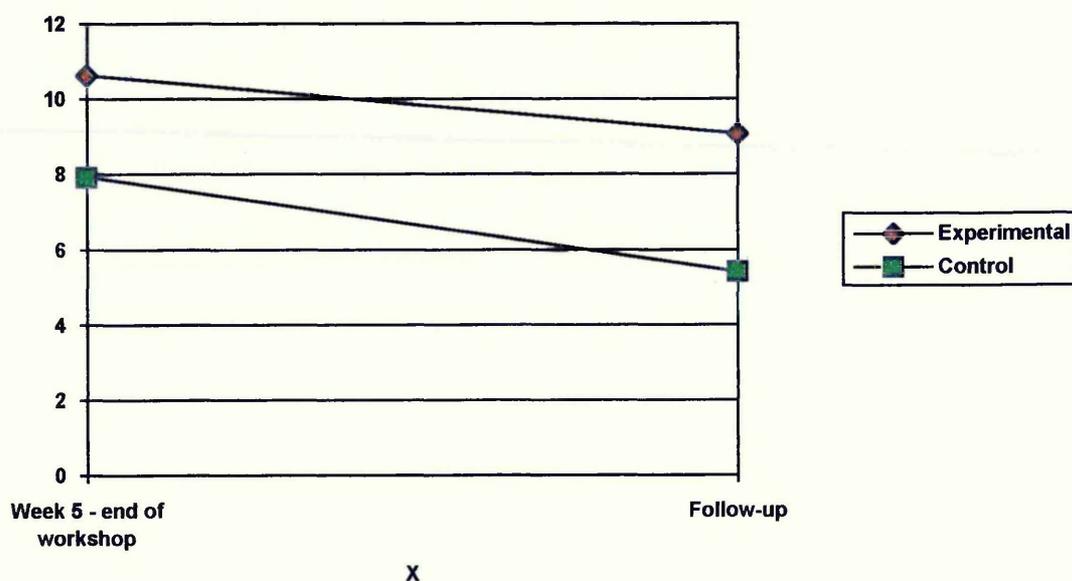
**Graph 5.34 : Experimental and control subjects' mean severity scores on the Uplifts Scale over the long-term**

Graph 5.34 shows that there is a visible increase in the experimental participants' severity scores on the Uplifts Scale over the long-term. This change was found to be significant, relative to the change in the control subjects' scores on this measure.

Table 5.33 summarises the analysis of covariance results for the Life Experiences Survey. The LES scores obtained at the four month follow-up review were used as the dependent variables, with the scores from the end of workshop review being used as the covariates. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the LES scores ( $F(\text{group 1}) = 2.307 \ p > 0.05$ ;  $F(\text{group 2}) = 0.145 \ p > 0.05$ ;  $F(\text{group 1. group 2}) = 0.070 \ p > 0.05$ ).

**Table 5.33 : Summary of ANCOVA for the LES scores**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Signif- icance of F</u>
Covariate LES2	925.671	1	925.671	38.455	0.000
Main effects	57.273	2	28.636	1.190	0.314
GROUP1	55.522	1	55.522	2.307	0.136
GROUP2	3.478	1	3.478	0.145	0.706
Interactive effects	1.690	1	1.690	0.070	0.792
GROUP1 GROUP2					



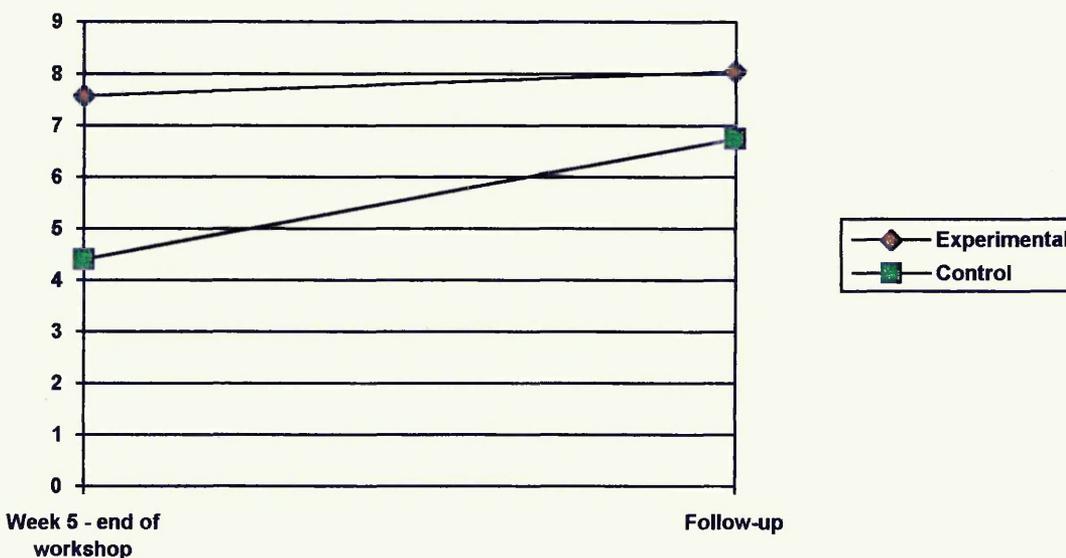
**Graph 5.35 : Experimental and control subjects' mean scores on the Life Experiences Survey over the long-term**

Graph 5.35 shows that there was a visible decrease in the experimental participants' mean scores on the Life Experiences Survey over the long-term. However, this change was found not to be significant, relative to the change in the control subjects' scores on this measure.

Table 5.341 summarises the analysis of covariance results for the somatic symptoms factor of the General Health Questionnaire-28. The scores obtained for this factor at the four month follow-up review were used as the dependent variables, with the scores from the end of the workshop review being used as the covariates. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for this factor of the GHQ-28. (F(group 1) = 0.030 p> 0.05; F(group 2) = 0.181 p> 0.05; F(group 1. group 2) = 1.093 p> 0.05 )

**Table 5.341 : Summary of ANCOVA for the somatic symptoms factor of the GHQ-28**

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Signif- icance of F</u>
Covariate GHQ6	178.211	1	178.211	9.308	0.004
Main effects	4.132	2	2.066	0.108	0.898
GROUP1	0.574	1	0.574	0.030	0.863
GROUP2	3.457	1	3.457	0.181	0.673
Interactive effects	20.916	1	20.916	1.093	0.301
GROUP1 GROUP2					



X

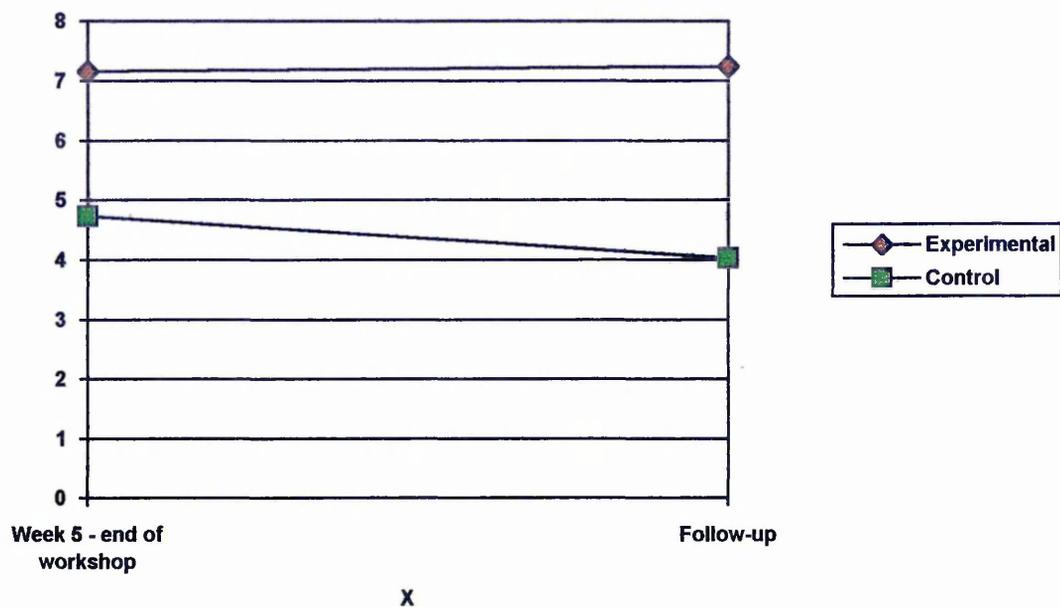
**Graph 5.36 : Experimental and control subjects' mean scores on the somatic symptoms factor of the General Health Questionnaire-28 over the long-term**

Graph 5.36 shows that there was a visible increase in the experimental participants' scores on the somatic symptoms factor of the General Health Questionnaire-28 over the long-term. However, this change was found to be not significant relative to the change in the control subjects' scores on this measure.

Table 5.342 summarises the analysis of covariance results for the anxiety and insomnia factor of the General Health Questionnaire-28. The results obtained for this factor at the four month follow-up review were used as the dependent variables, with the scores from the end of workshop review being used as the covariates. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the anxiety and insomnia factor of the GHQ-28 ( $F(\text{group 1}) = 3.443$   $p > 0.05$ ;  $F(\text{group 2}) = 2.869$   $p > 0.05$ ;  $F(\text{group 1, group 2}) = 1.486$   $p > 0.05$ ).

**Table 5.342 : Summary of ANCOVA for the anxiety and insomnia factor of the GHQ-28**

<b><u>Source of Variation</u></b>	<b><u>Sum of Squares</u></b>	<b><u>Degrees of Freedom</u></b>	<b><u>Mean Square</u></b>	<b><u>F</u></b>	<b><u>Significance of F</u></b>
<b>Covariate GHQ7</b>	<b>305.604</b>	<b>1</b>	<b>305.604</b>	<b>20.276</b>	<b>0.000</b>
<b>Main effects</b>	<b>94.290</b>	<b>2</b>	<b>47.145</b>	<b>3.128</b>	<b>0.053</b>
<b>GROUP1</b>	<b>51.896</b>	<b>1</b>	<b>51.896</b>	<b>3.443</b>	<b>0.070</b>
<b>GROUP2</b>	<b>43.249</b>	<b>1</b>	<b>43.249</b>	<b>2.869</b>	<b>0.097</b>
<b>Interactive effects</b>	<b>22.401</b>	<b>1</b>	<b>22.401</b>	<b>1.486</b>	<b>0.229</b>
<b>GROUP1</b>					
<b>GROUP2</b>					



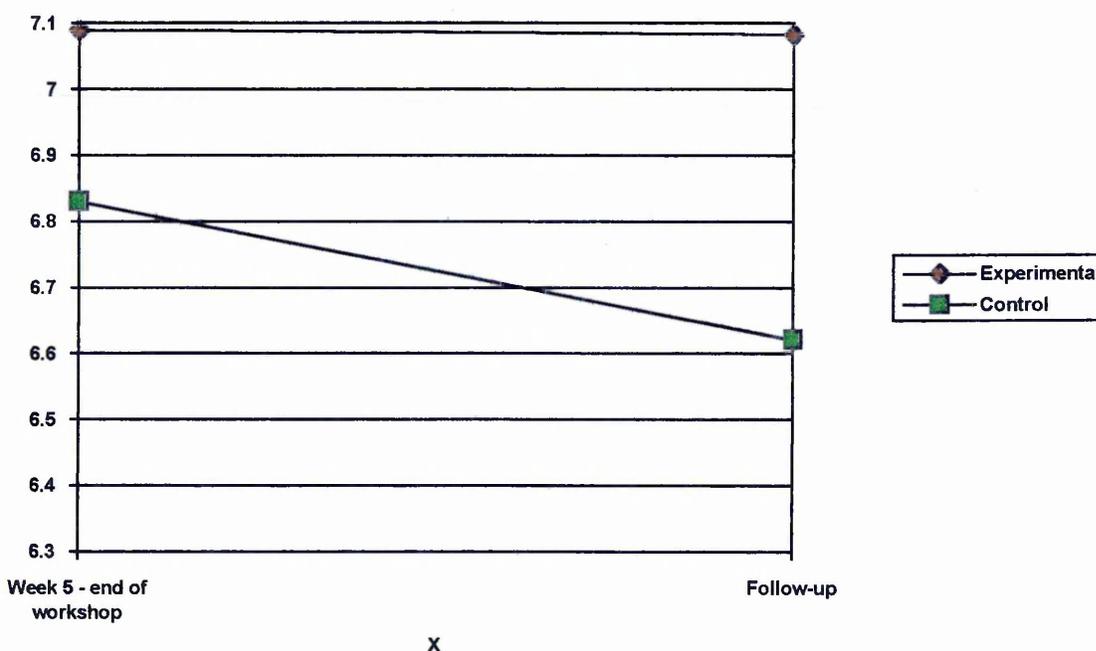
**Graph 5.37 : Experimental and control subjects' mean scores on the anxiety and insomnia factor of the General Health Questionnaire-28 over the long-term**

Graph 5.37 shows that there was a slight increase in the experimental participants' scores on the anxiety and insomnia factor of the General Health Questionnaire over the long-term. However, this change was found to be not significant, relative to the change in the control subjects' scores on this measure.

Table 5.343 summarises the analyses of covariance results for the social dysfunction factor of the GHQ-28. The results obtained for this factor at the four month follow-up review were used as the dependent variables, with the scores from the end of workshop review being used as the covariates. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the social dysfunction factor of the GHQ-28. (F(group 1) = 0.242  $p > 0.05$ ; F(group 2) = 0.072  $p > 0.05$ ; F(group 1. group 2) = 0.966  $p > 0.05$ ).



<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate GHQ8	30.415	1	30.415	3.003	0.090
Main effects	3.278	2	1.639	0.162	0.851
GROUP1	2.448	1	2.448	0.242	0.625
GROUP2	0.724	1	0.724	0.072	0.790
Interactive effects	9.784	1	9,784	0.966	0.331
GROUP1					
GROUP2					



**Graph 5.308 : Experimental and control subjects' mean scores on the social dysfunction factor of the General Health Questionnaire over the long-term**

Graph 5.308 shows that there was a slight decrease in the experimental participants' mean scores on the social dysfunction factor of the General Health Questionnaire-28 over the long-term. However, this change was found not to be significant relative to the change in the control subjects' scores on this measure.

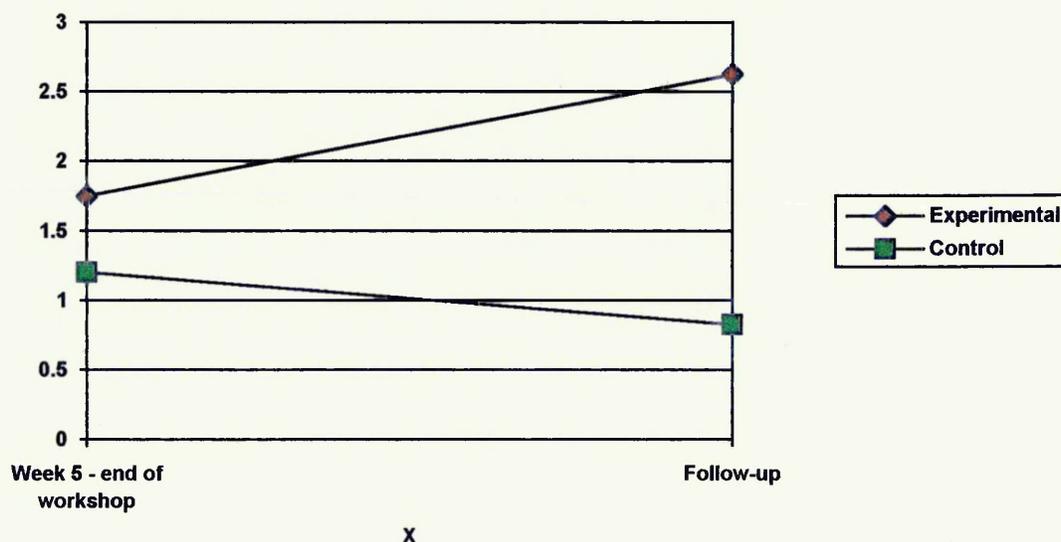


Table 5.344 summarises the analyses of covariance results for the severe depression factor of the General Health Questionnaire-28. The results obtained for this factor at the four month follow-up review were used as the dependent variables, with the scores from the end of workshop review being used as the covariates. GROUP1 (experimental or control) and GROUP2 (Type A or Type B) were the independent variables. A significant main effect for GROUP1 (experimental or control) was found for the severe depression factor of the GHQ-28. ( $F(\text{group } 1) = 4.357$   $p < 0.05$ ).

Observation of the experimental groups' mean scores for this factor showed that there was an increase in these scores over the period of the follow-up (Mean score for experimental group at end of workshop = 1.75; Mean score for experimental group at follow-up = 2.63). However, the control group's mean severe depression scores had decreased over this period of time (Mean score for control group at end of workshop = 1.20; Mean score for control group at follow-up = 0.83) It would therefore appear that the increase in the experimental participants' severe depression scores over the long-term was significant, relative to the change in the control group's scores over this period.

No significant main effect was found for GROUP2 nor was an interactive effect found between GROUP1 and GROUP2. ( $F(\text{group } 2) = 0.832$   $p > 0.05$ ;  $F(\text{group } 1, \text{group } 2) = 0.583$   $p > 0.05$ ).

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate GHQ9	171.412	1	171.412	20.205	0.000
Main effects	45.223	2	22.612	2.665	0.080
GROUP1	36.966	1	36.966	4.357	0.042
GROUP2	7.056	1	7.056	0.832	0.366
Interactive effects	4.945	1	4.945	0.583	0.449
GROUP1					
GROUP2					



**Graph 5.309 : Experimental and control subjects' mean scores on the severe depression factor of the General Health Questionnaire-28 over the long-term**

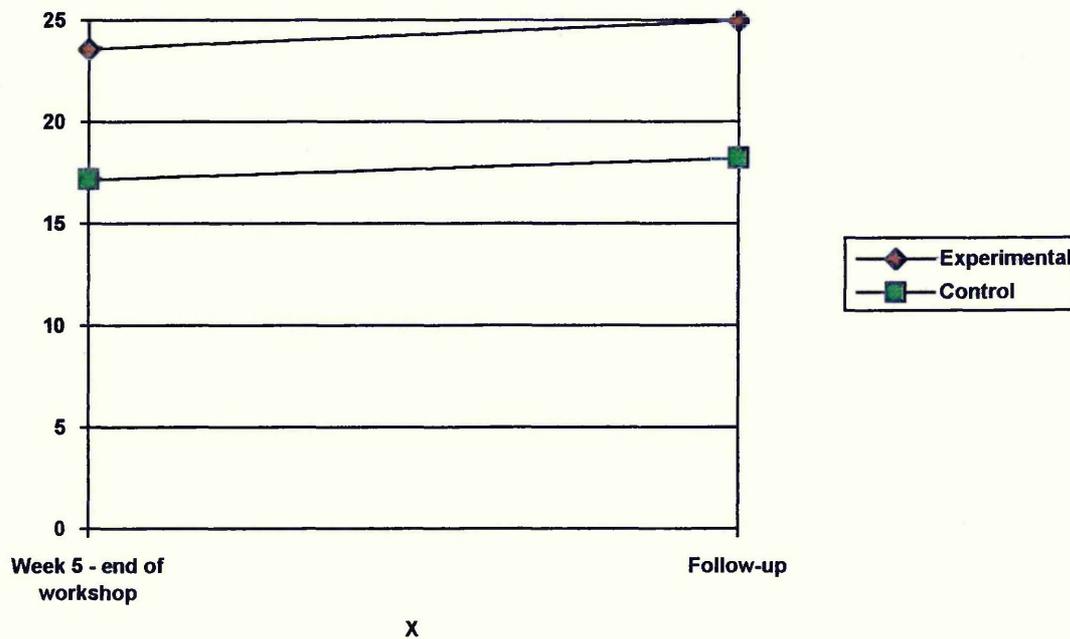
Graph 5.309 shows that there was a visible increase in the experimental participants' scores on the severe depression factor of the General Health Questionnaire-28 over the long-term. This change was found to be significant relative to the change in the control subjects' scores on this measure.

Table 5.345 summarises the analysis of covariance for the total scores on the General Health Questionnaire-28. The total scores obtained at the four month follow-up review were used as the dependent variables, with the scores from the end of

workshop review being used as the covariates. GROUP 1 (experimental or control) and GROUP 2 (Type A or Type B) were the independent variables. No significant main or interactive effects were found for the total scores on the General Health Questionnaire-28. (F(group 1) = 0.199 p> 0.05; F(group 2) = 0.244 p> 0.05; F(group 1. group 2) = 0.122 p> 0.05).

**Table 5.345 : Summary of ANCOVA for the total scores of the GHQ-28**

<u>Source of Variance</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>	<u>F</u>	<u>Significance of F</u>
Covariate GHQ10	2237.599	1	2237.599	20.147	0.000
Main effects	351.430	2	175.715	1.582	0.216
GROUP1	188.219	1	188.219	1.695	0.199
GROUP2	154.376	1	154.376	1.390	0.244
Interactive effects	276.166	1	276.166	2.487	0.122
GROUP1 GROUP2					



**Graph 5.31 Experimental and control subjects' mean total scores on the General Health Questionnaire-28 over the long-term**

Graph 5.31 shows that there was a visible increase in the experimental participants' total scores on the General Health Questionnaire-28 over the long-term. However, this change was found to be not significant relative to the change in the control subjects' scores on this measure.

### **5.32 Summary of analysis of covariance for the long-term effectiveness of SMI**

The only significant results found were for the GROUP (experimental or control) independent variable on the severity scores of the Uplifts Scale. Observation of the experimental and control groups' scores at the end of the workshop and at the four month follow-up review showed that the increase in the experimental group's severity scores on the Uplifts Scale was significantly greater than the increase in the control group's scores on this measure during that period. It would therefore appear that the experimental group perceived themselves as experiencing relatively more uplifts in their lives than the control group at the follow-up review.

The other significant result was for the severe depression factor of the General Health Questionnaire-28, again for the GROUP1 (experimental or control) variable. Observation of the experimental and control groups' scores on this measure showed that the increase in the experimental group's scores at the end of the workshop to the four month follow-up review was significant, relative to the change in the control group's severe depression scores during this period. It was found that whereas the mean of the control group's scores was lower at the follow-up review than at the end of the workshop, the experimental group's mean score was in fact greater at the follow-up review.

Table 5.35 shows the mean and standard deviation of the experimental participants' responses to the Follow-up Review Questionnaire (Appendix 2, p. 13 ).

**Table 5.35 : Summary of the Follow-up Review Questionnaire**

<u>QUESTION</u>	<u>DESCRIPTION</u>	<u>RESPONSE/ MEAN</u>	<u>FREQUENCY</u>
1.	Estimate amount of stress in life compared to prior SMI	Considerably more stress More stress About the same Less stress Considerably less stress	1 9 6 7 1
2.	How useful SMI in helping you cope with stressors	3.65	
3.	How aware are you of levels of stress compared to before SMI	Much more aware More aware Same Less aware Much less aware	4 17 3 0 0
4.	Which techniques used since review?	Assertiveness Cognitive restructuring Time Management Relaxation	20 17 17 16
6.	Which technique enjoyed most since review?	Relaxation Cognitive Restructuring Time Management Assertiveness	10 7 6 3
8.	Which technique never or rarely used since review?	Relaxation Assertiveness Cognitive Restructuring Time Management	9 6 5 1
10.	Which techniques use in future?	Relaxation Time Management Assertiveness Cognitive Restructuring	20 19 19 17
11.	Since review, employed any new SM techniques?	No Yes	16 7
13.	Since review, stopped using any habitual SM techniques?	No Yes	19 2
15.	Are there any changes need to make to lifestyle to cope better?	Yes No	21 2

16.	Why not made these changes?	Lack of time Insufficient info. about techniques to assist change Insufficient control of that aspect of life Other people Other	8 3 16 2 5
18(a).	How much practised cog. restr. since review?	2.92	
18(b).	Has CR helped you manage stress?	3.48	
20.	How motivated have you felt to practise CR?	3.5	
22(a).	How much practised relaxation since review?	3.04	
22(b).	Has relax. helped you manage stress?	3.55	
24.	How motivated have you felt to practise relax.?	3.04	
26(a).	How much practised assert. since review?	3.13	
26(b).	Has assert. helped you manage stress?	3.17	
28.	How motivated have you felt to practise assert.?	3.17	
30(a).	How much practised time management since review?	3.33	
30(b).	Has time man. helped you manage stress?	3.35	
32.	How motivated have you felt to practise time man.?	3.29	

## **6.1 Baseline levels of stress**

Analysis of the participants' baseline data revealed high levels of stress amongst many of the experimental participants involved in the research. The author expected that those subjects who volunteered to take part in the stress management workshops would show high levels of stress on the measures used, since they had clearly identified a need for stress management. Indeed, they reported a significantly greater number of daily hassles than both the control group and the normal population, with fifty-nine per cent reaching the criteria for psychiatric 'caseness' on the General Health Questionnaire-28. Further analysis of the baseline data from the General Health Questionnaire revealed that the experimental subjects scored significantly higher than the control subjects on three of the four factors of the GHQ-28, namely somatic symptoms, anxiety and insomnia and social dysfunction, and also on the total GHQ-28 scores.

However, although the control group reported significantly less severe stressors on the Daily Hassles Scale and significantly more uplifts than the normal population, there was still evidence of strain showing amongst the control participants. There was no significant difference between the depression scores on the GHQ-28 for the experimental and control subjects. Furthermore, thirty-three per cent of the control subjects reached the criteria for psychiatric 'caseness' according to the GHQ-28. It would therefore appear that there were quite wide variations within the control group in terms of their levels of strain.

It was beyond the scope of the present research to consider explanations for these variations, since the author was concerned with inter-group, as opposed to intra-group, differences. However, it would be interesting for further research to consider the differences in the stress levels of the control group participants, particularly since they were all working for the same institution in very similar environments. Clearly, it would

be necessary to examine the different environments of each individual, both at work and at home, in order to assess the demands they placed on the individual. The research would also need to consider external factors, such as the amount of social support each individual received, together with personality variables of the participants, such as cognitive styles, and levels of self-esteem and hardiness.

Research by Greenhaus and Parasuraman (1986) suggests that it is difficult to determine the extent to which specific work and non-work conditions contribute to resultant levels of strain because of the complex relationship between these variables, with spillover from work related to non-work related strain and vice versa. However, a discussion of work stressors by the experimental participants suggested that the source of their stress was at least in part due to factors relating to their job. Greater focus has been placed on work stressors in the present research, because of the vast literature emerging on occupational stress, and also because the intervention took place in a single occupational setting. However, this does not assume that non-work variables did not contribute towards the strain, and participants were allowed the opportunity in the questionnaires to report on non-work variables which they perceived as being stressful.

Cooper and Marshall (1976) argued that stress is likely to result when one's need for autonomy, participation and decision-making processes are denied at work. This is supported by the results from the feedback discussion on work stressors. One of the stressors cited most frequently by the experimental group in the feedback from discussion of work stressors was their lack of control over the work situation. Many felt that they were working to rigid, and sometimes conflicting deadlines which had been set by management, and that the beauracratic nature of the University left them with little or no control over their job. They tended to feel that managers were inconsistent in their demands, and that there was a severe lack of consultation between bosses and the staff. The managers, in turn, felt that much of this was due to a need for further managerial training.

