

**AN INVESTIGATION OF PSYCHOLOGICAL STRESS,
COPING STYLES/STRATEGIES AND PSYCHOLOGICAL
ADJUSTMENT IN A SAMPLE OF INDIAN SOUTH
AFRICAN WOMEN WITH BREAST CANCER IN
DIFFERENT DEVELOPMENTAL STAGES OF THE
LIFE-CYCLE**

by

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Faculty of Health Sciences

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ABSTRACT

The purpose of this research was to examine some major themes of stress, coping styles/strategies, and psychological adjustment to breast cancer, of 116 English-speaking, low socioeconomic status Indian South African women at different developmental stages of the life-cycle.

The sample was drawn from a population of hospital outpatients receiving treatment for breast cancer at three academic hospitals in Durban, South Africa. Convenience sampling was employed, and a battery of six questionnaires was completed in addition to the collection of demographic data. Descriptive statistics, correlational analysis, multivariate analysis and regression analysis was used to analyse the data.

The results suggested both similarities and differences between the younger and older groups of patients with regard to the disruption of life-tasks by breast cancer.

However, the younger group, on average, experienced significantly greater disruption with regard to the following ‘themes of stress’: interpersonal relationships, achievement-oriented goals/activities, body or sexual image and integrity, and existential issues. In addition, the younger patients, on average, experienced a greater degree of overall disruption to life-tasks. The disruption of life-tasks was only associated with psychological morbidity in the younger patients, and the overall extent of disruption to life-tasks was shown to directly contribute to the younger patients’ depressive symptomatology. Both groups demonstrated elevated stress

reactions and psychological symptoms in comparison to norms generally, however the younger patients demonstrated higher levels of ‘psychological’ stress and depressive symptomatology. With regard to coping styles, the younger group, on average, demonstrated a greater prevalence of ‘fighting spirit’ and ‘anxious preoccupation’, while the older group contained a significantly greater percentage of patients demonstrating a problematic combination of coping styles. The coping style ‘helpless or hopeless’ was associated with various stress reactions and psychological symptoms for both groups, although this association was less prevalent for the older group. The coping strategy ‘escape-avoidance’ was associated with overall psychological distress only for the younger group. The results suggested that there may be other, more significant predictor variables for psychological distress in older breast cancer patients – a potential area for future research.

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GLOSSARY

Biopsychosocial: An holistic approach that incorporates biological, psychological and social/contextual perspectives.

Cancer Incidence: The number of new cases occurring every year in an enumerated population (Sitas et. al, 1998).

Cancer Prevalence: The number of new and surviving cancer patients at any point in time (Sitas et al., 1998).

Cognitive Approach: This broadly refers to the therapeutic approach developed by Beck and his colleagues (e.g. Beck, 1976), which highlights the interrelationships of cognitions, affect and behaviour.

Cognitive – Developmental: An integration of theoretical ideas from various stress, coping and adult developmental models that have been developed within the broader cognitive and developmental psychology approaches.

Coping Strategies: A set of thoughts and behaviours employed by people within particular stressful situations, which are implicitly considered to be more malleable than coping styles, and may vary across situations (Folkman & Lazarus, 1988).

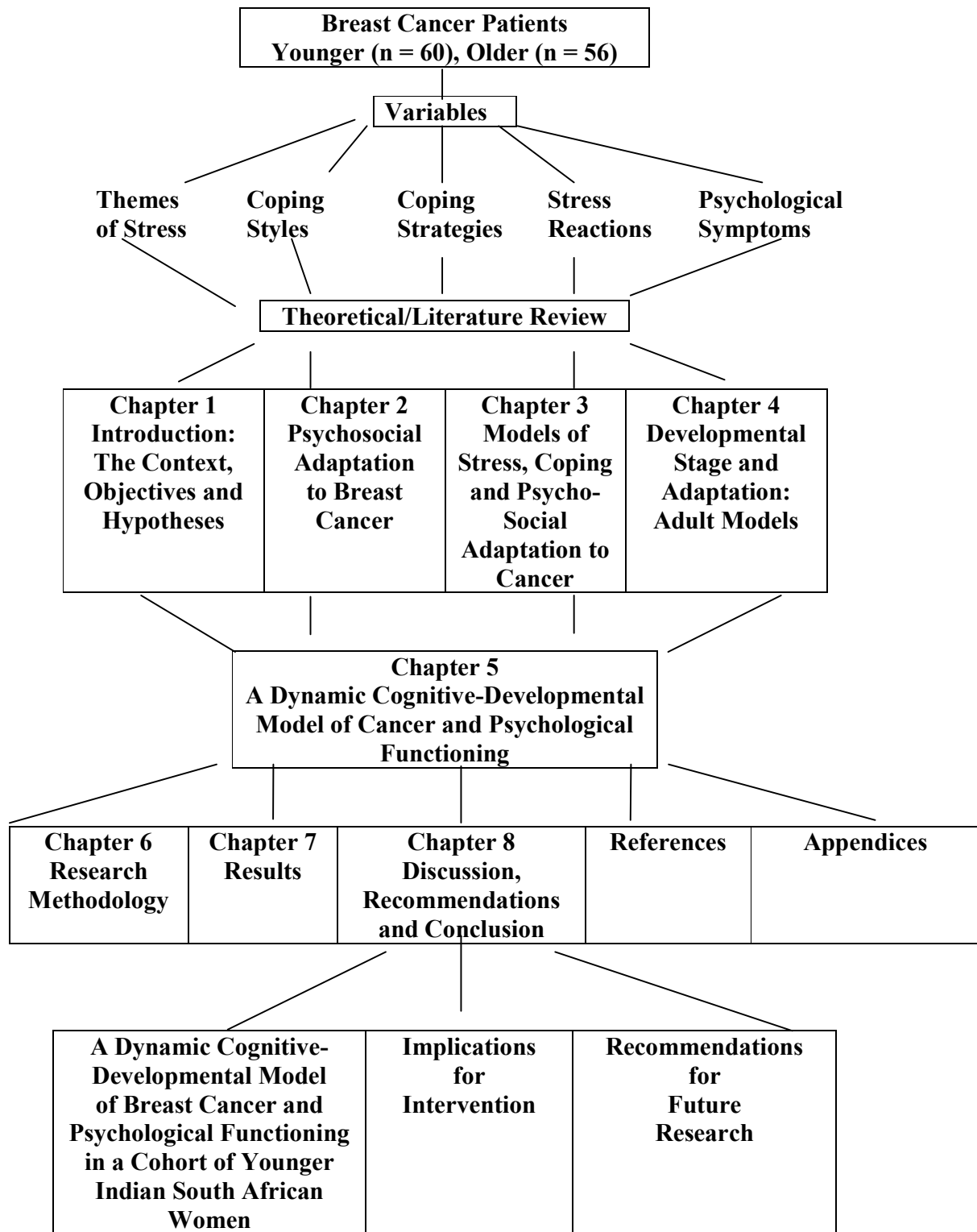
Coping Styles: This refers to more stable coping processes across situations, and implies ‘traits’ or coping ‘dispositions’ (Folkman & Lazarus, 1988).

Culture: The complex pattern of behaviour that is common to members of a society who share similar world views or who tend to make the same assumptions about their environment (Lo Castro, 2003).

Indian: This term is commonly used to describe South Africans who originate either directly or indirectly from India. It should be noted that this term is considered by some people to be an inadequate and/or over-inclusive description.

Younger/Older/Total Group: ‘Younger’ group refers to the group of participants in the study with an age-range of 26 – 52 years, who would generally be considered ‘pre-menopausal’ (Van Keep, 1983) with regard to developmental stage; ‘older’ group refers to the group of participants in the study with an age-range of 53 – 79 years, who would generally be considered ‘post-menopausal’ (Van Keep, 1983) with regard to developmental stage; and ‘total’ group refers to all the participants in the study, made up of participants from both the younger and older groups.

THESIS CONCEPTUALISATION



CHAPTER ONE

INTRODUCTION

1.1 THE PROBLEM AND ITS SETTING

The incidence of breast cancer in sub-Saharan Africa has been reported as second only to cervical cancer (Garcia et al., 2007). Similarly, after cervical cancer, cancer of the breast is the second most common cancer in females in South Africa, if basal and squamous skin cancers are excluded (Research Report, 1996). According to the Cancer Association of South Africa, cancer of the breast may even have overtaken cervical cancer as the most common cancer in women in South Africa (Sitas et al., 1998).

Over the last several decades, there has been a growing interest in the psychosocial aspects of breast cancer. Studies have addressed multifarious aspects including: the possible importance of personality factors and stress in the onset and progression of malignancy, the psychological impact of diagnosis and treatment, the incidence and nature of psychological and psychiatric problems, the development and evaluation of psychological interventions to ameliorate treatment side-effects and to enhance the quality of life, the psychological effects of screening for breast cancer and of counselling women at high risk, the organization of services, training and psychoneuroimmunology (Walker & Eremin, 1996). The reason for this outpouring of research has been the

growing awareness, reflected in the national and international psychosocial oncology literature, that breast cancer and its treatment are frequently associated with psychological morbidity (e.g. Abasher, 2007, 2008; Glanz & Lerman, 1992; Lo Castro & Schlebusch, 2006; Mor et al., 1994; Nuhu et al., 2009; Schlebusch & Van Oers, 1999). If not treated appropriately, this could not only compromise treatment, but also result in increased mortality (Pirl & Roth, 1999), although the latter claim is more controversial (Luecken & Compas, 2002).

The diagnosis, treatment and sequelae of breast cancer are major stressors. However research suggests that the psychological impact and emotional responses of individuals vary substantially depending on the medical parameters of the disease, the patient's psychological make-up and coping abilities, and availability of external and financial support (Payne et al., 1996). Stress factors and coping styles and strategies have been related to adjustment to breast cancer and, in some studies, even survival time (e.g. Iwamitsu et al., 2005; Spiegel, 1997; Taylor, 1983).

Research has often indicated that compared to older patients, younger cancer patients experience more distress, anxiety and depression (Zainal et al., 2007), and have a greater need for social support (Merckaert et al., 2009; Tuinman et al., 2008), although these results have not always been consistent (Jacobsen et al., 2005; Ransom et al., 2006). Studies on women with breast cancer have found that younger patients are particularly prone to reporting fears related to recurrence of the disease, as well as parenting worries (Lydon, 2009). In addition, women with breast cancer often face two major losses which

appear to generally have a greater impact on younger patients; one is the (possible) physical loss or deformity of part of the body and the threat to life, and the other is the loss of femininity (Grabsch et al., 2006; Koh, 1999; Oktay, 1998). Both are important with regard to the point in the life-cycle at which breast cancer occurs, and what social tasks are threatened or interrupted.

According to Holland and Rowland (1989), studies have shown that the threat to a sense of femininity and self-esteem is especially prevalent in younger women with breast cancer whose attractiveness and fertility are paramount (e.g. Lindop et al., 2001). They observe that in most instances, the meaning of breast cancer is quite different for older women with secure homes and families, and who often have fewer competency demands on their time and resources than do younger patients. It is thus not surprising that some studies have shown that older women with cancer manifested fewer and less severe psychosocial problems (e.g. Ganz et al., 2003; Mor et al., 1994). On the other hand, Holland and Rowland (1989) also warn that older women are more apt to be experiencing other losses (e.g. loss of a spouse), meaning not only having to adjust to a major loss in her life, but also to a threat to her own life and body integrity. Fotopoulos and Cook (1980), for example, found a high level of distress amongst older women with breast cancer.

It appears that given the paucity of research, further clarity is needed with regard to the specific issues facing South African women with breast cancer at different stages of the

life-cycle, with more appropriate psychometric assessment methods to measure this required.

In line with the above, Holland and Rowland (1989) developed an adult developmental model derived from a number of theoretical overviews developed by Eric Ericson (1963), Bernice Neugarten (1979), Daniel Levinson (1978) and George Vaillant (1977) which attempts to evaluate which major 'life tasks' are threatened or interrupted as a consequence of having cancer. These authors believe that such a model provides insight into the psychological problems likely to result from the diagnosis, and to arise during the treatment and course of an illness such as cancer. In terms of this model, the common disruptions of illness can be divided into five themes of stress, the meaning of which varies according to developmental stage or age. Based on the aforementioned theorists, four adult age ranges or developmental stages have been delineated by these theorists - the Young Adult (19-30 years), the Mature Adult (31-45 years), the Older Adult (46-65 years) and the Aging Adult (66 and onwards).

Finally, there appears to be insufficient information in the literature regarding the psychological responses to breast cancer of women of colour in South Africa, as well as the various psychosocial problems experienced by these women as a result of having breast cancer. Historically, the majority of research appears to have assumed a westernised approach in this regard, and to have been carried out largely within the white population (although this is changing). Cross-cultural research in the U.S.A. has shown that African American women with breast cancer present at a later stage of the disease

than other cultural groups and have higher mortality (Young et al., 1984). This has been linked, among other things, to knowledge of cancer (Jepson et al., 1991) and beliefs (Nemcek, 1990; Roberson, 1994) about breast screening, socioeconomic status, lack of access to health care and obesity (Hunter et al., 1993; Weiss et al., 1995; Wells & Horn, 1992).

South African researchers have observed that lack of knowledge and understanding can feature prominently as a reaction to a diagnosis of cancer within patient populations in some traditional societies, which is said to have implications for optimal adjustment to a positive outcome of disease within these groups (Schlebusch, 1998d). For such a positive outcome to come about, research suggests that for many traditional black people in South Africa, both the physical as well as the spiritual dimension require treatment before a return to health can be achieved (Pillay, 1996). In addition, Schlebusch and van Oers (1999) found that there were several other differences in the psychological experiences of black and white South African breast cancer patients. Black patients appeared to experience greater levels of somatization, depression and body image dysphoria, tending to utilize less adaptive styles of adjustment to their disease. It was hypothesized that the greater levels of psychological distress found in the black patient group may be due to traditional cultural reasons which may predispose them to suppress emotions or somatize them rather than display these outwardly.

Statistics provided by the National Cancer Registry (Sitas et al., 1998) suggest that Indian and white women have the highest incidence of breast cancer per annum in South Africa,

which is 1 in 21 and 1 in 13 respectively, with coloured (1 in 63) and black (1 in 81) women appearing less at risk. In addition, breast cancer as a form of cancer is ranked first among Indian women (24.4%), followed by coloured (18.2%), white (17.9%) and black (13.4%) women. These results suggest that further research such as that mentioned above, targeting the ostensibly high-risk and previously disadvantaged Indian population group is required, given that data on their response to breast cancer is particularly sparse. The aim of such research would be to establish and delineate the particular psychosocial problems facing Indian women with breast cancer, in order to best meet their needs with regard to psychological management. The results of this study may then be replicated or extended with research on other previously disadvantaged cultural groups in South Africa. Although the contribution of psycho-oncology research in Africa has lagged behind more developed countries, it has been slow and steady (Du Toit, 2004), and the aim of this study is to contribute to this encouraging trend.

1.2. OBJECTIVES OF THE STUDY

The study proposes to examine as the primary aim some major themes of stress, intrapersonal coping styles and strategies and psychological adjustment to breast cancer of Indian South African women at different developmental stages of the life-cycle. The secondary aim is to investigate the interrelationship among variables, that is, to identify the variables which habituate/facilitate positive or negative outcomes.

The primary objectives of the study are as follows:

1.2.1 Objective One

To assess and delineate sources of stress and psychological morbidity in Indian South African women with breast cancer at different developmental stages of the life-cycle in order to derive serviceable concepts for intervention and future research.

1.2.2 Objective Two

To assess and delineate the stress-related responses and levels of psychological morbidity of Indian South African women with breast cancer at different developmental stages of the life-cycle in order to derive serviceable concepts for intervention and future research.

1.2.3 Objective Three

To assess and delineate the coping styles and strategies of Indian South African women with breast cancer at different developmental stages of the life-cycle in order to derive serviceable concepts for intervention and future research.

1.2.4 Objective Four

To create and pilot a developmental stress questionnaire for South African women with severe/life-threatening illness.

1.3 HYPOTHESES TO BE TESTED

In order to achieve the objectives discussed in Section 1.2, the following hypotheses were tested in a representative sample of adult South African Indian women formally diagnosed with breast cancer, presenting for treatment to Oncology Departments at three local teaching hospitals in Durban, South Africa.

1.3.1 Hypothesis One

The diagnosis and treatment of breast cancer results in the disruption of life tasks/developmental milestones.

1.3.2 Hypothesis Two

The disruption of life tasks caused by cancer diagnosis and treatment can be divided into five major themes of stress, including: altered interpersonal relationships, dependence-independence issues, achievement disruption, body-sexual image and integrity, and existential issues, the significance of which varies according to age/developmental stage.

1.3.3 Hypothesis Three

The disruption of life-tasks and subsequent themes of stress caused by breast cancer diagnosis and treatment are associated with stress-related responses and psychological morbidity, which vary according to age/developmental stage.

1.3.4 Hypothesis Four

Various coping styles and strategies are associated with stress-related responses and psychological adjustment to the diagnosis and treatment of breast cancer, and these vary with age/developmental stage.

1.3.5 Hypothesis Five

The impact of various demographic variables, themes of stress and the differential use of coping styles and strategies on stress reactions and psychological symptoms varies according to age/developmental stage.

1.4 CHAPTER OUTLINE

The remainder of this thesis has been organised in the following way. Chapter Two provides an overview of the literature related to the psychosocial adaptation to breast cancer, and specifically focuses on psychological morbidity and quality of life (QoL), and various demographic mediating variables; Chapter Three highlights various prominent and relevant models of stress and coping within the arena of cancer research, with a general overview of research provided, together with a more specific focus on stress and coping within this context; Chapter Four provides an overview of various relevant theoretical models related to developmental stage and adaptation, with a specific focus on Holland and Rowland's Adult Developmental Model; Chapter Five describes a dynamic cognitive-developmental model of cancer and psychological functioning; Chapter Six gives a detailed account of the research methodology employed in this study; Chapter Seven presents the results of the statistical analyses conducted; and finally, Chapter Eight provides a general discussion of these results as well as the various conclusions reached and recommendations made on the basis of the findings of the research.

CHAPTER TWO

PSYCHOSOCIAL ADAPTATION TO BREAST CANCER

2.1 PSYCHOLOGICAL MORBIDITY AND QUALITY OF LIFE

2.1.1 Psychological Adjustment

A review of the literature in psycho-oncology indicates a vast body of evidence regarding the psychosocial effects of cancer, including anxiety, depression, adjustment disorder, somatisation, body-image disturbances, shame, post-traumatic stress symptomatology, sexual dysfunction and conditioned nausea, with the most commonly presenting symptoms being those of anxiety and depression (Asuzu et al., 2008; Avis et al., 2004; Glanz & Lerman, 1992; Johnson et al., 2010; Turner et al., 2005). Prevalence rates of clinically relevant levels of anxiety and depression have been estimated to be up to 45% in cancer patients generally (Grassi et al., 1996; McDaniel et al., 1995; Minagawa et al., 1997), with prevalence rates of the same, estimated to be between 16% and 57% in breast and gynaecological cancer patients (Kissane et al., 2004; Mehnert & Koch, 2007), although the overlap of these psychological symptoms with the symptoms produced by specific cancers and their treatments complicates diagnosis (Trask & Pearman, 2007). In addition to the above, studies have found that up to 30% of women diagnosed with breast cancer continue to experience clinically relevant levels of anxiety and depression at follow-up (Howard & Harvey, 1998). Unsurprisingly, these symptoms have been found

to significantly increase the burden of distress in cancer patients (Reich et al., 2008). Those at significant risk appear to be women with a premorbid history of psychiatric illness (Bloom et al., 1987; Penman et al., 1987).

For some cancer patients, the processes associated with being diagnosed and treated may be sufficiently traumatizing that they produce posttraumatic stress reactions such as avoidance and intrusive symptoms. Research findings with respect to breast cancer suggest that the development of a full PTSD syndrome appears to be relatively uncommon in this population, ranging from 3-10% (Alter et al., 1996; Cordova et al., 1995; Green et al., 1998). However subsyndromal, yet clinically significant trauma symptoms such as intrusion and avoidance are relatively common. For example, Hunter et al. (1996) found that more than 20% of primary breast cancer patients experienced high levels of intrusion and avoidance.

Within the African context, women with cancer exhibit a number of psychosocial concerns, including: suicidal ideation associated with pain (Nuhu et al., 2009), sexual disturbances and decreased quality of life (Abasher, 2008), psychological distress and depression (Schlebusch & Van Oers, 1999), and unhealthy levels of stress, fear of the disease, and lack of self-confidence (Fernandes et al., 2006; Lo Castro & Schlebusch, 2006).

The role of psychological variables – particularly those of anxiety and depression – in relation to client's quality of life (QoL), disease progression and clinical outcome has

been the topic of much research. For example, Walker et al. (1999) found that, in a study of women with advanced breast cancer, anxiety and depression were significant predictors of the patients' response to chemotherapy in terms of clinical and pathological outcomes. Hopwood et al. (1991) found that high levels of anxiety and depression were associated with higher mortality rates in breast cancer patients.

2.1.2 Quality of Life

In addition to having high rates of psychiatric and psychological disturbance, the quality of life of women with breast cancer is substantially affected by many of the following issues. The literature indicates that the strongest concerns for women with early-stage breast cancer are those relating directly to cancer as a health and life threat, the most salient being the possibility of recurrence (Spencer et al., 1999). According to these authors, the experience of breast cancer often forces women to confront fear and uncertainty, and most overwhelming, the idea of their own mortality, raising existential questions related to the importance and meaning of their lives. Other high-rated concerns include sickness and potential damage from undergoing potential adjuvant therapies, pain and premature death. Concerns regarding personal relationships include not being able to live out important relationships (ibid). Younger women with children are often in a dilemma as to what to disclose to their offspring, whether they have the resources to cope with the disease and provide good parenting at the same time, how the children will be affected by their illness, and issues related to their care should they not survive (Ashing-Giwa et al., 2003; Lydon, 2009; Oktay, 1998).

Breast cancer also elicits concerns regarding a woman's view of herself. Grabsch et al. (2006) found that of their sample of 227 women, one-third felt less attractive, one-quarter were dissatisfied with their body image, and for most, sexual interest had waned. Body image disturbance and sexual dysfunction including abstinence from sexual intercourse have been reported among Sudanese breast cancer patients (Abasher, 2007), with similar psychological difficulties in cancer patients being reported in Uganda (Kiyange, 2007). Many treatments for cancer challenge a woman's body image and sexuality (Abasher, 2008; Oktay, 1998). "The systemic treatment of breast cancer with chemotherapy or hormonal therapy may also affect self-image, fertility, and libido – all important components of femininity" (Oktay, 1998, p. 6). Lindop et al. (2001) found that the younger women with breast cancer in their sample expressed a stronger need to adjust to their changed appearance and to have this accepted by their husband/partner than the older patients. They offered the explanation that the older women may have been in longer-established relationships which were less affected by this consequence of breast cancer, or their partner may have died, making issues related to femininity and body image of less concern to them. Various studies have been conducted comparing psychological sequelae following mastectomy or breast conservation. Some studies such as that by Mock (1983) and Härtl et al. (2003) have found that patients treated with breast conserving methods reported a more favourable body image, compared to those treated with mastectomy. On the other hand, some studies comparing mastectomy with breast conservation have found no significant differences (Fallowfield et al., 1986). The effects of treatments other than surgery have been examined and also been found to be traumatic especially in terms of their side-effects (Gyllenskold, 1978). Overall it seems that the

combined effects of breast surgery, loss of hair, decreased libido and early menopause all constitute a threat to a woman's self-image. In addition, as the rate of breast cancer has increased in younger women, issues of femininity arising from the impact of disease on fertility are increasingly important (Oktay, 1998).