The results from the discussion of work stressors also appear to support Cooper and Marshall's (1976) proposal that organisational life increasingly brings with it a number of potential stressors, including role conflict, role ambiguity, career progression, job insecurity, and the organisational climate and politics. Many of the experimental participants were on temporary contracts, and felt that this was a major work stressor. Their job security was in doubt, leaving them unable to plan effectively for the future. However, even those on full-time contracts felt that there was no proper career development plan, with variable staff development schemes between schools and departments, and no institutional policy on staff development.

### **6.12 Locus of control and 'job specificity'**

The results from Rotter's (1966) scale of locus of control prove very interesting in light of the feedback from the discussions of perceived work stressors by the experimental subjects. The significant difference between both the experimental and the normative group's scores, and also between the control subjects' and the normative group's scores, revealed that the majority of participants in the present research were highly external. This prevented locus of control being considered as an independent variable in the evaluation of the effectiveness of the stress management intervention, since there were too few internally-oriented individuals for the analysis to be appropriate.

The results, however, do not appear to support the theory of congruency between locus of control and 'job specificity'. (Brownell, 1982; Marino and White, 1985) The congruency theory argues that externally-oriented people should be less stressed in an environment that is externally, as opposed to internally, oriented. The results from Rotter's (1966) scale of locus of control found that both the experimental and control subjects were significantly more externally-oriented than the normal population. However, although the experimental participants agreed that the institution was externally oriented, allowing them little control over their work, they reported high levels

of stress. An explanation for this could be that Rotter's (1966) scale of locus of control measures a generalised belief that reinforcement following some behaviour occurs as a result of luck, chance or fate. With regard to their work, the staff may indeed be internally-oriented, explaining why they reported being stressed at having little or no control over their job. Spector (1988) has designed a work-related scale of locus of control, which is a sixteen-item measure of generalised control beliefs in work settings. This was administered to the control and experimental participants eighteen months after completion of the workshops. The results showed that thirty-two of the thirty-nine participants who completed the questionnaire were externally oriented, with a mean value of 48.26 (relative to the normal population mean of 38.1). These results suggest that the participants would be suited to a working environment which allowed them little control over their work. However, the feedback from the discussion of work stressors suggested that lack of control over one's job was a major stressor in the experimental participants' lives. It would appear therefore that the results do not support the theory of congruency. However, Parkes (1989) suggested that the Work Locus of Control scale may not be a valid measure of general beliefs about work situations, but rather attitudes towards one's present job. Although the author emphasised in the questionnaire that respondents should consider their general beliefs about working situations, these beliefs may have been influenced by their present situations. For example, on the item "A job is what you make of it", respondents may believe that a job should be what you make of it, but may feel that their experiences within their present job have not supported this belief. Their present experiences may therefore have influenced their response to this item in such a way as for them to disagree with this statement. Further validation and possible revision of the Work Locus of Control scale need to be carried out in order to ensure that the scale does in fact measure general beliefs about work situations. This will then allow empirical testing of the theory of congruency to be carried out more accurately within the working environment.

## **6.2 Short-term evaluation of the stress management intervention**

Evaluation of the stress management intervention found that in the short term, the intervention was not effective in reducing the frequency or severity of daily hassles perceived by the participants, nor in increasing the frequency or severity of perceived uplifts in their lives relative to the control subjects.

Similarly, it was found that the stress management workshops were not effective in reducing the participants' levels of strain, in terms of their scores on the General Health Questionnaire. Following the intervention, there was no significant change in the experimental participants' scores, relative to the change in the control subjects' scores, on the somatic symptoms, anxiety and insomnia, social dysfunction and severe depression scales of the GHQ-28 following the intervention. There was also found to be no significant change in the experimental participants' systolic and diastolic blood pressure scores following the intervention.

In terms of somatic complaints, the present study supported the findings of previous research by Ganster, Mayes, Sime and Tharp (1982), in which no significant changes were observed in the dependent variable over the period of the intervention. Similarly, the present research also supported Ganster et al's (1982) finding of no significant changes in the experimental participants' levels of anxiety over the period of the intervention.

However, other research has found significant reductions in the anxiety levels of participants following a stress management intervention (Richardson, Beall and Jessop, 1983; Weisen, 1991; Hains, 1992). Differences between the findings from other studies, and those from the present research, may be explained by methodological differences. For example, Weisen's (1991) study was directed at a community sample, unlike the present research which was undertaken within an organisational context. Similarly, the research by Richardson et al (1983) and Hains (1992) were carried out on

groups of adolescents. Furthermore, in Weisen's (1991) study, the experimental and control subjects showed similar levels of anxiety prior to the intervention, unlike the present research in which the experimental participants scored significantly higher on the measure of anxiety than the control subjects. The author would argue that within the present study, the high levels of anxiety amongst the experimental participants meant that prolonged and intensive treatment would be required before any changes would be observed.

Clearly, it is difficult to make comparisons between the findings from one evaluative study with those from another, due to differences in the nature of the sample groups, and also differences in the design of the interventions. A programme which is found to be effective in reducing the levels of stress of a group of adolescent boys may not be effective within an organisational setting. Such differences therefore need to be taken into consideration when any comparisons between evaluative studies of stress management interventions are being made.

The present research found no significant changes in the experimental participants' systolic and diastolic blood pressures following the stress management intervention. Previous research has suggested that reductions in blood pressure following an intervention may be limited to subjects with hypertension. In view of the fact that the majority of subjects in the present research were not hypertensive prior to the intervention, the lack of a significant finding is not therefore surprising. However, even with groups of hypertensive subjects, research has suggested that reductions in blood pressure may be as a result of habituation to the measurement procedure, rather than to any specific effects caused by the intervention itself (Johnston et al, 1993). This should therefore be considered within future evaluative studies of stress management intervention, where blood pressure is used as the outcome measure. Habituation procedures should be incorporated into the design of the research, particularly where hypertensive subjects are involved.

Social dysfunction has not been used as an individual outcome measure in previous evaluative research, but it does appear to relate to the functioning at work variable which has previously been considered (Michie and Sandhus, 1994) The social dysfunction factor from the GHQ-28 is a more global measure of functioning, unlike the scale used in the research by Michie and Sandhus (1994) which was specific to work situations. This may explain the differences in the findings between Michie and Sandhus' (1994) study, in which significant increases in functioning at work were found amongst the experimental subjects, and the findings from the present research in which no significant changes in social functioning were observed. However, a number of flaws were present within the Michie and Sandhus (1994) research. The scale used to measure functioning at work consisted of a single item taken from a larger questionnaire. Although the questionnaire had previously been validated, it may have been appropriate to have used a more extensive questionnaire which consisted of several items for each variable considered. A second criticism of the research by Michie and Sandhus (1994), is that only nine participants were involved in each of the experimental and control groups, compared with the sixty-five subjects used in the present research. The author would therefore argue that the differences in the findings between Michie and Sandhus' (1994) study and the present research is likely to be as much a result of methodological flaws in the former research as differences in the outcome variable.

The final factor of the General Health Questionnaire-28, severe depression, has been used as an outcome variable in many evaluative studies of stress management interventions. The majority of the studies have found stress management programmes to be effective in reducing the levels of depression of experimental participants. (Sallis et al, 1987; Stiles, Shapiro and Firth-Cozens, 1988; Hains, 1992). However, in the present research, the reduction in the experimental participants' levels of severe depression following the intervention was not statistically significant. It should be noted though that there was a tendency for the experimental participants' depression scores to be lower following the intervention, relative to the change in levels of depression

amongst the control subjects. Methodological differences between previous studies and the present research may have accounted for the lack of significant findings within the present research. For example, the research by Stiles, Shapiro and Firth-Cozens (1988) involved mainly depressed participants, who underwent a programme of eight sessions of stress management. However, within the present research, there was a high degree of variation in the levels of depression amongst the experimental group prior to the intervention (Mean = 5.79,  $\sigma$  = 16.2). Differences in the nature of the stressors experienced by experimental groups of subjects from different evaluative studies may also have accounted for differences in the findings between previous studies and the present research. For example, the research by Antoni et al (1991) involved people who were being notified of their HIV-1 antibody status, a stressor which was considerably different to the stressors experienced by the participants in the present research. Such differences between the participants, and the stressors experienced by them, must therefore be recognised when making comparisons between different evaluative studies.

### **6.21 Individual variables - Type A behaviour**

No main or interactive effects were found in terms of the type A personality variable, showing that the intervention was no more or less effective for the type A personality than it was for the type B personality. The author would argue, however, that the variable should be included in further evaluative studies of stress management interventions, particularly where variables such as hostility and anger are used as the outcome variables. There are likely to be significant differences in the baseline levels of anger and hostility between type A and type B participants, which may determine the effectiveness of the stress management intervention. This is comparable to the evaluative research on stress management where blood pressure is the outcome variable. Some research has shown reductions in blood pressure following stress management interventions amongst hypertensive subjects only (McGrady et al, 1987;

Albright, Andreassi and Brockwell, 1991), which leads one to question whether baseline levels of other indicators of stress may in part determine the effectiveness of a programme.

Competitiveness is also an integral part of the type A personality. This characteristic may effect the way in which participants react and engage in stress management programmes. Highly competitive participants may perceive the stress management programme as a means by which they can exert their competitive behaviour, setting themselves unrealistic targets in terms of stress reduction and practise of the techniques. This consequently may lead to increased levels of stress. Indeed it has been found by Spence et al (1987) that competitiveness is negatively associated with physical health complaints, suggesting that levels of competitiveness may be a mediating factor within the stressor-strain relationship. It may be necessary therefore for stress management programmes to incorporate techniques on management of the type A personality, together with the more traditional techniques used for management of stress.

## **6.22 Review Questionnaire**

Although it was found from the standardised tests that the stress management intervention was not effective in reducing the experimental participants' levels of stress, the results from the Review Questionnaire did not support this finding. On the whole, the stress management intervention was perceived by participants as enjoyable (mean score of 4.35, on a scale of 1 to 5). The participants also felt that it helped them to cope better with stress (mean score of 3.92) and that it helped to relieve their symptoms of stress (mean score of 3.60). Seventy-one per cent of participants felt that the intervention was either better or much better than they had expected before participation, with only eleven per cent of subjects feeling that the intervention was worse than they had expected.

The part of the intervention which was most enjoyed was the 'Introduction to Stress' session (mean score of 4.15,  $\sigma = 0.82$ ), with participants finding it particularly useful (mean score of 4.25,  $\sigma = 0.70$ ). Although there was no evidence that this session was effective in reducing participants' levels of stress, it is an integral part of any stress management intervention since it aims to make the participants more aware of the causes and consequences of stress on their lives. Further research might consider the effects that such education has on the perception of stress by the participants, and also how much participants learn from the session.

Assertiveness was reported as the most enjoyable technique by the experimental subjects (mean score of 4.75,  $\sigma = 2.10$ ), with time management being rated as the least enjoyable (mean score of 3.50,  $\sigma = 0.87$ ). Assertiveness was also rated as the technique most likely to be used in the future. It is difficult to explain this result from the present research, given that the questionnaire was limited in its number of items. It may be that the participants' intention to use the assertiveness technique in the future was based upon their enjoyment of it during the course of the interventions.

Alternatively, it may have been a technique which the participants felt would be effective in relieving their stress in the future, or that they felt able to implement it into their daily lives. These are issues which will be considered in more detail in the single case study.

On a scale of how much they had used each of the techniques, it was found that the participants had practised relaxation most often (mean score of 4.50,  $\sigma = 2.54$ ), with assertiveness being rated as the technique used least often (mean score of 3.35,  $\sigma = 0.90$ ). This latter finding is surprising in the light of the high score for enjoyment of the assertiveness technique. However, there would appear to be some degree of variation between participants on their scores from the Review Questionnaire. For example, although relaxation was rated by thirty-seven per cent of participants who completed the question, as the 'technique most employed', and as the second most likely technique to be used in the future, it was also rated in first position as the 'technique

rarely or never employed'. This difference is reflected in the high standard deviation of the score related to how much the participants had used the relaxation technique (Mean = 4.50,  $\sigma$  = 2.54 on a scale of one to five).

Similarly, although the mean score relating to how much participants had used cognitive restructuring was only 3.40, ( $\sigma$  = 1.06), this technique was also rated joint first with relaxation as the 'technique most employed' by participants in a further question. Cognitive restructuring was also rated as the technique least helpful in managing participants' stress (mean score of 3.52,  $\sigma$  = 1.01), yet sixty-one per cent of participants who completed the questionnaire reported that they would use it in the future.

It would therefore appear that within the experimental group as a whole, differences occurred as to the techniques enjoyed, used most often and perceived as being helpful in managing their stress. This focused on the need for individual and situational variables to be considered within the design of a stress management intervention. Differences such as the degree to which a stressor poses emotion-focused or problem-focused coping styles (Auerbach, 1989) may have determined how much the participants enjoyed or felt that the techniques were effective in relieving their stress. Alternatively, as Martelli et al (1987) pointed out, it may be that the participants' own coping style determined their preferences for each of the techniques. These issues will be dealt with in the single case study which follows.

It is interesting that the results from the standardised psychological measures and those from the Review Questionnaire are somewhat opposed. Given that the validity and reliability of the psychological measures have been tested extensively, one would assume that they provided a fairly accurate representation of the participants' levels of stress. Yet according to the Review Questionnaire, the participants reported that overall they had enjoyed the techniques and found them helpful in relieving their stress, even though the standardised tests revealed that the stress management intervention was not effective in the short term. This issue should be considered carefully in terms

of the measures used in future evaluative studies of stress management interventions. Several of the studies reviewed employed their own 'Evaluation Questionnaires', and used the results to support their particular hypothesis. However, the contradictory results from the present research would suggest that caution must be taken when using this type of questionnaire, particularly if the results from such tests are used as the only measure of effectiveness in an evaluation of a stress management programme.

### **6.3 Long-term evaluation of the stress management intervention**

The main finding from the long-term evaluation of the stress management programme was that there was a significant increase in the experimental participants' intensity scores on the Uplifts scale compared with the change in the control subjects' scores. It would appear therefore that the positive aspects of the experimental subjects' lives were perceived as significantly more intense at the follow-up than they were prior to the stress management intervention. This result is surprising in view of the fact that the experimental participants also showed a significant increase in their levels of severe depression at the follow-up, relative to the change in the control subjects' levels of depression during this time.

Further analysis of the experimental participants' uplifts and depression scores at the follow up, however, revealed that there was a high degree of variation amongst the group's scores as a whole. (Mean (uplifts) = 30.36,  $\sigma$  (uplifts) = 45.63; Mean (dep) = 2.63,  $\sigma$  (dep) = 4.58) It would therefore appear that only a subgroup of the experimental participants reported significantly more intense uplifts at the follow-up. Similarly only a subgroup of the experimental participants' levels of depression had significantly increased at the follow-up compared with their levels following completion of the workshops. Post-hoc analyses showed that there was no correlation between the experimental participants' uplifts and depression scores at the follow up ( $r =$

-0.921  $p > 0.01$ ) These two subgroups therefore appear to be independent of one another. This suggests that the stress management intervention led to a significant increase in the Uplifts scale severity scores of a group of the experimental subjects, and to a significant increase in the depression scores of a different subgroup of experimental subjects.

This finding highlights the fact that the nature of the participants involved must be considered in an evaluation of a stress management programme. The programme evaluated in the present research would appear to be effective for a particular group of the experimental participants, who viewed their lives more positively at the time of the follow-up. However for some of the participants, the stress management intervention led to an increase in their levels of depression. These individual differences need to be considered in more detail, such that the factors influencing these results can be determined.

Observation of the experimental participants' scores on the Daily Hassles scale, showed that although not significant, there was a greater tendency for their scores to have increased at this point compared with the control group's scores. Analysis of the data at the follow up, showed that there was a high degree of variation in the experimental group's severity scores on the Daily Hassles scale (Mean = 30.36,  $\sigma = 45.63$ ). This was supported by the result from the Follow-up Questionnaire, which found that there was a high degree of variation in the experimental participants' estimates of how much stress they were experiencing in their life at the follow up compared with before the intervention. Forty-two per cent of participants reported that they were experiencing more or considerably more stress at the time of the follow-up, with twenty-five per cent reporting about the same amount of stress and thirty three per cent reporting less or considerably less stress relative to before the intervention. It would therefore appear that there was a section of the experimental group who perceived themselves as experiencing significantly more severe daily hassles at the follow-up than they had after completion of the workshops.

Post-hoc tests showed that there was a high degree of correlation between participants' severity scores on the Daily Hassles Scale and their levels of depression from the General Health Questionnaire at the follow-up ( $r = 0.6256$ ,  $p < 0.001$ ). It is therefore apparent that those subjects who perceived themselves as experiencing more severe daily hassles at the follow-up, were also the subjects who were more depressed. This supports the research which has found a strong relationship between stress and depression (Brown, 1979; Lloyd, 1980a).

There are a number of possible explanations for the finding of increased levels of depression, and severity scores on the Daily Hassles scale amongst some of the experimental participants. It may be that these subjects had experienced a greater number of major events in their life at the time of the follow-up relative to the period following the intervention. However, this would not appear to be evident from the experimental participants' scores on the Life Experiences Survey, which showed a tendency to decrease over the period of the follow-up.

Therefore, by controlling for external events, it would appear that the increased levels of stress and depression amongst some of the experimental participants at the time of the follow-up, was due to factors relating to cessation of the stress management intervention. There were differences in the experimental participants' mean scores on the amount of time they had spent practising each of the techniques at the time of the Review and at the Follow-up, with generally higher scores being reported at the time of the Review. It would therefore appear that the increased levels of depression and stress occurred as a result of lack of continued practise following completion of the intervention. This is an important issue within stress management interventions, such that the participants' levels of motivation to continue to practise the techniques following completion of the intervention should be discussed within the treatment sessions. In the light of these results from the long-term evaluation of the interventions, the author would suggest that the follow-up should have occurred at a much shorter period of time

following completion of the intervention. A follow-up of a few weeks would have been more suitable, in order that examination of the participants' levels of stress could have been considered sooner, and any problems relating to their motivation to practise the techniques discussed.

It is interesting that the experimental participants' scores of how helpful the intervention had been in helping them to cope with stressors had decreased at the time of the follow-up relative to their scores following completion of the interventions. It would appear that their lack of motivation may therefore have effected their perception of the efficacy of the intervention, perhaps since they may have felt frustrated that the intervention no longer seemed to be effective at the time of the follow-up. Since the theory of planned behaviour (Ajzen, 1985) suggests that expectancy of the outcome of a behaviour is an important factor in an individual's intention to perform that behaviour, the author would argue that it is important that the participants' perceptions of the outcome of practising the techniques remain positive over the period following completion of the intervention. If the participants begin to consider that the techniques are not so effective in helping them to cope with their stress, they may indeed begin to cease practise of the techniques.

### **6.31 Individual variables - Type A behaviour**

As with the short-term effectiveness of the stress management programme, no significant or main effects were observed for the type A individuals. The intervention was therefore no more or less effective for the type A individuals than it was for the type B individuals.

One possible explanation for the lack of significant findings in the present research may be that the Jenkins Activity Survey is a global measure of type A behaviour. Burns and Bluen (1992) argued that global measures of stress, such as the Jenkins Activity

Survey, actually serve to conceal differences associated with the independent components. Spence, Helmreich and Pred (1987) factor analysed data from the Jenkins Activity Survey, and found that the two dimensions, impatience/irritability and achievement striving reflected global type A behaviour. They further found that type A characteristics of the dimension of impatience/irritability, such as impatience, time urgency and irritability were significantly related to physical health complaints, depression, job and marital dissatisfaction. However type A characteristics of the second dimension, achievement striving, such as job dedication, target setting and hard driving behaviour were actually positively associated with academic, sales and work performance, research productivity and marital satisfaction. The authors therefore argued that there is a need for differentiation between 'toxic' and 'non-toxic' components of type A behaviour.

A criticism of Spence et al's (1987) research, and of the Jenkins Activity Survey used, however, was that it failed to include the type A characteristics of anger, hostility and competitiveness. Burns and Bluen (1992) therefore considered all five factors of type A behaviour following factor analysis of a twenty-four item multidimensional type A behaviour scale. They found that although irritation, anger, hostility and competitiveness were associated with depression and physical health complaints, achievement striving was actually positively related to job involvement, organisational commitment and intrinsic job satisfaction.

It may therefore be more effective for individual components of type A behaviour to be considered in research, rather than measuring type A behaviour as a global construct. This is particularly important in evaluative research on stress management intervention, since the evidence from the research by Spence et al (1987) and Burns and Bluen (1992) would suggest that adverse stress reactions may be influenced by only the 'toxic' components of type A behaviour, and that the 'non-toxic' components of achievement striving may serve as a buffer against the detrimental effects of stress. It would therefore have been appropriate for the present research to have considered the

'toxic' and 'non-toxic' characteristics of type A behaviour as separate individual variables which may determine the effectiveness of the stress management intervention.

### **6.32 Follow up Review Questionnaire**

There were significant changes in the participants' ratings of the efficacy and their enjoyment of the techniques at the time of the follow up compared with their scores at the time following completion of the workshops. In the 'Review Questionnaire', assertiveness received the highest mean score for the most enjoyable technique, and was also rated as the technique most likely to be used in the future. However, by the time of the follow up, it was rated fourth in the list of techniques which participants had most enjoyed, with only twelve and a half per cent of participants rating it as their most enjoyable technique.

This may reflect the difficulty which the participants had had in implementing the assertiveness technique into their life during the period prior to the follow up. However, eighty-three per cent of the participants had used this technique since completion of the intervention. Furthermore it had the second highest mean score for how much the participants had used the technique, with nineteen participants reporting that they intended to use assertiveness in the future. It may therefore have been the case that the techniques which were used by the participants were not always the ones which participants had found most enjoyable. In fact, the techniques which the participants found least enjoyable may have been the ones which they felt were most needed in their lives in order to relieve their stress, but which were most difficult to implement. A technique such as assertiveness may prove very hard for some people to implement, because it requires a change in the way one interacts with other people, and possibly a change in one's perception of one's rights. It may be necessary for a participant to consider themselves in a different light, such that they have rights to be assertive with

authoritative figures at work. Furthermore, it is not simply one's own individual perception of one's rights which have to change, but other people's perception of your rights. This may be difficult to achieve, if other people have become accustomed to an individual who has been unassertive in the past. They may be resistant to that individual being assertive, since it may require them to compromise their own wishes. Consequently, being assertive may prove particularly difficult in such circumstances.

Similar results were found for the time management technique at the follow-up. Although only twenty-five per cent of participants rated time management as their most enjoyable technique, seventy-one per cent of participants reported that they had used the technique since the review. Time management also received the highest mean score on the item of how much participants had used the technique, with nineteen participants stating that they would use it in the future. This is a technique which may require skills learnt in assertiveness training, since one must not be pressurised by others to change previously made priorities and deadlines. It is therefore a technique which people may find difficult to implement, but which may be recognised as necessary in order to relieve symptoms and causes of stress.

The difficulties in implementing assertiveness and time management into one's life may explain why they received the lowest ratings for the item on how much the participants felt the techniques had helped them to manage their stress. It may be that these techniques require continued practise before any positive effects are observed. It is surprising, though, that relaxation, which had the highest mean score on the item for how much the technique was perceived as helping participants manage their stress, also received the lowest mean score on the item of how much participants had felt motivated to practise the technique. It is possible that other factors which may effect an individual's intention to practise a behaviour, such as peer pressure and their perception of their ability to perform the behaviour (Ajzen, 1985) may have reduced the participants' levels of motivation to practise the relaxation technique.

Another surprising finding was that, although cognitive restructuring had the highest mean score in terms of motivation, it received the lowest mean score on the item of how much participants had used the technique. This highlights the need for further research into the relationship between motivation and practise of stress management techniques, and whether the former necessarily determines the latter. The theory of planned behaviour suggests that a person's intention to perform a behaviour is the central determinant of behaviour (Ajzen, 1985). Intention is thus defined as being determined by three variables, namely attitude, subjective norm and perceived behavioural control. Attitude focuses on whether a person believes that performing the behaviour will have a positive or negative outcome. In this case, it refers to whether the participants believed that the stress management intervention would be effective in reducing their levels of stress. Subjective norm is defined as the perceived social pressure that a person may feel to perform or not to perform the behaviour. This could include work colleagues, managers, friends or family. For example, an individual whose colleagues are also involved in a stress management programme may be encouraged to practise the techniques at work. A group of the experimental participants noted this at the review session, stating that cues were present in the office which reminded everybody in the team to practise the relaxation techniques. However, when an individual is the sole person in an office who is involved in the programme, they may feel that it is not socially acceptable to engage in such activities in the workplace. The third factor, perceived behavioural control focuses on how easy or difficult the person believes it will be to perform the behaviour. A person not only needs the knowledge of how to perform the technique, but also how to implement it into their daily lives, which may differ between situations. For example, an individual may find it easy to practise assertiveness at home with the children, but may find it difficult to practise the technique at work with a manager. Future research should consider the relationships between each of these variables, in more detail, in order to determine the specific factors which contribute towards a person's intention to practise stress management techniques in different settings. For example, although participants may have perceived cognitive restructuring as being potentially helpful, they may have also

felt uneasy at practising the techniques in the workplace if their manager was disapproving. These potential problems should be discussed within treatment sessions, in order to maximise the probability that the participants will regularly practise the techniques within their daily lives.

The participants' responses to the item of which techniques they would use in the future suggested that there was a high level of motivation amongst the participants to practise the techniques after the follow-up review. Relaxation was the most popular, with eighty-three per cent of participants reporting that they would use this technique. However, the scores for the remaining techniques were high, with seventy nine per cent of participants indicating that they would practise time management and assertiveness in the future, and seventy one per cent stating that they would practise cognitive restructuring.

These results are supported by the finding that eighty-seven and a half per cent of participants who completed the follow-up questionnaire felt that they still needed to make changes to their lifestyle in order to cope more effectively with stress. The most frequently given response as to why they had not made these changes was that they had insufficient control over that aspect of their life, with the second most frequent response being lack of time, and only two participants stating that it was due to other people.

It would appear from the participants' responses on the 'Motivation Questionnaire', that the majority of participants felt that they needed to change their situation at work in order to become less stressed. For example, responses included *"Work problems - taking them home and letting them interfere with home life"*, *"Improve my interpersonal skills and delegate more often"*, *"Change jobs - more money would help me get on with things I do"* and *"To recognise the signs of stress and to control it, both at home and at work"*. It would therefore appear that the reason that many of the participants had not implemented changes into their lifestyle which would help them manage their stress

more effectively, was because they felt that they lacked control over work situations, and the relationship between work and home life.

This is an issue which should be recognised in the design of stress management interventions. It may be that stress management programmes are effective in equipping participants with the knowledge of different techniques which could be used to help them manage their stress more effectively. However, it may be necessary to focus more on the problems of implementation, rather than simply on theoretical issues concerning the techniques. Certainly it was found from the 'Follow up Review Questionnaire' that only three participants felt that they had insufficient information about the techniques in order to assist any change in their lives which would help them manage their stress more effectively. It would therefore appear that problems arose more from difficulties in implementation of the techniques due to a feeling of lack of control rather than from lack of knowledge about the techniques. This issue will be considered in the single case study which follows.

Participants' reasons for becoming involved in the study varied quite widely, although all of the participants stated that one reason was because they had been feeling stressed recently, and eight participants had recently been suffering from stress-related illnesses. The second most frequent reason given was that they were curious to find out what stress management had to offer, with nineteen participants stating this response. This may be a reflection of the way in which the popularity and widespread use of stress management techniques has increased significantly over the past decade, perhaps because it potentially offers people an alternative approach to helping them cope with their stress, instead of the more traditional use of medication.