The experience of breast cancer has also been found to create certain challenges within a marriage or significant relationship. Difficulties include communication problems, difficulty coping and sexual dysfunction (Shapiro et al., 2001). One study found that approximately 50% of women with cancer had at least one diagnosed sexual dysfunction during the post-treatment year (Anderson, Anderson, & DeProse, 1989). Many studies over the years have examined the impact of breast surgery on sexual functioning. Maguire et al. (1978) found that sexual difficulties existed for up to one-third of women undergoing mastectomy throughout the first postoperative year. A quarter to a third of the women in a study by Greer (1979) reported impaired sexual adjustment after two years. Other studies compared women who had mastectomies with those who had breast-sparing surgery (Fallowfield et al., 1986; Fallowfield et al., 1990). Sexual interest had declined in over a quarter of respondents regardless of which surgical procedure had taken place. Possible explanations given for this are concerns over the diagnosis and/or the effects of treatment resulting in loss of libido. A recurring research theme is that sexual adjustment following breast surgery is dependent upon a support network and well functioning relationship with a partner where frightening and intimate feelings can be shared (Ghizani et al., 1995; Pistrang & Barker, 1995). Krishnasamy (1996) noted that self-esteem is derived from an interpersonal relationship in which the person perceives

that he or she is accepted. Research also suggests that if the quality of the relationship was good pre-morbidly, breast cancer does not usually disrupt the relationship and may even strengthen it (Oktay & Walter, 1991), with the opposite being true should the couple have experienced difficulties in their relationship pre-morbidly (Oktay, 1998). As will be discussed in more detail below, it is important to recognise that marital quality and support from a caring husband/partner has been identified as a critical contributor to quality of life in women with breast cancer (Holland & Rowland, 1991; Zahlis & Shands, 1991).

In addition to the above, various demographic explanations have been put forward in an attempt to explain the differential psychological responses to the diagnosis and treatment of cancer, and potential protective/risk factors that may act in mediation to this response. Some of these will be discussed in more detail below.

2.2 DEMOGRAPHIC VARIABLES MEDIATING PSYCHOSOCIAL ADAPTATION: AGE, RACE AND SOCIAL SUPPORT

2.2.1 Age as a Mediating Variable

Psycho-oncological research on breast cancer is increasingly demonstrating that a patient's phase of life has a significant impact on adjustment: younger patients tend to demonstrate greater levels of distress than older patients, with older patients generally demonstrating better psychosocial adjustment to breast cancer (Broeckel et al., 2000; Ganz et al., 1993; Ganz et al., 1998; Ganz et al., 2003; Pozo et al., 1992; Schag et al.,

1993; Simonton & Sherman, 1998; Vinokur et al., 1990; Zainal et al., 2007). Results of psycho-oncology research in this area are not always consistent, however, and some studies have found no correlation between age and distress (Jacobsen et al., 2005; Ransom et al., 2006). Compas et al. (1999), for example, in their study comprising 80 women aged 36-80 diagnosed with breast cancer, found that age is a salient factor in the psychological adjustment of women with breast cancer close to initial diagnosis, with younger women exhibiting greater affective distress and a tendency to use less adaptive ways of coping. However they found no difference between younger and older women in their adjustment over the subsequent course of treatment and initial recovery. However Koopman et al. (2002) in their study of 117 women recently diagnosed with breast cancer found that younger women were significantly more at risk of developing traumatic stress symptoms than older women, which were evident even at six months post diagnosis. Ganz et al. (2003) reported a substantial degree of psychological distress in younger women after breast cancer that persisted many years after the diagnosis.

2.2.1.1 Theoretical formulations of age as a mediating variable

Various explanations have been put forward in an attempt to explain the differential age-related adjustment patterns, although it appears that these have often been speculative in nature, or not tied to any comprehensive theoretical framework specifically designed to account for these differences. In addition, previous research has not adequately investigated the role of individual coping strategies in relation to age and adjustment to breast cancer. Studies investigating the relationship between age and coping styles in

dealing with a variety of stressors have generally assumed that people of different ages employ similar coping mechanisms (Compas et al., 1999). However it is now emerging that this is not always the case. Sharma et al. (2003) found that the younger Indian women with breast cancer in their sample used significantly more coping strategies, and had significantly more psychological distress as well as psychopathology in terms of anxiety and depression, suggesting that the younger women had greater difficulty adapting to the stress and limitations that cancer imposed on them. In cross-sectional analyses of community based samples (Aldwin, 1991; McRae, 1982; McRae, 1989) and chronically ill adults (Felton et al., 1987) older people have been found to engage in fewer coping responses that involve avoidance strategies (e.g. wishful thinking) or ventilation of emotion (particularly negative or hostile affect), all of which have been associated with poorer adjustment to trauma, and possibly account for some of the age-related differences in emotional distress. In addition, and not necessarily in conflict with the above, is the observation by Schulz et al. (1996) that one of the hallmarks of aging is the increased reliance on more passive and introverted cognitive coping styles as opposed to active, primary control strategies directed at the external environment. Under threatening conditions, cognitive coping strategies provide options to maintain high levels of functioning within the context of a familiar environment. Baider et al. (2003) observe that, for an older person, endorsing pessimism may simply reflect a coping strategy that has become adaptive in the face of a declining ability to control important life outcomes such as health. In contrast, younger people endorsing such coping strategies may be reflecting genuine hopelessness and despair about the future. Some studies suggest that older women with breast cancer often cope better than their younger

counterparts by employing a variety of previously learned coping methods. Life experiences, family relationships, previous losses, and problem-solving skills may also contribute to older people's use of wider-ranging and more realistic coping strategies, according to Halstead et al. (1994).

In addition to the role that coping plays with respect to age and adjustment to breast cancer, there are various other factors that may also play an important role. Serious illnesses such as cancer are more expected among older people and are, therefore, conceivably perceived as less threatening. The perceived losses for older people may not be as great, as the major part of their lives and accomplishments are already behind them (Heckhausen et al., 1995; Houldin et al., 1992; Ryaff, 1991). On the other hand, younger women are at a time in life when a serious disease like cancer is not anticipated and is very disruptive. Mor et al. (1994) found that in a comparison of breast cancer patients under the age of 55 with those over 55, the younger women were found to experience lower levels of emotional well-being – possibly in relation to various stressors observed amongst this cohort, including greater financial difficulties, more disruption of daily life, and more unmet needs related to household chores and child care. In fact, Baider et al. (2003) observe that most outcome studies have shown that younger women with breast cancer experience greater unmet needs, more unhappiness, and more financial distress than older women. In addition, the physical and psychological difficulties associated with the necessary medical treatments may affect their ability to function successfully in social roles that typify this age group (Schover, 1994; Spencer et al., 1999; Wang et al., 1999). As mentioned above, significant contributing factors may be related to the impact of

treatment on body image, reproductive health and sexuality. For example, Ganz et al. (2003) found that treatment-related menopause (and by extension the loss of the ability to have children) was particularly problematic for the youngest women in their sample and was associated with poorer emotional functioning.

Compas et al. (1999) have observed that “Age may best be viewed as a marker of risk for emotional distress, but other factors operate as the mechanisms that underlie the effects of age” (p. 196). It is clear that further research is needed in this area to more clearly delineate the complex interrelationships between these various factors, in order that researchers and clinicians alike have a better understanding of the age-related variations in patients’ psychological adjustment to breast cancer – particularly as this relates to their own particular cultural context and environment, as will now be discussed.

2.2.2 Race/Culture as a Mediating Variable

Responses to cancer are processes that occur within a specific socio-cultural context (Costa-Requena & Gil, 2009). Although Indian South African women are, comparatively-speaking, at increased risk of developing breast cancer, very little is known about the psychological continuum within which these women live with an illness such as breast cancer, and what enhances possible long-term survival. It is important to recognise that Indian South African women, as do all of us, filter information through a cultural context, and that these factors may influence their

perception of breast cancer and possibly also their psychological adjustment to this disease.

There has, however, been research in this area carried out with other ethnic groups – primarily with white and black women - within the South African context. For example, several studies within the South African context have focused on the increase in the incidence of breast cancer amongst black women who westernise their diets and lifestyle. Walker et al. (2004) observe that black African women in general are characterised by certain protective factors. These factors include late menarche, early age at birth of first child, high parity, and being physically active. However, according to these authors, with ongoing changes in the lifestyle of urban African women, the protective factors are decreasing in their intensity, which has been associated with rises in the disease's incidence rate.

High cancer mortality rates in Africa have been linked to a variety of factors. In Cameroon, for example, mortality rates have been linked to inadequate financial resources, lack of appropriate medical personnel and health care facilities, poor information about cancer and its treatment, and cultural beliefs and fears about cancer which was associated with delays in seeking medical attention (Ekortari et al., 2007). Benjamin and Akiror (2008) found that delays in presenting for treatment in African patients was linked to patients first seeking traditional treatment, sometimes for years, before presenting at a hospital for treatment. They also found that patients' perception of Western medicine was that it is painful, cold, threatening, authoritarian, unsympathetic

and non-holistic compared to traditional medicine. Some of these issues will be discussed in more detail with reference to the South African context below.

2.2.2.1 Tradition and culture

Pillay (2002), in an investigation seeking to establish the awareness of breast and cervical cancers among women of African descent in both rural and urban areas in South Africa, found that almost one-fifth of the women had not heard of these cancers, and almost half were unaware of the breast self-examination technique. Generally lower awareness levels were found in older and rural women who were also significantly more inclined to consult traditional healers (than doctors) about lumps in their breast.

Krombein and De Velliers (2006), however, found good knowledge about breast cancer and breast cancer screening in women in a South African township, possibly suggesting improvements in this area. Schlebusch and van Oers (1999) observe that for many traditional (and possibly older) black people in South Africa, the Western medical system coexists with a traditional system of healing. For them, the individual comprises a spiritual as well as physical dimension both of which are affected through illness and disease. Both dimensions require treatment before a return to health can be achieved (Pillay, 1996). Mtalane et al. (1993) observe that in some traditional societies causation of disease is often attributed to supernatural forces, ancestors, sorcery and contagion requiring the intervention of traditional healers to address the cause. In addition, Ngubane (1977) reported that these societies are often disapproving of malingering, with individuals discouraged from complaining or openly expressing their feelings, with the

extent of the patient's emotional distress often remaining hidden. Schlebusch and van Oers (1999) in their study of 25 black and 25 white breast cancer patients, found that the different groups appeared to experience their disease in different ways, and that level of psychological distress associated with their disease differed markedly between the two patient groups. According to these authors, the black patients were found to experience higher levels of depression and body image dysphoria and to utilise different, possibly less effective adaptive adjustment styles. They considered these patients to be at higher risk for psychological distress requiring psychological intervention. They suggested that a partial explanation for this difference can be made in terms of the groups' culturally diverse views of health and disease, and the historical lack of psycho-oncological services for black patients. In this study, the white patient group also reported less distress arising from somatisation. The authors offered the possible explanation that psychological distress may have been expressed somatically by some of the black patients given the aforementioned traditional emphasis on stoicism and discouragement of complaining within this culture. The endorsement of many of the somatic symptoms of depression by the black patients may also explain the significantly higher level of depression experienced by the black patients. Schlebusch and van Oers (1999) also discussed the impact of religious beliefs on the black women's experience of their disease, not only in connection to the possible experience of guilt in response to the belief that the illness was a form of punishment by ancestors, but also in connection to the predominance of hopelessness/helplessness and denial as adjustment styles which characterised the responses of the black patient group, suggestive of a more fatalistic approach. Finally, this study found that the patients within the black group also exhibited

a higher degree of body image dysphoria, particularly in relation to feelings about physical appearance in situations of social scrutiny. The authors offered a partial explanation based on a greater proportion of these women having undergone mastectomies which the literature indicates has a greater effect on body image than more breast conserving techniques (Margolis et al., 1990), particularly where the breast disfigurement may have negatively affected the nurturing and maternal aspects of the body and self-image which is often closely associated with a woman's primary traditional roles within this culture (Ngubane, 1977). These authors concluded that "...specialists in psycho-oncology need to be aware of possible cross-cultural differences in the experience of breast cancer in different patient populations and the need to target those individuals for psychological intervention who appear to be at risk for poorer psychological adjustment and thereby optimise treatment outcome" (p. 34).

2.2.2.2 Race, coping and psychological adjustment

Various international studies have also investigated racial differences with regard to women's psychological adjustment to breast cancer. For example, some studies have indicated that prayer and spirituality tend to be more common coping approaches for women of colour than Caucasian women experiencing illness (Ashing et al., 2002; Ashing-Giwa, 1999; Ashing-Giwa et al., 2003; Aziz & Rowland, 2002; Farmer & Smith, 2002; Jackson & Sears, 1992). Henderson et al. (2003) compared coping strategies used by a sample of African American women with breast cancer to a previous study of a mixed racial sample of mostly Caucasian women with breast cancer. Results indicated

that positive reappraisal and seeking social support were the most commonly used coping strategies among the African American women with breast cancer, which the authors attributed to a religious dimension, particularly given previous research which found that African American women relied more on God for support and Caucasian women relied more on their spouses (Bourjolly & Hirschman, 2001). African-American women also report finding more meaning in life after breast cancer (Ganz et al., 2003), possibly for some of the same reasons. Reynolds et al. (2000) evaluated the association between coping strategies and breast cancer survival among black and white women in a large population-based study. With the exception of avoidance, the black patients in their study appeared to use a substantially different constellation of coping strategies than whites, with the former more likely to rely heavily on suppressing emotions, wishful thinking, and positive reappraisal, while white patients were more apt to use higher levels of expressing emotions, problem-solving and escapism. In addition, their study suggested that expression of emotion was associated with better survival, and suppression of emotion with worse survival, having important implications for the differences in survival between African American women and Caucasian women, with African Americans being at increased risk of cancer morbidity and mortality. Rodrigue (1997) in his examination of race differences in African American and white patients' psychological adjustment to cancer, found that African Americans reported greater reliance on avoidant coping strategies, and less frequent use of confrontation coping strategies, which has been associated with higher emotional distress and poorer psychological functioning in previous studies (Dunkel-Schetter, 1992; Felton et al., 1984; Rodrigue et al., 1993, 1994). Finally, Sharma et al. (2003) conducted an

investigation on stress and coping in women with cervical and breast cancer in India, a population (i.e. women in India) they described as "...culturally attuned to lower literacy, greater socioeconomic dependence on men, greater social affiliation, equanimity and fatalism" (p. 41). A comparison of the two groups revealed that the breast cancer cases had significantly higher body image disturbance and made greater use of denial as a coping strategy. The authors suggested that the finding of a high body image disturbance in the breast cancer cases may have been connected to denial as the main coping strategy used, which has been found to 'help' in retaining body self-concept and feminine self-concept by delaying reaction to breast loss and mutilation for long periods (Greer et al., 1979; Greer et al., 1990; Watson et al., 1984;). There was a higher use of the coping strategy of 'denial' in urban and of 'internalize' in rural breast cancer cases, which the authors speculated may be related to differential awareness of outcome in patients from different backgrounds. Both the cancer groups reported moderately high death anxiety, and both showed symptoms of depression and anxiety within the clinical range. Both groups demonstrated a similar overall coping profile (denial and internalization) which the authors suggested may reflect similarity of either severity of illness or culturally attuned responses or both. As mentioned in the previous section, the younger cases used significantly more coping strategies, especially internalization and emotional outlet, and had significantly more psychological distress as well as psychopathology in terms of anxiety and depression. Less educated patients in both groups showed greater physical distress, which the authors have suggested may be related to the finding that bodily symptoms may serve as the idiom of distress in the less educated patients with cancers (Urs et al., 1997). As a religious group, Hindus

manifested lower anxiety, and non-Hindu breast cancer cases externalised to a greater extent.

Much of the research examining cultural differences and their impact on patients' psychological adjustment to cancer highlights differences in the use/availability of a social support network. The same applies to different age groups, which was considered earlier. The following section therefore examines the role that social support has been found to play with regard to women's psychological adjustment to breast cancer.

2.2.3 Social Support as a Mediating Variable

As discussed above, a number of factors have been associated with an increased risk of psychological distress in women with breast cancer, including younger age, pre-existing mental illness, and co-morbid medical conditions (Ganz et al., 1993; Spiegel, 1997).

However social support also appears to play an important role in a woman's adjustment to breast cancer (Glanz & Lerman, 1992; Moyer & Salovey, 1996; Rowland & Massie, 1996; Spiegel, 1997). Women compared to men generally have larger social networks and more intimate friends (Cutrona & Russell, 1987), and use social support more as a coping strategy (Monat & Lazarus, 1991), although interestingly, various studies have shown that younger cancer patients tend to show a greater desire for social support than older women (Merckaert et al., 2009; Tuinman et al., 2008). In particular, women have been found to appreciate intimacy and confidence (Lugton, 1997). These aspects of social support are emotional, and emotional qualities are suggested to be the most

important aspect of ‘the buffering effect’ that social support may have (Cohen & Wills, 1985).

2.2.3.1 Social support, coping and psychological adjustment

Seeking social support has also been found to be the product of an ‘instrumental’ coping style (Drageset et al., 2003) or ‘problem-solving’ coping. For example, it has been reported that social support relates to adjustment in part through approach coping (Holahan et al., 1995, 1997b). Empirical research suggests that a lack of social support is strongly associated with increased psychological morbidity in breast cancer patients (Nosarti et al., 2002). Conversely, it has been found that appropriate support given to women with breast cancer has a positive effect upon their reactions to illness, with patients reporting less emotional distress and more adaptive coping responses (Deane & Degner, 1997; Fridfinnsdottir, 1997; Greer, 1989; Northouse et al., 1997), and may even prolong their survival (Spiegel, 1992). For example, Dukes Holland et al. (2003) found that in their sample of women with breast cancer, higher levels of perceived social support was related to higher levels of adjustment. Participants revealed that breast cancer made them feel set apart, and that feeling close to family and friends and belonging to a group who could share their concerns could lessen this sense of isolation and alienation. Similarly, having people who can provide guidance and assistance also seemed important. These patients also described a simultaneous desire to obtain accurate information from health professionals and anxiety about receiving information. These authors concluded that “...social support may play an important role in helping breast

cancer patients experience positive psychological well-being directly and also indirectly by fostering the use of a greater proportion of approach coping strategies” (p. 27).

2.2.3.2 Definitions of social support

The concept of social support has been defined and operationalised in different ways. For example, Weiss’s (1974) theory of social provision represents a multidimensional view of social support, describing six different social comparisons or provisions, each associated with a particular type of relationship including: attachment, social integration, reassurance of worth, opportunity for nurturance, reliable alliance, and guidance. Thus social support may take many forms, with tangible support, expressive or emotional support, and informational support particularly relevant to coping with health-related problems (Schaefer et al., 1981). Studies of social support and adjustment to breast cancer have examined support from several sources. For example, Bloom and Spiegel (1984) found that emotional support from the family and opportunities for social interaction were related to adjustment in a sample of women with advanced breast cancer. Bloom (1986) found that social support, including perceptions of family cohesiveness, social affiliation, and presence of a confidant, was related to adjustment to the diagnosis of breast cancer. Other studies have included medical professionals among the sources of support studied (e.g. Funch & Mettlin, 1982; Neuling & Winefield, 1988; Northouse, 1988) as well as cancer support groups and church groups (Koopman et al., 2001). Support has also been defined as the number of persons in the support network (Vachon, 1986). Dunkel-Schetter (1984) in a sample that included both breast and

colorectal cancer patients, found that for patients with a good prognosis, adjustment was associated with three measures of social support, including quantity of support, satisfaction with support from spouse and overall strength of support. Bloom et al. (2001) found that the size of the social network was related to greater emotional and practical support in their sample of young women with breast cancer. Many studies have focused on general categories of support, but a few studies have made finer distinctions in type of support. For example, Primono et al. (1990) studied support from partner, family, friends and other persons. They found that after the spouse, the family provided more affective support than friends or others, and friends provided more affirmation than family. Affective support, affirmation and reciprocity from partner and family members were related to adjustment. Ell et al. (1989) studied the availability and adequacy of support in ongoing close relationships (labelled attachments) and support from acquaintances and less close friends and relatives (labelled social integration) with breast, colorectal and lung cancer patients. They found that the social support scales were significantly related to adjustment.

2.2.3.3 Familial support and psychological adjustment

Appropriate adjustment to cancer depends on the totality of the cognitive, emotional and behavioural responses to the disease by the patients as well as their significant others (Ben-Zur et al., 2001). Family life has been shown to be one of the most important components of social support for many women with breast cancer. Past research has shown, for example, that emotional support by the family is related to a positive outlook

on life among women with advanced breast cancer (Bloom & Spiegel, 1984). Rustoen et al.(1999) in their study of newly diagnosed cancer patients found the significance of the family and marital domains for a high QoL to be supported by the patients listing children and family as being of the greatest importance, and by the significantly higher QoL scores for those living together with another person compared with the group living alone. Broeckel et al.(2000) in their study of QoL after adjuvant chemotherapy for breast cancer, found that unmarried status was positively related to poorer mental well-being and greater depressive symptomatology. Given the obvious importance of the marital relationship as part of a patient's immediate support network, a significant amount of the social support research in breast cancer has focused on this area. Many studies have shown that the spouse or partner is an important social resource for the adjustment of the patient (Baider et al., 1988; Bolger, 1996; Spencer et al., 1998). Manne (1994, 1999) suggested that spouses are the primary source of support for married patients, and found that patients who perceive higher levels of critical or avoidant responses by spouses report greater psychological distress. Ben-Zur et al.(2001) observe that in the case of breast cancer, the spouse's vulnerability is heightened because he finds himself in a double, and conflicting, role: As the primary supporter, he must assume new roles in the household (Keller et al., 1996) and provide tangible as well as emotional support; at the same time he must cope with the distress emanating from the significance of his wife's diagnosis in terms of her suffering and the threat to her life (Spencer et al., 1998). Ultimately, if the spouse's distress level is high and if he uses less efficient coping strategies, he is likely to be less of a support for the ill partner. Ben-zur et al.(2001) found in their study of patient, spouse and dyad models in relation to coping with breast cancer,

that both the spouse's emotion-focused coping and his distress relate to the breast cancer patient's emotion-focused coping and distress. According to these authors, because high levels of distress and emotion-focused coping are connected with highly threatening and uncontrolled situations (Lazarus & Folkman, 1984), such spousal reaction may be perceived by the wife as indicating helplessness and therefore lack of support during a particularly difficult situation. In addition, this study found that not only was total spousal emotion-focused coping related to a high level of psychological distress and poor psychosocial adjustment, but a high level of disparity between the spouses' emotion-focused coping was also associated with greater distress. The authors observe that the patient's distress is greater when one spouse tries to deny the situation while the other does not or when one tries to vent emotions related to the situation and the other does not. Another area that has been investigated includes the impact on the couple's sexual functioning, with breast surgery resulting in a change to a woman's sexual identity resulting in sexual difficulties (Schain, 1988), as well as many other contributing influences to sexual dysfunction, including the physiological side effects of cancer treatment, psychological factors related to facing a life threatening illness and changed body image, and relationship conflict, which may increase sexual avoidance or difficulties (O'Mahoney & Carroll, 1997). As mentioned above, the impact on marital role functioning is also important: in addition to practical shifts in roles and responsibilities, emotional roles may also shift following breast cancer. Another issue highlighted by several authors is that there are different challenges facing couples based on their age, with older couples struggling with the practical tasks of caregiving and younger couples reporting more difficulties with managing the emotional reactions of

anger and resentment at the disruption that breast cancer has created in their lives (Mor, 1987; Mor et al., 1987; Wellisch et al., 1983). Finally, some research has found a higher level of need among women who were married or with a partner than those who were not, with authors suggesting that women who are married/with partner, although possibly receiving greater levels of support, also had the concerns of another person to consider making the situation more difficult (Lindop et al., 2001).

2.2.3.4 Limitations of social support

While most studies report positive relations with social support, some have reported limitations in the availability or effectiveness of social support. For example, Bolger et al. (1996) found that while patients reported receiving support from significant others with respect to physical impairment, support was much less available for emotional distress, and support from significant others was not effective in alleviating distress for patients. Neuling and Winefield (1988) found that women desired empathic support from family and friends, and informational support from surgeons. Women were more likely to report unwanted support from family and friends than from surgeons, whose support was reported as inadequate by many of the participants. It therefore seems that the 'right kind' of support assists the individual's coping efforts, with effective social support depending on a match between what one needs and what one receives within one's social network. Yet chronic illness can serve as a threat to social resources, as disruption in the life of one family member inevitably affects the lives of others. Chronic illness may lead to social withdrawal, while friends who normally provide social support

may feel unable to deal with the ill person and hence withdraw this support (Wortman & Dunkel-Schetter, 1979). For example, Chandra et al. (1998) conducted a prospective study on the psychological well-being among Indian cancer patients receiving radiotherapy, and found that although the social support and social contacts dimensions did not appear to be affected over time, there was a perceived decrease in concern by the family and the immediate or primary support group. The authors offered the explanation that this may have been due to the burden the family of the cancer patient was facing in a developing country such as India. They felt that financial and other aspects of family strain might alter the family functioning which might make the patient perceive a loss of family and primary group support. On the other hand, the authors surmised that family support might also decrease because the patient's well-being improves, as indicated by their finding of an increase in the positive affects dimension of their study over time. In addition the family's concerns towards their ill relative might also change, over the course of the illness, according to the authors, as they realize that treatment for cancer is in progress. Finally, social relationships have even been reported to be a source of distress and may lead to avoidance of confronting the problems directly (Krishnasamy, 1996; Sarason et al., 1990).

2.2.3.5 Ethnicity and social support

Finally, ethnic differences have also been noted with regard to the use of social support, although these have sometimes been contradictory in nature. In Rodrigues' (1997) examination of race differences in patients' psychological adjustment to cancer, he

found that in his sample, African Americans with cancer were more isolated and not as likely to solicit information or emotional support from health professionals, family members or friends. However Henderson et al. (2003) in their study examining coping strategies among African American women with breast cancer found that positive reappraisal and seeking social support were the most frequently used coping strategies. Studies of Caucasian women who do not receive adequate information or support show that they tend to experience more difficulty adjusting to breast cancer (Helgelson et al., 2000; Lavery & Clarke, 1996), while African American women report receiving insufficient information from their health care providers regarding how to cope with their breast cancer (Ashing-Giwa & Ganz, 1997). Furthermore, African American women report that some breast cancer support groups lack cultural sensitivity and do not provide them with the information and emotional support they need to cope with breast cancer (Wilmoth & Sanders, 2001). For both black and white breast cancer patients, however, there is mounting evidence to show that a combination of strong support and an opportunity to express emotions may have a beneficial effect on survival from breast cancer (Reynolds et al., 2000).

Goodwin (2003) observes that although factors such as younger age, pre-existing mental illness and inadequate social support may identify women at increased risk for more severe symptoms, many women with advanced breast cancer who do not have these attributes also experience some degree of psychological distress during their clinical course. In addition, as has been discussed, cultural differences in the experience of breast cancer will also serve as a mediating variable for psychological adjustment to the

disease. As can be seen from the research in this area, the importance of these various factors in influencing patients' psychological responses to breast cancer is now viewed as a vital part of ongoing psycho-oncology research, with further research required particularly for specific vulnerable populations that have received inadequate attention thus far.

The impact of various 'intrapsychic' variables that have been shown to have an effect on psychosocial adaptation to cancer will now be considered in Chapter Three.

CHAPTER THREE

MODELS OF STRESS, COPING AND PSYCHOSOCIAL ADAPTATION TO CANCER

3.1. GENERAL OVERVIEW OF RESEARCH

Psycho-oncology is now recognised as a multidisciplinary field in both research and clinical domains (Holland, 2004; Kash et al., 2005). Research in psycho-oncology can be divided into four broad categories: (a) psychological factors implicated in the initiation and promotion of cancer; (b) the psychological consequences of cancer;

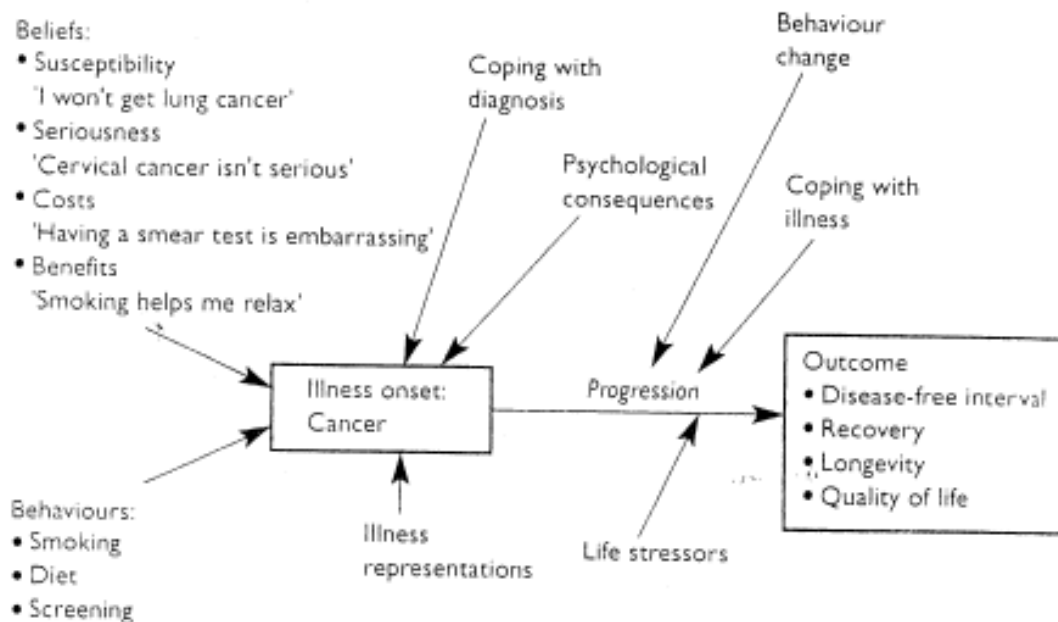


Figure 1. Psychological variables implicated in the process and outcome of cancer.

(c) management of the symptoms of cancer; and (d) variables involved in achieving longevity and promoting a disease-free interval. The potential role of various psychological variables implicated in the process and outcome of cancer, as depicted above by Ogden (1996, p. 268), is illustrated in Figure 1. These will be discussed below, in more detail.

3.1.1 The Psychosocial Factors in the Initiation and Promotion of Cancer

3.1.1.1 Behavioural factors and health Beliefs

Behavioural factors have been shown to play a role in the initiation and promotion of cancer. Smith and Jacobson (1989) reported that 30% of cancers are related to smoking, 35 % to diet, 7% to reproductive and sexual behaviour and 3% to alcohol. According to Ogden (1996), research has shown that high risk behaviours can be predicted by examining individual health beliefs (e.g. Becker & Rosenstock, 1984; O'Brien & Lee, 1990; Rimer et al., 1991; Weinstein, 1983; 1984; Wyper, 1990).

3.1.1.2 Life events

It has also been suggested that life events play a role in both the onset and the physical and psychological responses to cancer. A study by Jacobs and Charles (1980) examined the differences in life events between families who had a member who was a cancer victim and families who did not. They found that with regard to the former, more members had moved house, got divorced, changed some form of their behaviour and

seen their health status deteriorate, suggesting that that life events may well contribute to the onset of cancer. The psycho-oncology literature also suggests that the occurrence of stressful life events, whether prior to diagnosis or years after treatment completion, may increase distress and trauma symptomatology in response to cancer (Golden-Kreutz et al., 2004; Vickberg, 2003).

3.1.1.3 Stress

It has been shown in some studies that stress has a role to play in the initiation of cancer. Laudenslager et al. (1983) reported a study which involved exposing mice to stress, which demonstrated that there was an increase in tumour development if the stressor was perceived as uncontrollable. Bieliauskas (1980), suggested that there may be a relationship between depression and cancer, and that chronic mild stress leading to a low mood, but not clinical depression, may be related to cancer. However, other researchers have suggested that stress has most impact on the promotion of cancer, not its initiation (Sklar & Anisman, 1981). The relationship of stress to the promotion of cancer will be discussed in more detail below.

3.1.1.4 Personality

Temoshok and Fox (1984), suggested that individuals who develop cancer have a 'Type C personality', described as passive, appeasing, helpless, other-focused and inexpressive of emotion. Eysenck (1990), described a 'cancer prone personality', and suggested that

this is characteristic of individuals who react to stress with helplessness and hopelessness, and individuals who repress emotional reactions to life events. Shaffer et al.(1987) in their prospective study found cancer prone individuals to have impaired self-awareness, be self-sacrificing, self blaming and not emotionally expressive. Kobasa et al.(1982) coined the term 'hardiness', which was seen as protective with regard to developing cancer, and which has three components: control, commitment and challenge. Low control suggests a tendency to show feelings of helplessness in the face of stress. Commitment is defined as the opposite of alienation. Individuals high in challenge regard potentially stressful events as a challenge to be met with expected success.

3.1.2 Psychological Consequences of Cancer

3.1.2.1 Emotional responses

According to Ogden (1996) up to 20% of cancer patients may experience severe depression, grief, lack of control, personality change, anger and anxiety. Pinder et al. (1993) examined the emotional responses of women with operable breast cancer and reported that these can differ widely from little disruption of mood to clinical states of depression and anxiety. The emotional state of breast cancer sufferers appears to be unrelated to the type of surgery they have (Kiebert et al., 1991), whether or not they have radiotherapy (Hughson et al., 1987) and is only affected by chemotherapy in the medium term (Hughson et al., 1986). However, persistent deterioration in mood does seem to be related to previous psychiatric history (Dean, 1987), lack of social support (Bloom,

1983), age and lack of an intimate relationship (Pinder et al., 1993). Pinder et al. (1993), also reported that in sufferers with advanced cancer, psychological morbidity was related to functional status, with higher levels of depression, related to lower functional status as well as to lower social class.

3.1.2.2 Cognitive responses

Type of cognitive response to cancer is an important determinant of psychological morbidity and well-being (Costa-Requena & Gil, 2009), with a number of studies reporting that the coping styles termed ‘fighting spirit’ and ‘denial’ tend to be associated with better outcomes in terms of psychological morbidity (Akechi et al., 2000; Classen et al., 1996; Greer et al., 1979; Morris et al., 1992; Pettingale et al., 1985), while ‘helplessness/hopelessness’ correlated significantly with depression and mood disturbances (Akechi et al., 2000; Schou et al., 2004). Watson et al. (1988), in their sample of 235 patients with various types of cancer, found highly significant correlations between the coping style termed ‘anxious preoccupation’ and anxiety on the Hospital Anxiety and Depression Scale (HADS), and significant relationships between HADS depression and the coping style termed ‘hopeless/helpless’. In another study, Watson et al. (1991) found that a ‘fighting spirit’ is negatively correlated with anxiety and depression, whereas ‘fatalism’, ‘helplessness’ and ‘anxious preoccupation’ are related to lowered mood. Grassi et al. (1993) found that a ‘fighting spirit’ was significantly related to low external locus of control and high social support, whilst the opposite associations were shown for the coping styles ‘helpless/hopeless’ and ‘fatalistic’. However more

recent research (Petticrew et al., 2002) suggests that the relationship between different types of cognitive responses to cancer is more complex, and that different cognitive responses help patients to cope at different stages of different cancers. In addition, coping responses that may be more/less beneficial during the course of the disease, may become more/less so with regard to long-term psychosocial adaptation. Although findings are not completely uniform, current research suggests that coping through cognitive, emotional or behavioural disengagement is detrimental to long-term adjustment (although may be more beneficial to the client at earlier stages of the disease), whereas coping through active acceptance, seeking social support, emotional expression or other approach-oriented coping strategies has been shown to predict diminished distress for breast cancer patients over time (Epping-Jordan et al., 1999; Hack & Degner, 2004; Iwamitsu et al., 2005; Low et al., 2006), a finding that is consistent with the literature on other cancers (Costanzo et al., 2006; Roesch et al., 2005). One longitudinal research study on breast cancer patients completing medical treatments found that coping through emotional approach predicted psychological adjustment over and above the influence of other coping strategies (Stanton et al., 2000). Low et al. (2006) observe that ‘approach coping’ strategies are beneficial for patients with breast cancer (and other illnesses) as they facilitate the processing and communicating of affective states and “... may call attention to primary concerns, facilitate goal-directed action relevant to these concerns, and engender social support” (p. 235). Recent research on ‘self-efficacy’ – possibly a variant of the aforementioned ‘approach coping’ strategies, has been suggested as being a determinant of positive outcomes through facilitation of coping and adjustment in cancer (Kohno et al., 2010). Self-efficacy correlates highly with psychological adjustment and

plays an important role as a mediator of the effects of the impact of cancer and variables such as social support on adjustment (Howsepian & Merluzzi, 2009), has a positive relationship with quality of life (Kreitler et al., 2007), and moderates doctor-patient interactions (Han et al., 2005).

Taylor (1983) examined the cognitive adaptation of 78 women with breast cancer. She reported that these women responded to their cancer in three ways. First, they made a search for meaning, whereby they attempted to understand why they had developed cancer. Second, they also attempted to gain a sense of mastery by believing that they could control their cancer and any relapses, by means of meditation, positive thinking, etc. Third, the women began a process of self-enhancement, which involved a process of downward social comparison with others worse off, thus improving their beliefs about their own situation. According to Taylor's theory of cognitive adaptation, the combination of meaning, mastery and self-enhancement creates an illusion which is a central component of attempts to cope. This and other theories and research related to coping with cancer are discussed in more detail below.

3.1.3 The Alleviation of Symptoms

3.1.3.1 Pain management

Various pain management techniques for cancer patients have been the subject of research in psycho-oncology. Turk and Rennert (1981) found that teaching cancer patients relaxation and self-soothing skills helped them reduce the pain experience.

3.1.3.2 Social support interventions

Interventions taking place through support groups emphasise control, meaningful activities and aim to reduce denial and increase hope. According to Ogden (1996), although these sorts of interventions may not affect longevity, they do improve the meaningfulness of the cancer patient's life. An example of this is supportive expressive group therapy (SET) which was found to enhance emotion regulation in a group of women metastatic breast cancer (Giese-Davis et al., 2002).

3.1.3.3 Treating nausea and vomiting

Redd (1982) and Burish et al. (1987) found that 25 to 33% of cancer patients show conditioned vomiting and 60% show anticipatory anxiety. Relaxation and guided imagery have been found to reduce the severity of these problems.

3.1.3.4 Body image counselling

According to Ogden (1996), the quality of life of cancer patients has been found to be improved through altered body image counselling, particularly following the loss of a breast, but more generally when dealing with the grief of losing various body parts.

3.1.3.5 Cognitive adaptation strategies

Research also suggests that quality of life may be improved using cognitive adaptation strategies. Taylor (1983) used such strategies to improve patients' self-worth, their ability to be close to others and to improve the meaningfulness of their lives. Such methods have been related to improvements in well-being and reductions in illness-related distress, as well as an enhanced ability to cope with treatment (Kim et al., 2006; Wengström et al., 2001). Newer 'third-wave' CBT techniques, such as mindfulness-based techniques have been found to improve immune function, QoL and coping in women with breast cancer (Witek-Janusek et al., 2008).

Moorey and Greer (1989, 2002) introduced a form of cognitive behavioural therapy to be used alongside and as an aid to physical forms of cancer treatment, which they termed Adjuvant Psychological Therapy (APT) and this paved the way for CBT in the field of cancer and palliative care. The aims of this therapy include: to reduce anxiety, depression and other psychiatric symptoms; to improve mental adjustment to cancer by inducing a positive fighting spirit; to promote a sense of personal control; to develop effective

coping strategies for dealing with cancer-related problems; to encourage open expression of all feelings and improve communication with spouse/partner.

Sage et al. (2008) maintain that CBT is now widely used in the field of cancer and palliative care, although the focus has shifted more to considering which strategies help individual patients cope at different stages of different cancers, rather than a heavy emphasis on adjustment styles.

3.1.4 Psychological Factors in Longevity

3.1.4.1 Life stress and disease-free interval

Ramirez et al. (1989) examined the relationship between life stress and relapse in 50 women who had developed their first recurrence of breast cancer and 50 women who were in remission. They found that life events, rated as 'severe' were related to first recurrence of breast cancer, however the study was cross-sectional in nature, which has implications for determining causality. In addition, other studies such as that by Barraclough et al. (1992) found no relationship between psychosocial variables such as life events and social difficulties and longevity, although Ramirez et al. (1992), suggested that in this study, the results may be due to the older age of the women, the short follow-up period used, and the reported use of chemotherapy.

3.1.4.2 Personality/coping style and longevity

Several studies have proposed that the coping styles termed ‘fighting spirit’ and ‘denial’ are associated with reduced risk of disease progression and longer survival (Lehto et al., 2006; Tschuschke et al., 2001), while fatalism and avoidant coping are styles associated with disease progression and worse prognosis (Brown et al., 2000). Greer et al. (1979) carried out a prospective study in which they examined the relationship between cognitive responses to a breast cancer diagnosis and disease-free intervals. They found that those defined as having a ‘fighting spirit’ and those who denied the implications of their disease had a longer disease-free interval than those defined as having a ‘hopeless/helpless’ way of coping. This continued to apply at a follow-up 15 years later. This research has been criticised, however, because important physiological prognostic indicators were not measured. Other studies suggesting a link between coping style and longevity include that carried out by Pettingale et al. (1985) who found that breast cancer patients (similar in terms of clinical stage, histological grade etc.) whose mental adjustment was that of ‘fighting spirit’ or ‘denial’ were significantly more likely to be alive and free of recurrence than patients who responded with ‘stoic acceptance’ or ‘hopelessness/helplessness’ at both five and ten year follow-ups. Mental adjustment was found to be independent of biological prognostic factors. DiClemente and Temoshok (1985) carried out a replication study with patients with malignant melanoma and found that women showing ‘stoic acceptance’ and men with high ‘helplessness/hopelessness’ scores had a greater risk of disease progression, independent of biological prognostic factors and clinical stage. Temoshok and Fox (1984) found that results from a 15 year

follow-up of women with breast cancer indicated that poor outcome was associated with a passive, helpless coping style. Eysenck and Grossarth-Maticek (1991), demonstrated that experimental 'at risk' patients, who showed conflict-avoiding and emotion-suppression type personality (a type C/cancer-prone personality) showed a reduced mortality rate in comparison with an 'at risk' control group, after they received CBT focusing on altering the way they dealt with stress.

3.2 STRESS AND CANCER

3.2.1 Stress Concepts, Theories and Models

The term 'stress' has been used to define physiological and psychological response to situations that threaten or challenge us and that require some kind of adjustment. Contemporary definitions of stress regard the external environmental stress as a 'stressor', and the response to the stressor as 'stress' or 'distress' which involves biochemical, physiological, behavioural and psychological changes (Ogden, 1996). Folkman et al. (1986) define stress as "A relationship between the person and the environment, that is appraised by the person as taxing or exceeding his or her resources and as endangering well-being" (p. 572).

3.2.1.1 Cannon's fight or flight model

Cannon's (1932) model defines stress as a predominantly physiological response to external stressors. In terms of this model, external threats elicit the 'fight or flight' response involving an increased activity rate and increased arousal. This enables the individual to either escape the source of stress or fight it. In terms of this model, the individual is conceptualised as passive and responding automatically to the external stressor.

3.2.1.2 Selye's general adaptation syndrome (GAS)

Selye's (1956) GAS model, as depicted by Ogden (1996, p. 202) in Figure 2, suggests that there are three stages in the stress process.

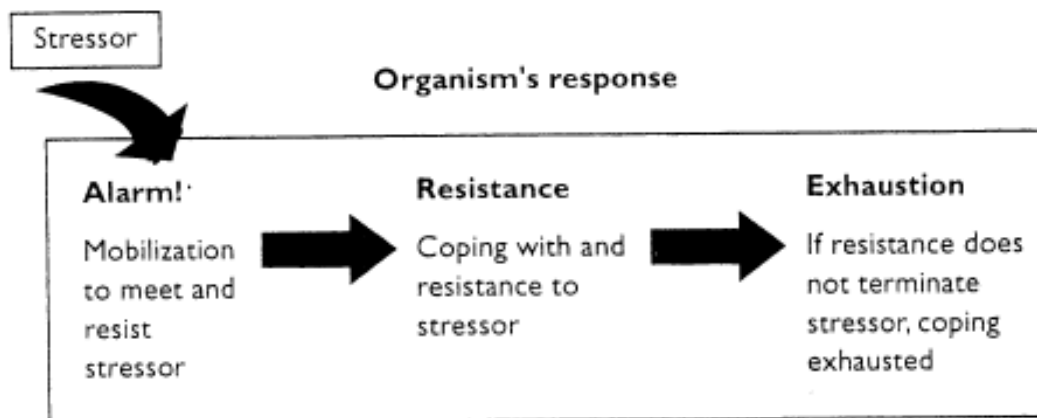


Figure 2. Selye's three-stage adaptation syndrome.

The initial stage is the 'alarm' stage, which describes an increase in activity, and occurs immediately when the individual is exposed to a stressful situation. The second stage is called 'resistance', and involves coping and attempts to reverse the effects of the alarm stage. The third stage is called 'exhaustion', which occurs when the individual has been repeatedly exposed to the stressful situation and can no longer offer any resistance against it. As in Cannon's model, this model implies a consistent and primarily physiological automatic response towards external stressors, with only a minor role given to psychological variables.

3.2.1.3 Life events theory

Life Events Theory examines stress and stress-related changes as a response to a life change. Holmes and Rahe (1967) developed the Schedule of Recent Experiences (SRE) which is a list of possible life changes/events. These are arranged in descending order of severity. In terms of the theory, the greater the final score (an indication of both the severity and number of life events) the higher the level of stress. Early research using this instrument found some links between individual's SRE score and their health status, and similar, more sophisticated measures of life events were subsequently developed. However various criticisms have been levelled at this model. According to Ogden (1996), these include: the individual's subjective rating of the event is neglected; retrospective assessment of the life experiences may be inaccurate; life experiences may interact with each other to increase/decrease the experience of stress; there are problems

attached to choosing the appropriate outcome measure for assessing the effects of life events on health; and stressors may be short-term in nature or ongoing.

3.2.1.4 The transactional model of stress and coping: Stress as a response to appraisal

Lazarus' pioneering work on stress (Lazarus, 1975; Lazarus & Cohen, 1973, 1977) introduced the concept of 'appraisal' to psychological theory and research, highlighting that individuals are psychological beings who actively engage with the outside world, and don't simply respond to it, unlike earlier models which have been criticised for being overly reductionistic. In terms of this model, according to Lazarus and Folkman (1984, 1991), a stress response is elicited if a situation is appraised by the individual as being stressful. There are two forms of appraisal: primary and secondary. The individual initially appraises the external event or situation, which is defined as 'primary appraisal'. There are three possible ways that events can be appraised: irrelevant; benign and positive; or harmful and negative. As depicted by Ogden (1996, p. 206) in Figure 3, 'secondary appraisal' involves the individual evaluating the pros and cons of their various personal coping strategies and resources.

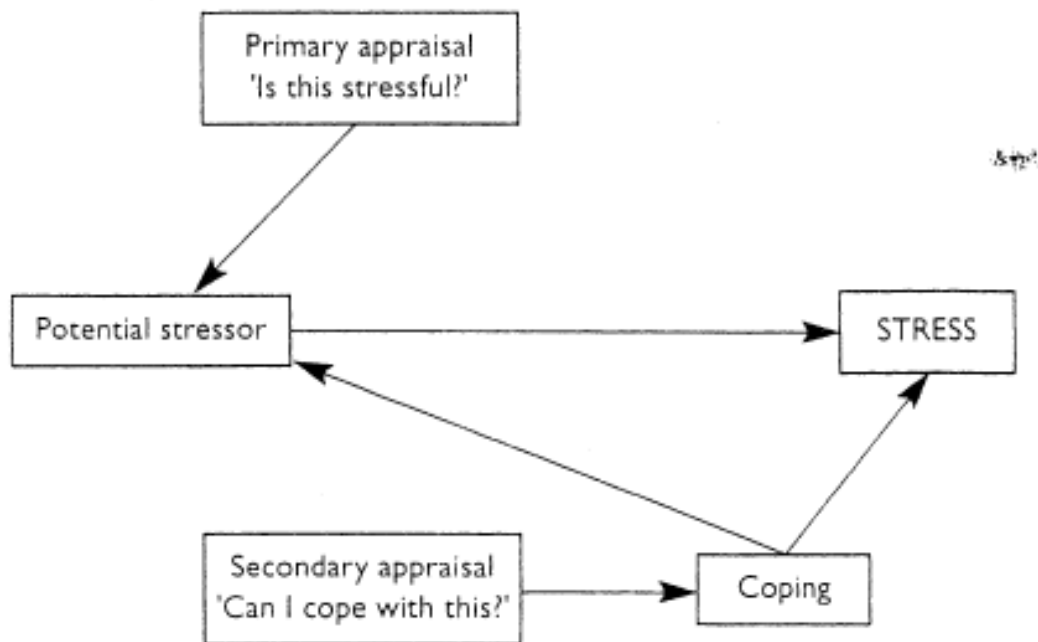


Figure 3. The transactional model of stress and coping.