Ten subjects reported that they had participated because they had suffered from stress-related illnesses in the past. For these participants, stress management may be recognised as a potential way of preventing further stress related illnesses from occurring in the future. This is important, since stress management should be

perceived as a preventative rather than just as a curative response to stress, and should not necessarily be focused solely on people who are feeling stressed at the time of the programme. The techniques learnt could be used to prevent an adverse stress reaction from occurring in the future, perhaps during times of major life events.

Ten participants believed that the time off work to attend the course would in itself help relieve stress. The stress management programme offered the participants two full days and three half days off work as part of their staff development, and a break away from their normal environment. This must be considered in the evaluation of the effectiveness of stress management interventions, since positive effects may simply be a function of time off work in a different environment, as suggested by Murphy (1984a). A criticism of the present research therefore is that this factor was not controlled for. It would have been appropriate to compare the results from those participants involved in a stress management programme, with those of a group who received the time off work in a different environment, but who did not engage in any formal stress management programme. Further research which considers whether the effects of a stress management intervention are a function of either the intervention itself, or non-specific factors such as attention from leaders and time off work, is warranted. As described in Chapter 2, the research to date in this area has produced somewhat contradictory findings.

#### **6.4 Methodological issues**

The present research aimed to evaluate the effectiveness of a stress management intervention using a controlled and balanced design. Treatments were counterbalanced between experimental groups, and results were compared with those of a control group. Unlike several of the stress management programmes reviewed, the present intervention consisted of repeated treatment sessions over a period of

weeks. This was intended to maximise the probability of the programme's effectiveness in terms of reductions in participants' levels of stress. A long-term evaluation of the intervention was also undertaken, in order that one could begin to determine the processes occurring between completion of the workshop and the period thereafter.

As previously noted, one criticism of the present research is that the control subjects should have been given time off work and met in similar surroundings to those of the experimental participants, in order to determine whether any effects from the intervention occurred as a result of specific factors related to the treatment or as a result of non-specific factors. The literature surrounding this issue is rather contradictory, but more recent research has suggested that all techniques induce a general relaxation response, but that particular techniques have specific effects (Lehrer et al, 1994). The author has suggested that the general relaxation response may occur as a result of the non-specific factors of treatment sessions, such as the trainer-participant relationship, time off work, and pleasant surroundings.

Unfortunately, in the present research, there were not enough people who were able to have time off work, and therefore from a control group which engaged in non-specific treatment sessions. However, future studies should endeavour to include such a control group, in order to determine whether any effects observed following an intervention occurred as a result of specific factors related to the stress management techniques, or to non-specific factors such as time off work.

The results from the present research and from previous evaluative studies of stress management, have led the author to design a process model of stress management. This model is more comprehensive than previous theoretical approaches to stress management intervention, and incorporates situational and individual variables into its structure. It also highlights the need for short and long-term evaluations, together with consideration of the outcome variables which are used.

CHAPTER 7

A PROCESS MODEL OF INDIVIDUALLY-ORIENTED

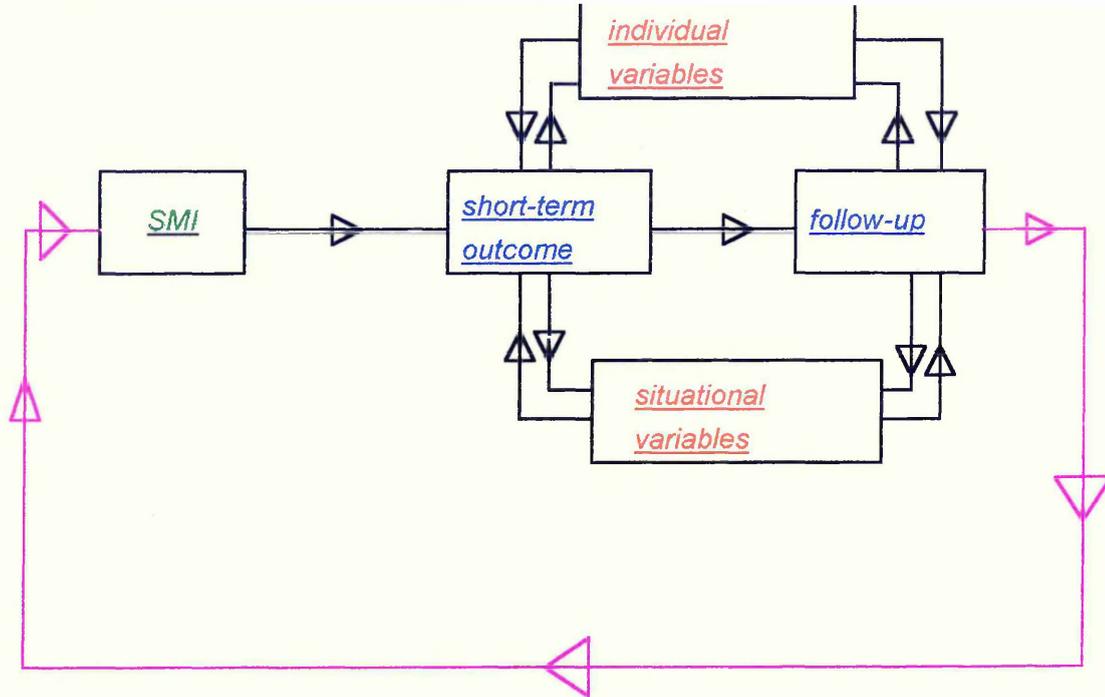
STRESS MANAGEMENT INTERVENTION

## **7.1 Introduction**

It is clearly evident from the review of the literature on evaluative studies of stress management interventions in Chapter 2, that much of the work has been atheoretical. This has resulted in a number of methodological flaws, including lack of control groups, poor statistical analyses, lack of any long-term follow-up, and no consideration of those situational and individual variables which may determine the effectiveness of an intervention.

Several models of stress management intervention have been proposed, as outlined in Chapter 3, but they are all subject to a variety of criticisms and none are truly comprehensive. In addition, they have little empirical support. Bearing in mind these criticisms, the author has constructed a more comprehensive model of stress management intervention. This involved an integration of the strengths of previous models, plus a focus on the individual and their specific needs.

The model, shown in Figure 7.1, describes the processes occurring during the period following the implementation of a stress management intervention. It focuses on both the short and the long-term outcomes of the intervention, and also on the variables which may effect these outcomes.



**Figure 7.1 A Process model of individually-oriented stress management intervention**

## **7.2 The intervention**

The first component of the model, that of the intervention itself, is defined in terms of any technique which is carried out by the individual in order to prevent, reduce or eliminate the experience of stress by that individual. Griffiths, Cox and Barlow (1995) stated that there are three common types of occupational stress management. These include those strategies which involve environmental change, for example in organisational settings where structure and procedures are modified; those which enable the individual to cope better with their stress, including psychological strategies and relaxation training; and finally, employee assistance programmes, often involving counselling.

The present model focuses on the second of these types of intervention, that of training the individual to cope better with stress using a variety of techniques. These techniques can range from those which aim to prevent the occurrence of stress, for example time management, to techniques which attempt to change the way the individual perceives a stressor, such as cognitive restructuring. Other techniques deal with the adverse physical consequences of stress, such as relaxation training.

Although the author recognises the significance of the other two types of stress management in organisational settings, she would argue that there is still a need for individual change. Several organisations do appear to be becoming increasingly aware of their role within stress management interventions. It remains unclear whether this is through genuine concern for their employee's health and well-being or through fear of litigation, in the light of the recent case of an employee obtaining a judgement against his employer for breach of its duty of care in failing to take reasonable steps to avoid exposing him to a health-endangering workload. (*Walker versus Northumberland County Council*, 1995) However, not all of those in industry and the business world are as willing to recognise the role of organisational factors in the stress response of their employees.

The development of the present model, based upon individual change, should not take the focus from the importance of organisational change. Indeed, the author positively encourages the work of those who emphasise the need for organisational change (Burke, 1987; Dewe, 1994; Cox, 1993). However, whilst a degree of apathy remains amongst those in industry and business regarding organisational interventions, the responsibility for change is left to the individual.

Furthermore, the present research is aimed at reducing the stress caused not only by conditions at work, but also by factors at home and at leisure. Since it is beyond the scope of a stress management intervention to change environmental factors outside the working environment, individual change is most appropriate. This model is therefore

aimed at providing individuals with a way of coping more effectively with stress, possibly helping them to prevent the occurrence of high levels of stress in the future, and at making them more aware of when they are under stress.

### **7.3 The short-term outcome**

From the intervention, follows the short-term outcome, as indicated in Figure 7.1. This is defined as those changes which occur during the period from before the intervention to the time immediately after the intervention. This is determined by the difference between the experimental subjects' pre- and post scores on the variables considered relative to any changes in the control subjects' scores over this period of time.

Ideally the control subjects should comprise of a group of individuals who do not take part in the specific treatment sessions of a stress management intervention, but who do receive time out from work in order that they can all meet in similar surroundings to those in which the intervention takes place. However, it is essential that they have not been allowed to focus on stress, and compare their experiences to any significant extent, since then there is a danger of them becoming a self-help stress management group. The aim should be to provide a similar level of social interaction between the control participants as that experienced by the experimental group, but without a focus on stress and stress management.

The control group must complete the same outcome measures at the same time as the experimental participants. This allows the researcher to evaluate whether any significant changes observed across the outcome variables following the interventions occur as a result of the specific components of the intervention itself. Most evaluative studies of stress management intervention only include a control group in which individuals simply complete the outcome measures at the same time as the experimental participants. This does not allow the researcher to determine whether any

significant changes in the outcome measures occur as a result of the specific components of the intervention itself or from non-specific factors such as time off work, and meeting up with other participants.

The outcome of the intervention can be considered in terms of changes in the individual, the environment or the individual/environmental interface. Changes in the individual include those psychological and physiological variables which were described in the review of evaluative studies in Chapter 2. Within an organisational setting, outcome measures which focus on the environment could include the quantity and quality of productivity, turnover, absenteeism, health care costs, and number of accidents. (Ivancevich, Matteson, Freedman and Phillips, 1990).

Individual/organisational interface measures within an organisation include job performance, job satisfaction, burnout and health care utilisation (Ivancevich, Matteson, Freedman and Phillips, 1990). In a community setting, outcome variables which focus on the environment are more difficult to measure since each individual will be part of a specific environment such as the family home or place of leisure. However individual/environmental outcomes could be measured, such as community health care utilisation (Lewin et al, 1992), and satisfaction with life at home.

#### **7.4 The follow-up**

It is clear from the review of evaluative research of stress management interventions, that the majority of studies have only considered the effectiveness of a programme in the short-term. However, there is clearly a need for follow-up evaluations of stress management programmes, in order to determine whether the positive effects observed in the short-term are maintained over a longer period. The period following an intervention is a significant time, since the individuals are not actively involved in attending treatment sessions, and no longer have the support of other members of the

intervention group, but should be implementing the stress management techniques which they have acquired.

The paucity of studies which have incorporated a follow-up review into their design, have generally found that any positive effects observed in the short-term have not been maintained over a longer period (see Chapter 2). Indeed, the present research found that the experimental participants' levels of depression had decreased over the short-term, but had increased at the four month follow-up. This clearly highlights the need for consideration of the processes occurring following completion of a single stress management intervention.

The author therefore suggests that continued involvement in a stress management programme is necessary in order to maintain any reductions in levels of stress observed in the short-term. Rather than incorporating a long-term evaluation into the research design, the author suggests that an initial short-term follow-up be undertaken, followed by the individuals engaging in further stress management programmes. These programmes should take the form of refresher courses, which allow individuals to report back on any problems which they have encountered in implementing the various techniques. The nature of the problem would need to be identified within a second intervention, and treated in an appropriate way. The problems may focus on factors such as the individual's perception of their ability to carry out the techniques, lack of support from others, or an individual's low expectation with regard to the positive outcomes of the programme. The effectiveness of the refresher courses would then need to be evaluated on a continual basis, such that the results from one course be used as the basis for assessment of problems in the implementation of techniques at the next course.

New techniques may also need to be offered within a long-term programme.

Techniques which were initially offered within an intervention may prove ineffective over the long-term, when new stressors are encountered, or where the nature of old

over the long-term, when new stressors are encountered, or where the nature of old stressors has changed. For example, an individual may initially cope quite effectively with the bereavement of a spouse by keeping busy and organising funeral arrangements, trying to inhibit any emotional expression. However, in the long-term, inhibition of emotions may prove damaging, and the individual may need to be taught ways of expressing and dealing with all the emotions that a bereavement can bring.

Continuous, long-term programmes are clearly likely to be more costly than the brief programmes frequently encountered at present. However, the author would argue that in the long-term, such programmes will prove more cost effective, because they will result in positive effects maintained over a much longer period of time. The findings from the present research support this hypothesis. Although decreased levels of depression were found amongst the experimental participants in the short term, such levels had significantly increased at the time of the four month follow-up. It is quite likely that this would have an effect on the institution's absenteeism rates and turnover of labour in the long-term. This, in turn, would clearly be financially damaging to the organisation. It is therefore in the organisation's own interests to set up stress management programmes which will be effective, and which evidently need to be run on a long-term basis.

As indicated in Figure 7.1, the model includes a link between the period after the follow-up, and the stress management intervention (———). The author proposes that following a single intervention, the individual engages in further training, initially at a relatively short period of time later, preferably a few weeks. The follow-up of the first intervention would be determined by considering the changes in the experimental participants' levels of stress from the period following the first intervention to the time prior to the second intervention. The short-term outcome of a second intervention would then be determined by considering the change in the individuals' levels of stress prior to that intervention to their levels of stress following the second

A-----1st. intervention-----B-----C-----2nd. intervention-----D-----E

A = the participants' baseline levels for 1st intervention

B = the participants' post intervention levels for 1st intervention

C = the participants' baseline levels for 2nd. intervention

D = the participants' post intervention levels for 2nd. intervention

E = the participants' baseline levels for 3rd. intervention

**Figure 7.2 Evaluations of two stress management interventions**

The short-term outcome for the first intervention is determined by the changes in the participants' levels of stress from points A to B, relative to the changes in the control subjects' levels of stress during this period.

The follow up for the first intervention is determined by the changes in the experimental participants' levels of stress from points B to C, relative to the changes in the control subjects' levels of stress during this period.

The short-term outcome for the second intervention is determined by the changes in the experimental participants' levels of stress from points C to D, relative to the changes in the control subjects' levels of stress during this period.

The follow up for the second intervention is determined by the changes in the experimental participants' levels of stress from points D to E, relative to the changes in the control subjects' levels of stress during this period.

The overall evaluation of the two interventions is determined by the changes in the experimental participants' levels of stress from points A to E, relative to the changes in the control subjects' levels of stress during this period.

The author proposes that the period occurring between each intervention should gradually be increased over time. Hence, in the given example of two interventions, period D--E should be greater than period B--C. The author suggests that the effects from a single intervention are likely to be short in duration, and the individual will need to engage in further training at a short time after completion of the first intervention. However, as the individual becomes more knowledgeable about methods with which to manage their stress, refresher courses should not need to be as frequent, and the time elapsing between interventions can be increased. Gradually increasing the time between interventions should also reduce the likelihood of individuals becoming dependent upon their trainer for help in reducing their stress. Individuals must learn to generalise the coping mechanisms taught in the stress management interventions to their daily lives, and not be continually dependent upon the trainer for advice and motivation.

The model also considers those situational and individual variables which may influence both the short- and the long-term outcome of the intervention.

### **7.5 Situational variables**

As described in Chapter 2.4, previous research literature has suggested that situational variables can determine the effectiveness of a stress management intervention. The present model therefore proposes that these situational variables should be considered in the implementation and evaluation of a stress management intervention. These variables include - **the nature of the stressor** This can be considered in terms of its degree of severity (Preston-Shoot and Braye, 1991; Avants, Margolin and Salovey,

1991; Kagan, Kagan and Watson, 1995), the degree of control which the individual has over the stressor (Auerbach, 1989), and its duration (Auerbach, 1989) - **the timing of the intervention** (Hofer, Wolff, Friedman and Mason, 1972) - **non-specific factors** (Murphy, 1984a; Sallis et al, 1987)

## **7.6 Individual variables**

Many individual variables have been considered within evaluative studies of stress management intervention. The author proposes that these individual variables therefore be considered during the implementation and evaluation of stress management interventions. These variables include - **Compliance** (Peters, Benson and Porter, 1977a; Kiecolt-Glaser et al, 1986) - **Expectation** (Beiman, 1976; Lehrer and Woolfolk, 1984) - **Locus of control** (Abramowitz, Abramowitz, Roback and Jackson, 1974; Ollendick and Murphy, 1977; Lewis, Biglan and Steinbock, 1978; Lehrer and Woolfolk, 1984) - **Type A behaviour** (Roskies, 1987) - **Optimism** (Avants, Margolin and Salovey, 1991; Schwarzer, 1994) - **Gender** (Sharpley and Scuderi, 1990; Gronningsaeter et al, 1992) - **Familiarity with the techniques** (Gronningsaeter et al, 1992) - **Coping style** (Martelli et al, 1987) - **Response to stress** (Lehrer et al, 1994) - **Physical and psychological well-being** (McGrady et al, 1987; Kagan, Kagan and Watson, 1995) - **Self-esteem** (Rector and Roger, 1994)

The model also considers the way in which the short-term and long-term outcomes of a programme may influence individual and situational variables. This is an area which has not received any attention within the evaluative literature to date, but which the author suggests may be an integral factor determining the effectiveness of stress management interventions, particularly over the long-term. For example, the author would argue that, according to the theory of planned behaviour (Ajzen, 1985), a positive outcome from a single intervention is likely to increase an individual's motivation to practise stress management techniques in the future. Similarly, the author would argue

that a positive, or indeed negative, outcome from a stress management intervention is likely to change the nature of stressors perceived by the individual in the future. Individual and situational variables should therefore not be considered as stable characteristics, but as variables which may change according to the outcome of a stress management programme.

The model therefore considers the short and long-term outcomes of an intervention, and those individual and situational variables which determine the outcomes. It also considers the influence which the short- and long-term outcomes have on individual and situational variables. Consequently it focuses on four central issues related to the evaluation of a stress management intervention. These include:

- In what way the intervention is effective
- For whom the intervention is effective
- In what situations the intervention is effective
- For how long the intervention is effective

These issues are important, because they highlight the complexity of evaluative work. Many of the evaluative studies reviewed in Chapter 2 considered only one or perhaps two of these issues, and therefore failed to recognise key points regarding the efficacy of the intervention. One cannot presume, for example that an intervention will be effective for all types of people in all situations. Individuals may differ in the techniques which are most effective for them. Even for one individual, varying techniques may need to be offered in different situations. Similarly, as the individual becomes involved in the stress management intervention, the types of techniques offered may need to be modified as the nature of the stressor and the individual's response to it changes. For example, a person who is trying to cope with a redundancy from work may initially

require the use of problem-focused techniques, until they begin to feel able to deal with the array of emotions associated with this loss.

### **7.5 Development of a stress management intervention**

Evaluation of a stress management intervention based upon this model, and the four key issues surrounding it can facilitate practitioners in the development of effective stress management programmes. Evaluative studies based upon this model should aim to determine for which individuals programmes are effective and in what situations. They should also give an indication of the way in which the programme is effective and for how long. Therefore, based upon this knowledge, practitioners should gain some idea of the types of intervention to be used with various types of people.

This may appear a rather daunting task considering the global nature of the model, which incorporates many variables into its structure. Indeed, the author recognises that it would be practically impossible to take each of these variables into account when designing a stress management programme. However, she would argue that those characteristics of the individual and their situation which are most evident should be considered during the selection and implementation stages of a stress management intervention. For example, if an individual appears to be someone who has a very rigid coping style, the practitioner should recognise that they may find it very difficult to adopt new coping strategies. This may therefore require the very gradual introduction of new techniques to the individual, in order that they do not become too anxious by the information. Similarly, if an individual's cognitions appear to be based on rather irrational beliefs, a technique such as cognitive restructuring may be most effective.

The author suggests that the most appropriate method of assessing the individual's characteristics and situation is to undertake an interview-based 'Stress Profile' of that individual. This would allow the practitioner to gain some insight into the qualitative

nature of the stress experienced by the individual and the ways in which they may be trying to cope with their situation. The practitioner should then consider this information during the selection and implementation of the techniques to be used.

CHAPTER 8

A SINGLE-CASE STUDY APPROACH TO STRESS

MANAGEMENT INTERVENTION

## **8.1 Introduction : a single-case approach**

Within the non-clinical domain, evaluative studies of stress management interventions have all been carried out using group designs. Typically, these studies have been based upon a non factorial design, in which an experimental treatment group is compared with a no-treatment control group. Random sampling of the individuals participating in the stress management intervention has allowed the researcher to generalise the findings from such studies to other similar populations.

For example, a study by Michie and Sandhus (1994) considered the effectiveness of a stress management programme with a group of clinical medical students, and generalised the findings to other clinical medical students within that school. However, considering the medical students as a group fails to recognise any differences between these students. Such differences may be reflected in their appraisal of an event, their personalities, or in the way they coped with stressors at work. The students may even have experienced different stressors during their medical training, perhaps when working in different wards of a hospital under different consultants. As stated by Barlow and Hersen (1984), *"one of the pitfalls of a truly random sample in applied research is that the more adequate the sample, in that all relevant population characteristics are represented, the less relevance will this finding have for a specific individual"*. (p.54) Therefore if the study by Michie and Sandhus (1994) included medical students with differing personalities and experiences, it is impossible to determine whether the stress management intervention was effective for a specific individual with specific personality characteristics and experiences.

The basic premise of the model proposed in Chapter 7 is that individual and situational variables determine the efficacy of a stress management intervention. It is therefore essential that when empirically testing the model, such variables should be taken into account during the selection and implementation of the intervention. From this perspective, one can determine which techniques are effective in reducing the stress of

which individuals. The author therefore suggests that a single-case study approach be used to evaluate the effectiveness of a stress management intervention.

In the event, this approach consisted of sessions as illustrated in Figure 8.1.

**WEEK 1**

Assessment interview by researcher and completion of baseline measures by the client

Outcome of assessment interview - 'Stress Profile'

**WEEK 2**

Reconceptualisation of 'Stress Profile', completion of baseline measures and

'Introduction to Stress' session

Designation of stress management interview based upon the client's 'Stress Profile'

**WEEK 3**

Completion of baseline measures by the client

Treatment session 1

**WEEK 4**

Completion of measures by the client

Treatment session 2

Treatment session 3

**WEEK 5**

Completion of measures by the client

Treatment session 4

**WEEK 6**

Completion of measures by the client

Treatment 5

Completion of measures by the client

**WEEK 13**

Completion of measures by the client

**WEEK 14**

Treatment 1 of second intervention

**WEEK 15**

Completion of measures by the client

Evaluative interview between the researcher and the client

**Figure 8.1 : Weekly diary of events occurring during the single-case study**

## **8.2 The Stress Profile**

As outlined in Chapter 7, the initial stage of a stress management intervention should be an assessment of the individual and their experiences. The author suggests that this 'Stress Profile' should be carried out using both qualitative and quantitative research methods, in order to obtain a comprehensive view of the individual and their situation. This is referred to as method triangulation, since it involves the collection of data using a variety of methods. As reported by Banister et al (1994), *"A danger of using only one method is that the findings may merely be an artefact of the method. If, however, an appropriate cluster of methods is used, each allowing different information through, then we can have some confidence that the material is more than a product of the method"*. (p.147)

An interview-based method of data collection was therefore used in conjunction with standardised psychological measures, in order to create a more complete picture of the client's personality and experiences of stress. Although the standardised tests used in the initial study were subjective measures, they were limited in how much they reflected the individual's experiences. Tests such as the Daily Hassles Scale and the Life Experiences Survey do not, for example, offer any information on why an individual perceives an event as a threat. They do not enquire as to how much control the participants feels they have over stressful events in their lives. Criticisms such as these therefore warrant the use of a more qualitative method of investigating participants' experiences.

An ethnographic approach to interviewing was adopted in the present research. This approach focuses on the dependence of the researcher for access to the client's subjective experiences, but also allows the researcher to set the research topic and outcome. As Banister et al (1994) noted, Jean Piaget argued that *"the good practitioner lets himself [sic] be led, though always in control, and takes account of the whole of the mental context"* (Piaget, 1929, p.19)

The author was interested in using the interview to collect data on those individual and situational variables which may influence the effectiveness of an intervention with the client. Based upon the client's responses, the author intended to generate hypotheses relating to the designation and evaluation of the stress management intervention. Empirical testing of these hypotheses would then allow the author to expand upon the model of stress management intervention proposed in Chapter 7.

### **8.3 Subject**

One of the participants from the initial evaluative study of stress management interventions was approached to take part in the present study. The participant was chosen on the basis that she :

- Had reported very high levels of stress, as indicated by her responses on the Daily Hassles Scale and Life Experiences Survey, together with high scores on all factors of the General Health Questionnaire, particularly anxiety and insomnia, and severe depression.
  
- Had indicated a desire during the Review to be involved in further stress management training.
  
- Was available and accessible during the proposed period of the intervention.

The participant, known in future references as Client A, was a fifty-two year old female employee of Sheffield Hallam University. She had worked as an administrative assistant at the University for seven years.

## **8.4 First intervention**

### **8.41 First baseline session**

#### **8.411 Completion of the psychological and physiological measures of stress**

On the first meeting between the client and the researcher, the client was asked to complete the Life Experiences Survey, the Daily Hassles and Uplifts Scale and the General Health Questionnaire. These were completed in the same manner as for the initial stress management intervention (Chapter 4). The client's blood pressure was also taken and recorded.

#### **8.412 The interview**

A semi-structured interview schedule was drawn up based upon the variables to be considered. Although this was a fairly detailed list of questions, the author was aware that the schedule should remain flexible to allow the client to expand on any issues covered during the interview session.

The researcher explained that there would be an interview session in which the individual's characteristics and experiences would be assessed as part of their 'Stress Profile'. Client A was instructed that stress management techniques would be selected on the basis of this 'Stress Profile', and delivered over a number of weeks by a psychologist and a physiotherapist. It was emphasised that the sessions would remain completely confidential. This was to encourage Client A to respond as accurately as possible to the standardised tests and during the interview.

The researcher interviewed Client A for a period of one hour. The interview was tape-recorded, based upon Fielding's (1993) proposition that writing notes could lead to loss of data, and result in "*a very stilted and peculiar interaction*" (p.146). Since the nature

of the present research meant that the client was being encouraged to speak about rather personal issues, the author felt that she should be seen to be attentive towards her. The client was also reassured about the confidentiality of the audiotape recording. After checking the transcription, it was agreed that the tape would be destroyed.

#### **8.413 The 'Stress Diary'**

Meichenbaum (1985) emphasised the importance of self-monitoring within his stress inoculation training. It was decided to include this within the present research in order to focus the client's attention on stressors and her response to them between sessions, and to quantify the level of the stress in the client's daily life. Another advantage of this approach is that it encourages clients to reflect on stressful events, and increases their understanding of the stress process.