During reappraisal, the individual assesses the previous outcomes of coping or adaptive behaviour. In terms of this model, this process of primary and secondary appraisal ultimately determines whether the individual shows a stress response or not. Various studies have supported the theory that appraisal is related to the stress response (Mason, 1975; Speisman et al., 1964).

There are three different components to the stress response. The first is the ‘emotional’ component. Lazarus (1991; 1993) has proposed that psychological stress is best regarded as a subset of emotion. He states that feelings that arise out of conflict such as anger, anxiety, guilt, shame, sadness, envy, jealousy, and disgust are commonly referred to as

the 'stress emotions'. "The emotions are a much richer source of information about how people are faring in adaptational encounters, and in there lives overall, then the unidimensional concept of stress" (Lazarus, 1993, p. 244). He suggests that emotions always be measured in the context of research on coping and the psychological stresses that require it, given that research has shown that the coping process is linked specifically to the kind of emotion experienced in an encounter requiring adaptation. The second component hypothesised as being part of the stress response is the 'physiological' component. If an event is appraised as being a stressor, physiological changes may be elicited. There may be sympathetic arousal and increases in the release of stress hormones such as catecholamines (e.g. noradrenalin) and corticosteroids (e.g. cortisol). There may also be increases in physical factors such as heart rate, blood pressure and muscle potential etc. The psychophysiological effects of stress can be seen as adaptive if they increase the individual's capacity to cope with the stressor, or non-adaptive if they become damaging to health (Ogden, 1996). The third component of the stress response is the 'behavioural' component. In terms of this theory, this can take different forms (that is, psychological or behavioural): direct action; seeking information; doing nothing; or developing a means of coping with the stress in the form of relaxation or defense mechanisms. These responses have been divided into two categories termed 'emotion-focused' and 'problem-focused' coping (Folkman & Lazarus, 1980) which will be discussed in more detail below.

3.2.2 Stress and Illness

3.2.2.1 Stress as an etiological factor

Stress can affect health via two pathways: via behavioural or physiological changes (Ogden, 1996). With regard to the former, there has been a wealth of research suggesting a link between stress and smoking behaviour in terms of smoking initiation, relapse and the amount smoked (Carey et al., 1993; Gilbert & Spielberger, 1987; Lichtenstein et al., 1986; Santi et al., 1991). Studies have also focused on the relationship between stress and alcohol consumption, and demonstrated that stress may promote alcohol use (Gupta & Jenkins, 1984; Herold & Conlon, 1981), with alcohol used as a way of reducing tension (Cappell & Greeley, 1987); and improving mood (Violanti et al., 1983). Other studies have demonstrated that stress may also result in an increase in the consumption of coffee, have a detrimental effect on diet, and result in a reduction in the amount of exercise taken (Ogden, 1996). All such behavioural changes are linked to the development of various illnesses (Baer et al., 1987; Conway et al., 1981), and chronic stress may have more detrimental effects on longer-term changes in behaviour and health.

Research has also shown that stress causes physiological changes that can cause and promote various illnesses. In particular, stress is seen as compromising the immune system by causing increases in catecholamines and corticosteroids making the individual more susceptible to infection etc. (e.g. Cohen et al., 1991).

3.2.2.2 Stress and illness progression

Stress has similarly been shown to have an effect on illness progression via two pathways: through physiological changes and by its effect on illness behaviour. With regard to the former, Kiecolt-Glaser and Glaser (1986) have argued that stress causes an increase in the hormones produced to fight carcinogens and repair DNA. Cortisol decreases the number of active T-cells which, if ill, can increase the rate of tumour development and exacerbate the illness. In addition, researchers have suggested that individual's beliefs may have a direct effect on physiology. Kamen and Seligman (1987) reported that an internal, stable, global attributional (pessimistic) style predicts poor health in later life through a reduction in T-cells and immunosuppression, and that this may reflect a direct link between beliefs and physiology, not necessarily mediated by behavioural change. This obviously has implications for recovery from illness. For example, Greer et al. (1979) suggested that 'denial' and a 'fighting spirit', not 'hopelessness', predicted survival for breast cancer.

3.3 COPING AND CANCER

3.3.1 Coping Concepts, Theories and Models

3.3.1.1 The psychoanalytic model of coping: Trait theories

Within the psychoanalytic model, 'coping' is thought of as a generic concept that includes ego-defenses, which manage threats to the individual's psychological integrity. Traditional psychoanalytic theory postulates that each form of psychopathology is associated with a particular defensive style. This view flowed from the theoretical convergence postulated in Freudian theory between three developmental variables: the psychosexual stage of childhood development at which trauma occurs; the primary impulses and conflicts of each particular stage (e.g. oral dependency; anal-centered struggles; phallic and oedipal conflicts); and the child's cognitive characteristics at each stage which shape the defensive style. The work of Menninger (1954), Haan (1969) and Vaillant (1977) drew on an hierarchical approach to coping derived from the developmental psychoanalytic formulation. Some defenses were said to be more healthy or less regressed than others - a result of stress or trauma. Haan proposed a tripartite hierarchy with coping as the most healthy and developmentally advanced process of adaptation, defense as a neurotic process, and ego-failure as the most severely regressed and possibly psychotic adaptive processes. Hierarchical, developmental approaches thus tend to highlight 'trait' theories and measures of coping, that is, 'coping style'. A more modern approach to coping styles (also termed 'adjustment styles') is discussed below in Section 3.3.1.5.

3.3.1.2 The transactional model of coping: Coping as process

In the late 1970s the psychoanalytic hierarchical view of coping, with its trait or style emphasis, became less popular in favour of a contrast in approach which treated coping as a process. From a process perspective, coping changes over time and in accordance with the situational contexts in which it occurs. Folkman et al.(1986) define coping as “... the person's cognitive and behavioural efforts to manage (reduce, minimise, master, or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources” (p. 572). In terms of this theory the person and the environment are viewed as being in a dynamic, mutually reciprocal, bidirectional relationship. The theory identifies two processes, namely, cognitive appraisal (discussed above) and coping, as critical mediators of stressful person-environment situations and their immediate and long-term outcomes. According to Folkman et al. (1986) the theory of coping as a process emphasises that there are at least two major functions of coping: dealing with the problem that is causing the distress (problem-focused coping) and regulating emotion (emotion-focused coping). Coping efforts may be directed outward towards changing the environment, or may be directed inward toward changing the meaning of the event.

The function of problem-focused coping is to alter the problematic person-environment relationship by acting on the environment or oneself. Problem-focused coping involves defining the problem, generating and weighing alternative solutions, and following a plan

of action. According to Folkman and Lazarus (1988), examples of this type of coping include:

- confrontive coping: describes aggressive efforts to alter the situation and suggests some degree of hostility and risk-taking
- seeking social support: describes efforts to seek informational support, tangible support and emotional support
- planful problem solving: describes deliberate problem-focused efforts to alter the situation, coupled with an analytic approach to solving the problem

The function of emotion-focused coping is to change either the way the stressful relationship with the environment is attended to, or the relational meaning of what is happening which relieves the stress even though the actual conditions of the relationship remain unchanged (Folkman et al., 1990). According to Folkman and Lazarus (1988) examples of this form of coping include:

- distancing: describes cognitive efforts to detach oneself and to minimize the significance of the situation
- self-controlling: describes efforts to regulate one's feelings and actions

- accepting responsibility: acknowledges one's own role in the problem with a concomitant theme of trying to put things right
- escape-avoidance: describes wishful thinking and behavioural efforts to escape or avoid the problem.
- positive reappraisal: describes efforts to create positive meaning by focusing on personal growth. It also has a religious dimension.

In terms of this theory, coping, when considered as a process, is characterized by dynamics and changes that are a function of continuous appraisals and reappraisals of the shifting person-environment relationship (Folkman et al., 1986). Shifts may result from coping efforts undertaken, or from environmental changes independent of the individual. Any shift of the person-environment relationship leads to a reappraisal of what is happening, its significance, and what can be done. This reappraisal then influences subsequent coping efforts. This is particularly relevant given the different demands placed on the cancer patient at different stages of the illness.

According to Lazarus (1993) although there is a strong tendency in western values to favour problem-focused coping over emotion-focused coping, the latter has been shown to offer the best coping choice when nothing useful can be done to change the situation. In such instances, "... rational problem-solving efforts can be counter-productive, even likely to result in chronic distress when they fail" (p. 238). In line with this finding,

research has indicated that type of coping varies depending on what is at stake (primary appraisal) and what the coping options are (secondary appraisal) (Folkman et al., 1986).

Based on their research using the Ways of Coping Questionnaire (Folkman & Lazarus, 1988), the following generalisations have been summarised by Lazarus (1993) as follows:

(a) People use a number of strategies of coping (both problem-focused and emotion-focused) in a stressful encounter; (b) Some strategies of coping are more consistent across stressful encounters than others; for example, seeking social support was found to be very inconsistent, whereas positive reappraisal was modestly consistent. The authors suggest that seeking social support therefore seems highly dependent on the social context while positive reappraisal can be seen to some extent as being a stable coping disposition. Similarly, other researchers such as Scheier et al. (1986) have shown that the tendency to be optimistic or pessimistic influences the way the person copes with stressful encounters, which Lazarus (1993) suggests implicates a personality trait in the coping process; (c) Coping also changes from one time to another in any given stressful encounter. What is adaptive in one context may be maladaptive in another, and can only be judged relative to adaptational outcomes in specific contexts; (d) When stressful conditions are viewed as refractory to change, emotion-focused coping predominates, but when they are appraised as controllable by action, problem-focused coping predominates, linking secondary appraisal (options for coping) with the coping strategy employed. Thus planful problem solving and other problem-focused strategies, have been found to be used more in encounters that are appraised as capable of being changed for the better, for example, work-related situations, whereas distancing and other emotion-focused

coping strategies are used more in encounters that are not amenable to change such as health-related situations (Folkman et al., 1980; 1986); (e) Coping is capable of mediating the emotional outcome of a stressful situation. For example, Folkman and Lazarus (1986; 1988) found that some coping strategies, such as planful problem solving and positive reappraisal, were associated with changes in emotion from negative to less negative or positive, while other coping strategies such as confrontive coping, self-control, escape-avoidance, accepting responsibility and distancing correlated with more distress. Vitaliano et al. (1985; 1987) found that depression was positively associated with wishful thinking and negatively associated with problem-focused coping in distressed individuals, and that patients with anxiety disorders used more wishful thinking and less problem-focused coping. Coyne et al. (1981) found that depressed individuals used more wishful thinking and sought more emotional support than did non-depressed people. Felton et al. (1984) assessed coping strategies of chronically ill adults (cancer, hypertension, diabetes and rheumatoid arthritis) and found that while medical diagnosis contributed minimally to explained variance in coping, a relationship was found between coping and psychological adjustment. Information-seeking was related to positive affect, while avoidance, blame and emotional ventilation were related to negative affect and poorer adjustment to illness. Manne and Sandler (1984) and Silver et al. (1986) found wishful thinking to be highly correlated with all measures of maladjustment in their samples of individuals with recurrent genital herpes infection. Aldwin and Revenson (1987) found that escapism and self-blame had direct effects on increasing emotional distress, whereas problem-focused coping showed interactive effects. Therefore, although a number of studies have shown a relationship between certain kinds of coping and

outcomes such as depression, anxiety and other psychological symptoms, the nature of the relationship is far from clear. Folkman and Lazarus (1993) however, have emphasised that a coping strategy that produces positive outcomes in one context, or in one person, may not in another, based on a complex interaction of the environment, personality variables etc. They go on to state that, as mentioned above, presumably coping should fit the situation, such that problem-focused coping should be more appropriate in situations that are amenable to change than in situations that are not. Conversely, emotion-focused forms of coping such as distancing or positive reappraisal should be more appropriate in situations where nothing can be done. Some studies such as those by Collins et al. (1983) and Forsythe and Compas (1987) have provided support for this theory; (f) Certain demographic variables may influence coping. Various studies have demonstrated age differences in coping. McCrae (1982) found that the coping strategies termed 'hostile reaction' and 'escapist fantasy' were used less by the older participants in his study; and Folkman et al. (1987), in their study comparing a community sample of married couples (aged 35 to 44) with a community sample of older men and women (aged 65 to 74) found that the younger group used proportionately more active, interpersonal problem-focused forms of coping (confrontive coping, seeking social support and planful problem solving), while the older group used proportionately more passive, intrapersonal emotion-focused forms of coping (distancing, acceptance of responsibility and positive reappraisal) across various contexts and situations.

Lazarus (1993) argues that although 'process' approaches are better able to encompass specific coping thoughts and actions in diverse stressful contexts that call for coping, then

coping 'style' approaches, they have their own limitations. "The most important one is that the measures are not usually formulated to link up with a whole person, who has a particular goal hierarchy and situational intentions, belief systems, and a life pattern of plans and social connections" (p. 199). He recommends a move away from an extreme contextualism in the study of coping to an examination of the contextually influenced, as well as stable, relationships between a person and the environment, with an attempt at synthesising contextual measurement of coping with the whole person. In other words, he suggests that approaches to coping as 'style' and as 'process' are both essential in that they address different aspects of the problem. Finally, he calls for future research to focus on: (a) threatening personal meanings which people must cope with a major life stresses and crises; and (b) the connection between stress and the emotions.

3.3.1.3 Crisis theory

Moos and Schaefer (1984) have applied crisis theory specifically to the crisis of physical illness. Crisis theory was developed from Lindemann's (in Moos & Schaefer, 1984) work on grief and mourning and Erikson's (1963) model of developmental crises at transition points in the life cycle. It has generally been used to examine how people cope with major life crises and transitions and has provided a framework for understanding the impact of illness or injury. It examines the impact of any form of disruption on the individual's established personal and social identity, and proposes that any crisis is self and select limiting given that psychological systems are driven towards maintaining homeostasis and equilibrium in the same way as physical symptoms (Ogden, 1996).

Moos and Schaefer (1984) conceptualise physical illness as a crisis point in the individual's life, potentially causing the following changes: (a) changes in identity such as from carer to patient, from breadwinner to dependant etc.; (b) changes in location as a result of needing to move to a new environment such as a hospital or becoming bedridden; (c) changes in role from independent adults to passive dependant; (d) changes in social support resulting in isolation from friends and family; and (e) changes in the future involving children, career etc. These factors may be exacerbated by the fact that illness is often unpredicted, information about the illness may be unclear, important decisions may need to be made quickly, there may be ambiguities related to the meaning of the illness, and there may be lack of experience with coping with illness.

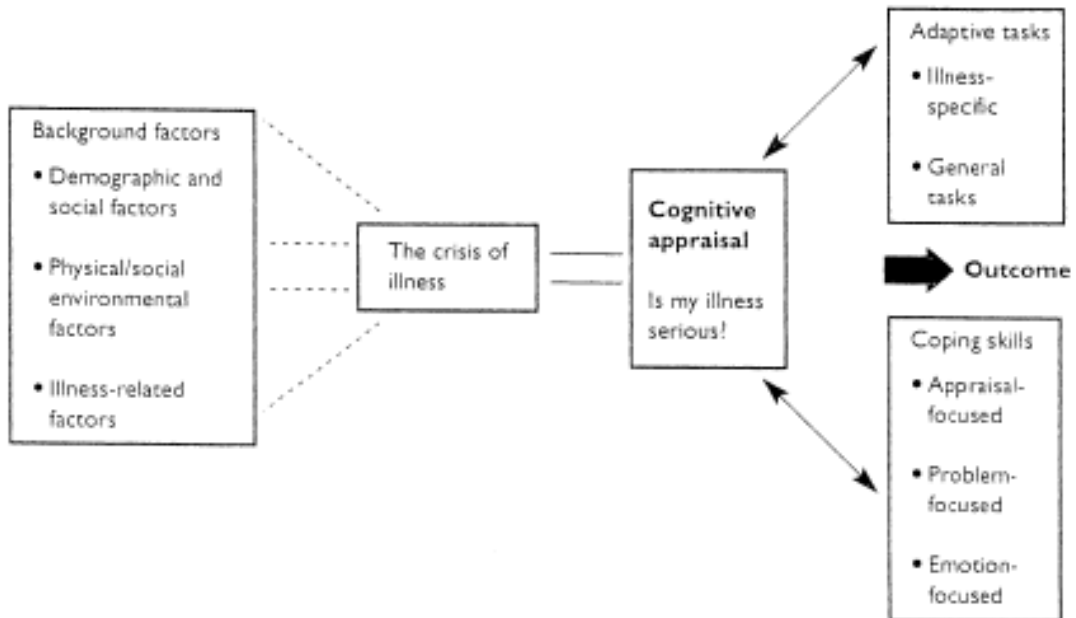


Figure 4. Moos and Schaefer's (1984) crisis theory.

Moos and Schaefer (1984) described three elements that constitute the coping process: cognitive appraisal, adaptive tasks, and coping skills. These are presented above in Figure 4, as depicted by Ogden (1996, p. 51).

Cognitive appraisal occurs at the stage of disequilibrium triggered by the diagnosis of illness, where the individual evaluates the seriousness and significance of the illness. Factors such as knowledge, illness beliefs, previous experience and social support may influence this process.

Following cognitive appraisal, Moos and Schaefer (1984) described seven adaptive tasks that are used as part of the coping process. Illness-related tasks include: Dealing with pain and other symptoms; dealing with a hospital environment and treatment procedures; developing and maintaining relationships with health professionals. General tasks include: Preserving an emotional balance; preserving self-image, competence and mastery; sustaining relationships with family and friends; and preparing for an uncertain future.

A series of coping skills are then accessed to deal with the crisis of physical illness. These can be categorised as appraisal-focused coping, problem-focused coping and emotion-focused coping. Appraisal-focused coping involves: Logical analysis and mental preparation; cognitive redefinition; and cognitive avoidance and/or denial. Problem-focused coping involves: Seeking information and support; taking problem-

solving action; and identifying rewards. Emotion-focused coping involves: Affective regulation; emotional discharge; and resigned acceptance.

Moos and Schaefer (1984) argue that the various factors determine the use of these tasks and skills including: Demographic and personal factors such as age, sex, class and religion; physical and social/environmental factors such as the accessibility of the social support network and the acceptability of the physical environment; and illness-related factors such as pain, disfigurement etc. According to crisis theory, individuals are motivated to re-establish a state of equilibrium and normality, which can be achieved through either short-term or long-term solutions. 'Healthy adaptation' involving reality orientation, adaptive tasks and constructive coping skills can result in personal growth and maturation, but 'maladaptive response' results in deterioration.

3.3.1.4 Cognitive adaptation theory

Taylor et al. (1984) examined ways in which individuals adjust to threatening events. They suggest that there are three processes involved in coping with threatening events such as illness: (a) A search for meaning, which is based on attribution theory which suggests that individuals need to understand, predict and control their environment (Weiner, 1986). Taylor et al. (1984) found that 95% of the women they interviewed offered an explanation of the cause of their breast cancer. These researchers concluded that the search for a cause is important for the process of cognitive adaptation. In addition, over 50% of the women stated that the cancer had resulted in them reappraising

their life, and others mentioned improved self-knowledge, self-change and a process of reprioritization. Thus understanding the cause of the illness and developing an understanding of the implications of the illness gives the illness meaning, which according to this theory, contributes to the process of coping and cognitive adaptation; (b) A search for mastery can be achieved by believing that the illness is controllable. Taylor et al. (1984) found that 66% of the women in their study believed they could influence the course or reoccurrence of their cancer. The remainder believed that the cancer could be controlled by health professionals. These researchers reported that a sense of mastery is achieved either through psychological techniques such as developing a positive attitude, meditation, self-hypnosis or a type of causal attribution, or by behavioural techniques such as changing diet, changing medications, accessing information or controlling any side-effects. These processes contribute towards a state of mastery, which is essential in contributing to a state of cognitive adaptation; (c) A process of self-enhancement is engaged in by individuals following their illness in order to build their self-esteem, in terms of this theory. Taylor et al. (1984) reported that 53% of their sample reported positive changes only following their illness, with only 17% of the women reporting negative changes alone. The researchers explained these results by suggesting that individuals make sense of the world by comparing themselves with others. Such comparisons may either be downward or upwards, however these researchers found that most of the women with breast cancer showed downward comparisons, suggesting that the women selected criteria for comparison which enabled them to improve their self-esteem as part of the process of self-enhancement.

In terms of this theory, these three processes involve developing illusions which are positive interpretations of reality. Taylor and her colleagues argue that these illusions are a vital component of cognitive adaptation and that reality orientation (as suggested by other coping models) may actually be detrimental to adjustment. These suggestions have important implications for the ways in which we conceptualise 'psychological adaptation' to cancer - a central concept in many of the models considered above.

3.3.1.5 An integrated cognitive behavioural model of coping and adaptation

Moorey and Greer (1989, 2002) described an integrated cognitive behavioural model of coping and adaptation to cancer, integrating many of the previously-reviewed models, and based on their own and others' research and clinical experience. In essence, it considers the stress of cancer along two dimensions: the threat to survival and the threat to self.

In terms of this model, in order to make sense of the threat experienced by patients when they first receive a diagnosis of cancer, they have to go through a process of appraisal. The appraisal process involves the person's view of the diagnosis, the threat of which can be interpreted in several ways: as a challenge, threat, harm or loss (already occurred) or denial that a threat exists at all.

3.3.1.5.1 Threat to survival

The authors posit the theory that patients go through a process of three appraisals following diagnosis. Primary appraisal revolves around the nature of the stress and incorporates the person's view of their diagnosis; secondary appraisal corresponds to the person's perceived sense of control over the disease; and finally, based upon these first two appraisals, the individual is able to establish a view of their prognosis. The patterns of thoughts, feelings and behaviours associated with these appraisals, according to the authors, represent the style of adjustment (or coping style) which the person develops.

Moorey and Greer (1989, 2002) allude to the five common adjustment styles initially identified by Greer and Watson (1987) including: Fighting spirit, avoidance or denial, fatalism, helplessness and hopelessness and anxious preoccupation. In terms of this theory, at the core of each of these adjustment styles, is a cognitive 'survival' schema which selects, filters and interprets information about cancer based on current information as well as past experience. Following Beck's (1978) account of depressogenic schemata, the authors suggest that the schema which the person with cancer develops to make sense of the threat of the disease operates in a similar way. Whereas in depression the schema incorporates a cognitive triad about the self, current circumstances and the future, Moorey and Greer (1989, 2002) suggest that in cancer there is a cognitive triad which incorporates the following three elements:

- View of diagnosis
- Perceived control
- View of prognosis

Each adjustment style has its own response to these three elements and its own particular survival schema, which selects information from the environment which is congruent with the adjustment style and filters out information at variance with it.

The five adjustment styles identified by Greer and Watson (1987) are now discussed in terms of their survival schema.

3.3.1.5.1.1 Fighting spirit

In terms of this theory, patients with this type of adjustment or coping style would see the illness as a challenge, and have a positive attitude towards outcome. They would engage in various behaviours such as seeking appropriate information about the disease, taking an active role in his or her recovery, and attempting to live as normal a life as possible.

The integrating cognitive schema includes the following triad:

- The diagnosis is seen as a challenge
- The individual can exert some control over the stress
- The prognosis is seen as optimistic

3.3.1.5.1.2 Avoidance or denial

A patient with this adjustment style would be expected to deny the impact of the disease. This attitude would be accompanied by behaviour which minimises the impact of the disease on the patient's life. The integrating cognitive schema includes the following triad:

- The threat from the diagnosis is minimal
- The issue of control is irrelevant
- The prognosis is seen as good

According to the authors, a more conscious form of this termed 'positive avoidance' is encouraged by some clinicians as it involves trying to get on with life without dwelling on cancer and by using distraction.

3.3.1.5.1.3 Fatalism

The patient has an attitude of passive acceptance. Active strategies towards fighting the cancer are absent. The cognitive schema incorporates three elements:

- The diagnosis represents a relatively minor threat
- There is no control that can be exerted over the situation
- The consequences of lack of control can and should be accepted with equanimity

3.3.1.5.1.4 Helplessness and hopelessness

In this adjustment style, the patient is overwhelmed and engulfed by the enormity of the threat of cancer, and the patient basically ‘gives up’. Active strategies for fighting the cancer are absent and there may be a reduction in other normal activities. The cognitive schema incorporates the following three elements:

- The diagnosis is seen as a major threat or loss
- No control can be exerted over the situation
- The inevitable negative outcome is experienced as if it has already come about

Sage et al. (2008, p. 329) have conceptualised and depicted this coping style as follows:

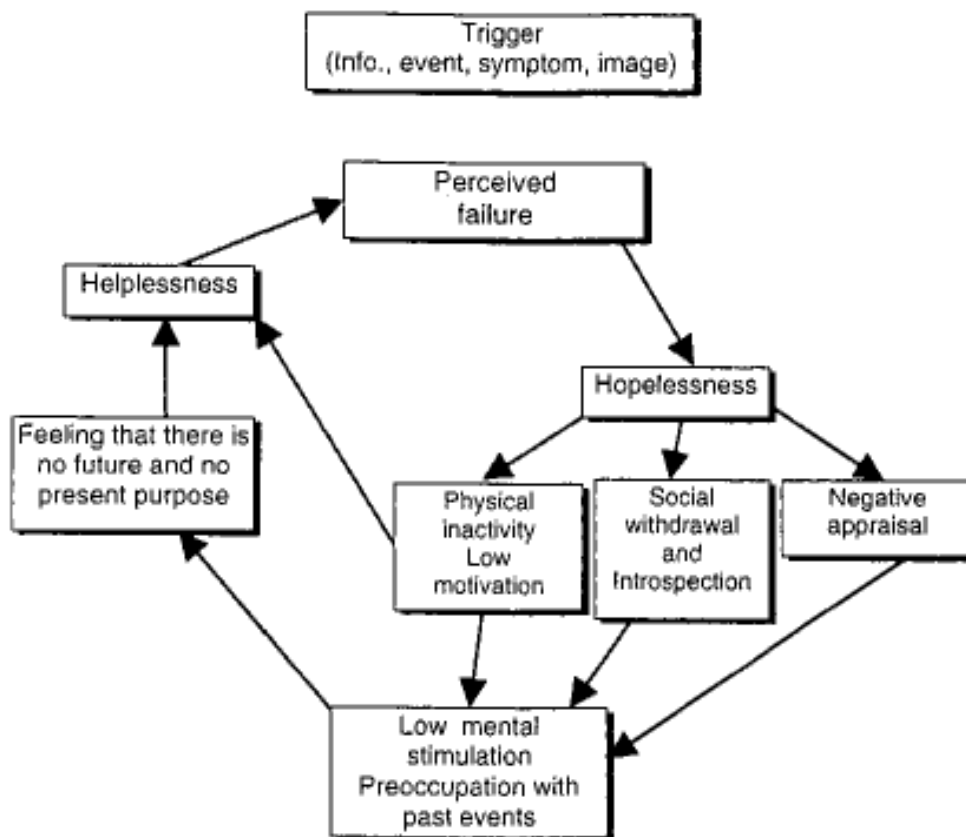


Figure 5. A vicious cycle model of hopelessness-helplessness.

3.3.1.5.1.5 Anxious preoccupation

Anxiety is the predominant affect in this style, conceptualised and depicted by Sage et al. (2008, p. 328) in Figure 6. The behavioural component is one of compulsive reassurance-seeking. Much time is spent worrying about the disease coming back, and any physical symptoms are immediately interpreted as such. Reassurance may be sought by self-

referral, use of alternative medicine, and excessive searching for information about cancer. The cognitive schema incorporates three elements:

- The diagnosis represents a major threat
- Uncertainty over the possibility of exerting control over the situation
- Uncertainty over the future

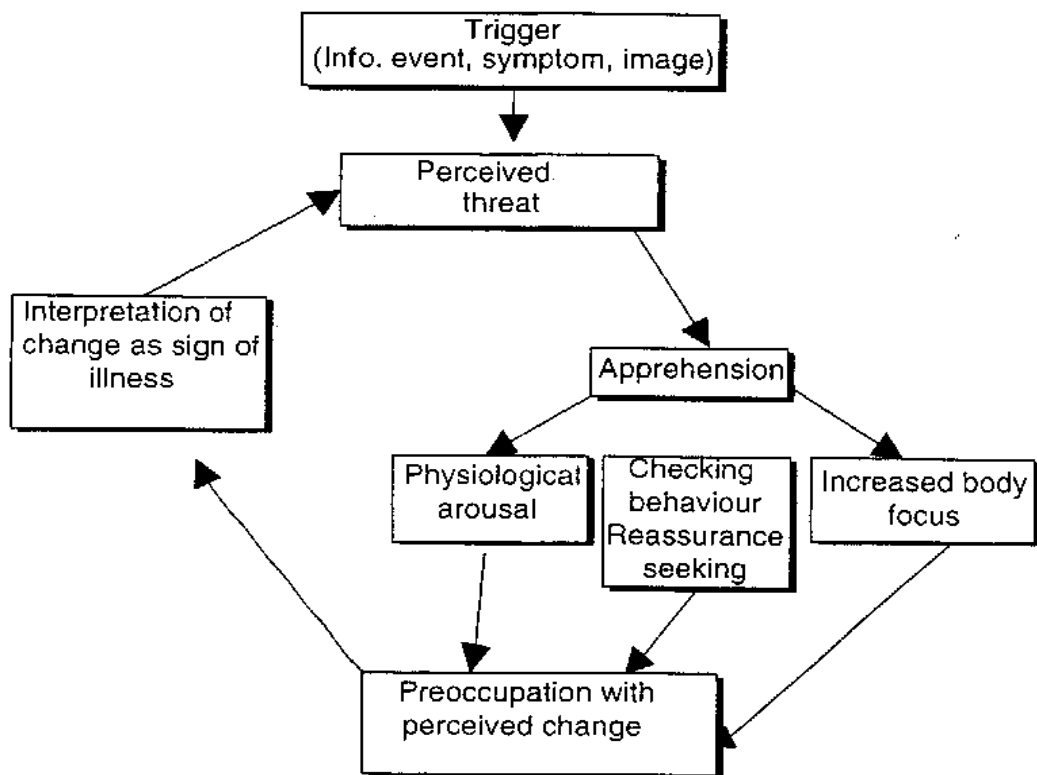


Figure 6. A vicious cycle model of anxious preoccupation.

3.3.1.5.2 Threat to self-image

According to the authors, the morbidity of cancer can prove more difficult to cope with than the fear of death. Symptoms of cancer and treatment can be painful and debilitating, and according to Moorey and Greer (1989), can affect the individual in the following three main areas:

- Change in mental and physical abilities
- Change in personal and social role
- Change in appearance

These changes can produce major disruption of the patient's lifestyle and can affect the person's ability to engage in previously rewarding activities, result in changes in work and family/social roles, affect physical appearance and self-image/sexuality etc. The authors emphasise that the threats cancer poses will affect people differently, depending on the meaning they give to them based on past experience, belief systems, cultural norms etc. Another way of conceptualising 'threats to self image' according to Moorey and Greer (1989) is in terms of Beck's (1976) concept of threats to the 'personal domain', which refers to those aspects of a person's life which is seen as having direct relevance to themselves, for example, family, friends, possessions, values, goals etc. Silberfarb and Greer (1982; in Moorey & Greer, 1989) identified four common emotional reactions to cancer: anxiety, anger, guilt and depression. In terms of this theory, the particular interpretations the patient makes about cancer give rise to these emotions, and they can be viewed as interpretations of particular threats to the personal domain. The four

common emotional reactions are listed below with their key cognitions, as stated in the theory:

- Anxiety (Key cognitions: Danger and vulnerability)
- Anger (Key cognition: Unjustified attack)
- Guilt: (Key cognition: Self-blame)
- Sadness and depression: (Key cognitions: Loss and defeat)

In terms of this theory, if these reactions become enduring ways of viewing the self, they become integrated into the person's self-concept. A negative self-schema develops in the same way as the negative survival schema develops, both of which are potentially associated with various unhelpful behavioural, cognitive and emotional responses which only serve to confirm and reinforce the negative beliefs.

Finally, the authors note that the cognitive model discussed above must also take into account systemic factors which influence the individual's reactions. Interactions with family, friends, professionals and other patients can all be significant, as these can affect the person's perception of the consequences of the disease as well as their ability to cope. According to the authors, changes in any part of the system, be it a change in physical health or difference in degree of support received affects the other components. But it is the way in which these changes are perceived and processed cognitively that determines the final psychological reaction.

One factor that has been shown to have an important mediating effect on the individual's perception of, and approach to, coping with various life stressors, is the developmental stage of the life-cycle at which the person is located at that point in time. In light of this, various adult developmental models will be considered next.

CHAPTER FOUR

DEVELOPMENTAL STAGE AND ADAPTATION: ADULT MODELS

4.1 INTRODUCTION

There is a wealth of empirical and anecdotal evidence which suggests that the recognition of the various physical, social and psychological factors associated with each particular cancer patient facilitates the interpretation and understanding of the emotional impact of the disease on the individual, and assists in anticipating potential difficulties and in planning for appropriate and idiosyncratic interventions (Eisenberg et al., 1984). It is generally accepted that three sets of variables affect psychological adaptation to cancer: the developmental stage, intra-personal factors, and interpersonal resources (Rowland, 1989). This chapter will focus on the developmental stage, which is "...where the person is with respect to life cycle-related biological, personal and social life goals and tasks when cancer develops" (Rowland, 1989, p. 25). Various key adult developmental theories will be considered below. They are, in contrast to child developmental models (e.g. Freud, Piaget), less driven by biology and the negative consequences of failure to progress, and focus more on the influence of societal forces and the changing psychological self, with the requisite of mastery of each developmental stage and task emphasised (Rowland, 1989). An area of overlap, however, is the cyclical framework of stability and change over the course of development (Levinson, 1986; Vaillant & Milofsky, 1980).

The two major researchers and lifespan developmental theorists considered first are Erik Erikson and Robert J. Havighurst, whose theories were important precursors for the work carried out by the two more contemporary researchers discussed here – Daniel Levinson and Roger Gould. Holland and Rowland's Adult Developmental Model which attempts to integrate a number of developmental theories within an 'illness framework' is discussed at the end of the chapter.

4.2 ERIK ERIKSON'S THEORY OF PSYCHOSOCIAL DEVELOPMENT

Erikson's theory of psychosocial development (Erikson, 1963) gives emphasis to the rational conscious ego functions and the person's adaptation to the social world. He placed great importance on society and culture in shaping the ways in which we experience and view ourselves in the world. He identified eight steps of psychosocial development that occur during the individual's lifespan, each of which represents a social crisis in the individual's development which can be more or less successfully resolved, resulting in a positive or negative outcome or, more commonly, a solution between the two extremes. For the purpose of this discussion, only the last three (adult) stages of development will be reviewed here. Erikson (1963) divided adulthood into three developmental stages: 'Early Adulthood', 'Middle Age', and 'Later Years'. Each stage has one or more developmental task/s with the aforementioned associated psychosocial crisis of that stage. The outcome of each stage is dependent on the outcome of the previous stage, and the successful negotiation of each stage's ego crisis. This process can

obviously be severely disrupted by a traumatic life event such as cancer, further increasing patients' vulnerability.

In terms of this model, following adolescence, the developmental task of 'Early Adulthood' involves establishing intimate bonds of love and friendship, with the psychosocial crisis of this stage being 'intimacy versus isolation'. It is hypothesised that, in terms of this theory, disruption caused by an illness such as cancer at this stage of development, could potentially interfere with/prevent the appropriate resolution of the developmental crisis inherent in this stage of development. This could result in an inability to create strong social ties, and a 'loss of self' in isolation and loneliness. The risk to the individual is that they become socially isolated or tend to have fairly superficial relationships, depriving themselves of the opportunity of support - an important coping resource for most cancer patients. In particular, a mature sexual relationship is an important part of normal development of close and intimate ties, and inability to achieve this aim results in further isolation and poses a threat to the individual's ability to reach the usual developmental milestones of the period.

With regard to the next developmental stage of 'Middle Age' (commencing around age 40), the developmental tasks include fulfilling goals involving family, career, and society; and developing concerns that embrace future generations. The psychosocial crisis of this stage requiring resolution is 'productivity/generativity versus stagnation'. Thus the individual needs to be focused on establishing and guiding the next generation, and the adequate resolution of the crisis in this phase thus requires productivity and caring.

Failure to achieve the developmental tasks of this stage leads to personal bankruptcy, pseudo-intimacy, excessive dependency, or premature disengagement from society. The potential risk to the individual who develops a life-threatening disease such as cancer at this stage of development, is the development of thoughts/beliefs that life is boring and meaningless. This would most certainly impact on the individual's mood and motivation to engage in daily activities.

The final of Erikson's (1963) life stages covering the developmental period of 'Later Years' (beginning around age 60) has the developmental task of looking back over one's life and accepting its meaning – of having a sense of having taken care of important matters and other people, and of having obtained a balanced view of successes achieved as well as failures suffered. The psychosocial crisis of the stage is 'integrity versus despair' meaning that inadequate resolution of the developmental tasks of this stage can result in despair of one's accomplishments and a lack of a sense of meaningfulness, leading to difficulty in facing death or a despairing welcoming of death. For the individual who develops cancer at this phase of development, the threat resulting from an unsatisfactory resolution of the developmental crisis of this stage, is the development of a sense of despair and hopelessness. In turn, this would most certainly impact on a person's mood and ability to cope with their disease.

4.3 ROBERT J. HAVIGHURST'S THEORY OF DEVELOPMENTAL TASKS

Related to, although more concrete than, Erikson's (1963) psychosocial tasks, is the idea of 'developmental tasks' most fully elaborated by Havighurst (1972). A developmental task is defined as "...a task which arises at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks" (Havighurst, 1972, p. 2). The developmental tasks of a particular group of people are seen as arising from three sources: physical maturation, cultural pressure (the expectations of society), and individual aspirations or values. Some tasks will result primarily from one source whilst others will result from the interaction of any combination of physical, cultural and psychosocial factors. Havighurst (1972) sees the personality, or self, as emerging from the interaction of organic and environmental forces, which ultimately becomes a force in its own right capable of directing the individual's subsequent development. Havighurst's (1972) three stages of adulthood, and the developmental tasks associated with each, are described in Table 1, as presented by Beinart (2001).

Table 1

Havighurst's (1972) Developmental Tasks

Stage	Developmental Tasks
Early Adulthood	Achieving new and more mature relationships and independence from parents Achieving a masculine/feminine social role Accepting one's physique and using body effectively Achieving a set of values and an ethical system to guide behaviour Selecting an occupation
Middle Age (Early)	Selecting a mate Learning to live with a marriage partner Starting a family Rearing children Managing a home Getting started in a occupation Taking on civic responsibility Finding a congenial social group
Middle Age (Late)	Assisting teenage children to become responsible and happy adults Achieving adult social and civic responsibility Reaching/maintaining satisfactory performance in one's occupational career Developing adult leisure-time activities Relating to one's spouse as a person Accepting and adjusting to the physical changes of middle age Adjusting to aging parents
Later Maturity	Adjusting to decreasing physical strength Adjusting to retirement and reduced income Establishing an explicit affiliation with one's age group Adopting and adapting social roles in a flexible way Establishing satisfactory living arrangements

In terms of this theory, disruption of development in Early Adulthood (19-30 years old) by a significant life event such as severe illness, would impact on the person's ability to achieve new and more mature relationships, and to properly achieve emotional

independence from parents and other adults. Disruption at this stage, particularly if the person suffered physical disability as a result of their illness, would impact on the person's ability to accept their physique and use their body effectively - possibly affecting body- image and self-esteem. This is a vital part of this phase of development. The person's ability to select an occupation and set out on developing a career would also potentially be hampered by illness at this stage, further impacting on the development of social identity and the development of independence and autonomy.

With regard to disruption in Middle Age (30-60), illness during this phase of development would potentially severely impede an individual's ability to establish a family; become established and achieve success in an occupation; and generally adjust to 'middle age' with regard to changes in body function, leisure activities and social responsibilities.

Finally, the impact of an illness such as cancer on an individual in the developmental phase termed 'Later Maturity' (60 and over) would potentially hamper their ability to adjust to the many changes associated with growing older, including changes in physical/occupational/social status; living arrangements etc.

Developmental disruptions by major life events at any of the aforementioned stages of development could not only put the individual at risk of psychological distress, but also impact on both internal and external resources which could, potentially, have facilitated coping.

4.4 DANIEL LEVINSON'S THEORY OF ADULT LIFE STRUCTURES

Levinson (1978) defines the developmental stage of early adulthood as the years from 17 to 45. In his view, "Early adulthood is the era in which we are most buffeted by our own passions and ambitions from within and by the demands of family, community, and society from without" (Levinson, 1986, p. 5). With regard to this stage of development, Levinson (1978) views the earlier part of this phase as the time when individuals enter the adult world and build their first adult life structure. Towards the end part of this stage spanning the years 28 to 33, and known as the 'age 30 transition', the individual's focus is on creating a more satisfactory reality-orientated life structure by altering the flaws and limitations of the original one. In so doing, the basis for a more satisfactory structure is created which can carry the individual through the next era of development. Should disruption through illness or other life events occur at this stage of development, the individual is at risk of losing the opportunity to reflect and make new choices, potentially hampering future psychosocial growth and development.

According to Levinson (1978) the years from 33 to 40 are a 'settling-down' period in which the individual finds their place in society and works to establish success and autonomy. There is progressive adjustment to what Levinson terms the 'second adult life structure' which is an outgrowth and resolution of the age 30 transition. Disruption to this phase of development would put the individual at risk of failing to consolidate career and family goals, potentially negatively impacting on the forging of a stable identity and the ability to establish intimacy in relationships.

The mid life transition occurs between the ages of 40 and 45, during which time there is a questioning of all aspects of life and search for balance among a number of choices including various desires, aspirations, talents, values and different parts of the self. An important developmental task at this stage is the resolution of the ‘intentionality’ question. “To the extent that this occurs, we can become more compassionate, more reflective and judicious, less tyrannised by inner conflict and external demands, and more genuinely loving of ourselves and others. Without it, our lives become increasingly trivial or stagnant” (Levinson, 1986, p. 5). This stage of development encompasses the second adult life structure (Levinson, 1986). This phase begins between the ages of 40 and 45 (or mid-life transition), and is marked by important changes in the individuals life – some major such as divorce or a change in occupation, and others more subtle such as an increase or decrease in satisfaction and creativity. In addition, there is a change in focus from outer to inner-world orientation, conceptualised as an increasing emphasis on ‘interiority’. The age 50 transition (ages 50 to 55) is seen as an important part of this stage where the individual adjusts the second life structure or begins to build a new life structure with revised goals and purpose. Levinson (1978) has noted that normal personal development does not always go smoothly in middle adulthood. He notes also that decline occurs frequently at this stage and is thus ‘statistically’ normal. “It is not, however, developmentally normal. Drastic decline occurs only when development has been impaired by adverse psychological, social, and biological circumstances” (Levinson 1978, p. 41). It would appear then, that in terms of this theory, developmental disruption at this phase as a result of a major life event such as cancer, could lead to 'drastic decline', given the potential impediment to clarification of values and generativity.

The last period in this life cycle model is the late adult transition (between ages 60 and 65) which defines the entry into the developmental stage of late adulthood which encompasses the period of age 60 and above (Levinson, 1986; Levinson et al., 1978). However, it is noted that late adult transition may occur earlier in people of lower socioeconomic status and in individuals with chronic illness, or later as people begin to retire later. An important aspect of this period is the preparation for the next life era, or a review and reworking of the past. Some memories may be dramatised, while in others there may be a search for consistency. The developmental task at this stage is to “...overcome the splitting of youth and age, and find in each season an appropriate balance of the two” (Levinson et al., 1978, p. 46). In terms of this model, everyone is likely to feel despair at one or other points during this late transition, and the tasks of late adulthood are finding a balance in the degree of societal and self-involvement, making peace with inner and external enemies, and finally making peace with dying. Developmental disruption at this stage, by illness or any other major life event, puts the individual at risk of existential crisis, or at least conflict.

As with the previous theories discussed, it is hypothesised that failure to achieve any of the aforementioned developmental 'milestones' as a result of illness, could potentially result in psychological distress and a decreased ability to cope with both the challenges raised by the illness, as well as those by daily life in general.

4.5 ROGER GOULD'S THEORY OF THE EVOLUTION OF ADULT CONSCIOUSNESS

Gould's (1978,1980) theory of the evolution of Adult Consciousness originally derived from his work as a psychiatrist, but was tested on over 500 non-patients aged 16 – 65. It represents, arguably, the most significant extension of Freud's theory to adulthood (Gross, 1992). In terms of this theory, the thrust of adult development is towards the realization and acceptance of ourselves as creators of our own lives, and away from the assumption that the rules and standards of childhood determine our destiny. Individuals need to free themselves of the illusion of absolute safety, which involves giving up the security of the past to form one's own ideas. According to Gould, the false assumptions of childhood often embody the concept of parental dependency which must be replaced by a sense of personal autonomy. In order to achieve psychological maturity, the (false) basic assumptions of childhood about the self and the world have to be given up. This is a gradual process and continues throughout adulthood both intellectually and emotionally. The details of the four major false assumptions about the self and the world are shown in Table 2, as presented by Gross (1992, p. 707)

Table 2

Gould's (1978, 1980) Theory of the Evolution of Adult Consciousness

Age	False Assumptions
Late teens, early 20s.	I will always belong to my parents and believe in their version of reality (i) I can't get any more independent (ii) I can only see the world through my parents' assumptions (iii) Only they can guarantee my safety (iv) They must be my only family (v) I don't own my body
20s. Apprenticeship period of life. We need to look outward and develop competency in roles outside the family	Doing it my own way with will- power and perseverance will bring results but when I am frustrated, confused, tired, or unable, they will step in and show me the way (i) Rewards will come automatically if we do what we are supposed to do (ii) There is one right way to do things (iii) My loved ones are able to do for me what I can't do for myself (iv) Rationality, commitment and effort will always prevail over all other forces
Late 20s, early 30s. Return to inner selves, confronting parts suppressed. Disillusionment and confusion about what life is all about	Life is simple, not complicated. There are no significant unknown inner forces within me; there are no multiple coexisting, contradictory realities present in my life (i) What I know intellectually, I know emotionally (ii) I am not like my parents in ways I don't want to be (iii) I can see the reality of those close to me quite clearly (iv) Threats to my security aren't real
35-50. Ending of illusion of absolute safety	There is no evil or death in the world. The demonic has been expelled (i) My work (for men) or my relationship with men (for women) grant me immunity from death and anger (ii) There is no life beyond the family (iii) I am innocent

In terms of this theory, there is a change in the individual's sense of time alongside the shedding of childhood consciousness:

- Until the individual leaves their family of origin (at around 18), they are protected by parents, but also constrained by them, never quite believing that they will escape the family world. However they begin to glimpse an endless future provided they are not forced back into the restricted world of their childhood. Developmental disruption at this phase of development impedes the establishment of identity, putting the individual at risk of not developing a sense of agency and autonomy.
- In their 20's, the individual is more confident that they have separated from the family, but has not yet formed a coherent early adult life structure. Developmental disruption at this phase of development potentially impedes the attainment of goals, possibly impacting on the individual's self-esteem and sense of self-efficacy.
- By the end of their 20's, the individual's sense of time incorporates their adult past as well as their future. There is the beginning of a sense that the future is neither infinite nor linear, and that choices must be made as a result. Developmental disruption at this phase of development potentially distracts or prevents the individual from fulfilling the important developmental task of 'questioning life' - possibly impeding the shift to full adult consciousness which enables us to face difficulties in life. This would obviously have an adverse effect on an individual's ability to cope with adversity, such as illness.