Following the interview, Client A was taught how to keep a Stress Diary. She was instructed to record stressful events which she encountered on a daily basis. Charts were given to the client, on which she could record the nature of the events, including the dates and times on which they occurred, the people involved, and the actions occurring. The client was also asked to state what effect the events had had on her feelings, thoughts and actions immediately following the events. Finally, the client was asked to describe what actions she had used to try to cope with the events. The client was instructed to complete the diary on a daily basis, writing down events either immediately after or very soon after they had occurred. It was noted, however, that this may not always be appropriate, and therefore the client was asked to try to remember as much about the events as possible when completing the diary at a later time. In order to facilitate the client in completing the diary, an example which was of direct relevance to the client, was given on the response chart. This involved a work deadline being brought forward, which had resulted in panic, sweating, nervous trembling, feelings of "how am I to cope now", "I hate this job" and "I'll never get it done". In this example, the individual was seen as going home and moaning to the family and having

a few drinks in order to calm down. This example, in which the individual used maladaptive coping strategies to deal with the event was intended to encourage Client A to respond honestly to the diary. Similarly, a daily hassle was used as the stressful event, in order to emphasise to the client that they should include the everyday events which they experience and not simply major life events.

Arrangements for the treatment sessions were then carried out between the researcher, the client and the psychologist.

#### **8.42 The client's 'Stress Profile' : Designation of the intervention**

##### **8.4201 Nature of the stressors**

The client perceived the stressors which she was experiencing at that time, as falling into two distinct categories, those at work and those at home. At work, she felt that not only had she too much work to do, but she also had conflicting priorities. This occurred as a result of the three different roles which she was required to play within the one job. One role involved carrying out duties for her manager, which tended to take priority over other tasks. When such work arose, previous priorities had to be forsaken, making time management particularly difficult. In the past, she had tried to cope with this stressor of conflicting priorities by taking work home. However, she ceased to do this when she recognised that this in itself created its own set of stressors.

The author proposed that the client's ability to manage her time be considered within the stress management sessions. However, she argued that her time management problems at work were a function of her lack of assertiveness, since the client felt that she could not delegate work amongst her colleagues and refuse to change her timetable when she was pressurised to carry out additional work. The client reported that at the time of the original stress management course, she had begun to keep her

own timetable, and say *"Oh, I can't do that"*. However, she believed that other people prevented her from continuing with this strategy, because *"they make you do what they want you to do"*. She felt that *"It [assertiveness] doesn't fit with my personality, rightly or wrongly"*, and tended to equate assertiveness with aggression. She said, *"I think there's such a thin line between those two things, because if somebody is being assertive - I have a friend who sees herself as assertive, and I find her frightening...She's intimidating"*. However, the client expressed a desire to include assertiveness training within the programme, which the author suggested should be delivered in a very gradual way, dealing initially with the underlying factors preventing the client from being assertive.

Her other main work stressor involved a decision on changing jobs, as she had been offered a different post. She reported that *"I don't know that I personally am ready to move on"*. This was an issue which was worrying the client, causing her to feel very anxious. The trainer suggested that problem-solving skills be used to help the client to come to a decision about the change of job. She proposed that the client write down the pros and cons of staying in the old job or leaving and starting a new job.

At work, the client felt that she did not have much control over her job, since she was constantly under pressure by others to get the work done quickly. This lack of control made her feel that she was not doing any of the work correctly, which in turn made her feel less confident that she was able to do the work. She also found it stressful knowing that she could not leave the job, because *"For the first time in my life, my money has actually mattered"*. This focused on the client's financial problems at home, which felt she was she was not able to solve since her work was not highly paid. The client also felt that she lacked control over other problems at home, such as her teenage daughter who had been in trouble with the police. She reported that she had found it very difficult to come to terms with what her daughter had done, and didn't know how she could *"change it to sort of magically, you know, make it right again"*. She felt as though it was her fault that her daughter had got into trouble.

A study by Kagan, Kagan and Watson (1995) suggested that interpersonal awareness combined with physiologically based techniques are effective in situations where an individual lacks control. The author therefore proposed that a combination of cognitive restructuring and relaxation training would be effective in helping the client to cope with her situation at home and at work. Although these techniques would not enable the client to directly change the nature of the stressor, the author argued that they would allow her to perceive her problems in a more positive way, making her feel more in control of her situation at home and at work.

#### **8.4202 Timing of the intervention**

Research by Hofer, Wolff, Friedman and Mason (1972) suggested that there is a need for a review of the most effective coping strategies to be used over time, since the nature of the stressor may change over the period of the intervention. The author was therefore aware that although specific techniques were to be selected initially, there was a need for a continual review of the client's 'Stress Profile' during the course of the intervention, with possible changes being made to the techniques used. The nature of the client's stressors was therefore discussed at each treatment session.

#### **8.4203 Non-specific factors**

Although several researchers have suggested that the effects of stress management interventions are at least in part a result of non-specific factors (Murphy, 1984a; Sallis et al, 1987), few studies have considered what these factors may be. Murphy (1984a) suggested that factors such as the quality of the subject-therapist relationship, and the comfort of the subject during the treatment procedure may have positive effects on the outcome of an intervention. Clearly empirical research is required in order to support Murphy's (1984a) proposals. However, the author felt that it was appropriate within the

present research to ensure that there was a good subject-therapist relationship and that the treatment sessions were carried out in pleasant surroundings. Clearly, the former of these non-specific factors is more difficult to attain within a stress management intervention. However, the author felt that this had been achieved within the present research, since a good working and personal relationship had been established between the client and the psychologist over several years .

#### **8.4204 Compliance**

The client reported during the 'Stress Profile' interview that she had practised the techniques fairly regularly between sessions of the initial stress management intervention. She stated that *"It was fresh in your mind...and you were playing at doing it"*. Although the literature on the issue of practise within a stress management intervention is somewhat contradictory (Peters, Benson and Porter, 1977a; Carrington et al, 1980; Murphy, 1983; Kiecolt-Glaser et al, 1986), the author felt that encouraging practise between sessions would certainly not be detrimental to the efficacy of the programme. As Matteson and Ivancevich (1987) pointed out, principles of practice, feedback and motivation *"will not guarantee its [the programme's] success, but they will ensure a reasonable chance to improve an employee's knowledge of stress, skills to cope with stress, and attitudes toward stress"* (p.200).

However, it was apparent from the interview, that the client had had problems in maintaining practise of the techniques following completion of the initial course. She reported that although she had initially completed her diary on a weekly basis, she had ceased this time management technique within six to twelve months. Similarly, the client reported that she had practised the relaxation technique on a daily basis during the period of the course. However, she stated that she had gradually ceased to practise the technique, even though she noted that when a stressor was present, it made her think *"I do need to relax"* .

Client A reported that her motivation to practise the techniques *"comes and goes really"*. She stated, *"It's just too easy to stop doing it"*. She remembered how she had started to read a book on positive thinking during the previous year, and had stuck post-it stickers around her desk to remind her of the positive statements. She felt that this had been quite effective, but she had ceased to continue to practise this technique when a stressful event occurred in her life.

The client stated that upon being asked to participate in the present study, however, she had thought *"I do need it again, that would get me out of this sort of crisis that I was definitely having"*. She felt that simply being reminded of stress management training *"was enough to make me think one of the ways out of this hole I'm in here at work would be to actually sit down and...sort it out"*. She suggested that a refresher course every six months might be helpful in motivating her to continue to practise the techniques.

Client A reported that it was external influences which motivated her to practise the stress management techniques. These included factors such as other people reminding her of the techniques, and also completion of the Daily Hassles Scale, which she felt reminded her of techniques she could use to alleviate her stress.

She reported that although it was not difficult to practise the techniques at home, *"It's just having the..just deciding to do them...and just keeping it up, that's the hard bit"*. She felt that with the assertiveness training, although she did not practise it, it was not difficult to do, *"it's just that I don't seem to be able to do it"*. She said, *"It doesn't fit with my personality, rightly or wrongly"*.

In terms of factors which helped or hindered practice of the techniques, Client A felt that with time management, *"your place in the hierarchy just does to some extent determine whether or not you can do it, whether or not you can actually set aside the time"*. However, she felt that this was not so much an issue when she first began to use the

technique because *"you're doing it when you're sort of full of enthusiasm, and therefore regardless of the hierarchy you actually will say "I'm sorry, I can't do that this morning"*. She continued, *"but when it gets a bit further along the line, then it does become a bit more difficult, you lose that sort of impetus that you started with...and so it's much too easy to just think "Oh, fair enough argument"*. Client A reported that once this impetus had been lost then she tended not to continue with the technique, until a crisis *"actually set you back off again"*. This problem of continued practise of the techniques led the author to suggest that the present intervention should focus not so much on the principles of the techniques, but more on the implementation and practise of them within the client's working and home situations.

#### **8.4205 Expectation**

Goldstein (1960) found that symptomatic change in individuals awaiting psychotherapy was a function of favourable patient expectancy and non-specific professional intervention such as intake interview and psychological testing. The author would therefore argue that the probability of the intervention being effective in reducing the client's levels of stress was improved by the fairly positive expectations which the client expressed concerning the present intervention, during the interview. The client stated that she felt the intervention could be effective, since the initial course had *"put me back to thinking about it again, and actually thinking about me"*. The author would also argue that, based upon Goldstein's (1960) research, the likelihood of symptomatic change was increased by the presence of the initial 'Stress Profile' interview.

#### **8.4206 Locus of Control**

It has been suggested in the psychotherapy literature that externally-oriented individuals are more responsive to a directive approach as opposed to a non-directive

approach. (Abramowitz, Abramowitz, Roback and Jackson, 1974). Since Client A had scored highly on Rotter's (1966) Internal/External Locus of Control Scale during the initial stress management course, the author proposed that the psychologist should use a directive approach towards the treatment of the client within the present intervention. Much instruction would therefore be given by the psychologist to the client concerning the techniques to be used and the way the client should try to implement them into her life.

#### **8.4207 Type A behaviour**

Client A's scores on the Jenkins Activity Survey during the initial stress management course showed that she did not exhibit the type A behaviour pattern. The author therefore argued that it was not necessary to heed Suinn's (1982) advice that stress management training for type A individuals should be brief, rapid and intense.

#### **8.4208 Optimism**

It appeared from the interview that Client A had a pessimistic outlook on life. She reported that *"I'm a very negative thinker, no question about that"*. She had tried to practise more positive thinking by reminding herself of positive aspects about herself and her life. This was based upon her reading of books on cognitive therapy, which she had at home. She applied this to the problems she had been having with her teenage daughter, as to how she could perceive the situation in a different way, and how the situation could actually be worse. However, she felt that this positive thinking only worked for a short period of time, and reported that, *"You have to keep working at it, and it's hard to do just using a book"*.

Research by Avants, Margolin and Salovey (1991) found that pessimistic individuals gained more in terms of anxiety reduction following a stress management programme than optimists. The author suggested in Chapter 2 that there may have been more scope for change amongst the pessimistic individuals in this study, since the pessimists had reported higher levels of anxiety prior to participation in the intervention than the optimists. The author therefore argued that the client's pessimistic outlook on life would not hinder the efficacy of the intervention, and that her high levels of stress and anxiety prior to participation meant that there was much scope for change. The author suggested that cognitive restructuring be used to help the client to have a more optimistic outlook on life, particularly focusing on ways of maintaining positive thinking following completion of the intervention.

#### **8.4209 Gender**

Little evaluative research of stress management interventions has considered this individual variable as a determining factor in the efficacy of a stress management programme. Where research has found differences between the sexes concerning the outcome of an intervention, explanations have not been forthcoming. (Gronningsaeter et al, 1992) The author therefore argued that further comparative studies of stress management programmes between the sexes are required before this individual variable is considered as a determining factor in the efficacy of a programme.

#### **8.421 Familiarity with the techniques**

Research by Gronningsaeter et al (1992) found significantly greater improvements on a number of physiological indices of stress by female subjects following aerobic

exercises, relative to the male subjects. The authors suggested that the differences in the results between the sexes may be explained in part by the women's familiarity with the exercises. The author therefore suggested that the efficacy of the present intervention would be improved by the client's familiarity with many of the techniques, particularly with the cognitive restructuring as a result of her own interest in this technique.

#### **8.4211 Coping style**

Within the non-clinical domain, there does not appear to have been any research which has considered the role of an individual's coping style in the efficacy of a stress management intervention. However, the author felt that it was an important individual variable which must be considered within the selection and implementation of a stress management intervention. She would argue that it may prove very difficult for an individual to learn and implement techniques which are very different to coping strategies which they would normally use.

During the 'Stress Profile' interview, the client reported that the only problem-focused coping technique which she used regularly was time management, in order to try to cope with the conflicting priorities at work. She had attempted to divide her week into sections, and to assign each of the different tasks which she was required to undertake, to a particular section. She felt that this had been quite effective, reflected by the need for her not to take work home. She had also begun to organise her paperwork in a more orderly manner, and said, "*I do feel slightly better about that*". In terms of workload, she reported that although the job always entailed lots of work, her system of organisation had meant that she was working more effectively.

However, it was evident that in general, the client used mostly emotion-focused coping techniques to deal with the stress in her life. At home, Client A felt that the only way

she coped was with the help of her tranquillisers. She said, *"Not a very good way of coping, but it's a way of coping"*. She reported that she had been taking tranquillisers for a very long time, and had continued to get a repeat prescription. However, she realised that the time would come when the doctor would refuse to give her a prescription and she would have to go and see him/her. This was an eventuality which Client A did not appear to be looking forward to. The only other way in which Client A felt she coped at home was by coming to work, *"to try and put it [her problems at home] out of my head for a while"*.

The author suggested that the client would find it difficult to implement problem-focused coping techniques within her life, due to her reliability upon emotion-focused coping techniques. The client reported, for example, that she had not used the assertiveness technique since the Follow-up Review of the initial stress management course, because *"I just always think to myself "I can't do that" "*. The author argued that since the client did not regularly engage in problem-focused coping techniques, she may find such techniques anxiety provoking. The author therefore suggested that problem-focused coping techniques, such as assertiveness training, be delivered in a very gradual way to the client during the period of the intervention, reducing the likelihood of her becoming anxious.

#### **8.4212 Response to a stressor**

The stress experienced by Client A was clearly in part due to her irrational style of thinking (Ellis, 1962). Based upon the specificity of effects literature, the author argued that cognitive restructuring would therefore be an appropriate technique to be used as part of the intervention.

Client A reported that when stressed, she gritted her teeth, and tensed her shoulders both during the day and at night time in bed. She stated that *"those shoulders just won't go down, they will go down, they just won't stay down"*.

The client also reported that she responded to stress by continually worrying about problems in her life, both at home and at work. She stated that she sometimes felt that *"the worry for the next thing is pushing out the worry you were worrying about"*.

The author therefore argued that, according to the specificity of effects literature, relaxation training would be effective in helping the client to relax her shoulders. The author also proposed that, by focusing on her physical state, the relaxation training may also enable the client to become more mentally relaxed, thus helping to prevent her from continually rehearsing the stressful events in her life.

#### **8.4213 Physical and psychological well-being**

Kagan, Kagan and Watson (1995) found that a combination of techniques directed at coping-with-people (for example assertiveness training) and interpersonal awareness (for example cognitive therapy), and also a combination of physiologically based techniques (for example relaxation) and techniques directed at coping with people were more effective for highly depressed individuals than techniques which were either directed at physiological reactions or at coping-with-people. This research highlights the fact that combinations of techniques may have interactive effects, and may be more effective than a singular technique. Considering that Client A scored highly on the severe depression factor of the General Health Questionnaire-28, the author argued that a combination of assertiveness (coping-with-people), cognitive restructuring (interpersonal awareness) and relaxation (physiologically based technique) would be effective in reducing the client's levels of stress.

### **8.4214 Self-esteem**

Rector and Roger (1994) suggested that individuals with low self-esteem are likely to become more stressed in a given situation than an individual with higher self-esteem. It could be argued that individuals with low self-esteem find a situation threatening because they feel that they have not got the internal resources to deal with it. Indeed, Client A reported that she lacked self-confidence, and believed that this made the stress worse. She reported "*I never seem to think I can do it right*", and felt that a cyclical process occurred in which the stress affected her self-confidence, which in turn affected the stress in her life. She commented that she rarely gave herself credit for things that she had done, and if she did, she thought to herself "*Who do you think you are?*". She reported that she was unsure whether it was the stress which upset her, or her lack of self-esteem, and felt that she would like to consider this within the treatment sessions. The author felt that it was necessary to focus on the client's low self-esteem during the assertiveness training, since it appeared that this was a barrier to the effective implementation of this technique.

### **8.43 Summary of the intervention**

The author proposed that the stress management intervention designed for Client A would therefore include :

- (1) **assertiveness training**, focusing on the client's low self-esteem. This should be delivered in a very gradual way, so as not to be anxiety-provoking.
  
- (2) **relaxation training**, selecting those techniques which the client felt were most effective in relieving tension in her shoulders. The session would also be used to focus on cues which would signal practise of the technique, in order

to maximise the likelihood of continued practise following completion of the intervention.

(3) **cognitive restructuring**, focusing on the way in which the client could perceive her stressors in a less rational and more positive way.

(4) **time management**, focusing on problems of prioritising at work.

(5) **problem-solving skills**, considering the pros and cons of leaving the old job and starting a new one

#### **8.44 Second baseline session of the first intervention**

##### **8.441 Completion of the psychological measures of stress**

The second session commenced with the completion of the Daily Hassles and Uplifts Scales by Client A.

##### **8.442 Reconceptualisation of the client's 'Stress Profile'**

The second session between the researcher and the client was used to ensure that the information obtained from the interview by the researcher was a true reflection of the client's perception of her stress and experiences. The researcher outlined the main issues, which she perceived as developing out of the interview, to the client. The client was then given the opportunity to comment on these issues and the researcher's perception of them.

The issue concerning the researcher's role within the process of data generation has been considered widely by those in the qualitative field of research. (Banister et al, 1993; Fielding, 1993). Banister et al (1993) noted some of the threats to gaining an

accurate account of an interviewee's experiences. These include over-interpretation and misinterpretation, whereby the data is *"manipulated to produce meanings that were not 'originally' there"* (p.64). As Banister et al (1993) argued, within an ethnographic model of interviewing, disagreement between the researcher and the interviewee would invalidate the researcher's view of the data. Within the present research, it was particularly essential that there was agreement between the researcher and the client concerning their perceptions of the data from the interview, since the design and style of implementation of the stress management intervention was to be based upon such data.

The client had reported during the 'Stress Profile' interview that she felt she lacked control over both her situation at work and at home. The author therefore felt that it was particularly important that the client was given the opportunity to comment on the techniques selected by the author. She argued that this would be a first step in empowering the client, and allowing her to feel a sense of control over her life.

#### **8.443 Introduction to Stress**

The results from the Review Questionnaire, used in the initial stress management intervention, found that the participants as a whole had very much enjoyed the 'Introduction to Stress' session and had found it particularly useful. The second session of the present intervention finished with instruction on the concept of stress and stress management given by the psychologist to the client. The author argued that this would allow the client to once again focus on the meaning and consequences of stress, and also feel that she was gradually being introduced to the principles of stress management.

#### **8.444 Homework**

As a homework session, the client was asked to write out the pros and cons of making or not making a decision to leave her present job. The client had previously reported in the interview that she had been delaying making this decision, as it would have major consequences on her life.

Client A completed the Daily Hassles and Uplifts Scales three days prior to participation in the treatment sessions of the stress management intervention.

#### **8.445 The treatment sessions**

The treatment sessions were carried out over four weeks, by the psychologist. Following each session, the psychologist gave feedback to the researcher concerning the techniques used in the sessions and any issues which had arisen from the sessions. The psychologist was a qualified counsellor and trainer in stress management techniques.

The client completed the Daily Hassles and Uplifts Scales once a week during the period of the treatment sessions.

#### **8.4451 Treatment session 1**

During the first treatment session, the psychologist focused on the client's low self-esteem. It emerged from a discussion between the client and the psychologist that the client's low self-esteem caused her to feel that she could not be assertive with managers because they were on a more superior level to her. It appeared that she did not have any difficulty being assertive with her colleagues because she felt that she was on an equal basis to them.

The psychologist then enquired as to where the client felt her lack of self-esteem originated from. It appeared that it was based upon her role within the family, and her relationship with her mother. Although she had been an intelligent child, she had never been given the opportunity to succeed. Client A's cognitions served to reinforce her low opinion of herself. She found it very difficult to say anything positive about herself without following it with a conditional statement. Client A was very judgmental of herself, and very much a perfectionist in her work. She reported that she did not like to delegate work, because she felt that she would be judged poorly by others if she did not do it herself. She felt that it would appear to look as though she was not capable of handling the work herself. Similarly, she did not like to take work home because she felt that this might be seen as her failure to cope with the workload during working hours. Client A reported that was concerned about other's opinions of her, which again reflected her own lack of self-worth.

Although, originally, assertiveness training was assigned as the technique to treat Client A's lack of assertiveness with her manager, the psychologist felt that cognitive restructuring was required to deal with the client's underlying lack of self-esteem. The psychologist identified that the client's perfectionism and low self-esteem were barriers to her being assertive at work. The client was made aware of these barriers, so as to gain a better understanding of why she was not assertive at work.

Client A's habit of constantly worrying was also considered. She reported that her mother had been a worrier, and believed that she had inherited this bad habit from her. However, the psychologist explored this issue of heritability of characteristic traits with Client A by considering the differences between Client A and her mother. Client A was able to suggest a number of her own character traits which her mother had not possessed, and by doing so realised that because her mother was a worrier, it did not mean that she had to be a worrier also. Client A was made aware that by worrying, she was failing to use effective problem solving strategies.

The psychologist suggested to the client that she identify her major stressors and problem solve for each. The client reported that she felt that she must cope at work. However, the psychologist questioned how realistic this belief was, based upon the size of her workload. Upon the client listing all of her major stressors, the psychologist also questioned how realistic it was that she should be able to cope successfully with this amount of stress. The client reported that she was worried about her performance in a forthcoming job interview. The psychologist explored this issue with her, by asking her what her performance in previous interviews had been like. The client reported that she had never performed badly in an interview, and therefore could see that there was no rational basis for her fears.

This first treatment session also focused on her perceptions of her teenage daughter's problems. She felt that she was unable to trust her daughter, which she found very stressful. It emerged from the session that the client constantly reinforced her belief about not being able to trust her daughter through her maladaptive cognitions. She reported that she had thoughts concerning her inability to trust her daughter at least twenty times a day. It therefore appeared that Client A's daughter was unable to earn her mother's trust because her cognitions about her daughter had become very fixed. This was pointed out to Client A during the session, as an issue to consider.

For her homework, the client was asked to write down on a half a page of A4 paper, all the positive things she could think about herself, with no conditional statements. She should then put each of these statement on cards, to be used as part of the cognitive restructuring technique.

## 8.4452 Treatment session 2

Treatment session 2 began by considering the client's homework. Although she had been able to list a few positive statements about herself, she had found it very difficult to do so without an additional conditional statement. This was indicative of the client's low self-esteem, and her belief that she was not as good as authoritative figures at work.

The psychologist therefore allowed the client to consider in more detail where her low self-esteem had originated from. In the previous session, the client had identified her problematic relationship with her mother. During the second session, the psychologist taught the client different ways of looking at her history. The client came to realise that she had been the successful one in the family, even in the face of adversity.

The client then considered her feelings towards a new job which she intended to apply for. She reported that she had mixed feelings about the job, although she did feel that she would be able to cope with it. The psychologist and client discussed how easy it was to think negatively, and of ways of changing the client's habit of thinking in such a manner. The client generated sayings which she could use to try to overcome her negative cognitions.

The client then discussed her feelings of pressure to complete all her work if she left her present job. She considered how time management might be useful in helping her to prioritise her tasks. She divided her jobs into items which she could complete, items which it was not possible to complete, and finally items which she could pass on to others with notes attached. By considering her tasks in this way, the client felt that she had reduced her workload.

The psychologist also used cognitive restructuring to suggest to the client that she did not have to finish all her work before she started a new job. The client had been

worried about how it would reflect on her if she did not complete everything upon leaving her present job. She was anxious that people might be critical of her leaving. The psychologist asked the client whether it was possible to stop others talking negatively about her. The client felt that there was nothing she could do. She discussed why people might criticise her for leaving, and considered the situation in terms of others leaving a job. The client could understand that people might criticise others for leaving, because they were jealous, and was therefore able to apply the same logic to her own situation.

### **8.4453 Treatment session 3**

During this session, the client met with the physiotherapist who had delivered the Simple Relaxation (Mitchell, 1988) technique during the initial stress management intervention. They discussed the relaxation procedures, and selected techniques which the client felt were most beneficial to her. Problems in implementing these exercises were discussed, with possible solutions being offered.

### **8.4454 Treatment session 4**

One of the client's major stressors over recent weeks had been her inability to refuse additional work which was not part of her job title. She felt that she could not delegate the work, in case it reflected badly on her. The psychologist therefore suggested that the client use some problem solving strategies by making a rule not to accept any additional work, and also by scheduling certain times for specific tasks.

The client reported that during the previous week she had been very assertive with one of her managers, which had made her feel positive about herself. However, she still felt that she was unable to be assertive with her direct manager. In order to tackle the

client's lack of assertiveness, the psychologist proposed that the client should try to increase her self-esteem. The psychologist asked the client what rewards she had in her life at present. The client could not think of any.

The client therefore considered what she could do to try to increase her self-esteem. She reported that she had considered doing a course at the Open University. She also discussed the possibility of her going on holiday, but felt that financially it may be a problem. However, she did think that she could afford to go away for a weekend on her own, which she considered a luxury. She realised that she needed positive events in her life in order to feel better about herself.

Thoughts then turned to her situation with her teenage daughter. The psychologist explored with the client ways in which she could possibly begin to trust her daughter again, and discussed the issue of taking the chance of trusting her. The client considered the actions of her daughter in recent weeks, and how she had interpreted them. For example, when she had been on study leave one day, the client's daughter had cleaned and tidied the house, taken the laundry out of the machine and had intended to cut the grass. Upon reflection, the client reported that she had been unsure of how to interpret her daughter's actions. The psychologist suggested that the client's daughter had been showing the client that she loved her by trying to take some of the pressure off her. The psychologist also commented on how difficult it might be for the client's daughter to verbally apologise for her actions in the past, since it was not part of their family culture to apologise. They considered other ways in which the client's daughter had shown behaviourally that she was sorry for her actions, and that she wanted to make a fresh start. She had agreed to come and live with the client and her husband in their new house. The psychologist suggested to the client that she negotiate a contract of house rules with her daughter, which would include rules for the whole family. The psychologist discussed with the client ways of looking at the whole business of moving house as a positive event, in that it could be a fresh start for the whole family.

The client's homework from this session involved her considering the use of cognitive restructuring in terms of her thoughts about possibly leaving her present job and starting a new one.

The fourth treatment session ended with the client considering her thoughts about moving house. The psychologist asked the client to try to think about the move in a more positive way, by considering it as a fresh start for the family.

With the agreement of the client, this fourth treatment session of the intervention was observed, by a consultant psychotherapist, who was trained in methods of stress management and cognitive-behaviour therapy. This was to ensure that the trainer was delivering the techniques correctly.

#### **8.4455 Treatment session 5**

During the fifth treatment session, the client considered the use of role rehearsal in preparing for her new job. She was aware that in order to be more assertive, she needed to use cognitive restructuring to change the way she saw herself. She considered the way in which she was perceived by others as obliging at work, and how this meant that she did not create any boundaries. She realised that people felt that she was willing to do any work, and would never refuse. The client felt that she acted in this way because she thought people would like her better if she did something for them. However, the psychologist suggested that rather than perceiving the client's obligingness as a positive trait, people may criticise her for it, and see her as a 'doormat'. The psychologist therefore suggested that she consider herself as being obliging, but within limits.