- From the mid-30's to mid-40's there develops a sense of urgency that time is running out. There is an emotional awareness of the individual's own mortality, and how time is spent becomes a matter of importance. There is also a questioning of whether the striving for freedom from restrictions by our parents has been worthwhile. Developmental disruption at this phase potentially inhibits the creation of a sense of stability. As with the previous phase, disruption at this stage inhibits the shift to full adult consciousness which is seen to facilitate coping with adversity. It potentially puts the individual at risk of existential crisis or conflict.

In terms of this theory, the move to adult consciousness involving the replacement of 'I am theirs' of child consciousness to 'I own myself' allows us to face disappointment, ill health and pain with greater strength. Older people who have not made this transition find no meaning in their own life and attack life itself as meaningless (having lost the battle between integrity and despair in Erikson's (1963) terms). Obviously, this has important implications for cancer patients who require a sense of meaning and purpose in their lives in order to face the many challenges raised by this disease.

4.6 CRITIQUE OF ADULT DEVELOPMENTAL MODELS

It has long been purported by various feminist authors that women are exposed to higher rates of change and instability in their lives than men and that they are arguably more vulnerable to life cycle stresses because of their greater emotional involvement and

responsiveness to a wider network of people for whom they feel responsible (McGoldrick, 1989). For example, some researchers refer to the 'dependency squeeze' that middle-aged women in particular tend to be caught in, between their parents and their children (Baruch and Barnett, 1983; in Gross, 1999). Research illustrates that women may experience a role overload which leaves them feeling over-burdened when unpredictable stresses such as illness, divorce, and unemployment occur, to which they are sometimes more emotionally responsive than men (McLeod, 1983; in Gross, 1999). The feminist literature is therefore critical of the dominant theories of adult human development for under-representing these gender-specific issues.

Gilligan (1982) and others criticised theories of human development as being androcentric, stating that "...while women have thus taken care of men, men have, in their theories of psychological development, as in their economic arrangements, tended to assume or devalue that care" (p. 17). McGoldrick (1989) observes that developmental theories put forward by men have failed to describe the progression of relationships towards a maturity of interdependence, and have instead tended to lay emphasis on the importance of individuation and autonomy. For example, she criticises Erikson's (1963) theory in this regard, observing that his phase of generativity, comes after what could be considered as the time of greatest human generativity - producing children, which does not even enter into his model. In addition she observes that the last stage of adulthood, 'ego integrity versus despair', again appears to focus on individual rather than interpersonal features of development. Furthermore, while his Eight Stages of Man (1950,1963) were meant to be universal, applying to different men and women in

different cultures equally, Erikson (1968) himself acknowledges that the sequence of stages is different for the female: according to him she suspends her identity as she prepares to attract the man who will marry her. Many authors feel that while men achieve identity before achieving intimacy with a sexual partner, for women these developmental tasks seem to be fused. Gilligan (1982) observes that women's identities are often based on their relationships with others. One of the obvious limitations of the theory put forward by Levinson (1978, 1986) and others is the use of an all-male sample. More recent research of women's lives reveals a major difference between men and women in that women's dream is typically split between family and career. Women still have the major responsibility for childcare and domestic affairs as a whole, and the difference in women's and men's priorities may put women at greater risk of disappointment and developmental tension as their investments in others' goals conflict with their personal needs (Durkin, 1995).

In addition to the feminist critique, some of these theories have also been criticised as being descriptive rather than explanatory; and inevitably socially, culturally and historically specific – a consequence of the potential lack of trans-cultural and trans-historical generality of accounts of the life course. Research findings suggest that it is necessary to describe developmental patterns for gender and social class groups separately, illustrating how it is more difficult to describe universal stages for adults than it is for children and even adolescents (Gross, 1999). However, despite these weaknesses, it is also widely acknowledged that the work of these researchers has been important as a precursor to the current interest in life-span development, each having their own focus of

attention and making their own unique contribution. Erikson has been acknowledged for being ground-breaking in the emphasis he gave to the interdependence of generations – with the old needing the young as much as vice versa. Havighurst focused on significant and possibly controversial problems such as mid-life career change, perceptions of ageing by the self/family/community, personality change in the context of declining health and vigour, and the attitudes toward death held by people of different ages. The more contemporary work by Levinson and Gould built upon the foundations laid by these researchers.

Levinson's (1978, 1986) concept of the life structure captures the importance of a sense of integration and harmony at a particular point in time, in addition to having the ability to confront and handle change. Gould's (1978, 1980) focus on the need for adults to relinquish the illusion of absolute safety derived from our childhood captures the importance of the need of a sense of self-determination – something that research has indicated as being achieved later for women (mid 40's) as they seem to achieve identity and intimacy in reverse order to men (Sanguiliano, 1978; in Bee and Mitchell, 1980).

In summary, it seems that despite their contribution to the development in our thinking about human adult development, stage theories of adulthood greatly underestimate both individual variability in adult experience and the continuity of personality during adult life. “An alternative approach (may be) to study the impact of critical life events/psychosocial transitions, which can be classified according to whether they represent normative, age-graded/normative, history-graded/non-normative influences”

(Gross, 1999, p. 623). The latter refers to idiosyncratic transitions such as illness. These are often called critical life events (Levinson's (1978) marker events), and the study of the impact of these represents an alternative (but not necessarily incompatible) approach to stage theories in the explanation of adult development. According to Gross (1999) in examining critical life events it is particularly useful to relate them to different eras of adulthood. Holland and Rowland's (1989) Adult Developmental Model, described below, attempts to do this.

4.7 HOLLAND AND ROWLAND'S ADULT DEVELOPMENTAL ILLNESS MODEL: DISRUPTION OF DEVELOPMENTAL LIFE TASKS AND THEMES OF STRESS

Holland and Rowland (Rowland, 1989) have developed a model which attempts to bring together a number of theoretical overviews developed by the prominent adult-stage theorists "...in the absence of a universal model of adult lifecycle milestones" (Rowland, 1989, p. 28). More specifically, it is arguably one of the only comprehensive adult developmental models that summarises the major biological, social and psychological tasks associated with each life stage that are generally regarded by theorists and researchers as part of 'normal' development, and integrates this with research on human response to illness. The model is designed to highlight the potential developmental disruptions that ensue when illness is experienced at a given stage of life, highlighting "...the differences in individual's responses to cancer that are in part a function of the specific goals, responsibilities, and resources associated with a given life stage" (Rowland, 1989, p. 26).

Within this model, adult development is divided into four stages: the ‘Young Adult’ (19 – 30 years), the ‘Mature Adult’ (31 – 45 years), the ‘Older Adult’ (46 – 65 years), and the ‘Ageing Adult’ (66 and over). Rowland (1989) acknowledges that the finding of age markers with which to label each stage is difficult and possibly somewhat arbitrary, with enormous overlap across stages, necessitating flexibility when making an interpretation. He states, however, that there is empirical evidence to suggest that the ages of 30 and 45 serve as the upper boundaries for the earlier periods of life, and important transitions do occur around these periods making them appropriate demarcations of developmental change (Levinson, 1977; Neugarten, 1968c, 1979). In terms of this model, the common disruptions of illness at all life stages are divided into five categories that denote major themes of stress: altered interpersonal relationships, dependence-independence, achievement disruption, body-sexual image and integrity, and existential issues. The four developmental stages and major themes of stress described in the model by Rowland (1989) are discussed in more detail below.

4.7.1 The Young Adult (19 – 30 years)

4.7.1.1 Developmental tasks

This stage is marked by the physical and psychological transition from adolescence to young adulthood. Individuals tend to be intellectually egocentric – a tendency which is put progressively into perspective as the individual matures. Formal education is generally completed, and jobs that are in line with career goals are undertaken, and long-

term career plans identified. Autonomy from the family is often achieved. The key life cycle task is focused on the achievement of intimacy (particularly sexual), closeness and commitment to others, usually with marriage and parenthood. There is greater clarity about the universality of death due to increased personal exposure to it.

4.7.1.2 Disruptions of illness

4.7.1.2.1 Altered relationships

Cancer at this stage of the lifecycle has an extremely negative impact on the young adult's ability to develop or sustain relationships. The individual may choose to remain emotionally and socially isolated rather than face the demands of maintaining old or beginning new relationships, given the fear and guilt about the potential consequences of the illness. Similarly, the physically healthy partner may question commitment to a person with cancer. If children are present, fears centre around leaving the young child/children. Concerns about the partner's ability to cope alone and issues related to guardianship for single parents are prominent. Concerns about ageing parents are also present.

4.7.1.2.2 Dependence–Independence

The need for increased dependence (including poor personal hygiene) on family and medical staff negatively affects self-esteem at this stage of the development, and may

also cause anger, resentment and rebelliousness. Excessive overprotection by family members and excessive dependence by the patient on others may lead to difficulties.

4.7.1.2.3 Achievement disruption

This stage of adult development is generally associated with a focus on a future career – either in pursuing further educational goals or by beginning a job/apprenticeship. The diagnosis and treatment of cancer severely hampers these ambitions, and may even affect an employer’s decision about advancement. These difficulties may lead to depression.

4.7.1.2.4 Body image and integrity

“Cancer causes a major psychological disruption by its feared or actual association with diminished attractiveness, effect on the patient’s ability to elicit affection from others, and the effect on the ability to establish or maintain a sexual relationship” (Rowland, 1989, p. 31). The side effects of cancer treatment, including the real possibility of reduced fertility and reduced libido may profoundly affect the sexual and partner roles of the patient, which may be exacerbated by anxiety and depression.

4.7.1.2.5 Existential issues

The fear of death is a constant worry and the concept of the finality of death represents a threat to personal identity and sense of continuity, particularly if the individual has no siblings or children of their own.

4.7.2 The Mature Adult (31 – 45 years)

4.7.2.1 Developmental tasks

This developmental stage is often characterised by greatest stability in the life course and by “...personal growth and consolidation of career and social goals” (Rowland, 1989, p. 32). Intellectual ability peaks, and social and emotional tasks centre around establishing a family and child rearing. Preparation for illness/death in ageing parents is negotiated. The consolidation of personal identities is also a feature of this period. Career goals are achieved and upward mobility is a focus for many. Sexual and social relationships may be optimal at this stage.

4.7.2.2 Disruptions of illness

Many of the developmental tasks of this stage emerge out of those of the previous stage, and therefore similar disruptions are faced by cancer patients in both of these developmental phases (Rowland, 1989).

4.7.2.2.1 Altered relationships

Fears of separation from loved ones are experienced by both patients and their family members, and isolation by real or imagined social stigmatization maybe experienced. Difficulties in relationships are emphasised. Concerns for the psychological, social and financial well-being of children and ageing parents are high. Anger and depression may be related to envy at loved one's ongoing survival.

4.7.2.2.2 Dependence–Independence

Normal responsibilities may need to be handed over to others with the assumption of a more passive role. This can result in over-dependence or overcompensation with the desire for excessive independence and a premature resumption of previous roles and responsibilities.

4.7.2.2.3 Achievement disruption

Job disruptions and medical costs may threaten those immediate and long-term personal and familial financial commitments, and certain life goals may be compromised or even abandoned.

4.7.2.2.4 Body image and integrity

As in the previous stage, the sequelae of cancer and cancer treatment may resolve in disfigurement or loss of attractiveness, sexual difficulties (or an exacerbation of previously existing ones) and sterility. These may exacerbate the feelings of physical vulnerability normally associated with the onset of ageing, and normal minor signs of ageing may be catastrophized and perceived as disease progression.

4.7.2.2.5 Existential issues

Cancer is a major threat to the patient's sense of identity. Religious faith/beliefs may be threatened or strengthened, and there may be a questioning of existential purpose.

4.7.3 The Older Adult (46 – 65 years)

4.7.3.1 Developmental tasks

Most individuals in this stage of development have to adapt to several physical, emotional and social changes. Examples of physical changes include the loss of musculoskeletal integrity, a decrease in bone density and mass, and for women – major adjustments to menopausal hormonal changes. The biopsychosocial changes related to the menopause take place over several years, starting at about 50 years of age (Van Keep, 1983).

For women, menopause has consistently been identified as the period most frequently associated with psychological symptoms (Ballinger, 1985; Cooke, 1984). Important psychosocial changes possibly associated with this include children leaving home ('empty nest syndrome'); loss of parents through death or role reversal due to increased dependency; loss of a spouse/partner through death or emotional distance; and loss of fertility with associated perception of loss of femininity and sexual attractiveness (Ballinger, 1985; Cooke, 1984; Parlee, 1980). Such factors are powerful reminders of the loss of youthfulness and progressive ageing and require changes which include "... pervasive role transitions, examination and re-definition of the self-concept, and reorganisation of behaviour, lifestyle, gratification, attitudes and perceptions of personal worth" (Kok, 1990, p. 181). This is particularly true in Western societies where ageing is feared and menopause is associated with negative expectations. In more traditional societies where ageing is not perceived in a negative way, for example, in certain parts of India and Israel, no adverse psychological reactions are noted following the cessation of menstruation (Ballinger, 1985; Van Keep, 1983). Various theories have been put forward in an attempt to understand the underlying causes of psychological distress related to this stage of female adult development, most notably that the nature of stressors during this stage of a woman's life signify loss or ending ('exit event'), and the 'vulnerability hypothesis' which focuses on increased vulnerability to the psychological effects of stress as a result of deficiencies in the social support network (Cooke, 1984). Related findings illustrate that women in lower socio-economic classes with lower income and less education are more at risk for psychological symptoms in response to the onset of menopause due to the greater value placed on childbearing and rearing. Work represents

a safety factor for menopausal women of high SES with the opposite true for women of low SES related to job satisfaction variables. Women who have fewer confiding relationships and a more restricted social network tend to be more at risk of developing psychological symptoms in response to menopause (Ballinger, 1985; Cooke, 1984; Van Keep, 1983).

With regard to Holland and Rowland's developmental model, Rowland (1989) observes that individuals in the 'Older Adult' stage of development also have to adjust to intellectual, sensorimotor and visuoperceptual changes which may also heighten the perception of physical vulnerability and lead to increased body monitoring. Such changes are also accompanied by changes in psychosexual identity, with men assuming a more passive, nurturing role sexually and socially, and as discussed above, women having to adapt to children leaving home and (for some) becoming more work/career-focused (Notman, 1979). Rowland (1989) observed that paradoxically, stress may also be caused by children failing to leave home or even returning home once they have left. Changes in family relationships are also important in this developmental stage, with new family roles needing to be negotiated between parents and adult children, and between spouses, with an opportunity for increased intimacy to occur given the opportunity for fewer responsibilities with regards to child care etc. The role of nurturer to grandchildren "...evolved and heightened the introspection and reflection appropriate to this era" (Rowland, 1989, p. 35). Career success and achievement is often observed during the early years of this stage, and some (but usually not all) career goals are achieved by the end of this phase of development. There is a growing awareness of time having passed

and ‘years left’ (Neugarten, 1968c), and an inclination towards life review and the beginning of a new more personal understanding and consideration of death, and planning for this inevitability.

4.7.3.2 Disruptions of illness

4.7.3.2.1 Altered relationships

Although financial obligations to significant others such as children and ageing parents may be less significant than the preceding period, with the diagnosis of cancer comes the concern for the social, financial and emotional well-being of survivors – particularly where late or second families are concerned, or if responsibility is held for an ageing parent. The possible loss of the opportunity to be involved with grandchildren may also be cause for concern and distress. Increased social alienation may be difficult for the patient and family alike, and pre-existing difficulties in families and other relationships may be exacerbated. For women in particular, a return to a more passive role, particularly if after having started or returned to a satisfying career/job, may be distressing.

4.7.3.2.2 Dependence-Independence

The possibility of needing to care for and be cared for may result in psychological distress (including resentment and guilt) for both family members (particularly children)

and patient, putting strain on important relationships. The financial costs hamper independence on the part of the patient and/or couple and may lead to dilemmas over the wish not to be a burden and the necessity of receiving assistance from others, including possibly the need to give up independent living arrangements.

4.7.3.2.3 Achievement Disruptions

The prospect of enforced early retirement may result in psychological distress for individuals, particularly for individuals in the early phase of this stage who may have to give up the prospect of potential achievements. For those approaching retirement or those who have already retired, the prospect of possibly being cheated out of the much anticipated healthy retirement may cause distress – particularly where there are financial concerns.

4.7.3.2.4 Body image and integrity

An acceleration of the natural physical ageing process may be experienced by patients with cancer as a result of the effects of the disease or treatment, resulting in an increased sense of physical vulnerability. This process may prove particularly difficult for those who have placed a heavy emphasis on youthful appearance and perfection of body integrity and function, and can lead to severe psychological distress. Normal concerns related to this stage of development about changing sexual image and function may be

exacerbated by the disease and treatment. The masculinisation effect of hormonal therapy may be particularly problematic for women.

4.7.3.2.5 Existential issues

Depression is associated with less denial of death as a possible outcome. An increase in the introspection and reflection characteristic of this period of life review may lead to psychological distress related to the perception of a lack of meaning in ones life, and aspirations not achieved. An overemphasis on an introspective orientation may lead to social isolation and a decrease in fighting spirit.

4.7.4 The Ageing Adult (66 and older)

4.7.4.1 Developmental tasks

Individuals tend to differ most markedly with regard to psychological, social and physical factors in this final developmental stage (Rowland, 1989). Despite this, a number of common changes in physical ability and performance have an impact on these areas of functioning (Storandt, 1986). These are related to 'primary ageing' (Rowland, 1989) and include a decline in various organs/systems resulting in a decrease in physical capacity and an increase in the prevalence of chronic diseases. Safety factors appear to include good diet, exercise, social involvement and financial well-being. Intellectual, sensorimotor and visuoperceptual skills decline, particularly towards the end of this

stage, and dementia may occur. The individual needs to be able to adapt to these as well as other changes, including those in the social and occupational spheres. Retirement may result in psychological distress, although perhaps less so for women who are traditionally more involved in extra-professional concerns such as child rearing (or grandparenting), homemaking and volunteer work. For the partner of the retiree, adjustments may need to be made for increased contact and a change in schedule. Social isolation may increase during this period with the death of loved ones and close friends, requiring adaptation.

4.7.4.2 Disruptions of illness

4.7.4.2.1 Altered relationships

Cancer may exacerbate social isolation and loss already created by death/geographical distance of friends/loved ones, a normal decrease in mobility and activity levels etc. As a result of normal reduction in adaptation to these situations, the individual in this phase of development may feel suspicious towards staff and treatment, and fear abandonment by staff/family members or becoming a burden.

4.7.4.2.2 Dependence-Independence

For the older adult, used to functioning independently, psychological distress and shame may occur with increased (particularly physical) dependency. Conversely, the patient

may become overly dependent and succumb to the disease process. Concerns about having to give up independent accommodation and beloved pets may be prominent.

4.7.4.2.3 Achievement disruptions

Additional financial strain on an already reduced income may produce anxiety about the individual's future and for the financial security of the survivors. As before, despair and anger about the loss of anticipated enjoyment of life in old age and post-retirement may be great, which is exacerbated if the life review process is unsatisfying.

4.7.4.2.4 Body image and integrity

The inability of the ageing adult to manage personal hygiene may be upsetting for the patient, family and staff alike. The side effects of treatment including the masculinising of women from the effects of hormonal treatments may be distressing, as are the complications of illness and the decreased tolerance of side effects by the older body. Cancer also exacerbates any pre-existing diseases of ageing, and reduced ability to assimilate and integrate information may complicate treatment and treatment compliance.

4.7.4.2.5 Existential issues

“Cancer has a cumulative effect on the multiple life losses of the ageing adult, leading at times to bereavement overload and a depressive response to illness” (Rowland, 1989, p.

40). There may be an accelerated need for life review and search for meaning (religious or otherwise) which may fall short of expectations leading to psychological distress. The already physically and socially vulnerable ageing adult may find the additional stress induced by the illness and its consequences hard to bear. Thoughts about death - fairly typical in this stage of development – may become centered around issues such as duration, pain, disability etc.

4.8 SUMMARY AND CONCLUSION

Holland and Rowland's model could be criticised for being overly general, and predominantly westernised in its approach. However despite these criticisms, it provides a unique schema for analysis of the psychosocial issues related to having cancer at various stages of the lifecycle – something that is missing from other theories of human development. It therefore provides a starting point for analysing the various biopsychosocial issues involved, and addresses many of the criticisms levelled at the more traditional adult developmental theories, by laying emphasis on the importance of relationships, family and care giving, whilst simultaneously acknowledging the importance of academic/professional achievement and dependence/independence related issues experienced by many modern-day women. As mentioned, however, a major weakness exists in the lack of differentiation for gender, class and culture – an area requiring further research, and one that is addressed in this study.

CHAPTER FIVE

A DYNAMIC COGNITIVE-DEVELOPMENTAL MODEL OF CANCER AND PSYCHOLOGICAL FUNCTIONING

5.1 INTRODUCTION

The following theoretical model (Figure 7) is an integration of three influential theoretical models of stress, coping and adult development reviewed earlier, including: Folkman and Lazarus' (1988) transactional model of coping (described in Chapter Three), Moorey and Greer's (1989¹, 2002) cognitive behavioural model of coping and adaptation to cancer (described in Chapter Three), and Holland and Rowland's (1989) adult developmental model of psychological adjustment to cancer (described in Chapter Four). It has been developed in order to provide an overarching theoretical framework for this thesis. Not only does it illustrate the areas that have been focused on by this research, but it also highlights the enormous complexity of the process of psychological adaptation that each patient must go through upon receiving the cancer diagnosis and undergoing treatment. In doing so, it can also be noted that it has been beyond the scope of this study to investigate all aspects of this highly complex and idiosyncratic process, highlighting both potential weaknesses of this research, as well as possible directions for future research, discussed in greater detail in Chapter Eight.

¹ Certain parts of Figure 7 have been adapted from diagrams presented in Moorey and Greer (1989).