The session continued by considering the client's worries about her new job. The psychologist asked the client what problem solving strategies she could use in order to

plan for this forthcoming event. The client reported that she could contact the woman that she would be working with, and meet up to discuss boundaries at work.

Client A also reported that she was still worried about not having completed all tasks when she left for her new job and how her colleagues would cope with the workload. The psychologist pointed out to the client that there was nothing she could do to influence the situation at work, and therefore focused on the futility of the client's worries about it. The client's worries about her ability to cope with her new job were also discussed.

The psychologist considered the way in which the client responded to the Daily Hassles Scale, and how her responses reinforced her belief that she was a negative thinker. The client reported that she initially responded to items as being hassles, but when she had thought again about them, she had realised that they may in fact not have been very stressful. However, the psychologist pointed out that her initial thoughts were indicative of her habit of thinking in a negative way.

The client reported that she had decided to go away on holiday with her husband, but was anxious about leaving her children on their own. The psychologist pointed out that this was an opportunity for the client to try to trust her children.

For her homework, the client was asked to make lists of things she could do to make her life less stressful. The psychologist suggested that she make the phone call to her future colleague at her new job. She was also asked to consider ways in which she could make time for herself whilst she was on holiday from her job. She considered that she could book a massage and a facial for herself, have her hair cut, and arrange to meet friends for lunch. She felt that she would have to be more assertive with her family, in order that she could refuse their demands and make time for herself. She was unsure about the Open University course, but stated that she would obtain some

literature on courses at her local University. She also considered learning to drive, which she had previously felt she lacked the confidence to do.

The client was also asked to try to conceptualise her situations at work and at home in a more positive way. For example, the psychologist suggested to the client that she perceive her moving house as a challenge, by considering ways in which she could make the house look attractive.

The psychologist noted that there was an issue concerning the client's motivation for carrying out these changes. The psychologist felt that the client was not undertaking these changes for herself, but in order to please the psychologist. This was certainly an issue which would need to be considered further in terms of the client's practise of the techniques following completion of the intervention.

#### **8.45 Short-term evaluation of the intervention**

The initial intervention was evaluated using the client's scores on the Daily Hassles and Uplifts Scales as dependent variables.

##### **8.451 Period of evaluation**

The period over which the intervention was evaluated consisted of three baseline scores prior to any intervention, and four scores during the period of the treatments. Ideally, the author would have wished to follow Baer, Wolf and Risley's (1968) recommendations that a baseline measurement be continued over time "*until it's stability is clear*" (p.94). However, limitations were placed upon this procedure, both in terms of the time span of the study, and of the practical issue concerning the frequency with which the client should be required to complete the psychological measures of

stress. The author therefore proposed that a baseline of three scores be used in the present research.

#### **8.452 Statistical analyses**

Atiqullah (1967) stated that within group research, statistical tests are usually able to handle the violation of various assumptions. However, Barlow and Hersen (1984) reported that if the assumption of independence-of error-components is seriously violated, t and F tests are deemed inappropriate. They stated that within group research, the independence-of-errors components are not violated when subjects are randomly assigned to groups. However, Barlow and Hersen (1984) reported that when repeated measures are used over time, the assumption of independence-of-errors is often not met. This is reflected in the correlation between successive scores, such that the data is serially dependent.

In order to carry out a t-test within a single case study, it was therefore necessary to determine whether successive scores correlated with one another, and therefore whether the data was serially dependent. This was assessed by considering autocorrelation within the data. As stated by Barlow and Hersen (1984), *"autocorrelation refers to a correlation (r) between data points separated by different time intervals (lags) in the series"*. The correlation coefficient that reflects serial dependency can be determined from the autocorrelation of lag 1. This is calculated by considering the degree of association between the first and second scores, the second and third scores, and so on. Where the autocorrelation was not significant, t-tests could be carried out to consider the difference in the mean of the client's baseline scores and the mean of her scores during the treatment period.

A series of autocorrelations of lag 1 were carried out to determine whether there was serial dependency within the data. It was found that the autocorrelations for the client's frequency scores on the Daily Hassles and Uplifts Scales were not significant, but that the autocorrelations of the client's severity scores on the Daily Hassles and Uplifts Scales were significant. T-tests were therefore carried out using the client's frequency scores on both Scales, but not on her severity scores.

#### **8.453 Results of the short-term evaluation of the intervention**

##### **8.4531 The client's frequency scores on the Daily Hassles Scale**

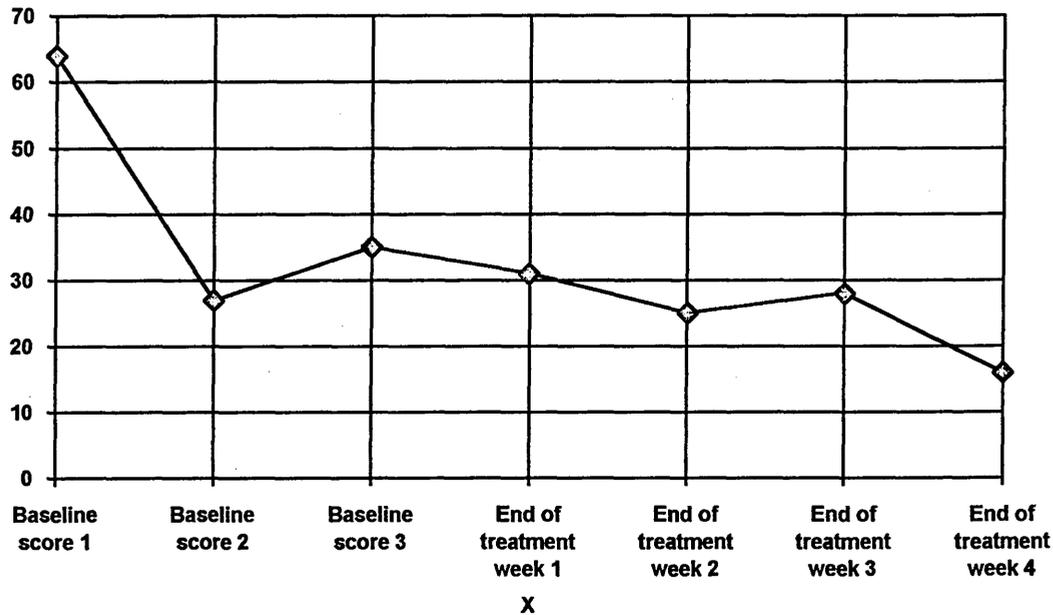
Since there was no serial dependency between the client's frequency scores on the Daily Hassles Scale, a t-test could be carried out. Table 8.4531 summarises the mean and standard deviations of the client's frequency scores on the Daily Hassles Scale. The t-test found that there was no significant difference between the mean of the client's frequency scores on the Daily Hassles Scale during the baseline period and her scores during the treatment period. ( $t = 1.67$ ,  $d.f. = 5$ ,  $p > 0.05$ ).

**Table 8.4531 Mean and standard deviations of the client's frequency scores on the Daily Hassles Scale**

<b><u>Time of measurement</u></b>	<b><u>No. of cases</u></b>	<b><u>Mean</u></b>	<b><u>Standard Deviation</u></b>
<b>Baseline</b>	<b>3</b>	<b>42.0</b>	<b>19.468</b>
<b>Treatment</b>	<b>4</b>	<b>25.0</b>	<b>6.481</b>

Graph 8.4531 summarises Client A's frequency scores on the Daily Hassles Scale during the evaluative period.

Graph 8.4531 summarises Client A's frequency scores on the Daily Hassles Scale during the evaluative period.



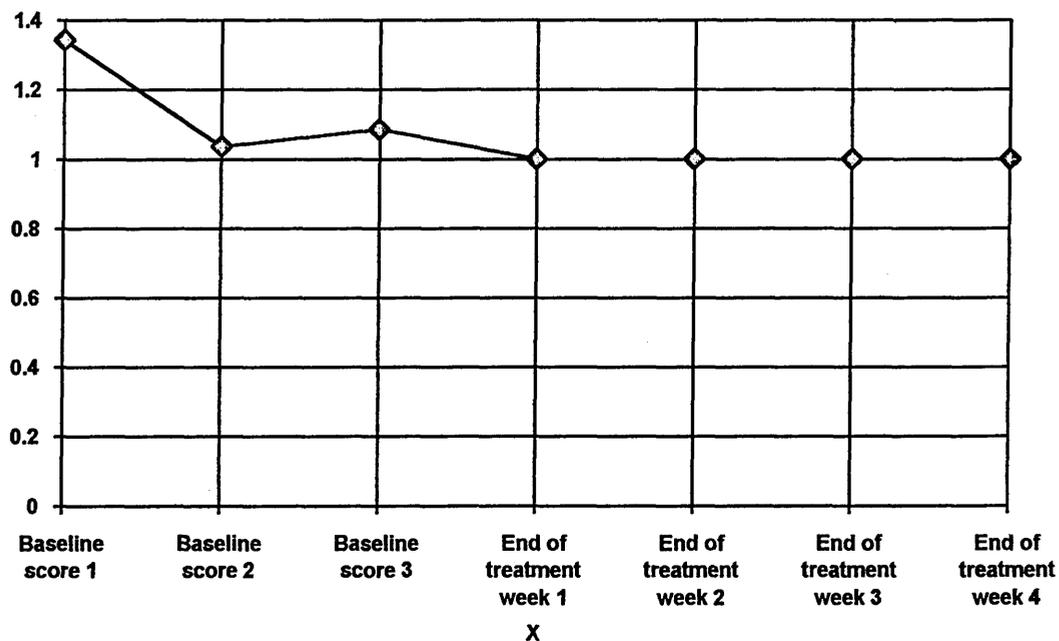
**Graph 8.4531 Client A's frequency scores on the Daily Hassles Scale**

Graph 8.4531 shows that there was a considerable decrease in the client's frequency scores on the Daily Hassles Scale following the initial interview between the client and the researcher (the 'Stress Profile'). There then followed a slight increase in her scores towards the end of the baseline, with a general decrease in scores during the period of the treatment.

**8.4532 The client's severity scores on the Daily Hassles Scale**

A t-test could not be carried out on the client's severity scores on the Daily Hassles Scale due to serial dependency between her scores over the period of the baseline and the treatment sessions.

Graph 8.4532 summarises the client's severity scores on the Daily Hassles Scale over the evaluative period.



**Graph 8.4532 Client A's severity scores on the Daily Hassles Scale**

Graph 8.4532 shows that there was a considerable decline in the client's severity scores on the Daily Hassles Scale after the initial 'Stress Profile' interview, followed by a slight increase towards the end of the baseline. There was a very slight decrease in the client's scores following the first week of treatment, with a stability in the scores being maintained over the final three weeks of treatment.

**8.4533 Client A's frequency scores on the Uplifts Scale**

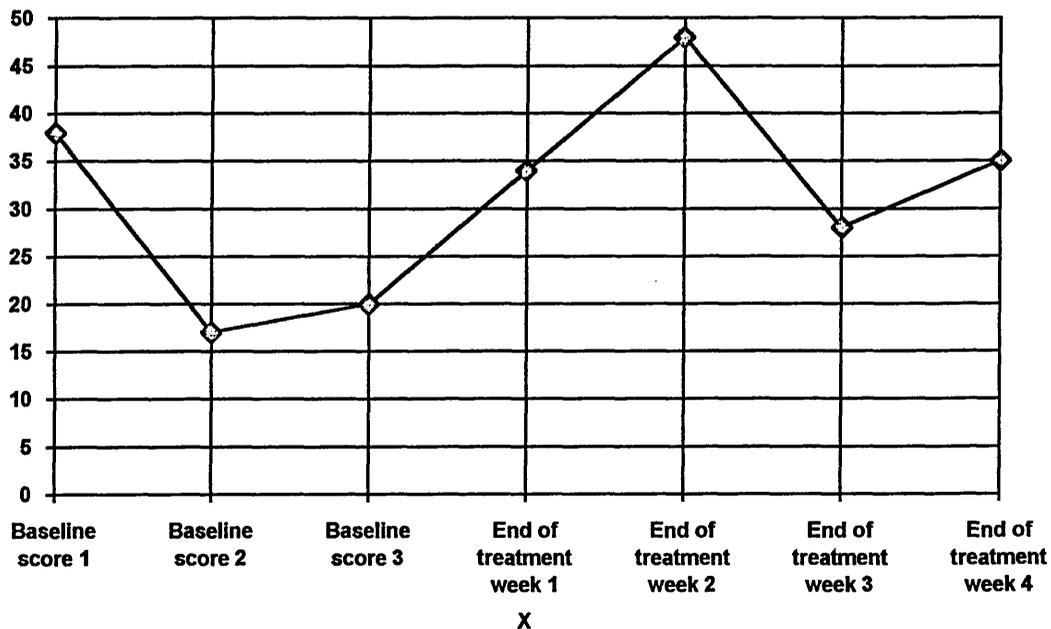
Since there was no serial dependency between the client's frequency scores on the Uplifts Scale, a t-test could be carried out. Table 8.4533 summarises the mean and standard deviations of the client's frequency scores on the Uplifts Scale. The t-test found that there was no significant difference between the mean of the client's

frequency scores on the Uplifts Scale during the baseline period and her scores during the treatment period. ( $t = -1.52$ ,  $d.f. = 5$ ,  $p > 0.05$ ).

**Table 8.4533 Mean and standard deviations of the client's frequency scores on the Uplifts Scale**

<u>Time of Measurement</u>	<u>No. of cases</u>	<u>Mean</u>	<u>Standard Deviation</u>
Baseline	3	25.0	11.358
Treatment	4	36.25	08.421

Graph 8.4533 summarises the client's frequency scores on the Uplifts Scale over the evaluative period.



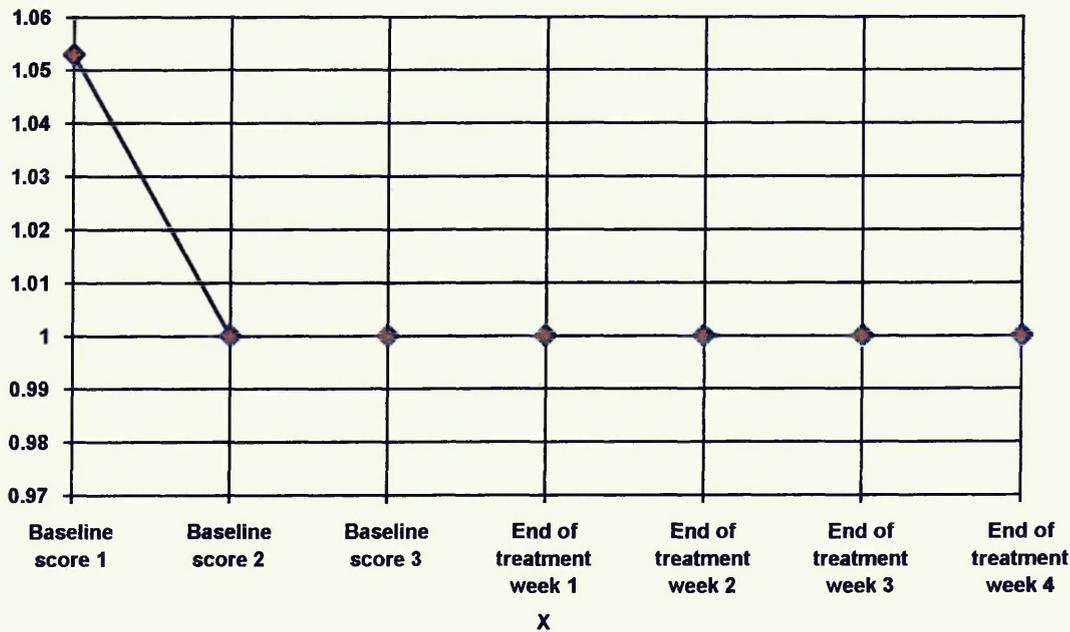
**Graph 8.4533 Client A's frequency scores on the Uplifts Scale**

Graph 8.4533 shows that there was a considerable decline in the client's frequency scores on the Uplifts Scale after the 'Stress Profile' interview, with a slight increase towards the end of the baseline. During the first two weeks of treatment, there was a gradual increase in the client's frequency scores on the Uplifts Scale, followed by a steep decline during the third week of treatment. However, by the fourth week of treatment, client A's frequency scores on the Uplifts Scale had increased to a level just below that of the initial baseline score.

**8.4534 Client A's severity scores on the Uplifts Scale**

A t-test could not be carried out on the client's severity scores on the Uplifts Scale due to serial dependency between her scores over the period of the baseline and treatment sessions.

Graph 8.4534 summarises the client's severity scores on the Uplifts Scale over the evaluative period.



**Graph 8.4534 Client A's severity scores on the Uplifts Scale**

client's scores was then maintained towards the end of the baseline, and throughout the treatment period.

#### **8.46 Discussion of the results from the short-term outcome of the first intervention**

It is interesting that there was a decline in the client's frequency and severity scores on the Daily Hassles and Uplifts Scales following the 'Stress Profile' interview. Since Client A had not received any formal treatment during this interview, the decrease in the client's scores during the initial phase of the baseline period may have consisted of a placebo effect. However, the reduction in the client's scores may have also been due to factors related to the interview process, namely to the client being allowed to ventilate her experiences and emotions to the researcher. Previous research has indeed shown that self-disclosure can have positive moderating effects on an individual's levels of stress, as reflected by immune functioning. (Pennebaker, Kiecolt-Glaser and Glaser, 1989). In the research, fifty undergraduate students wrote for twenty minutes on four consecutive days about either traumatic or difficult events, or about trivial topics. It was found that those students who wrote about traumatic events showed better blastogenic responsiveness and had few health centre visits than those who wrote about trivial matters. Furthermore, the greatest effects in blastogenic responsiveness were found amongst those students who had not previously disclosed such information to others.

It was found that following the 'Stress Profile' interview, the client's perception of the frequency and severity of uplifts in her life had decreased. It is difficult to determine whether this change occurred as a result of the interview process, or whether the client simply experienced fewer uplifts in her life following the interview. In order to assess whether the client had actually encountered fewer uplifts in her life, data would need to

be obtained from objective sources such as the client's family and colleagues. This would require considerable time and effort by those involved in producing such data, and was thought not to be appropriate for the purposes of the present research. However, given that the interview appeared to result in a reduction in the client's scores on the Daily Hassles Scale, the author would argue that it was unlikely that the interview experience would lead the client to perceive fewer and less severe uplifts in her life. Therefore, the author would suggest that the client objectively encountered fewer and less severe uplifts in her life during the period following the interview.

In the light of the reduction in the client's frequency and severity scores on both the Daily Hassles and Uplifts Scales during the baseline period, it would have been appropriate to have extended the baseline until the client's scores were consistent. Unfortunately the limitations surrounding the duration of the study meant that only three baseline scores were possible. However, the author would argue that future studies should endeavour to extend the baseline until consistency in a client's scores is apparent.

The t-tests carried out on the client's frequency scores on the Daily Hassles and Uplifts Scales found that there was no significant change in her scores between the baseline and treatment periods. The client's severity scores on the Daily Hassles and Uplifts Scales revealed an overall decline in scores during the baseline phase, with a stability in the scores being maintained over the treatment period.

It would therefore appear that there were no significant changes in the client's perception of the frequency or severity of daily hassles or uplifts in her life following the intervention.

However, although not statistically significant, there was an overall decline in the client's frequency scores on the Daily Hassles Scale during the treatment period. The author would argue that, over the short-term, it was unlikely that there would have been a

significant decrease in the client's levels of stress. Behaviour change, particularly where a client exhibits strongly engrained habits, as in this case, is likely to be difficult and somewhat anxiety-provoking during the initial few weeks of treatment. A client has to learn new behaviours, which may be rather alien to them, and perform them within their already stressful daily lives. Furthermore, the client reported that she expected to experience a number of major life changes shortly after the period of the intervention, including a change of job and a house move. In the light of the client's anxiety about these events, and the requirements for behaviour change made upon her, the author considered the overall decline in the client's frequency scores on the Daily Hassles Scale during the treatment phase, as a positive reflection of the effects of the stress management intervention.

#### **8.47 Follow-up to the first intervention**

Six weeks following cessation of the first intervention, the client completed the Life Experiences Survey, the Daily Hassles and Uplifts Scales and the General Health Questionnaire.

The follow-up to the first intervention used the client's final scores during the treatment period, and her scores six weeks following completion of the treatment as the observation period for assessment of any change in the client's levels of stress. Since each of these measures consisted of a single score, it was not possible to carry out t-tests to consider any changes occurring during the period of the follow-up. The clinical significance of the results was therefore used as the basis for assessing the degree of change which occurred over this period of time.

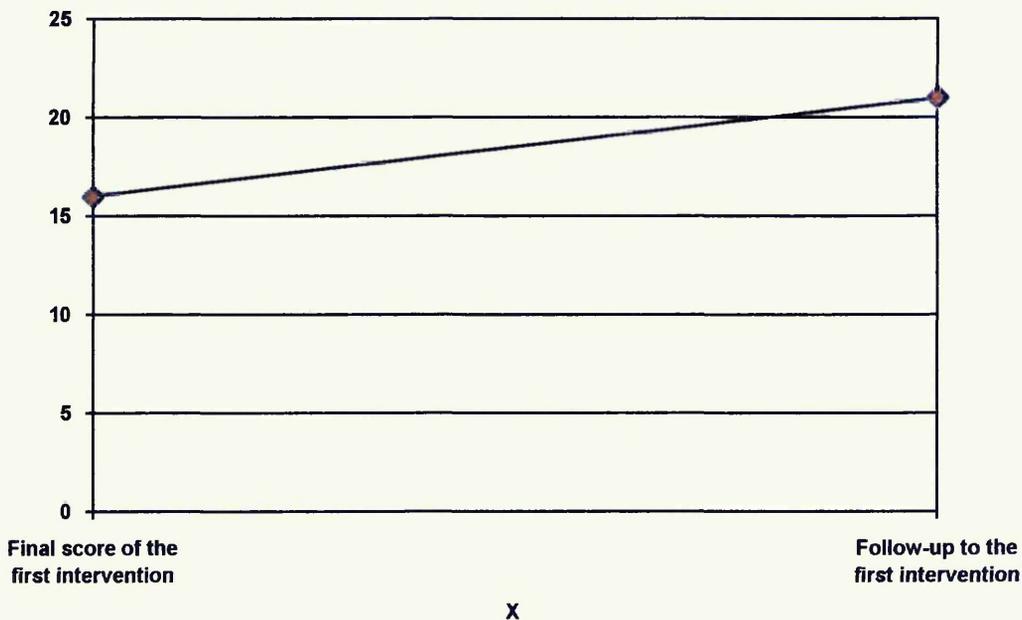
### 8.471 Client A's scores on the Daily Hassles Scale

Table 8.471 summarises the client's frequency and severity scores on the Daily Hassles Scale during the period following the first intervention to the time of the follow-up six weeks later.

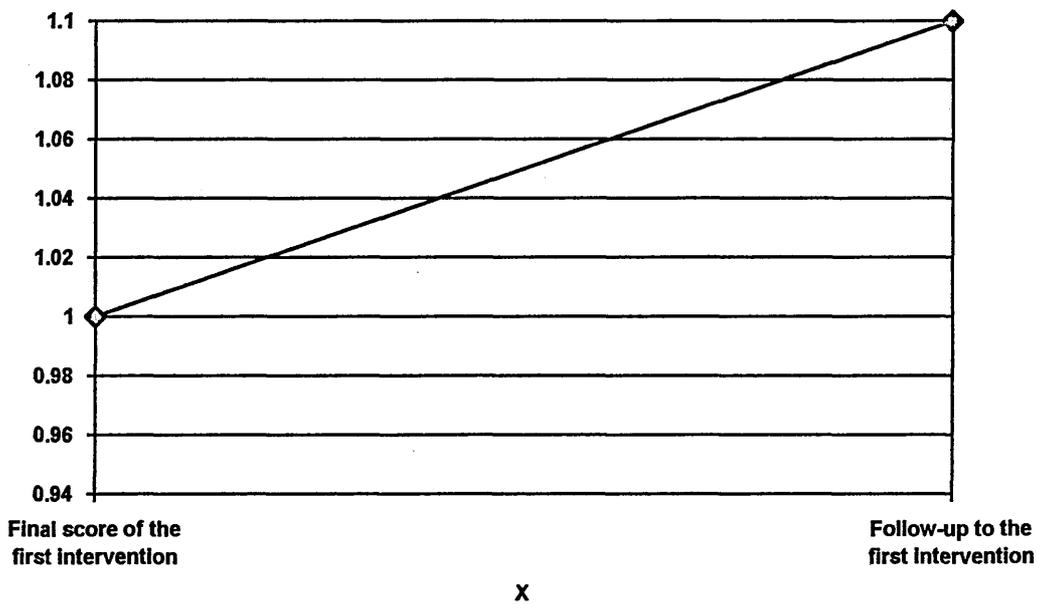
**Table 8.471 Client A's frequency and severity scores on the Daily Hassles Scale during the follow-up**

<b><u>Time of measurement</u></b>	<b><u>Client's frequency score</u></b>	<b><u>Client's severity score</u></b>
<b>Upon completion of the first intervention</b>	<b>16</b>	<b>1.00</b>
<b>Follow-up</b>	<b>21</b>	<b>1.10</b>

Graphs 8.4711 and 8.4712 summarise these results.



**Graph 8.4711 Client A's frequency scores on the Daily Hassles Scale over the period of the follow-up**



**Graph 8.4712 Client A's severity scores on the Daily Hassles Scale over the period of the follow-up**

It is clear from both Graphs 8.4711 and 8.4712, that there was an increase in the client's frequency and severity scores on the Daily Hassles Scale during the period of the follow-up. However, her frequency score was only slightly higher than that of the normal population at the follow-up (Normal population frequency score = 20.5) and her severity score was lower than that of a normal population (Normal population severity score = 1.46).

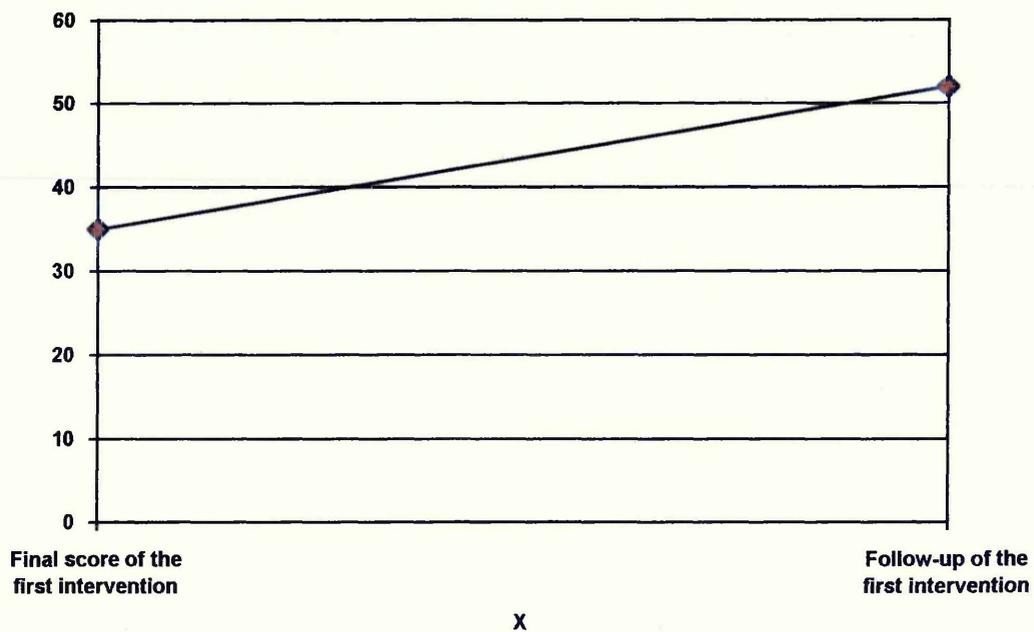
**8.472 Client A's scores on the Uplifts Scale**

Table 8.472 summarises the client's frequency and severity scores on the Uplifts Scale during the period following the first intervention to the time of the follow-up six weeks later.

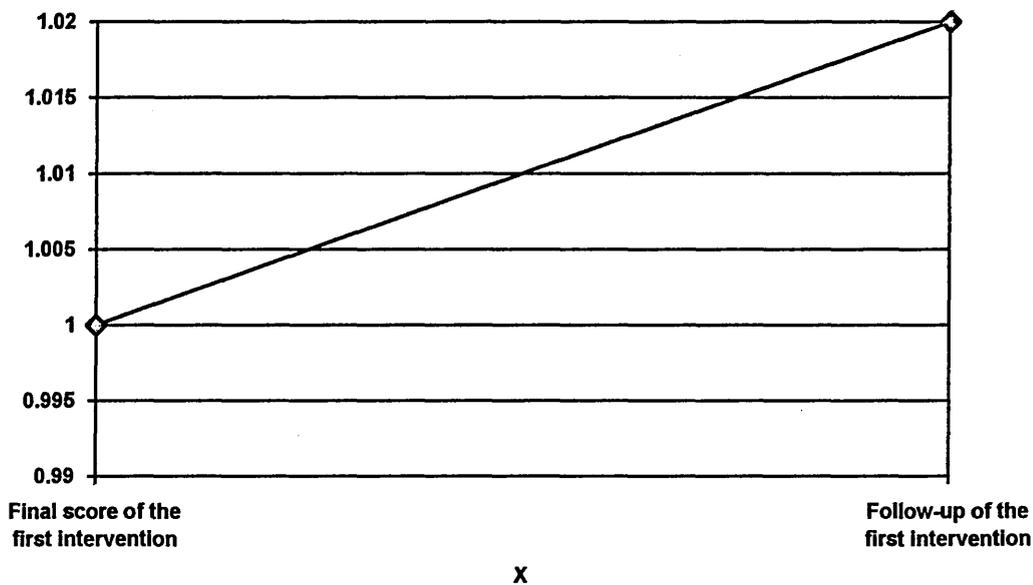
**Table 8.472 Client A's frequency and severity scores on the Uplifts Scale during the follow-up**

<b>Time of measurement</b>	<b>Client's frequency score</b>	<b>Client's severity score</b>
<b>Upon completion of the first intervention</b>	<b>35</b>	<b>1.00</b>
<b>Follow-up</b>	<b>52</b>	<b>1.02</b>

Graphs 8.4721 and 8.4722 summarise these results.



**Graph 8.4721 Client A's frequency scores on the Uplifts Scale over the period of the follow-up**



**Graph 8.4722 Client A's severity scores on the Uplifts Scale over the period of the follow-up**

Graphs 8.4721 and 8.4722 show that there was an increase in the client's frequency and severity scores on the Uplifts Scale over the period of the follow-up to the first intervention. Although the client's frequency score on the Uplifts Scale was lower than the population norm following completion of the first intervention, her score had increased to a level higher than the population norm by the time of the follow-up. (Normal population frequency score = 49.5) However, the client's severity score at the time of the follow-up was still slightly below that of the population norm (Normal population severity score = 1.77).

**8.48 Discussion of the results from the follow-up of the first intervention**

Although there was an increase in the client's frequency and severity scores on the Daily Hassles Scale during the period of the follow-up, it is important to consider the clinical significance of the results, and also the external events surrounding this period of time in the client's life. The client's frequency score on the Daily Hassles Scale at the time of the follow-up was only slightly above that of a normal population, with her

severity score on this measure being lower than that of a normal population. In the light of the client's reports that she had experienced a number of major events in her life during this period, including leaving her old job and starting a new one, the author would argue that these results are encouraging. Furthermore, it must be considered that the client appeared to be perceiving considerably more uplifts in her life at the time of the follow-up compared with upon the period following completion of the first intervention. As previously argued in Chapter 7, the time following completion of an intervention is likely to be a difficult one in terms of maintaining practise of stress management techniques, due to a lack of direct support from a trainer. However, considering the number of major events occurring in the client's life during this time, the author would argue that the client coped fairly successfully. This was reflected by the fact that the client's levels of stress did not increase to a point which was much higher than the levels of stress for a normal population. Clearly, though, there was a need for a refresher course, in order to reduce the client's levels of stress further, and discuss any problems the client had had in maintaining practise of the techniques during the period of the follow-up.

## **8.5 Second intervention**

### **8.51 Treatment session**

During the course of the initial intervention, it became apparent that the client would be absent from work for a number of weeks, as a result of leaving her present job and beginning a new one. It was therefore considered appropriate by the author for the client to complete the initial intervention, and undertake a refresher course six weeks later when she had started her new job.

The day prior to the treatment session of the second intervention, the client completed the Life Experiences Survey, the Daily Hassles and Uplifts Scales, and the General Health Questionnaire-28.

The second intervention was designed to discuss issues which had arisen from the initial intervention, and discuss any problems which the client had had in implementing the stress management techniques into her life during the period when she was not actively involved in a programme. The session began with a review of the stressors which the client perceived as having experienced during this time. She recognised the stress of leaving her old job and starting a new one, and reported that she had felt relatively unstressed during the first week of her new job. She stated that she had used cognitive restructuring to make her realise that it was normal to feel stressed with the amount of changes she was experiencing at this time. She found that this prevented the stress from escalating, and becoming so severe that she felt that she could not cope.

Client A also reported that she had been fairly assertive within her new job, and had engaged in some role rehearsal to help her to carry out this technique in her daily life. She found that within her new job, she was in danger of taking on a colleague's work, and had therefore arranged a meeting with her colleague in order to set boundaries. Client A reported that she felt that her colleague was not entirely happy after the meeting, but the client stated that she had realised that it was her colleague's problem and not hers. The client reported that she had also been fairly assertive in her refusal to come to work early or leave late. She had set her clock on her computer to tell her when it was time to leave. By getting home at a reasonable hour, Client A recognised that it left her with time to spend on herself.

Client A reported that she had been using time management skills on a fairly regular basis. For example, she had set the speaker on her computer clock to beep five or ten

minutes before an appointment as a reminder for her to prepare herself for it. Overall she found it easier to manage her time within her new job due to the structured working life of her manager.

Client A perceived her job as being much better than her previous one, but also recognised that it still entailed a number of stressors. However, the client reported that she had not felt too worried about these stressors, and was prepared to see how matters developed over time. For example, she had not got a permanent office, and was constantly sharing with different people. However, she reported that she was not too worried about this.

Although the client had not been to see her new house, she reported that she did feel better about the house move compared with prior to the initial intervention. For example, she had told herself, whilst paying her final direct debit for a bill on the old house, that the next direct debit payment would not be so large an amount for the new house.

Client A also appeared to have used cognitive restructuring fairly successfully in terms of problems with her teenage daughter. She recognised that she had done her best for her, and had given up thinking that she could not forgive her. Client A realised that she would have to accept her daughter for herself.

Client A had also followed up on her intentions to devote time to herself, and get involved in activities which she would like to do. She had started to take up dress making again, and had sent off for information on extra-mural classes in history at the local University. She had planned her time in order to incorporate these classes into her daily life. Client A also reported that she had stopped taking sleeping tablets and was sleeping quite well without them.

Four days following the second intervention, Client A completed the Life Experiences Survey, the Daily Hassles and Uplifts Scales and the General Health Questionnaire-28. Her systolic and diastolic blood pressures were also measured with a digital sphygmomanometer and recorded.

**8.52 Short-term evaluation of the second intervention**

With only a single baseline and post intervention recording for each variable, it was not possible to carry out t-tests to consider any changes which had occurred over the period of the second intervention. The clinical significance of the results was therefore used as the basis for assessing the degree of change which occurred over this period of time.

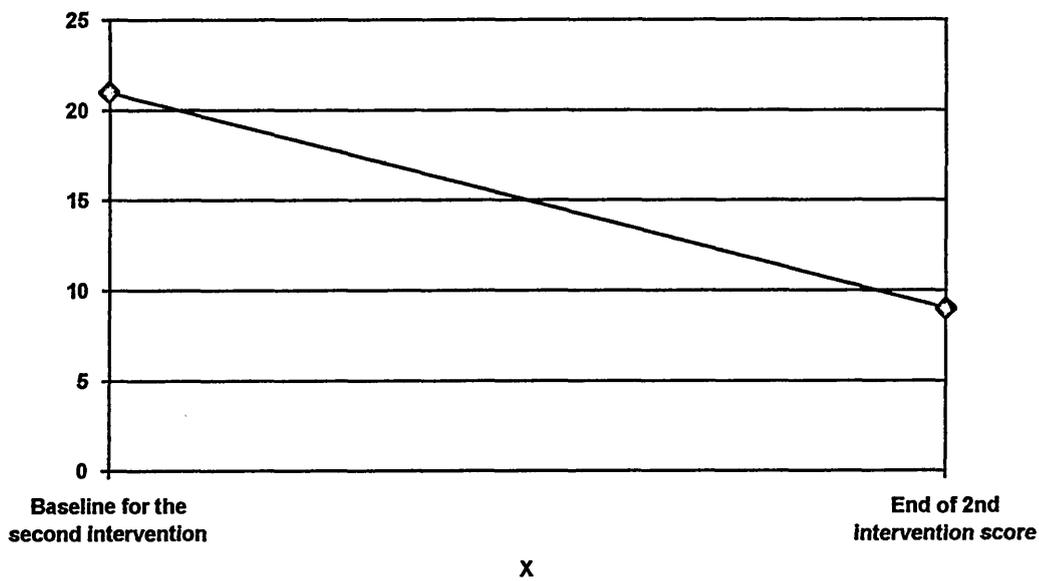
**8.521 The client's scores on the Daily Hassles Scale**

Table 8.521 summarises Client A's frequency and severity scores on the Daily Hassles Scale before and after the second intervention.

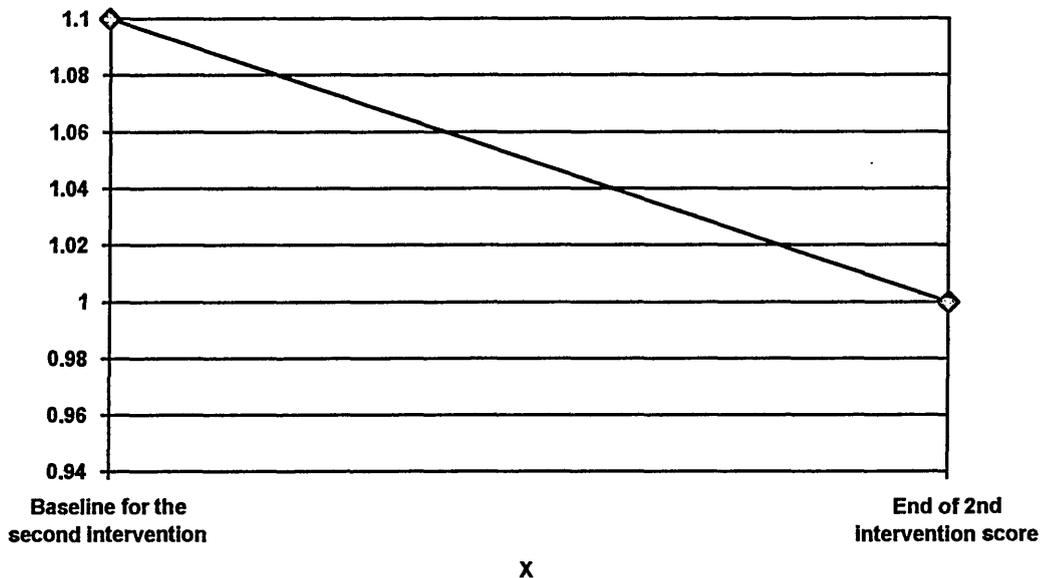
**Table 8.521 Client A's frequency and severity scores on the Daily Hassles Scale during the second intervention**

<b><u>Time of measurement</u></b>	<b><u>Frequency score</u></b>	<b><u>Severity score</u></b>
<b>Prior to second intervention</b>	<b>21</b>	<b>1.10</b>
<b>Following second intervention</b>	<b>09</b>	<b>1.00</b>

Graphs 8.5211 and 8.5212 summarise these results.



**Graph 8.5211 Client A's frequency score on the Daily Hassles Scale during the period of the second intervention**



**Graph 8.5212 Client A's severity scores on the Daily Hassles Scale over the period of the second intervention**

It is clear from both Graphs 8.5211 and 8.5212 that there was a decrease in the client's frequency and severity scores on the Daily Hassles Scale during the period of the second intervention. In terms of clinical significance, both the client's frequency and severity scores had decreased to levels considerably below that of the normal

population (Normal population frequency score = 20.5; Normal population severity score = 1.46).

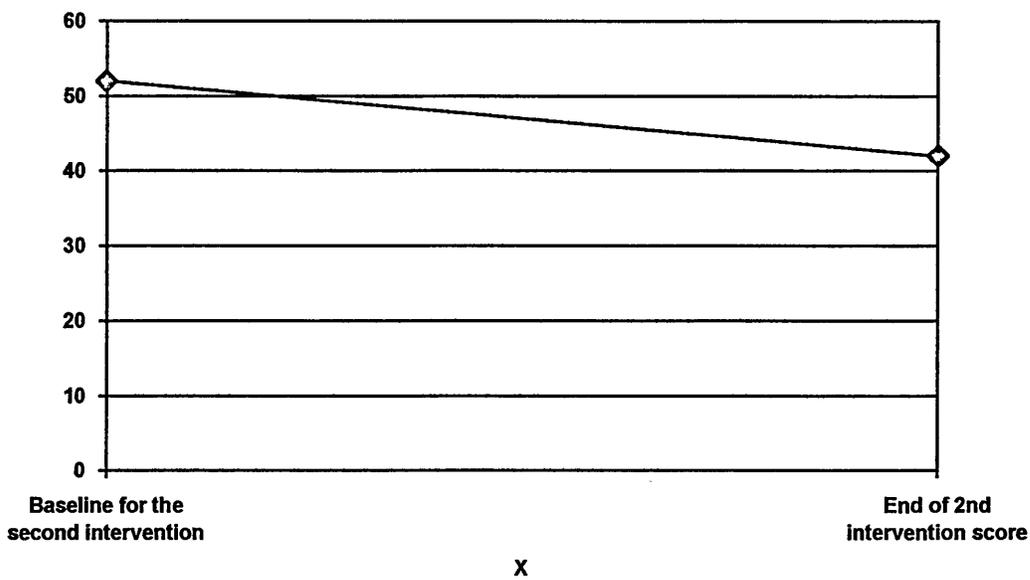
**8.522 The client's scores on the Uplifts Scale**

Table 8.522 summarises Client A's frequency and severity scores on the Uplifts Scale before and after the second intervention.

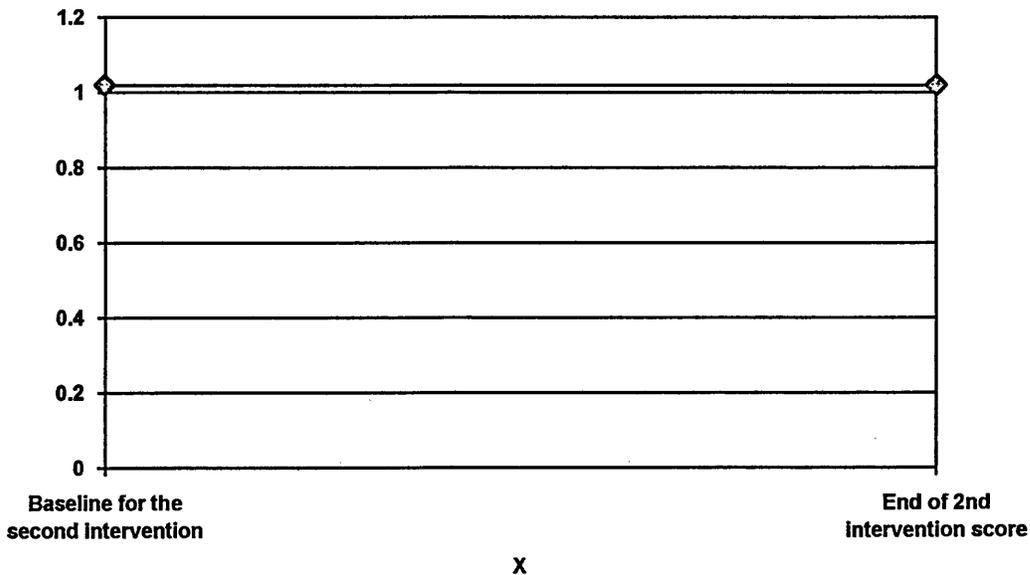
**Table 8.522 : Client A's frequency and severity scores on the Uplifts Scale during the second intervention**

<b><u>Time of measurement</u></b>	<b><u>Frequency score</u></b>	<b><u>Severity score</u></b>
<b>Prior to second intervention</b>	<b>52</b>	<b>1.02</b>
<b>Following second intervention</b>	<b>42</b>	<b>1.02</b>

Graphs 8.5221 and 8.522 summarise these results.



**Graph 8.5221 Client A's frequency score on the Uplifts Scale during the period of the second intervention**



**Graph 8.5222 Client A's severity score on the Uplifts Scale during the period of the second intervention**

Graph 8.5221 shows that there was a slight decrease in the client's frequency score on the Uplifts Scale during the period of the second intervention. However, the client's score had only decreased to a level slightly below that of the normal population (Normal population frequency score = 49.5). Graph 8.5222 shows that the

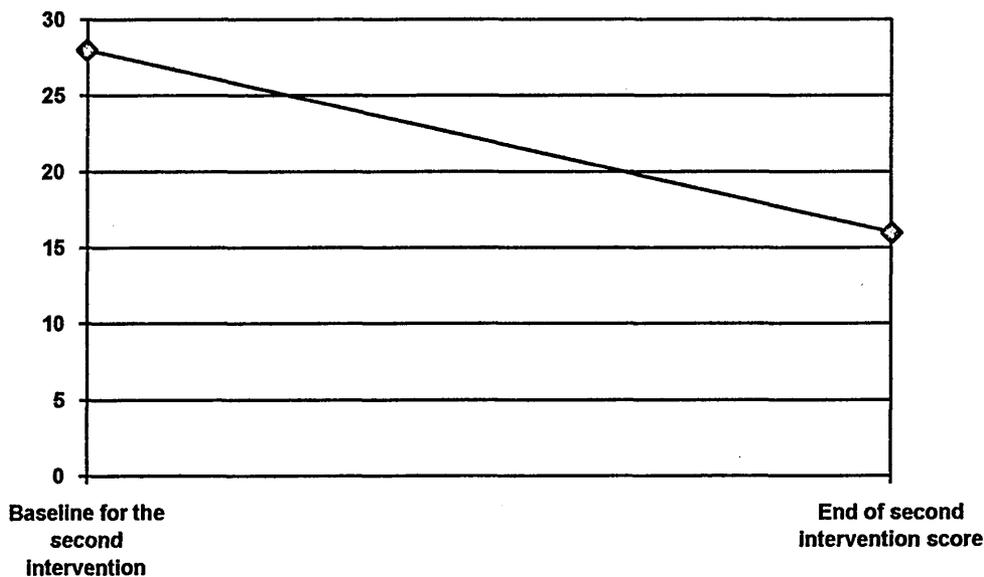
client's severity score on the Uplifts Scale had remained constant during the period of the second intervention, at a level slightly below that of the normal population (Normal population severity score = 1.77).

**8.523 The client's scores on the Life Experiences Survey**

Table 8.523 summarises Client A's scores on the Life Experiences Survey before and after the second intervention.

**Table 8.523 : Client A's scores on the Life Experiences Survey during the second intervention**

<b>Time of measurement</b>	<b>Total LES score</b>
<b>Prior to second intervention</b>	<b>28</b>
<b>Following second intervention</b>	<b>16</b>



X

**Graph 8.523 Client A's total scores on the Life Experiences Survey during the period of the second intervention**

It is clear from Graph 8.523 that there was a decrease in the client's total LES scores during the period of the second intervention. Indeed, her score had decreased from a level considerably above that of the normal population, to a level slightly below the norm (Normal population LES score = 20.16).

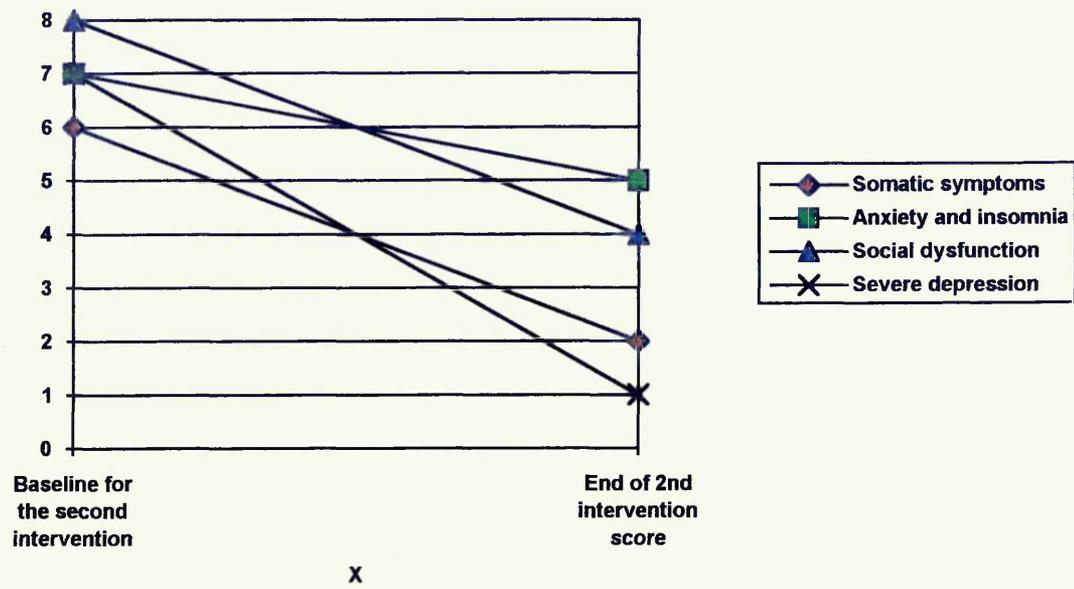
**8.524 The client's scores on the GHQ-28**

Table 8.524 summarises Client A's scores on the somatic symptoms, anxiety and insomnia, social dysfunction and severe depression factors of the General Health Questionnaire-28, together with a total score, before and after the second intervention.

**Table 8.524 Client A's scores on the GHQ-28 over the long-term**

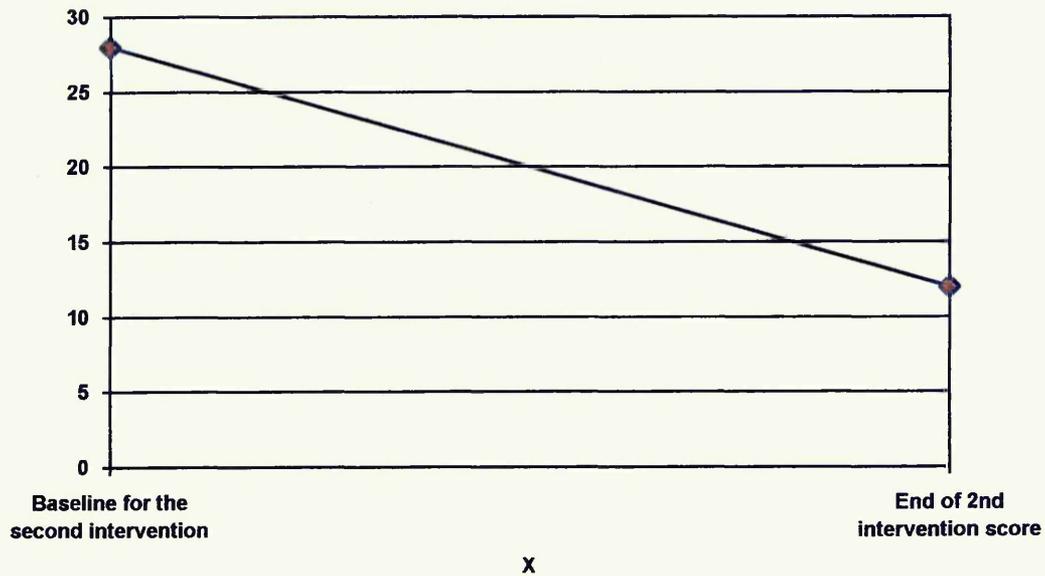
<u>Time of measurement</u>	<u>Somatic symptoms score</u>	<u>Anxiety and insomnia score</u>	<u>Social dysfunction score</u>	<u>Severe depression score</u>	<u>Total score on the GHQ-28</u>
<b>Prior to second intervention</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>7</b>	<b>28</b>
<b>Following second intervention</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>12</b>

Graph 8.5241 summarises these results for the four factors of the GHQ-28..



**Graph 8.5241 Client A's scores on the four factors of the GHQ-28 during the period of the second intervention**

Graph 8.5242 summarises the result for the client's total scores on the GHQ-28.



**Graph 8.5242 Client A's total score on the GHQ-28 during the period of the second intervention**

Graph 8.5241 shows that there was a decrease in the client's scores on all four factors of the General Health Questionnaire-28 during the period of the second

The sum of these changes was reflected in the considerable decrease in the client's total GHQ-28 scores during this period of time, as shown in Graph 8.5242. It was also found that the client did not reach the criteria for psychiatric 'caseness' following completion of the second intervention. (Client's score for 'caseness' = 0; Critical score for 'caseness' = 5).

### **8.53 Discussion of results from short-term outcome of second intervention**

The author would argue that the results from the short-term outcome of the second intervention were very promising. The client showed considerable reductions in her frequency and severity scores on the Daily Hassles Scale, together with reductions in all four factors of the General Health Questionnaire-28. It could be argued in the light of the decrease in her score on the Life Experiences Survey that the reductions in her levels of daily stress occurred as a result of her experiencing less major events in her life during this period of time. However, closer examination of her scores on the Life Experience Survey showed that there was no so much a change in the frequency of events cited, but in the rating of the extent to which the events had an impact on the client's life. For example, changes occurred in her score on the item 'New job' from -2 to -1 during the period of the short-term outcome of the second intervention. This is interesting in the light that she had only started the job by the time of the short-term outcome, suggesting that the change was not as stressful as she had expected it to be. Similarly, the client perceived her 'Change in residence', her 'Major personal illness or injury', 'Major change in living conditions' and her 'Son or daughter leaving home' as changing from -3 to -2 in terms of the impact that they had had on her life, over the period of the second intervention. The author would argue therefore that the reductions in her daily levels of stress were caused, in part, by the change in her perception of the major events in her life. This change, the author would suggest, occurred as a result of the client's involvement in the second stress management intervention, particularly the.

cognitive restructuring technique which formed a major part of both interventions in the single case study.

### **8.6 Overall evaluation of first and second interventions**

Similarly to the 'Stress Profile' described in Section 8.2, the author argued that the triangulation method to data collection was appropriate in evaluating the overall effectiveness of the first and second interventions. Qualitative and quantitative methods of data collection were therefore used to assess the efficacy of the interventions. Quantitative approaches included the use of standardised questionnaires to measure the client's psychological and physical health, and a measure of the client's blood pressure using a sphygmomanometer. The qualitative approach consisted of an ethnographic interview between the client and the author.