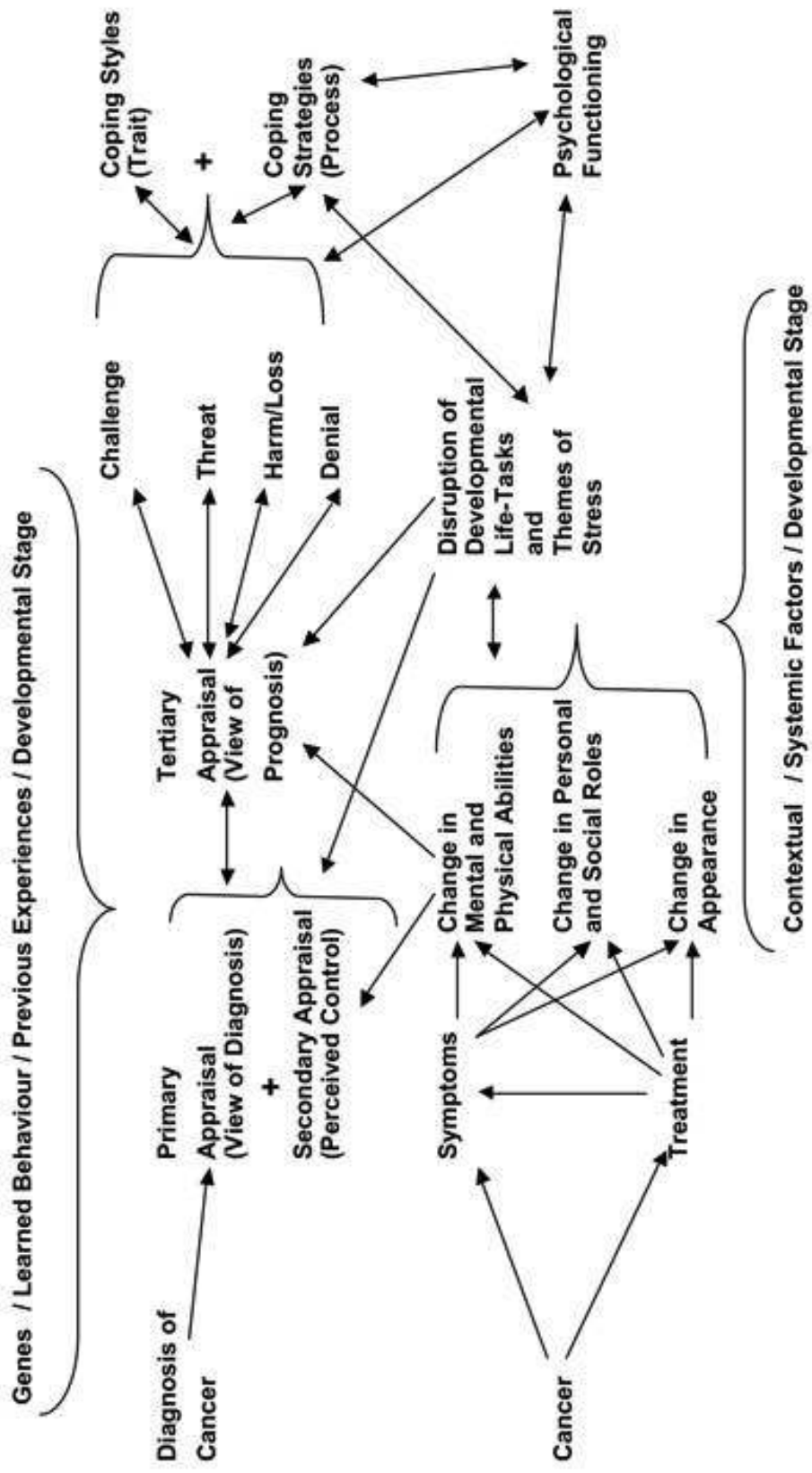


FIGURE 7. A dynamic cognitive-developmental model of cancer and psychological functioning.

5.2 PROCESS OF APPRAISAL AND COPING

5.2.1 Appraisal Process, Survival Schema and Coping Styles/Strategies

As described in Section 3.3.1.5, Moorey and Greer (1989, 2002) give a detailed account of the appraisal process that the individual goes through when receiving the cancer diagnosis, in order to try and make sense of what is, for many people, a catastrophic threat to their survival and self-image. The primary appraisal results in a view of the diagnosis (How much of a threat is this?), the secondary appraisal results in a sense of perceived control (What can be done about it?), and the tertiary appraisal – the view of prognosis - arises out of the conclusions reached from the first two. These three elements together form a cognitive triad which relates to a particular ‘survival schema’ (challenge, threat, harm/loss or denial), each of which is associated with a pattern of cognitions, affect and behaviour which represent the style of adjustment or ‘coping style’ which the person develops. Implicit in the concept of coping or adjustment ‘styles’ is the presence of a personality trait in the coping process resulting in a relatively enduring way of responding to stressful events. This view certainly makes intuitive sense given that patients do not present in a vacuum but come equipped with pre-existing core beliefs and schemas based on past learning and experience, as is outlined in the theory and research of theorists such as Aaron T. Beck (e.g. Beck, 1976) and Jeffrey Young (e.g. Young et al., 2003). In addition, there is fairly substantial evidence in the research literature to support this view (e.g. Grassi et al., 1993; Scheier et al., 1986). However, over the years, there has also been an increasing acknowledgement of the potential fluidity and

flexibility, not only of coping styles (Petticrew et al., 2002; Sage et al., 2008), but of strategies actively used by individuals to cope in difficult and stressful situations. From this ‘process’ perspective, coping changes over time and in accordance with the situational contexts in which it occurs, and represents “...the person’s cognitive and behavioural efforts to manage...the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person’s resources” (Folkman et al., 1986, p. 572). However researchers such as Lazarus (1993) also warn against ‘extreme contextualism’ and recommend in the study of coping, an examination of the contextually-influenced, as well as stable relationships between the person and environment. The model discussed here therefore incorporates both coping styles and coping strategies into the coping process in order to reflect the importance of both the patient’s pre-existing ‘psychological make-up’ as well as the dynamic, mutually reciprocal, bidirectional relationship between the person and their environment which allows coping to be a fluid and dynamic process.

Based on the theory and research discussed in Chapter Three of this thesis, the coping styles hypothesised as being most relevant for adjustment to cancer are:

- fighting spirit
- helpless/hopeless
- anxious preoccupation
- fatalistic
- avoidance

For the same reasons, the following coping strategies have been incorporated into this model:

- confrontive coping
- distancing
- self-controlling
- seeking social support
- accepting responsibility
- escape-avoidance
- planful problem solving
- positive reappraisal

5.3 PSYCHOLOGICAL SEQUELAE OF DISRUPTIONS CAUSED BY CANCER

5.3.1 Biopsychosocial Sequelae of Cancer, Disruption of Developmental Life Tasks and Psychological Symptoms

In terms of Moorey and Greer's (1989, 2002) model of coping and adaptation to cancer, the possibility of death is not the sole threat in cancer. According to these authors, the morbidity of the disease can prove more difficult to cope with than the fear of dying given its negative impact on self image and sense of self. Both the symptoms and the treatment of cancer can be painful and debilitating, which, based on their own and others' research (some of which is reviewed in Chapter Two and Three), is seen as potentially leading to changes in the following three domains: mental and physical abilities, personal

and social role, and appearance. This has been shown to impact on the patient's lifestyle in various ways, including on: reduction/cessation of previously rewarding activities, adjustments to work, family and social roles, changes in body and sexual image etc. Within the theoretical model presented here, these changes can be conceptualised in terms of disruptions to developmental life-tasks which can be classified into five 'themes of stress' in line with Holland and Rowland's (1989) model of psychological adjustment to cancer.

According to Holland and Rowland's (1989) model (discussed in Chapter Four), the differences in individual's responses to cancer are in part a function of the specific goals, responsibilities and resources which are impacted upon and disrupted at a given life stage. In terms of this model, the common disruptions of cancer at all life stages can be divided into five categories that denote major themes of stress, each of which is impacted upon differently, with different consequences, at different developmental stages of the life-cycle:

- altered interpersonal relationships
- dependence-independence
- achievement disruption
- body-sexual image and integrity
- existential issues

As with the threat of death, it is the appraisal of these consequences of cancer which contributes to the person's emotional reaction. Moorey and Greer (1989) identified four common emotional reactions to cancer (based on previous research findings) into which most psychological symptoms and stress reactions can be grouped. They are listed here along with their key cognitions:

- anxiety: danger and vulnerability
- anger: unjustified attack
- guilt: self-blame
- sadness and depression: loss or defeat

Finally, the role of systemic and contextual factors such as interactions with family, friends and professionals are all seen as potentially significant with regard to their impact on the individual's psychological reactions, which is seen as dependent on how these are perceived and processed cognitively by the individual.

5.4 DYNAMIC INTERACTION OF VARIABLES INVOLVED IN PROCESS OF PSYCHOLOGICAL ADJUSTMENT

In terms of the model presented here (Figure 7), the various components discussed above are seen as being in ongoing dynamic, often bidirectional relationships with each other, resulting in various simultaneous complex associations and maintenance cycles.

As discussed, following diagnosis, primary and secondary appraisal take place, which in turn lead to tertiary appraisal. These are seen as being heavily influenced by a combination of genetic predisposition, learned behaviour, previous experience and developmental stage. All three types of appraisal are not conceptualised as static, but are viewed as being changeable dependent on the adaptiveness of coping styles/strategies, and changes in mental and physical abilities, personal and social roles and appearance, resulting in the disruption of important developmental life-tasks and subsequent themes of stress.

The aforementioned changes in mental and physical abilities, personal and social roles and appearance are seen as being influenced by contextual/systemic factors and developmental stage. They are conceptualised as being in a bidirectional relationship with developmental life-tasks, given that, just as these changes can be seen as potentially resulting in disruptions of developmental life-tasks, the consequences of these disruptions can also result in changes in these areas as well.

The adaptiveness of the individual's coping styles/strategies is conceptualised as having an impact on psychological functioning (in terms of psychological symptoms and stress reactions), with psychological functioning seen as potentially impacting in a feedback loop on coping styles/strategies, which may require adjustment. In addition, both the activation of various survival schema, as well as the disruption of important developmental life-tasks and subsequent themes of stress are conceptualised as potentially impacting on psychological functioning in this model.

5.5 THE PRESENT STUDY

5.5.1 Components of Model Highlighted by Present Study

The focus of the present study highlights certain aspects of the model presented here (Figure 7). This study specifically aims to investigate the impact of the following variables on psychological functioning and adaptation to the illness of breast cancer at different stages of the life-cycle: (a) the impact of various coping styles and strategies (influenced by threat to survival), and (b) the impact of disruptions to various developmental life-tasks (influenced by threat to self image).

5.5.2 Components of Model Not Investigated by Present Study

Components of the model (Figure 7) not specifically investigated in the current study include: various cancer-related details such as stage of disease, various historical factors such as family history and history of early experiences, current systemic/contextual factors, and various cognitive variables such as patients' appraisal processes and core beliefs/schemas. These issues will be discussed in greater detail in Chapter Eight.

The methods undertaken to conduct the research, together with a description of the participants, the instruments used and the methods employed in the analysis of the data will now be discussed in Chapter Six.

CHAPTER SIX

RESEARCH METHODOLOGY

6.1 INTRODUCTION

The literature review and stated objectives of the study form the basis for the methodology discussed in this chapter. The methodology comprises the sampling technique, the data collection procedure, and the statistical analyses utilised for evaluating the questionnaire responses.

The research design incorporates both descriptive and inferential statistical analyses.

This study is based on a correlational design that involves the comparative, differential age-group assessment of the psychological sequelae of breast cancer for a sample of female South African Indian patients (N = 116), and includes the following main variables:

- Developmental Life Tasks/Themes of Stress
- Coping styles/strategies
- Psychological Adjustment (Stress Reactions and Psychological Symptoms)

A variety of mostly standardised questionnaires were selected to form a complementary set of measuring instruments in order to operationalise and evaluate the hypothesised differences between the sample groups. In addition, this study utilised the Developmental Stress Questionnaire (Selmer, 2000) which was specifically developed by the author for the purposes of this study, in the absence of a suitable alternative.

6.2 SAMPLE

6.2.1 Method

The research design included convenience sampling of a group of patients being treated for breast cancer. After a general announcement was made at the start of one of the three clinic sessions, every female Indian patient was invited to take part in the study. All volunteers whose questionnaires were completed were included in the study. Interviews continued until the quota sample size was reached. Systematic sampling would have been utilised had there been too many patients to interview.

6.2.2 Size

The sample size of $N = 116$ Indian breast oncology patients was based on:

- The recommendations from the Institute for Biostatistics of the Medical Research Council
- The number of variables being measured

- The objectives of the study, which required the valid use of inferential statistics
- The nature of the psychometric measures

6.3 CRITERIA FOR INCLUSION/EXCLUSION

1. Patients were 19 years or older.
2. Patients were South African English-speaking Indian females (i.e. patients were able to communicate in English even if this was not their first language).
3. Patients had formally been given their diagnosis at least three months prior to being tested.
4. Patients had formally been given a diagnosis of breast cancer, for which they were currently undergoing outpatient adjuvant treatment (radiotherapy, chemotherapy and/or oral chemotherapy).
5. There was no evidence of metastasis.
6. A voluntary agreement to participate existed.

6.4 SAMPLE GROUPS

6.4.1 Younger Breast Oncology Group (n = 60)

The younger group consisted of 60 South African Indian, English-speaking breast cancer patients. The age-range of the women in this group was from 26 to 52 years old.

One reason for this age demarcation is that these participants would generally be described as ‘pre-menopausal’ in the literature (Van Keep, 1983), although it is acknowledged that this can only be described as a general trend, given that menopause itself arises at different points for different women. Although not exact, given the size of the sample and the age distribution, it was felt that this cut-off was the most appropriate given the aforementioned trend described in the literature. It was also based on an amalgamation of the adult developmental models presented in Chapter Four, which provide additional psychosocial justification for such a demarcation. For example, Levinson’s (1986) concept of the ‘age 50 transition’ (ages 50-55) within the second life structure, which falls between early and late adulthood; Gould’s (1978, 1980) theory of the evolution of adult consciousness (pre versus post age 50); and Holland and Rowland’s separation of the developmental stages of Young/Mature Adult from Older/ Ageing Adult at around this age demarcation based on empirical evidence (Rowland, 1989). With regard to the latter, when discussing ‘themes of stress’ and making interpretations using Holland and Rowland’s (1989) theory, both of their developmental categories termed ‘Young Adult’ and ‘Mature Adult’ (generally covering the age-range of the younger group) are used when discussing issues pertaining to the younger patients in this sample (c.f., 8.4.2). Their developmental categories termed ‘Older Adult’ and ‘Ageing Adult’ are used when discussing issues pertaining to the older patients in this sample. In this way, the integrity of the theory is maintained when making interpretations based on age- related factors, given the age demarcations in this study.

These patients were either on adjuvant chemotherapy or radiotherapy and/or oral treatment for breast cancer, and included surgical patients presenting for lumpectomy, mastectomy or for non-interventions. The sample was drawn mainly from Addington Hospital, Durban and King Edward VIII Hospital, Durban, although a small proportion of the sample was also obtained from R.K. Khan Hospital, Durban.

6.4.2 Older Breast Oncology Group (n = 56)

The second group consisted of 56 South African Indian, English-speaking breast cancer patients. The age-range of this group was from 53 to 79 years old, and these participants would generally be described as ‘post-menopausal’ in the literature (Van Keep, 1983), however with the aforementioned caveat also applying here. Levinson’s (1986) observation, based on his research, that late adult transition may occur earlier in people of lower SES (as in this sample) and in individual’s with chronic illness provides further justification for the age demarcation used.

As with the first group, these patients were either receiving adjuvant chemotherapy or radiotherapy and/or oral treatment for breast cancer, and included surgical patients presenting for lumpectomy, mastectomy or for non-interventions. Again, the sample was drawn mainly from Addington Hospital, Durban and King Edward VIII Hospital, Durban, with a small proportion of the sample obtained from R.K. Khan Hospital, Durban.

6.5 POSSIBLE BIASES

6.5.1 Sampling Biases

All patients meeting the inclusion criteria, and who agreed to participate were interviewed. Questionnaires were administered on set clinic days at the various hospitals, within the time limit provided for the sampling process (over approximately 12 months). All Indian patients over the age of 18 years attending the clinic for that particular day were requested to take part in the research. Only three patients declined to participate, although nine patients did not complete their questionnaires. This represents an overall participation rate of 90 %. No patient who volunteered was selected out of the study, whether through fatigue, illness or time constraints on any specific day. In this way control of the sampling process was maximised and biases were minimised as much as possible, although this could not be eliminated due to the sampling method, and the patient self-exclusions.

6.6 DESCRIPTION OF THE SAMPLE

6.6.1 Participants

The sample comprised two groups of Indian female breast cancer patients: Younger (n = 60) and Older (n = 56) (c.f., 6.2.2: sample size and selection). The sample was drawn from a population of hospital outpatients receiving adjuvant treatment for breast cancer

from three academic hospitals: Addington Hospital, King Edward VIII Hospital and R.K. Khan Hospital. The treatment facilities are all located in the Durban area, South Africa. As the study was based on a direct age-group comparison of the selected population, matched control groups were not utilised.

6.7 METHOD OF DATA COLLECTION AND INTERVIEWING PROCEDURE

6.7.1 Procedure

Permission to conduct research in the Oncology departments at Addington Hospital, King Edward VIII Hospital and R.K. Khan Hospital was obtained from the Hospital Superintendents and relevant heads of departments at the hospitals. Permission was further granted by the Head of the Department of Behavioural Medicine and the relevant Ethics Committee of the Nelson R Mandela School of Medicine at the University of KwaZulu-Natal, Durban.

The period of data collection was 12 months. The data collection involved the completion of a battery of questionnaires which were administered primarily by the author, with minimal assistance from a trained nursing sister at R.K. Khan Hospital. The author coordinated the questionnaires and scales used for measuring the selected variables.

The participants were drawn from the outpatient population attending breast clinics at Addington Hospital, King Edward VIII Hospital and R.K. Khan Hospital on a regular basis (c.f., 6.2.1). Participants were selected based on the criteria listed for inclusion as

stated in section 6.3 of the study. All volunteers had an equal chance of being selected, depending on their consent and availability to participate in the study. The questionnaire was administered in English which was the first language of all but three participants, although these three participants were also fluent in English.

6.7.2 Data Collection

Data for the breast cancer out-patients was collected on the set clinic days at each hospital.

6.7.3 Interviewing Procedure

All participants attending the breast cancer clinics at each hospital were verbally invited to take part in the study, by either the nursing sister in charge or the researcher.

Volunteers fulfilling the necessary inclusion criteria were identified and were handed a brief formal letter of introduction and explanation of the study (Appendix A).

Following the letter of introduction, participants were given a brief explanation of the procedure, and an assurance of confidentiality. In addition, patients were reassured that they were entitled to withdraw from participation in the study at any stage, without any disadvantage to their status as a patient or their treatment. After the necessary consent form had been signed, the battery of questionnaires was administered to each patient on an individual basis. This interview method was utilised in order to standardise the data

collection. The interview process took on average one-and-a-half hours, although the process did take longer for patients who were particularly ill or who experienced literacy challenges.

Following the completion of the interview, all patients were formally thanked for their contribution to this study.

6.8 DESCRIPTION OF THE QUESTIONNAIRES

6.8.1 Introduction

The battery of questionnaires included in the study assessed four major categories of data, including: demographics, developmental ‘themes’ of stress, coping styles/strategies and outcome variables in the form of symptoms indicative of stress and psychological morbidity. In addition, essential demographic information was obtained by a questionnaire specifically designed for that purpose.

The instruments used in the present study were selected because of their overall clarity, simplicity and applicability pertaining to the hypotheses as stated in Section 1.3 of this study. They are well-known in health research, and for most, there is considerable evidence of their reliability and validity. However it should be noted that these questionnaires have not been standardised for the population under investigation, which may have implications for their validity and reliability within this context. In addition,

testing in South Africa cannot be divorced from the country's history, either politically, socially or economically, all of which needs to be taken into account when interpreting results (Claassen, 1997; in Lo Castro, 2003).

The final selection of questionnaires comprehensively covered the full range of variables. The complete battery of tests is presented in Section 6.9. Table 3 gives a summary of all questionnaires used in the study.

Table 3

Battery of Questionnaires used to Investigate Hypotheses One to Five

Questionnaire Title	Author/s	Hypothesis
Demographic Questionnaire	Selmer (2000)	Five
Developmental Stress Questionnaire	Selmer (2000)	One, Two, Three, Five
Stress Symptom Checklist	Schlebusch (2000)	Three, Four, Five
Brief Symptom Inventory	Derogatis and Spencer (1982)	Three, Four, Five
The Mental Adjustment to Cancer Scale	Watson, Greer and Bliss (1989)	Four, Five
Courtauld Emotional Control Scale	Watson and Greer (1983)	Four, Five
The Ways of Coping Questionnaire	Folkman and Lazarus (1985)	Four, Five

6.9 SUMMARY OF PSYCHOMETRIC INSTRUMENTS

The questionnaires (Appendix B, Table 3) used to analyse the independent and dependent variables are discussed below.

6.9.1 Demographic Questionnaire

The demographic questionnaire was developed by the author in order to screen for demographic data, biographical data, as well as to determine situational variables.

The socio-demographical information included:

- Age
- Home language
- Religion
- Marital Status
- Children and grandchildren
- Educational qualifications
- Socio-economic status measured by: employment, patient's monthly income, gross household monthly income

Screening items included:

- Ethnic group
- Present medical condition
- Date of diagnosis
- Treatment indicated

6.9.2 Developmental Stress Questionnaire (DSQ) (Selmer, 2000)

The Developmental Stress Questionnaire (DSQ) is a theoretically-derived clinical instrument that consists of 85 items designed specifically to assess various stressors experienced by women with breast cancer, across the developmental life-span. It is based upon the research and theory of Holland and Rowland (1989) which is described in detail in Chapter Four. This developmental model is derived from a number of theoretical overviews developed by Eric Ericson (1963), Bernice Neugarten (1979), Daniel Levinson (1978) and George Vaillant (1977), and attempts to evaluate which major 'life tasks' are threatened or interrupted as a consequence of having cancer. Based on this theory, various items from the literature were considered for inclusion and these were discussed in a focus group with five psychologists, until consensus on 85 items was reached, to establish face and content validity. The questionnaire is divided into five categories called 'Themes of Stress'. These are as follows: Altered Interpersonal Relationships (items 1-24), Dependence-Independence (items 25-40), Achievement Disruption (items 41-53), Body/Sexual Image and Integrity (54-72), and Existential Issues (items 73-85). The questionnaire can be administered or self-scored, and on average takes between 10 to 15 minutes to complete. With regard to scoring, each category is totalled separately, in order to highlight specific stressors as identified by the participant, and a Grand Total score is also obtained in order to obtain an overall view of the sum intensity and frequency of stressors subjectively experienced by the individual at that time. Reverse scoring applies to items 3, 4, 77 and 85.

Because this scale was developed specifically for use in this study, given the absence of a suitable substitute, its statistical reliability as an instrument is unknown, and there are no established norms. Results obtained are therefore used comparatively within this sample. In other words, as this study is based upon a correlational design, that does not use a control group, 'developmental stress' issues are examined relatively in relation to demographic factors, stress symptoms, adjustment factors and coping behaviours reported. Given the above, the results obtained from this questionnaire will be interpreted with caution.

6.9.3 Stress Symptom Checklist (SSCL) (Schlebusch, 2000)

The Stress Symptom Checklist (SSCL) is a "dichotomous-scaled, 87-item checklist" (Schlebusch, 2004, p. 335) which the author reports was "...based on the appurtenant anxiety and stress-related indices" (p. 333) incorporated into the DSM-IV (APA, 1994, 2000a) and Kaplan and Sadock (1995). It is a composite checklist of the general signs and symptoms of unhealthy stress (Schlebusch, 2000). It is divided into three categories, including physical reactions (items 1-18), psychological reactions (items 19-45) and behavioural reactions (items 46-87), and the complete version has been published (Schlebusch, 2000).

The entire checklist can be administered or self-scored, individually or in groups, and takes approximately 10 minutes to complete and score (Schlebusch, 2000). Each item is awarded a score of half a point if it occurs monthly or one point for a weekly frequency.

Each category is totaled separately, with a score of three or more per category being indicative of elevated stress, or a cut-off score of nine or more across all three categories being used to indicate elevated stress levels overall. Schlebusch (2004) suggests that the SSCL can further be interpreted in terms of different categories of stress, and provides cut-off scores for each category.

The SSCL has been used with various sample populations within South Africa, including adult volunteers (Bosch, 2006; Pharma Natura, 1999), cancer patients (Lo Castro, 2003; Noor Mahomed, Schlebusch & Bosch, 2003;), hospital staff (Shadwell, 2003) and medical students (Vawda, 2004). The preliminary reliability range based on the pilot study was 0.756 – 0.86 and it therefore meets research requirements in this regard. The Cronbach alpha coefficients for the SSCL were:

Physical subscale	(X1 – X18) = 0.85
Psychological subscale	(Y1 – Y27) = 0.93
Behavioural subscale	(Z1 – Z42) = 0.94
Total	(X1 – Z42) = 0.97

Finally, a continuous visual analogue scale, in a horizontal linear format, was used to assess the individual's subjective estimate of 'present intensity' of stress experienced, with both a numerical scale and descriptive (semantic) cues (no stress = 0 to profound stress = 10) placed on either end. Severity of stress was measured using an 11 point scoring system (Schlebusch, 2000): 0 = no stress, 1-3 = mild stress, 4-6 = moderate stress, 7-9 = severe stress, and 10 = profound stress. Bech (1993) has argued that Visual

Analogue Scales such as these offer a high degree of sensitivity, particularly when based on repeated administrations.