A flexible interview schedule was drawn up by the author, based upon the author's aim to determine the client's thoughts and feelings concerning the efficacy of the interventions. The author was also interested in considering the level of motivation exhibited by the client concerning her practise of the techniques during the interventions and the follow-up period, and also of her intentions to continue to practise the techniques in the future.

At the beginning of the final evaluative session, the client was asked to complete the Daily Hassles and Uplifts Scales, the Life Experiences Survey and the General Health Questionnaire-28. Her systolic and diastolic blood pressures were also taken.

The interview was then carried out between the client and the author, over a period of an hour, and was tape-recorded.

## **8.61 Summary of the interview**

### **8.6101 Nature of the client's stress**

The author began the interview by enquiring how stressed the client felt at that time compared with prior to the interventions. The client reported that she felt *"Not nearly as stressed"*, and stated that *"part of this is outside influences, that things that were stressing me then...have come. The events that were ahead of me have mostly come...and the bad bits that I was still chewing over, obviously have got a bit of space behind them and I've come to terms with them"*.

Upon enquiring about the nature of these events, which had occurred during the period of the intervention, the client stated that they included her job, in that *"that awful time of trying to clear up the old job...has passed, and starting the new job, that too"*. The client reported that she had not enjoyed the first week of the job, but that she had gradually found it easier as time had passed. Concerning the problems she had been having with her teenage daughter, the client appeared to have come to terms with the situation. She stated, *"my problems with Helen, they come and go, you know...you have another little crisis and it passes...I have come to terms with Helen and forgiven her for her misdemeanours until the next one turns up"*. She continued, *"I've got to forgive this one, the latest one, in order to sort of ride it when she, when she does the next one, which she will almost certainly do. I have forgiven her"*.

The client reported that the only outstanding stressor which was present before the interventions was the house move, which she reported *"is now imminent, and we're hoping to move maybe at the end of next week, but we're really at the hassle stage now where we're actually looking for a date and trying to get all the people in tune to agree on a date"*. The client stated that although she was not looking forward to the move, and had not yet visited the house, *"I've sort of come to terms with it"*. Indeed she did not appear to be worrying unduly about the event, stating that *"there's so much to do in*

*the packing that, it's as though you just sort of go with the flow". This was very different to her approach prior to the interventions, when the client was very worried about the move and the events surrounding it. She now realised that the move would be quite difficult, saying that "I've still got that awful hump to get over when I go", but was in some ways looking at the positive side of the move, stating that "because we're moving from large to small, actually throwing away some of the stuff you don't actually need...sort of clear out, physically and mentally, and start again".*

The client reported that the only new stressor to have occurred in her life during the period of the interventions was the illness of two of her sisters. She stated that this was *"causing me a bit of worry for them and also the fact that, you know, it's going to get me as well".* However, she reported that, *"it's not something that's at the top of my worry list".*

#### **8.6102 Perceived control**

Client A reported that knowing that she was able to make herself relax during stressful times, made her feel more in control of stressors. She gave an example in which her husband had been anxious as they sat in the car in a traffic jam. She said, *"I just sat and went like that, put my shoulders down because I thought "This is his problem, I'm not worrying about it" ".* Client A also reported that the fact that she recognised that she was able to think differently made her feel more in control of her life. She said *"It's reminded me that you can look at things from two sides, and that a lot of the problems I've had ... of being .... stressed out at work, is because I won't accept I do things wrong."* She stated that *"I've worked too hard, I've worked too long hours, I've taken things home".* Client A reported that recognising the fact that she did not have to do everything perfectly at work had helped her during the period when she was leaving her old job. She had previously felt that it was necessary for her to complete all of her current work duties before leaving the old job, causing her undue worry. She stated

that the trainer had asked her whether she normally completed all her work at the end of the month. She realised that she never did, and therefore there was no reason why she must complete all of her work before leaving. She said *"In the end, it suddenly occurred to me "I do not have to clear my desk" "*. She reported that she had finally been able to delegate work amongst her two colleagues in order to lighten her own workload. This in fact was something which she had previously been unable to do, and reported that *"In my old life I would have been taking stuff home everynight"*.

### **8.6103 Perceived efficacy of the stress management interventions**

The client believed that the interventions were successful in helping her to cope with the stress in her life, *"because they reminded me of the things that we'd done on the main course, and separated out the things that actually mattered for me...the bits that I could hang onto"*. She gave the example of the relaxation techniques, where she felt that rather than talking about relaxation in general, the present interventions gave her the opportunity to focus on cues in her own life. She stated, *"We went through things that I could pull out, either at home or in the office, things that happened during the day...Like say when the phone rang, I would automatically put my shoulders down before I would answer the phone"*. Client A reported that the aim of these cues to relaxation, was to make the exercises into a habit, so that eventually *"even if sometimes you forget to do them, you can feel the fact that your shoulders have gone up, and you will automatically think "Oh shoulders down!", without any other trigger - it would be that that would actually make you stop"*.

Client A reported that she found it difficult to relax using the Simple Relaxation exercise of thinking of pleasant situations whilst lying on the floor. She stated that *"I can't switch off my brain enough, I certainly haven't mastered that one"*. However, she did feel that she was able to relax with other methods, such as having a bath, and also by making

her hands face upwards instead of downwards where they would be able to grab onto a chair or some other item of furniture.

Client A reported that the interventions were useful in that they reminded her of the cognitive restructuring techniques. She stated that the trainer, *"was actually able to say some of the things to me that I should have been saying to myself"*, such as *"Is this my problem? Is this really somebody else's problem?"*. The client felt that she had been fairly successful at putting the cognitive restructuring into practice within her own life, and stated *"I honestly feel that it's reminded me and that this time it's been for me"*. She reported that she had been able to analyse her behaviour and cognitions between each of the sessions, and had reported back to the trainer on any problems which she had had concerning the implementation of the techniques.

Client A was less sure about the efficacy of the assertiveness technique. She stated *"I don't know whether I'm any more assertive or not really"*. However, she went on to say that she felt she was perhaps more assertive in some situations. For example, within her new job, it was necessary for her to get a bus at a specific time, and had therefore had to tell her manager that she would have to leave at this time.

In terms of time management, Client A felt that she had been successful in setting up a calendar system on her computer which was able to instruct her by an alarm of forthcoming events during the day. However, she reported that she would like to set up a bring-forward system in the near future, since at present she was having to look through all her papers in a morning to find the appropriate ones. She was in the process of planning the bring-forward system, and had ordered a concertina file to store her papers in.

#### **8.6104 The client's perception of the most effective techniques**

Of all the stress management techniques which the client had used during the interventions, she reported that she had found the cognitive restructuring technique most successful in helping her to cope with the stress in her life. She stated, *"I think it's the one I needed most"*. Client A was unsure of how successful she would be at maintaining the technique in the future, although she did feel that her new start with the job and house move might help. She stated, *"Perhaps I'll remember, you know, if I hear myself saying something and think "Oh streuth", you know, "don't say that"...Or you know, hopefully I'll think of it before my mouth says it"*. Client A reported that it was not that she did not know the positive statements which she should be saying or thinking, just that she needed reminding sometimes. She stated that *"It can be me that reminds me. It doesn't have to be an external thing"*.

#### **8.6105 The client's perception of the least effective techniques**

Client A reported that the time management technique was the least effective technique for her, *"because my working day doesn't depend on just the way that I want to work"*. Client A stated that her time was managed more by her manager, because when she wanted some work doing, that had to take priority. She realised that if she was able to be assertive she might refuse to do the work immediately, but stated that, *"that would be inappropriate for me to say"*. However, she reported that at home, she had been able to manage her time more effectively, since she was more in control in that situation. She gave the example of her daughter wanting the client to drive her to some place in the car. The client stated that she refused to do this because she had begun to run herself a bath.

### **8.6106 Perceived efficacy of the homework sessions**

Client A reported that she had found the 'Stress Diary' useful, because *"It was a good one to actually see, stop and think just how many times I would think something irrationally...and even to look at how many times in the day, you're saying "I'm totally stressed out"...."I don't know what I'm going to do" ". She continued, "If you can actually see how many times you're doing that then...I think it makes you think again about just what you're thinking of".*

She had also found the list of 'Things to Do' useful, and had already sent off for information about a history course at the local University. However, she reported that she had found it very difficult to write positive statements about herself. She stated that she knew there were positive things which she could say about herself, *"If I didn't think there was a big foot going to tread on me for saying it".* However, even then, she reported that these things were only *"less awful than the others"*, and stated that *"I still have a very negative thinking to myself...I don't think that's going to change overnight".* She continued *"I'm not quite sure where I go on that one, you know, except that I can keep reminding myself, you know, that some of the things I do, I do right".*

### **8.6107 Practise of the techniques during the treatment period**

Client A reported that she had practised the cognitive restructuring technique most often during the treatment period, *"because I knew that it was the one that was worst, and because it was the one which seemed to me could actually change the rest".*

Client A continued, *"If I could sort of change the way I thought then I perhaps wouldn't feel as stressed out, I'm sure I wouldn't be so bad".* She felt that the cognitive restructuring technique could facilitate the use of the time management. She stated *"Sometimes you're so stressed out, that you can't actually organise the time you've got, so you're not making best value of the time you've got".*

Similarly, she felt that the cognitive restructuring technique was related to the assertiveness, for *"if you think differently about yourself, you know about things, you can be assertive"*. She felt that if she cared enough about herself then she would delegate her work amongst her colleagues, *"so that it left me more space to do....actually to be selfish, what I wanted to do"*. However, Client A reported that she had found it quite difficult to practise the cognitive restructuring. She reported, *"It's not as though I'm a sixteen year old, and I'm trying to you know, think in a different way...I'm very set in my negative thinking"*.

Client A reported that she had practised the assertiveness technique least often during the treatment period, because she felt that she was unable to carry it out within her life. However, she reported that she had been assertive on a few occasions, which had made her realise that *"had I done that in the first place, how much easier life would have been"*. She reported that within her new job, she felt that there was less need to be assertive than in her old job, and was unsure of whether, if there was a need, she would be assertive. She said, *"Whether if anything happened I'd actually have the courage to say right from the word go, you know, 'I'm sorry, I can't actually do that'....I don't really know"*. When questioned about what she felt was stopping her from being assertive, she reported that it was *"never feeling that I'm good enough"*, which clearly highlights the relationship between self-esteem and assertiveness. She continued, *"If I do something wrong, that's when it takes the confidence out of me..... Why should I expect to do things right?"*.

The client reported that she had found it fairly easy to practise the relaxation techniques. She stated that *"there was no problem in actually doing that because if you do put your shoulders up when you tense up, it's amazing how quickly you come to actually recognise that, when you're doing it, and just put your shoulders down"*. With the time management, Client A had found that having decided upon the type of strategies to use, it was not too difficult to maintain. She felt that it was important to choose a time management technique which was easy to carry out, such as the

computer calendar which reminded her of forthcoming events during the day. She reported that she found the computer calendar a more effective technique for managing her time than keeping a diary, which she had previously attempted following the initial stress management course, but had not maintained over the long term.

#### **8.6108 Practice and perceived efficacy of the techniques during the follow-up period**

Client A reported that she had maintained practise of the techniques during the period following the first intervention, and before the second. She stated that it was a time when she had gone away on holiday, and had spent the time *"just sort of unwinding...it was really good for me...it was giving me a bit of space"*. She reported that she had devoted time to herself and that *"during that week I said very often, you know, "This is my time" "*. She felt that the time management was not so important during this time, since she was not at work, but felt that she was able to put the assertiveness into practise with her family. Client A reported that she also practised the relaxation regularly during the follow-up period, *"because as it got nearer to the holiday, I was suddenly really sort of unrelaxed about it - organising, leaving the children in my house, would they have trashed it by the time we got back, those sort of things"*. She stated that there *"was plenty of opportunity to practise them [the relaxation techniques] in a different setting"*.

Client A reported that she had found it fairly easy to implement the techniques during the follow-up period. She stated, *"I think it's a case that if you let it go, it's probably hard to get back into it...so, to me, I'm still thinking about it, you know, quite regularly"*.

Client A felt that the stress management techniques were effective in helping her to cope with the stress during the follow-up period. She felt that the techniques were short-term strategies to help her to cope more effectively with the stress in her life.

When questioned about whether she felt she could change the way she thought in the long-term, she reported that *"You've got to keep doing it"*.

#### **8.6109 Perceived efficacy of the second intervention - the refresher course**

Client A felt that it had been helpful to have a session six weeks following completion of the first intervention. She reported that the first intervention, particularly the final two sessions were useful in helping her to cope with the stress of leaving her old job. She felt that the second intervention completed the work undertaken during the first intervention, and that, *"It was like a finishing off really"*.

#### **8.611 Motivation for continued practise of the techniques**

Client A felt that she would continue to practise the techniques in the future. She reported that she had the information about the techniques in a folder, which she would keep at work in the future, once she had her own office. She stated that she would put the information in the bring-up system, so that she would be reminded of the techniques at the beginning of every month.

Client A felt that the techniques could be useful in the future in helping her to manage her stress. She reported that her children had kept saying to her *"Get a life, mum"*, and she felt now that she had got back her life, and had begun to make positive changes following the interventions. She had sent off for the information on the history course, and felt that this would give her the opportunity to devote time to herself in the future. The client felt that she would manage her time more effectively by using the bring-forward system which she had been planning. She also felt that she would continue to use the cognitive restructuring technique because *"I'm not cured of negative thinking...perhaps you never will be cured of negative thinking"*. She continued,

*"Perhaps it's just that you actually stop yourself from saying things, or not so much saying things, but thinking things. When you think them, you have to learn to automatically think the other one, the opposite of it".* She stated that she would only write down the positive thoughts on pieces of paper, to stick around her work area, when she had her own office.

The client reported that she would continue to use the relaxation techniques, particularly those which focused on her hands and her shoulders. However, she was unsure whether she would use the assertiveness technique in the future. She reported that she had discussed the problem of her long working hours with her manager, and that she had pointed out to him that she would only work thirty-five hours a week, and that it was necessary for her to leave at a specific time.

Client A reported that she felt more motivated to continue practising the techniques following the present two interventions, than following the initial stress management course. She was not sure why she had ceased to practise the techniques following the initial course, but reported that *"maybe things changed, or something different happened, and you know, you just actually stop doing it"*. However she reported that this time, *"I'm aware of the fact that I've got a second chance...that I've got a chance to start again"*.

Client A reported that other people were a major factor in lowering her motivation to practise the techniques previously. She stated that in the old job, she had found it difficult to manage her time. She reported that *"when I used to come in, I'd come in perhaps to do something, but as soon as you were in, it seemed that something happened and I couldn't actually keep to whatever you'd decided"*.

Client A felt that she was better at carrying out the techniques than she had been previously. She reported that within her new job, she had already set up a file index and a flow chart of her work. She also felt that it was probably easier for her to carry

the techniques out within her new job, due to different organisational procedures, and the fact that she had had the opportunity to implement certain techniques upon starting the new job.

### **8.62 Results from the long-term evaluation**

Unfortunately, limitations on the duration of the project did not allow for a follow-up to the second intervention. The long-term outcome of the single case study was therefore determined using the baseline results from the first intervention and the results from the short-term outcome of the second intervention.

Where several baseline recordings were taken for a single variable, the mean of these scores was taken as the baseline measure for the long-term evaluation of the single case study. Since there was therefore only a single baseline and post intervention score for each variable, it was not possible to carry out t-tests to consider any changes which had occurred over the period of the interventions. The clinical significance of the results was therefore used as the basis for assessing the degree of change which occurred over this period of time.

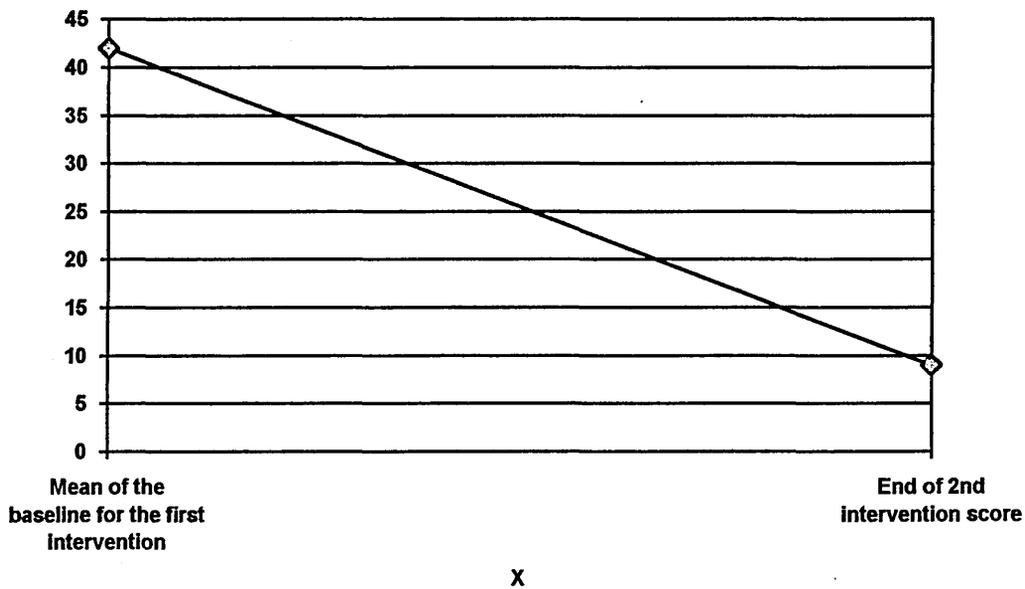
#### **8.621 The client's scores on the Daily Hassles Scale**

Table 8.621 summarises Client A's frequency and severity scores on the Daily Hassles Scale before the first intervention and following the second.

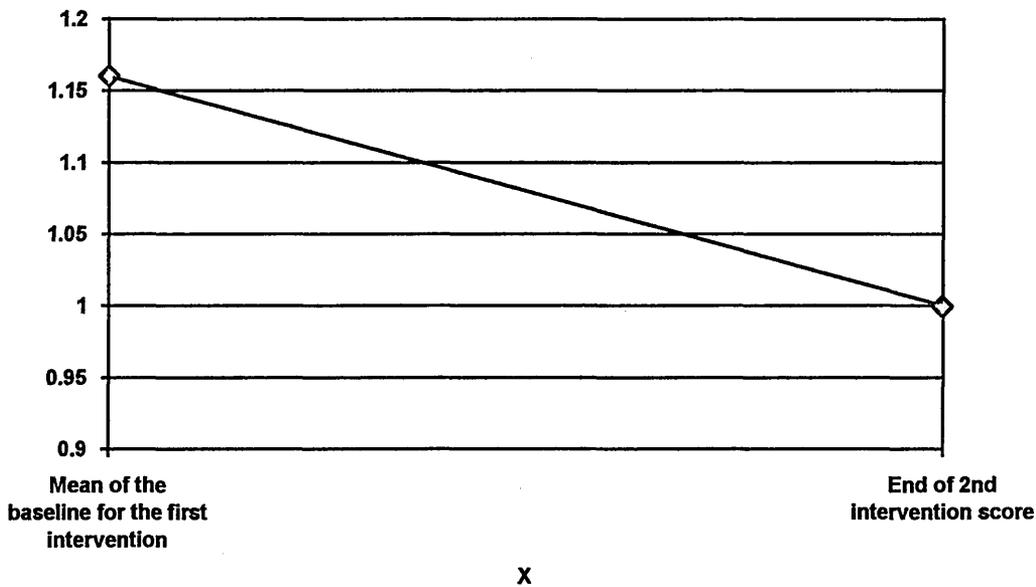
**Table 8.621 Client A's frequency and severity scores on the Daily Hassles Scale over the long-term**

<b>Time of measurement</b>	<b>Frequency score</b>	<b>Severity score</b>
<b>Prior to first intervention</b>	<b>42</b>	<b>1.16</b>
<b>Following second intervention</b>	<b>09</b>	<b>1.00</b>

Graphs 8.6211 and 8.6212 summarise these results.



**Graph 8.6211 Client A's frequency scores on the Daily Hassles Scale over the long-term**



**Graph 8.6212 Client A's severity scores on the Daily Hassles Scale over the long-term**

It is clear from both Graphs 8.6211 and 8.6212 that there was a decrease in the client's frequency and severity scores on the Daily Hassles Scale over the period of the two interventions. In terms of the frequency measure, the client's score had decreased from more than double that of the normal population to a level well below the norm. (Normal population frequency score = 20.5). Although the mean of the client's severity scores on the Daily Hassles Scale had been below that of the normal population prior to the initial intervention, her scores continued to decrease during the course of the two interventions. (Normal population severity score = 1.46).

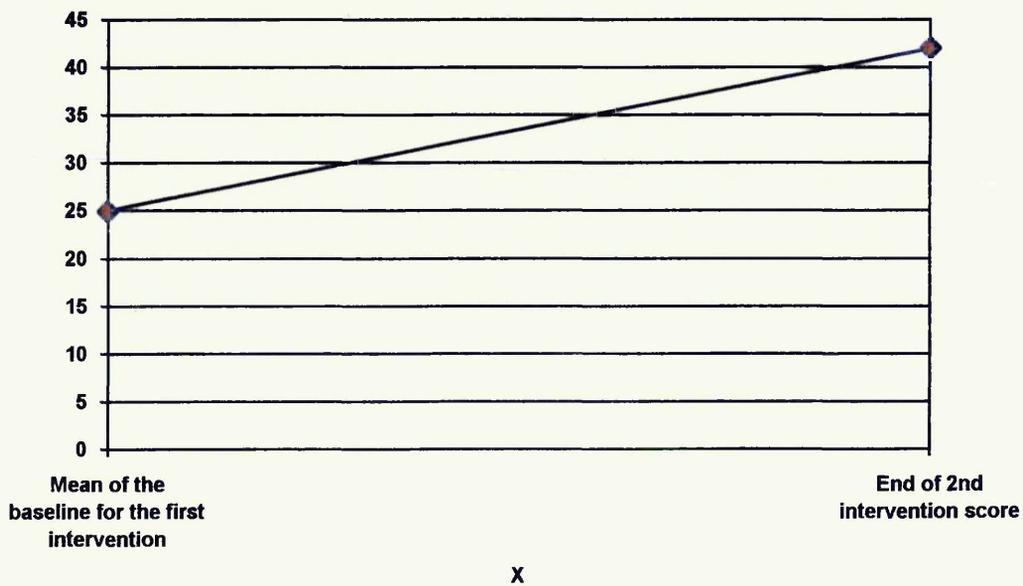
**8.622 The client's scores on the Uplifts Scale**

Table 8.622 summarises Client A's frequency and severity scores on the Uplifts Scale over the long-term.

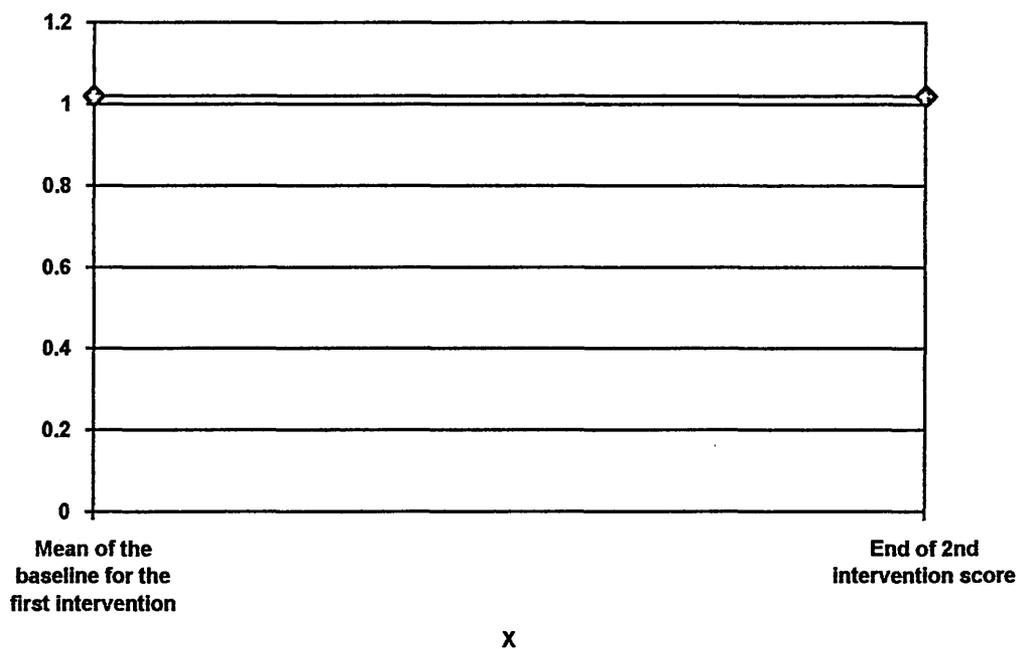
**Table 8.622 Client A's frequency and severity scores on the Uplifts Scale over the long-term**

<b>Time of intervention</b>	<b>Frequency score</b>	<b>Severity score</b>
<b>Prior to first intervention</b>	<b>25</b>	<b>1.02</b>
<b>Following second intervention</b>	<b>42</b>	<b>1.02</b>

Graphs 8.6221 and 8.6222 summarise these results.



**Graph 8.6221 Client A's frequency scores on the Uplifts Scale over the long-term**



**Graph 8.6222 Client A's severity scores on the Uplifts Scale over the long-term**

Graph 8.6221 shows that there was a considerable increase in the client's frequency scores on the Uplifts Scale over the period of the two interventions. Prior to the first intervention, the mean of the client's baseline frequency scores was almost half that of the normal population (Normal population frequency score = 49.5). However, by the end of the second intervention, the client's frequency score had increased to a level only slightly below that of the normal population. The client's severity scores remained at a constant level over the period of the two interventions, slightly below that of the normal population (Normal population severity score = 1.77), as shown in Graph 8.6222. It would therefore appear that over the period of the two interventions, Client A perceived herself as experiencing considerably more uplifts in her life, the severity of which remained a constant level.

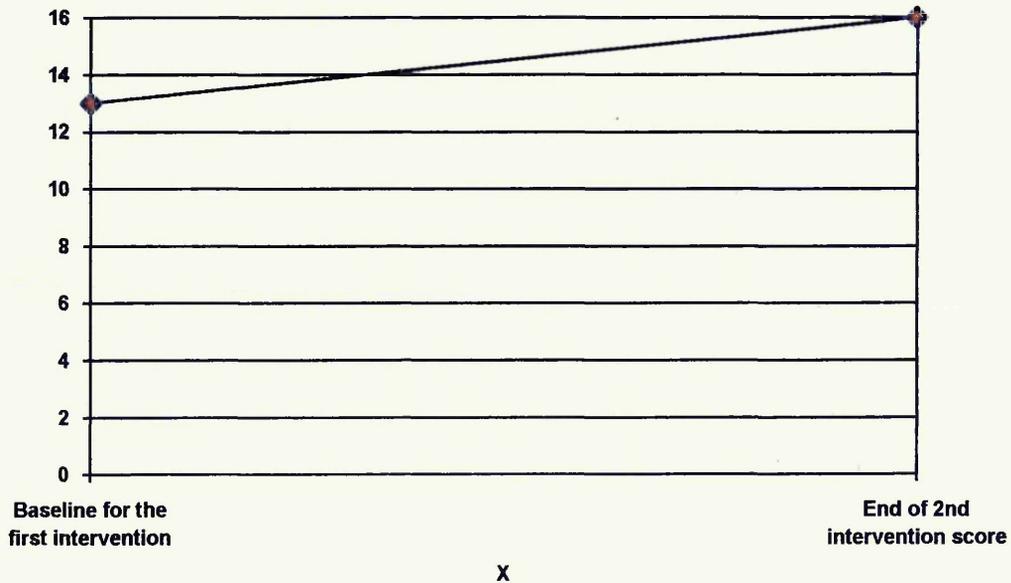
**8.623 The client's scores on the Life Experiences Survey**

Table 8.623 summarises Client A's total scores on the Life Experiences Survey over the long-term.

**Table 8.623 Client A's total LES scores over the long-term**

<b>Time of measurement</b>	<b>Total LES score</b>
<b>Prior to first intervention</b>	<b>13</b>
<b>following second intervention</b>	<b>16</b>

Graph 8.623 summarises these results.



**Graph 8.623 Client A's total LES scores over the long-term**

It is clear from Graph 8.623, that there was a slight increase in the client's total LES score over the period of the two interventions. However, the client's score following the second intervention was still considerably lower than that of the normal population (Normal population score = 20.16).

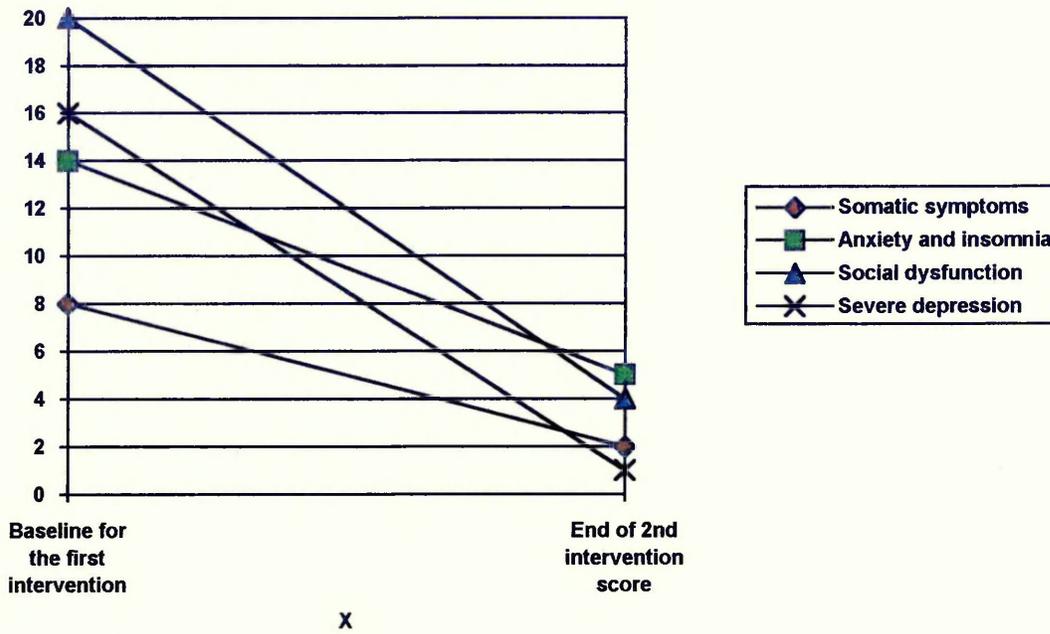
### **8.624 The client's scores on the GHQ-28 over the long-term**

Table 8.624 summarises Client A's scores on the somatic symptoms, anxiety and insomnia, social dysfunction and severe depression factors of the General Health Questionnaire-28, together with a total score, over the long-term.

**Table 8.624 Client A's scores on the GHQ-28 over the long-term**

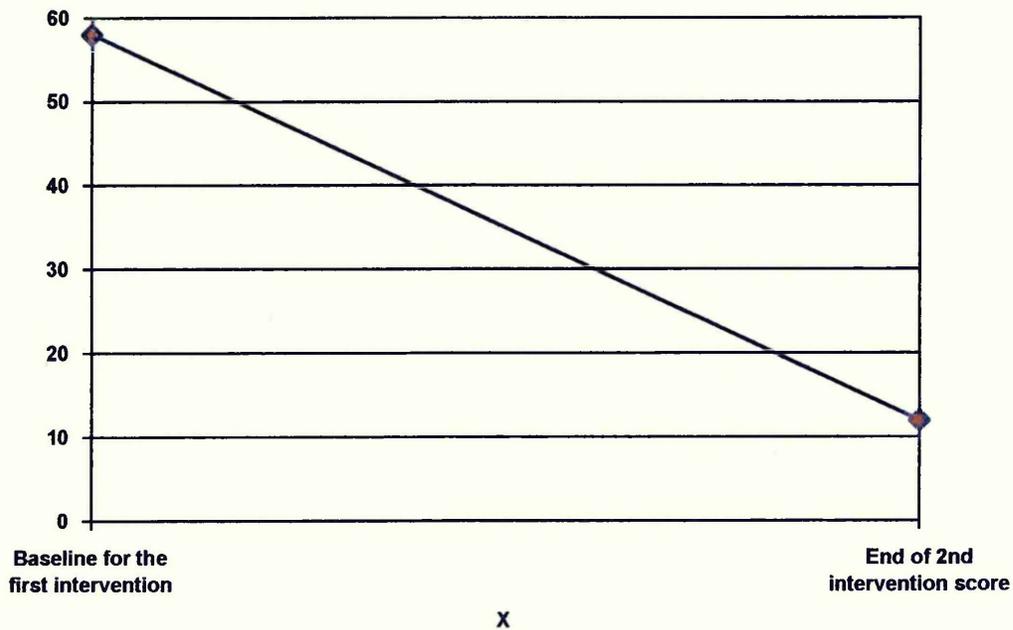
<b><u>Time of measurement</u></b>	<b><u>Somatic symptoms score</u></b>	<b><u>Anxiety and insomnia score</u></b>	<b><u>Social dysfunction score</u></b>	<b><u>Severe depression score</u></b>	<b><u>Total score on the GHQ-28</u></b>
<b>Prior to first intervention</b>	<b>8</b>	<b>14</b>	<b>20</b>	<b>16</b>	<b>58</b>
<b>Following second intervention</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>12</b>

Graph 8.6241 summarises the results for the four factors of the GHQ-28.



**Graph 8.6241 Client A's scores on the four factors of the GHQ-28 over the long-term**

Graph 8.6242 summarises the results for the client's total scores on the GHQ-28 over the long-term.



**Graph 8.6242 Client A's total scores on the GHQ-28 over the long-term**

It is clear from both Graphs 8.6241 and 8.6242 that there was a considerable decrease in the client's scores on all four factors of the GHQ-28, together with her total scores on this measure over the long-term. Indeed it was found that although Client A reached the criteria for psychiatric 'caseness' prior to the first intervention, she was no longer considered a 'case' following the second intervention. (Client's score for 'caseness' prior to first intervention = 19; Client's score for 'caseness' following second intervention = 0; Critical score for 'caseness' = 5).

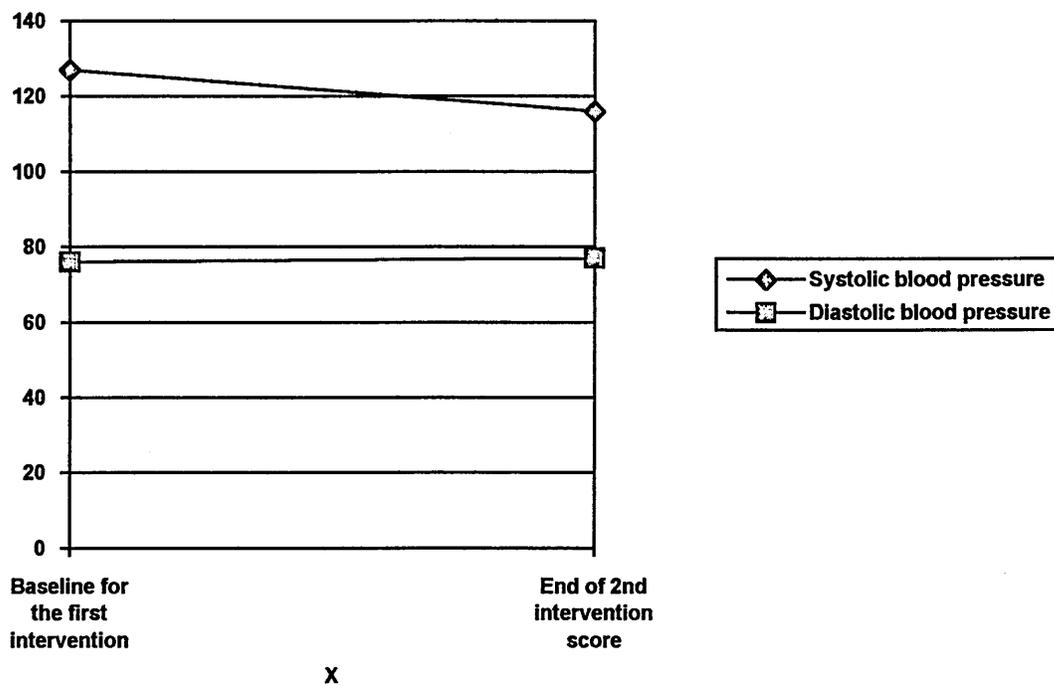
**8.625 The client's blood pressure scores over the long-term**

Table 8.625 summarises Client A's systolic and diastolic blood pressure scores over the long-term.

**Table 8.625 Client A's blood pressure scores over the long-term**

<u>Time of measurement</u>	<u>Systolic blood pressure score (mmHg)</u>	<u>Diastolic blood pressure score (mmHg)</u>
<b>Prior to first intervention</b>	<b>127</b>	<b>76</b>
<b>Following second intervention</b>	<b>116</b>	<b>77</b>

Graph 8.625 summarises these results.



**Graph 8.625 Client A's systolic and diastolic blood pressure scores over the long-term**

Graph 8.625 shows that there was a slight decrease in Client A's systolic blood pressure score over the long-term, but a slight increase in her diastolic blood pressure score over this time. However, considering that all scores were within the normal range, any changes were not regarded as clinically significant. (Maximum normal systolic blood pressure = 140mmHg; Maximum normal diastolic blood pressure = 90mmHg). Furthermore, changes in the time of day when measurements were taken may have accounted for any differences observed over the long-term.

**8.7 Discussion of results from the long-term evaluation**

The results from the long-term evaluation of the two stress management interventions were very encouraging. There was a considerable reduction in the client's perception of the frequency of daily hassles in her life, from a level significantly above that of the normal population, to a level significantly below. There was a reduction in the client's

perception of the severity of daily hassles in her life during the period of the interventions, and an increase in her perceptions of the number of uplifts in her life following the two interventions. Furthermore, it was found that the client's levels of somatic symptoms, anxiety and insomnia, social dysfunction and severe depression considerably decreased, such that the client no longer reached the criteria for psychiatric 'caseness' on the General Health Questionnaire-28.

Clearly, within a single case approach, there is no control for external events which occur during the period of an intervention. The author therefore considered the client's scores on the Life Experiences Survey, which indicated that there was no considerable change in the client's perception of the major life events in her life over the period of the interventions. Additional data concerning the events which had occurred in the client's life during the period of the interventions was also obtained in the form of the client's responses during the evaluative interview. The client indicated that there had been no major change in the quantity of life events which she had experienced over the period of the study, except for the recent illness of two of her sisters. However, she reported that part of the reason why she felt less stressed following the interventions was because a period of time had elapsed since the occurrence of the major events in her life, such as leaving her old job and starting a new one.

It would therefore appear that changes occurred in the nature of the life events which the client experienced during the period of the study. It could be argued that these changes accounted for the reduction in the client's levels of stress over this time. However, the author would suggest that this explanation is not sufficient, and that the stress management intervention was also responsible for the reduction in the client's levels of stress. Although time was likely to be a contributory factor in the stress reduction, it was important that the client was able to "*come to terms with them [the stressors]*" during this time. In other words, it was not time, per se, which allowed the client to feel less stressed about the events in her life, but the way in which she used this time to allow her to perceive the events in a different light. The author would argue

that it was the intervention which was responsible for enabling the client to perceive the events in a different way, and hence allowing her to *"come to terms with them"*.

Furthermore, it was significant that although the client had not yet experienced the house move, she reported that she had *"come to terms with it"*. The author would propose that this supports her argument that the intervention was, in part, responsible for the reduction in the client's levels of stress.

Comparing the present results with those from the evaluation of the initial stress management course, the author would argue that there is support for her individualistic approach to stress management intervention. Each individual brings to a course their own set of personality characteristics and experiences. It is therefore essential that a stress management intervention caters for the needs of the individual, focusing on those techniques which are likely to be most effective for that particular client. This was highlighted in the client's responses during the interview, in which she suggested that the reason the present interventions were effective, was *"because they reminded me of the things that we'd done on the main course, and separated out the things that actually mattered for me...the bits that I could hang onto"*. For example, the client felt that her lack of being able to 'switch off' meant that she could not effectively carry out the imagery parts of the Simple Relaxation (Mitchell, 1988) exercises taught during the initial stress management course. However, from the session on relaxation which occurred during the present study, the client was able to focus on those exercises which she was able to carry out successfully, and which she felt were most effective in helping her to relax. Indeed, attempting to carry out exercises which are not appropriate to an individual or their life may prove to be somewhat stress-inducing.

It was evident from the client's responses during the interview, that she had been able to successfully implement many of the techniques into her life. Although she had found the cognitive restructuring quite difficult, she reported that she had begun to think differently about events in her life. For example, she realised that she did not have to have completed all her work before leaving her old job, and recognised that some

events were not her problem, such as when her husband became anxious in a traffic jam. The client had been able to use relaxation exercises which focused on her hands and her shoulders, and had successfully developed a calendar system to manage her time at work.

However, the client felt that she had not been successful at implementing the assertiveness technique into her life during the period of the study. It was significant that she reported that the barrier to her being assertive was *"never feeling that I'm good enough"*. This focused on the importance of self-esteem within a stress management intervention, and the need to develop ways of increasing a client's self-esteem in order that they are able to be more assertive. In the present research, the client had been taught how to think differently about herself, and had considered where her low self-esteem originated from. She had also been required to make lists of things to do which would make her feel better about herself. She had decided to enrol on a University course in history, and was determined to devote more time to herself at home.

Although there was no evidence of a significant increase in the client's self-esteem following the study, the author would argue that this was to be expected. The client had though negatively about herself from a young age, and had continually reinforced her negative beliefs over the years. Indeed, the client reported that, *"It's not as though I'm a sixteen year old, and I'm trying to you know, think in a different way...I'm very set in my negative thinking"*. The author would therefore argue that it would take a longer period of time, with intensive treatment to change the client's self-concept. However, there was evidence that changes were beginning to take effect, reflected by the client's ability to be more assertive at work with her manager, and at home with her family. The author would suggest that this laid the foundations for further increases to the client's self-esteem following additional stress management interventions, and continual practise of the techniques which focused on self-esteem by the client.

The author would argue that it was important to consider the client's self-esteem, not only because of its relationship to stress (Rector and Roger, 1994) and its role as a

barrier to effective implementation of techniques, but also because of its link with depression (Lewisohn et al, 1981; Ingham et al, 1986).

Traditional views of the self-esteem-depression link supposed that low self-esteem was a symptom of the depression syndrome (Ingham et al, 1986). However, the alternative explanation, that low self-esteem causes depression has also been suggested (Brown et al, 1986). Prospective studies which have considered the relationship between self-esteem and depression have been contradictory. Lewisohn et al (1981) and Ingham et al (1986) found from their studies that low self-esteem did not predict future onset of depression, whereas Brown et al (1986) found a positive predictive relationship. Ormel and Sanderman (1989) supported the latter findings, because they argued that Brown et al's (1986) study used a more valid measure of self-esteem. Furthermore, they found that in a ten year longitudinal study into the change and stability of depression, over sixty per cent of between-subject differences in depression could be attributed to a common factor which was strongly related to the measure of self-esteem. They also found that changes in depression amongst individuals was related to temporarily reduced levels of self-esteem.

The relationships between self-esteem and stress, and self-esteem and depression have led the author to suggest that the individual variable of self-esteem must be considered carefully within any stress management intervention. It clearly has a role to play within the implementation of many of the stress management techniques, including cognitive restructuring, assertiveness training and time management. Although significant changes are unlikely to occur within the short-term, the author would argue that with repeated treatment procedures and continual practise of techniques, considerable changes to a client's self-esteem should result in the long-term. This in itself should have significant effects not only on the client's levels of stress, but also on his/her levels of depression.

It was important within the present study to consider the client's level of motivation to practise the techniques in the absence of any formal intervention, since the client had reported that previously she had gradually ceased to practise any of the techniques learnt on the original stress management course. Within the present study, the client's motivation to practise the techniques in the future appeared to be quite high, except for the assertiveness training. This would clearly need to be an issue within further stress management interventions, such that ways of increasing the client's motivation to practise this technique be considered. However, the outlook for the future appeared to be fairly positive, particularly since the client reported that she had maintained practise of the techniques during the period in between the interventions.

One of the factors which the client felt had hindered her to maintain practise of the techniques previously was other people at work. Fortunately, within her present job, she reported that she had not encountered any such problems. However, it must be recognised that the client's working situation may change as she meets new colleagues, and that she may one again come into contact with people who will make it difficult for her to practise the techniques. The real acid test of the present intervention would be whether the client was able to fight such resistance and maintain practise of the techniques in these difficult circumstances. The author would argue that it is therefore essential that the client feels confident about her ability to perform the techniques, and that she is very aware of the positive effects they can have on her levels of stress. Consequently, it was arranged between the psychologist and the client, that further stress management training would be offered three months following completion of the second intervention.

The efficacy of this stress management intervention lies not in its generalisation to other individuals, but in its ability to reduce the stress of this single individual to a 'normal' level. However, the author recognises that the single case approach may prove difficult within an organisational setting, particularly where the cost-effectiveness of a

programme is an issue. In such circumstances, the author would suggest that a modular approach to stress management intervention be taken. The 'Stress Profile' of each individual should be considered, and used to design a global programme, which suits the needs of the majority of individuals. Each client would then be required to attend particular modules of the global programme, representing the techniques which would be likely to be most effective for that particular individual. Within this global package, clients should also be engaged in individual sessions with the trainer, in order that their progress can be continually assessed, together with any changes in their experiences of stress. These considerations should then form the basis of a re-evaluation of the needs of the client, such that any changes in the modules which the client is attending be made. This approach also allows employees to have time off work for attending stress management modules at different times, thereby reducing the probability of any disturbances created by the absence of employees in a single department.

## **8.8 Conclusions**

Clearly the evaluative area of stress management intervention is still in its early days, and much more work is needed before this field can move beyond the realms of popular psychology and become recognised by many as a scientific area for study. The author would argue that this can only be achieved if researchers begin to take a theoretical approach to the subject, and incorporate sound methodological principles within their evaluative work. The Process Model proposed within the present research should be considered as a basis for future research, such that an emphasis is placed on determining those individual and situational variables which influence the effectiveness of an intervention, both in the short- and long-term. Although some progress has been made in determining the effects of these variables on the outcomes of interventions, much more work is required, particularly concerning variables such as an individual's coping style, self-esteem and type A behaviour. Once these variables

have been considered, purveyors of stress management programmes can then begin to offer interventions which meet the needs of the individual.

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**SHEFFIELD HALLAM UNIVERSITY**

**SCHOOL OF HEALTH AND COMMUNITY STUDIES /  
SCHOOL OF SCIENCE**

**Health Research Institute**

# **STRESS MANAGEMENT WORKSHOP**

## **A Review**

Please answer the following questions about the stress management workshop as accurately as possible:

(1) On the whole, did you enjoy the workshop?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

(2) On the whole, do you feel that the workshop has helped you to cope with stressors in your life?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

(3) On the whole, do you feel that the workshop has helped relieve symptoms of stress?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

### UNDERSTANDING STRESS

(4) Did you enjoy the "Understanding Stress" session?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

(5) Did you find the "Understanding Stress" session useful?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

(6) Is there anything about the "Understanding Stress" session that you particularly like/dislike? If so, what?

(7) Is there anything about the "Understanding Stress" session that you did not understand? If so, what?

## COGNITIVE RESTRUCTURING

(8) Did you enjoy the cognitive restructuring session?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

(9) Have you used this technique during the weeks between sessions?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

If so, do you feel that it has helped you to manage the stressors/  
symptoms of stress in your life?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

(10) Is there anything about cognitive restructuring that you particularly  
like/dislike? If so, what?

(11) Is there anything about cognitive restructuring that you do not  
understand? If so, what?

## TIME MANAGEMENT

(12) Did you enjoy the time management session?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

(13) Have you used this technique during the weeks between sessions?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

If so, do you feel it has helped you to manage the stressors/  
symptoms of stress in your life?

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

**(14) Is there anything about time management that you particularly like/dislike? If so, what?**

**(15) Is there anything about time management that you do not understand? If so, what?**

### **RELAXATION TRAINING**

**(16) Did you enjoy the relaxation session?**

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

**(17) Have you used this technique during the weeks between sessions?**

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

**If so, do you feel that it has helped you to manage the stressors/symptoms of stress in your life?**

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

**(18) Is there anything about the relaxation that you particularly like/dislike? If so, what?**

**(19) Is there anything about the relaxation that you do not understand? If so, what?**

## ASSERTIVENESS TRAINING

**(20) Did you enjoy the assertiveness session?**

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

**(21) Have you used this technique during the weeks between sessions?**

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

**If so, do you feel that it has helped you to manage the stressors/  
symptoms of stress in your life?**

Not at all \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Very much

**(22) Is there anything about the assertiveness technique that you  
particularly like/dislike? If so, what?**

**(23) Is there anything about the assertiveness technique that you do not  
understand? If so, what?**

## GENERAL COMMENTS

**(24) Is there a stress management technique which you employed most  
often? If so, which one?**

**Why did you employ this particular technique more often than the  
other techniques?**

- (25) Is there a stress management technique which you employed never or very rarely? If so, which one?**

**Why did you employ this particular technique less often than the other techniques?**

- (26) Do you feel that you might use any of the stress management techniques in the future? If so, which one(s) and in what circumstances?**

- (27) Compared to your original expectations of the stress management workshop, how did the workshop compare? *(Please circle the appropriate response)***

**Much better      Better      Same      Worse      Much Worse**

- (28) Since starting the stress management course, have you employed any new stress management technique other than those offered in the workshops? If so, what techniques have you used?**

**How often have you used these technique(s)?**

**How did you learn about these stress management techniques? (eg other people on the course, books, TV etc)**

**What were your reasons for beginning to use these stress management techniques?**

- (29) Have you stopped using any of your habitual stress management techniques during the period of the stress management course? If so, which technique(s) have you ceased to employ?**

**How often did you previously use these technique(s)?**

**What were your reasons for ceasing to employ these stress management technique(s)?**

- (30) Have you any comments, criticisms to make about any of the stress management sessions/techniques?**

- (31) Have you any suggestions for improving stress management workshops?**

- (32) Would you be willing to participate further in stress management programmes?**

***Thank you very much for your co-operation during the workshops***

***This questionnaire is designed to determine people's reason(s) for participating in stress management courses, and their motivation to change their behaviour.***

***Please answer the questions honestly. The questionnaire allows complete anonymity***

**THIS QUESTIONNAIRE ALLOWS YOU TO REMAIN COMPLETELY ANONYMOUS**

**(1) Please indicate your reason(s) for participating in the stress management workshop, by ticking the appropriate box(es):**

**I have been feeling stressed recently**

**I have been suffering from stress-related illnesses recently**

**I have suffered from stress-related illnesses in the past**

**I was curious to find out what stress management courses had to offer**

**I felt that the time off work to attend the course would in itself help to relieve stress**

**I simply wanted time off work**

**Have you any other reason(s) for participating in the stress management workshop? If so, please describe below:**

**(2) Is there a particular area of your life that you feel you should change in order to become less stressed? If so, please indicate what this area is:**

**(3) How motivated do you feel to change this area of your life? (Please tick the appropriate dash)**

**Not at all motivated** \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ **Very motivated**

**(4) How has your motivation to change this area of your life altered whilst you have been participating on the stress management course? (Please circle the appropriate response)**

**Much less motivated**   **Less motivated**   **No change**   **More**   **Much more motivated**  
**motivated**

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**STRESS MANAGEMENT WORKSHOP**

**FOLLOW-UP REVIEW**



- (6) Which, if any, stress management technique have you employed most often since the last review?
- (7) Why did you employ this particular technique more often than the others?
- (8) Which, if any, stress management technique have you never, or very rarely employed since the last review?
- (9) Why did you employ this particular technique less often than the others?
- (10) Which, if any, of the stress management techniques will you use in the future?
- (11) Since the last review, have you employed any new stress management techniques other than those offered in the workshop?  
(Please circle the appropriate response)

YES

NO

If YES, please specify what techniques you have used

(12) **How often have you used these techniques?** (*eg twice a day, once a month*)

(13) **Since the last review, have you stopped using any of your habitual stress management techniques?**  
(*Please circle the appropriate response*)

YES

NO

**If YES, please specify what techniques you have stopped using**

(14) **How often did you previously use these techniques?** (*eg twice a day, once a week*)

(15) **Do you feel that there are changes which you still need to make to your lifestyle, in order to cope more effectively with stressors?**  
(*Please circle the appropriate response*)

YES

NO

**If YES, can you identify these changes? Please specify**

(16) **Why do you think that you have not as yet made these changes?**  
(*Please tick the boxes of appropriate response(s)*)

*Lack of time*

*Insufficient information about techniques to assist in the change*

*Insufficient control of that particular aspect of life*

*Other people*

*Other (Please specify below)*

(17) **What do you feel you could do to begin to make these changes?**

*Now I would like your opinions about each aspect of the workshop. I apologise if some of this seems repetitive but I need to collect the information in this format.*

## COGNITIVE RESTRUCTURING

- (18) **Have you practised this technique since the last review?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

**If so, do you feel that it has helped you to manage the stressors/symptoms of stress in your life?**

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (19) **In what situations have you practised this technique?** (eg in the office at work, at home with the children)

- (20) **How motivated have you felt to practise this technique?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (21) **What do you feel motivated you to practise this technique?**

## RELAXATION

- (22) **Have you practised this technique since the last review?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

**If so, do you feel that it has helped you to manage the stressors/symptoms of stress in your life?**

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (23) **In what situations have you practised this technique?** (eg in the office at work, at home with the children)

- (24) **How motivated have you felt to practise this technique?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (25) **What do you feel motivated you to practise this technique?**

## ASSERTIVENESS

- (26) **Have you practised this technique since the last review?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

**If so, do you feel that it has helped you to manage the stressors/symptoms of stress in your life?**

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (27) **In what situations have you practised this technique?** (eg in the office at work, at home with the children)

- (28) **How motivated have you felt to practise this technique?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (29) **What do you feel motivated you to practise this technique?**

## TIME MANAGEMENT

- (30) **Have you practised this technique since the last review?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

**If so, do you feel that it has helped you to manage the stressors/symptoms of stress in your life?**

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (31) **In what situations have you practised this technique?** (eg in the office at work, at home with the children)

- (32) **How motivated have you felt to practise this technique?**  
(Please tick the appropriate dash)

Not at all    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    Very much

- (33) **What do you feel motivated you to practise this technique?**

**Thank you once again for all your co-operation with my research**