6.9.4 Brief Symptom Inventory (BSI) (Derogatis and Spencer, 1982)

This is a self-report symptom inventory consisting of 53 items designed to reflect psychological symptom patterns of psychiatric and medical patients as well as non-patients (Derogatis, 1993; Derogatis & Spencer, 1982). It takes 8-12 minutes to complete, and is can be self or interviewer-administered. It is the brief form of the Symptom Checklist (SCL-90-R) (Derogatis, 1977) - an instrument that has been widely used in research with psychiatric as well as non-psychiatric populations. The BSI measures the same nine symptom dimensions and three global indices of distress. The items of the BSI are rated on a five-point Likert type scale ranging from 0 (not at all) to 4 (extremely). The nine primary symptom dimensions reflected include: Somatization (seven items), Obsession-Compulsion (six items), Interpersonal Sensitivity (four items), Depression (six items), Anxiety (six items), Hostility (five items), Phobic Anxiety (five items), Paranoid Ideation (five items), and Psychoticism (five items). Derogatis (1993) observes that the advantage of a multidimensional instrument such as the BSI over a unidimensional symptom scale, is that it is able to provide important information about the overall psychopathological context in which the symptoms of note occur. 'The nine primary symptom dimensions... (do not provide a diagnosis)...but essentially provide a broadbrush profile of the patient's psychopathological status and communicate important information about the pattern of the patient's current symptomatology' (p. 32). The

Dimension scores are calculated by summing the values for the items included in that dimension and dividing by the number of items endorsed in that dimension. T-scores may then be calculated for purposes of interpretation and comparison.

As mentioned, there are three global indices of distress on the BSI, namely the Positive Symptom Total, the Positive Symptom Distress Index, and the Global Severity Index (GSI). Only the GSI was selected for use in this study, as it is the most sensitive indicator of a respondent's distress level (Derogatis & Spencer, 1982), combining information of the intensity of distress and numbers of symptoms. The GSI produces a score that is calculated by dividing the total score obtained on the BSI by the number of symptoms that were positively responded to. In other words, the total score is divided by the number of symptoms that were scored more than 0. The GSI can also be used to identify 'caseness'. The operational rule for caseness states that if the respondent has a GSI score greater than or equal to a GSI score of 63, then the individual will be considered a positive diagnosis or case.

Scores are interpreted by comparison to age appropriate norms. Normative data are available for both clinical and non-clinical samples of adolescents (over 13 years) and adults (Derogatis, 1993; Derogatis & Spencer, 1982). The appropriate comparison group for this study is non-patient adult females. For this group, a T-score of 60 corresponds to the 84th percentile, a T-score of 65 corresponds to the 93rd percentile, and a T-score of 70 corresponds to the 98th percentile.

Reliability and validity were assessed among 1002 psychiatric outpatients, 310 psychiatric inpatients and 719 non-patient volunteers. The authors reported good internal consistency reliability for the nine dimensions, ranging from .71 on Psychoticism to .85 on Depression. Good internal consistency reliability is supported by other independent studies (Derogatis, 1993). Test-retest reliability for the nine symptom dimensions ranges from .68 (Somatization) to .91 (Phobic Anxiety), and for the three Global Indices from .87 (PSDI) to .90 (GSI). With regard to convergent and discriminate validity, in general high convergence was observed for the dimensions of the BSI with MMPI scales (Derogatis, 1993). Factor analysis results confirmed the a priori construction of the symptom dimensions. In addition, correlations between the BSI and SCL-R-90 were .92 to .99 (Derogatis, 1993). References to other studies attesting to the validity of the BSI are found in the manual (Derogatis, 1993).

A number of investigators have used the BSI to conduct research into the psychological distress status of cancer patients and their families. Stefanek, Derogatis, and Shaw (1987; in Derogatis, 1993) evaluated the psychological status of 126 oncology outpatients with diverse diagnoses during initial clinic registration. Using the psychiatric 'caseness' criteria, the investigators identified 30 patients (23.8%) who met the criteria, and Depression, Anxiety and Somatization scores were predominantly elevated in their profiles. According to Derogatis (1993) this rate of positives is highly consistent with the findings of previous studies with cancer patients (Derogatis et al., 1983; Farber, Weinerman, & Kuypers, 1984), and the nature of the distress profile is also highly similar. Another study cited by Derogatis (1993) and carried out by Schain, Wellisch et

al. (1983) using the BSI, found that patients on chemotherapy demonstrated significantly higher elevations on four BSI dimensions and the GSI than those who were not. The mean profile for the chemotherapy group was also in the clinical range.

6.9.5 Mental Adjustment to Cancer Scale (MAC) (Watson, Greer and Bliss, 1989)

The Mental Adjustment to Cancer (MAC) Scale is a 40-item scale which has been developed to assess 'adjustment', or responses to, the diagnosis of cancer (Greer & Watson, 1987; Watson et al., 1988). It is essentially a measure of the coping styles employed by people with cancer and incorporates the following five subscales: Fighting Spirit (sixteen items), Helpless/Hopeless (six items), Anxious Preoccupation (nine items), Fatalistic (eight items) and Avoidance (one item). It can be self or interviewer-administered and takes about 10 to 15 minutes to complete. Respondents are required to select one of four alternative responses on a four-point scale ('Definitely does *not* apply to me) to 'Definitely applies to me'). Separate scores are calculated for each subscale by summing scores on each of the constituent items making up the subscale. The scores on each subscale indicate the extent to which this particular coping style is being employed. Scores on the various subscales can be converted to T-scores which are provided in the scoring manual. This allows for scores on each subscale to be compared with each other. 'Fighting Spirit' and 'Helpless/Hopeless' have been amalgamated as psychometric analysis shows them to form a bipolar scale. As avoidance only has one item, it does not constitute a subscale for the purposes of scoring. However this was considered beyond the scope of this study, and raw scores were used for comparison. Cut-off scores are used

to distinguish clinical 'cases' from 'non-cases'. 'Cases' are defined as individuals with a score of 47 or less on the 'Fighting Spirit' subscale in combination with a score of 12 or more on the 'Helpless/Hopeless' subscale.

Watson et al. (1988) obtained evidence of the reliability and validity of the MAC Scale in a study of 235 people with various types and stages of cancer. They reported that the internal consistencies of the various subscales are all acceptable, with values for Cronbach's alpha for each of the subscales being as follows: Fighting Spirit, 0.84; Anxious Preoccupation, 0.65; Fatalistic, 0.65; Helpless/Hopeless, 0.79. Inter-rater reliability was tested by calculating correlations between the subscale scores of respondents and their partners. These were all highly significant (range from $r = 0.63$ to 0.76) with the exception of the single-item avoidance subscale ($r = 0.34$). The factor structure of the MAC Scale was tested on the basis of inter-correlations between the subscales. The results indicated a small to moderate degree of overlap between the Helpless/Hopeless, Anxious Preoccupation and Fatalistic subscales. Concurrent validity was tested by obtaining correlations between the MAC Scale and the Hospital Anxiety and Depression Scale anxiety and depression subscale scores. Watson et al. (1988) found highly significant correlations between anxious preoccupation and HADS anxiety ($r = 0.48$), and significant relationships between HADS depression and helpless/hopeless ($r = 0.19$) and fatalistic ($r = 0.20$). Grassi et al. (1993) provide evidence of the MAC Scale's construct validity in reporting that fighting spirit is significantly related to low external locus of control and high social support, whilst opposite associations were shown for helpless/hopeless and fatalistic. These authors note one major criticism of the MAC

Scale, namely that the single-item avoidance subscale is insufficient to evaluate clearly the use of avoidance/denial as a coping style – a coping style measured in alternative scales in the present study.

6.9.6 Courtauld Emotional Control Scale (CECS) (Watson and Greer, 1983)

The Courtauld Emotional Control Scale (CECS) represents an attempt to develop a questionnaire measure of emotional control or expressivity. The CECS has three sections consisting of self-reports of responses to anger, anxiety and depression. Each section has seven response modes, each of which is rated on a 1 to 4 point scale of frequency. The items were selected by factor analysis of a 48-item questionnaire, selecting the seven significant items with the highest factor loading for each scale. The scale can be interviewer or self-administered, and takes five to ten minutes to complete. The total score in each section is the sum of the circled ratings, except for item 4 on the Anger subscale, item 5 on the Depression subscale, and items 1, 4 and 5 on the Anxiety subscale, where the scoring is reversed. Possible scores on each section range from 7 to 28 and the total score ranges from 21 to 84. In a consecutive series of studies of 308 women in the early stage of breast cancer (Watson et al., 1991), mean scores (and standard deviations) for the subscales and for the total score of the CECS were: Anger = 16.2 (4.8); Anxiety = 17.1 (4.8); Depression = 17.5 (5.0); Total = 50.7 (12.5).

Items for each scale were selected by factor analysis of responses from 156 respondents. Factor loadings for the Anger subscale range from .53 to .79, for the Depression subscale

from 56 to 74 and for the Anxiety subscale from 55 to 76. Each of the three sections has been shown to have adequate internal consistency (alpha coefficients 0.86, 0.88 and 0.88) and test-retest reliability over three to four weeks (0.86, 0.89 and 0.84 for Anger, Depression and Anxiety respectively and 0.95 for the Total score). The scores on the three sections are significantly positively correlated, providing some support for its validity as a measure of a general construct of emotional control (Watson & Greer, 1983). The Anger subscale correlates negatively with the trait version of the State-Trait Anxiety Inventory (Spielberger et al., 1970) measure of self-report anger and all three subscales show negative correlations with the Bortner self-report TAB scale (Bortner, 1969).

6.9.7 Ways of Coping Questionnaire (WCQ) (Folkman and Lazarus, 1985)

The Ways of Coping Questionnaire (WCQ) is based on a definition of coping as the cognitive and behavioural efforts to manage specific external and/or internal demands appraised as taxing or exceeding the resources of the individual (Folkman & Lazarus, 1980). According to these authors, this definition has four key features:

1) it is process-oriented; 2) it speaks of management rather than mastery; 3) it makes no a priori judgment about the quality of coping processes; and 4) it implies a stress-based distinction between coping and automatic adaptive behaviours. An earlier version of the Ways of Coping Questionnaire (WCQ), named the Ways of Coping Checklist (WCC), was developed by members of the Berkeley Stress and Coping Project during 1976 through 1977. The coping strategies assessed included items from the domains of defensive or palliative coping such as avoidance, magical or wishful thinking,

intellectualization, isolation, and suppression, as well as items from the problem-solving domain, such as information-seeking, inhibition of action, and direct action. The items were classified as being 'problem-focused' or 'emotion-focused' (Folkman & Lazarus, 1980). Problem-focused coping refers to efforts undertaken to manage or alter the troubled person-environment relationship that is the source of stress, while emotion-focused coping refers to efforts undertaken to regulate stressful emotions. Participants responded to items on the Checklist relative to a specific stressful event, indicating with a 'yes' or 'no' whether or not they had used that strategy to deal with the event.

The WCC was flawed in various areas. It was criticized as presenting too simplistic a conceptualisation of human coping, and certain strategies were found to serve both problem-focused and emotion-focused functions. For these reasons, the original two rationally-derived scales were discarded in favor of eight empirically-derived scales. These include: Confrontive Coping (six items), Distancing (six items), Self-Controlling (seven items), Seeking Social Support (six items), Accepting Responsibility (four items), Escape-Avoidance (eight items), Planful Problem Solving (six items) and Positive Reappraisal (seven items). Although the revised version known as the WCQ retains the broad range of cognitive and behavioural strategies that comprised the Checklist, items that were redundant and unclear were deleted or reworded, and several items, such as prayer, were added at the suggestion of participants. Further, the response format was changed from a yes-no format to a four-point Likert scale.

The questionnaire can be self or interviewer-administered, and takes about 10 minutes to complete. There are two methods for scoring the WCQ: raw and relative. Raw scores describe coping effort for each of the eight types of coping, whereas relative scores describe the proportion of effort represented by each type of coping. To obtain raw scores, each item on the scale is added to get a total score. There are four possible responses: 0, 1, 2 and 3. These are also the weights that should be used to get the raw score. Not all 66 items are scaled. High raw scores indicate that the person often used the behaviours described by that scale in coping with the stressful event. Relative scores describe the proportion of effort represented for each type of coping and are expressed as a percentage that ranges from 0 to 100. A high relative score on a scale means that the person used those coping behaviours more often than they used other behaviours. To calculate the relative scores, the average response per scale is calculated by dividing the total raw score by the number of items in the scale, summing the average responses per scale across all the scales, and dividing the average score for each scale by the sum of the averages for all eight scales. This value is the relative score for the scale.

Internal consistency of the coping measures, estimated with Cronbach's coefficient alpha, generally fall at the low end of the traditionally acceptable range. As Billings and Moos (1981) point out, those who are constructing coping measures attempt to minimize item redundancy within each coping category, resulting in groups of relatively independent clusters of coping strategies within each category. Furthermore, the use of one coping response may produce the desired effect which lessens the need and probability that other coping responses from the same category will be used. The alpha coefficients for the

eight scales are higher than the alphas reported for most other measures of coping processes. They are: Confrontive Coping (.70), Distancing (.61), Self-Controlling (.70), Seeking Social Support (.76), Accepting Responsibility (.66), Escape-Avoidance (.72), Planful Problem Solving (.68) and Positive Reappraisal (.79) (Folkman, Lazarus, Dunkel-Schetter et al., 1986). A related issue concerns the reliability or stability of the factor structure. Current evidence suggests a good deal of convergence with respect to several factors, but not all (e.g. Aldwin & Revenson, 1987). It is unclear whether variance in the factor structure is a function of persons, situations, methods of administration, or whether it is due to psychometric properties, such as lack of reliability of the measurements themselves. The items on the WCQ have face validity since the strategies described are those that individuals have reported using to cope with the demands of stressful situations. Evidence of construct validity is found in the fact that the results of various studies (e.g. Folkman & Lazarus, 1980, 1985; Folkman, Lazarus, Dunkel-Schetter et al., 1986) are consistent with the authors' theoretical predictions, namely that: (a) coping consists of both problem-focused and emotion-focused strategies, and (b) coping is a process. For example, there is clear evidence that the various forms of coping tend to differ in the extent to which they are variable or stable across situations. An estimate of stability that can be used to examine these differences is the mean autocorrelation which is the correlation between each successive pair of scores on each coping scale. The mean autocorrelation of each coping scale was calculated across five stressful encounters in the study of married couples (Folkman, Lazarus, Dunkel-Schetter et al., 1986) and were found to range from .17 to .47. The three coping scales with the lowest mean autocorrelations – Confrontive Coping ($r = .21$), Seeking Social Support ($r = .17$), and

Planful Problem Solving ($r = .23$) include virtually all the problem-focused strategies that were assessed. The low autocorrelations suggest that the use of problem-focused forms of coping is strongly influenced by the situational context. Positive Reappraisal had the highest average autocorrelation ($r = .47$) suggesting that it was most influenced by personality.

6.10 STATISTICAL ANALYSIS OF DATA

The data was analysed using the Statistical Package for the Social Sciences (SPSS). SPSS version 15.0 was used for data analysis. Statistical analysis of data was accomplished with the assistance from a statistician based at the University of KwaZulu-Natal. Statistical methods and calculations were mainly determined by the hypotheses of interest, as well as the number of groups and the sample size per group. Confounding variables were also taken into account in the analysis.

6.11 DESCRIPTIVE STATISTICS: RESEARCH STATEMENTS

All seven questionnaires/scales were checked for results. Table 3 shows the list of questionnaires and the hypotheses to which they relate.

Descriptive statistics present general information about the groups being investigated. Descriptive objectives were analysed with frequency tables. Descriptive statistics, consisting of means and standard deviations for continuous data and percentages for

categorical data, were calculated for both sample population groups of younger (n = 60) and older (n = 56) breast cancer patients. The raw data were summarized and presented graphically in the form of graphs and frequency distribution tables.

6.12 INFERENCE STATISTICS

Inferential statistics were used to compare groups and in order to permit statistically valid generalisability of the results to the population being studied. The accuracy of an inference is defined by the probability. Probability estimates are used to qualify results and state the degree of confidence that the sample fairly represents the population. A *p*-value of less than 0.05 ($p < 0.05$) was considered as statistically significant. The inferential statistics used in this study to test various hypotheses were: the Mann-Whitney *U* test to compare means and standard deviations; Pearson's Chi-Square test to compare categorical data; Spearman's Rank Correlation Coefficient (Spearman's Rho) to determine the linear relationships between the dimensions and the strength of these; and multivariate analysis which included statistical techniques which focused on simultaneous relationships among three or more phenomena. Multivariate analysis of variance was used to assess the relationships between more than one interrelated dependent variable and independent variables, while multiple regression techniques were applied to assess the form of the relationship between variables in order to predict a single dependent variable from two or more independent variables.

Cronbach's alpha statistics were calculated for each instrument subscore in order to ascertain whether the instruments used maintained construct validity in this sample (Table 49, Appendix C).

The one-sample Kolmogorov-Smirnov test was employed to establish which scores followed a normal distribution (Table 50, Appendix C). In this way, the validity and reliability of the data were further investigated.

6.13 UNIVARIATE ANALYSIS

6.13.1 Pearson's Chi-Square Test and Mann-Whitney *U* Test

The chi-square test was used for categorical data and the Mann-Whitney test for ordinal data to compare the differences between the younger breast cancer patients ($n = 60$) and older breast cancer patients ($n = 56$) on all seven measuring instruments.

With regard to the chi-square test, assumptions include that the data is categorical; that the samples are independent; that the sample size is sufficient; and that the sample is selected randomly.

The Mann-Whitney *U* test is the non-parametric equivalent of the independent samples *t*-test. It is used when not all of the variables follow a normal distribution.

6.13.2 Correlations

Correlation coefficients were used to examine the strength of the relationship between variables. Spearman's rank correlation coefficient (r_s) does not establish a causal relationship, but can demonstrate that the variables are associated with each other.

It is the non-parametric equivalent of Pearson's r correlation. It is appropriate for both continuous and discrete variables, including ordinal variables. It is used when the data do not meet the assumption about normality, homoscedasticity, and linearity, and when one or both of the variables consists of ranks.

To establish whether the relationship is reliably significant or not can be determined by the level of significance. Generally, a p -value of less than 0.05 was considered as statistically significant in this study. Table 4 illustrates the potential strengths of the correlations and their corresponding ratings.

Table 4

Ratings of Strength of Correlation

Correlation	Strength
$r_s \geq 0.7$	A strong correlation
$0.5 \geq r_s \leq 0.7$	A moderate correlation
$r_s < 0.5$	A weak correlation

6.14 MULTIVARIATE ANALYSIS

Multivariate analysis included statistical techniques which focused on simultaneous relationships among three or more phenomena, for example, multivariate analysis of variance (MANOVA) and multiple regression.

6.14.1 Multiple Regression Analysis

Multiple regression analysis was used, in which two or more independent variables are used to predict values of the dependent variables of the study. This enables the relationship to be described with greater accuracy, by means of an estimating equation. Stepwise regression techniques were used to include or exclude independent variables in a stepwise fashion, so that those variables significantly associated with the dependent variable were highlighted. The regressions are reflected separately for both groups. A *p*-value of 0.05 or lower indicates a significant impact. The degree of impact is measured by Beta. Negative values for Beta indicate an inverse relationship.

Assumptions of multiple regression analyses include: the normal distribution of variables; linear relationships among variables; variables are measured reliably (i.e. reliability estimates should be used, such as Cronbach alphas as were used in this study); and the assumption of homoscedasticity as can be demonstrated by data with a normal distribution (slight heteroscedasticity has little effect on significance tests).

6.14.2 Multivariate Analysis of Variance: Hotelling's T

Multivariate analyses of variance form linear combinations of the dependent variables which best discriminate among the groups in the particular experimental design.

Assumptions of multivariate analyses of variance include: the normal distribution of variables; linear relationships among variables; and the assumption of homoscedasticity as can be demonstrated by data with a normal distribution (slight heteroscedasticity has little effect on significance tests).

Hotelling's T is a multivariate statistic used to compare two groups where multiple outcomes are observed; that is, one dichotomous independent variable, and multiple dependent variables. It was therefore selected to investigate which set of dependent variables are different between the two groups of patients. Hotelling's T test establishes whether the overall multivariate test is significant. If the overall multivariate test is significant, it can be concluded that the respective effect (age) is significant. F tests for each variable are then examined to interpret the respective effect; that is, to identify the specific dependent variables that contributed to the overall effect. The null hypothesis for this study states that Group 1 (younger breast cancer patients) and Group 2 (older breast cancer patients) are similar with regard to the variables of comparison. The alternate hypothesis states that the two groups differ significantly. The null hypothesis is rejected at the alpha level of significance if the p -value is smaller than alpha ($\alpha = 0.05$). If the p -value is greater than or equal to alpha, the null hypothesis is accepted.

The results of the statistical analyses discussed here are reported below in Chapter Seven.

CHAPTER SEVEN

RESULTS

7.1 INTRODUCTION

The study was designed to compare the relationships of multiple variables between two groups of women at different developmental stages of the life-cycle who were on treatment for breast cancer. The inter-relationships amongst variables were examined on the biological, psychological and social (biopsychosocial) outcome levels. The results were obtained by utilising the various methods described in Chapter Six. The data were then analysed using descriptive and inferential statistics and summarised in the various tables and figures presented in this chapter.

7.2 DESCRIPTIVE ANALYSIS

7.2.1 Demographic Data

A total sample of 116 volunteers divided into two groups of younger ($n = 60$) and older ($n = 56$) breast cancer patients, participated in the research. Descriptive statistics of means and standard deviations were calculated for the demographic data of the two groups.

7.2.1.1 Age

The age-range of the sample as a whole was from 26 years to 79 years $\underline{M} \underline{SD} = 53.06$ (11.101). Sixty patients (51.7%) were under 53 years while 56 (48.3%) were 53 years or older. The age of the participants in the younger sample group ranged from 26 years to 52 years $\underline{M} \underline{SD} = 44.27$ (6.002). The age-range of the participants in the older sample group was from 53 years to 79 years $\underline{M} \underline{SD} = 62.48$ (6.655).

7.2.1.2 Home language

The home language of the majority of the patients in the total sample was English (97.4%) whilst 2.6% of the whole sample indicated that their home language was 'Other'.

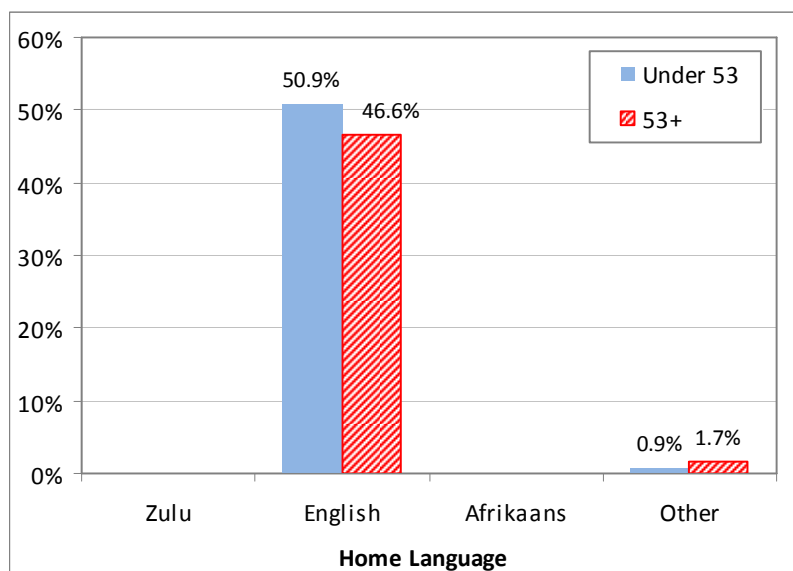


Figure 8. Home language distribution of the younger (n = 60) and older (n = 56) patient groups.

7.2.1.3 Religion

Approximately half of the patients in the whole sample (54.3%) indicated that their religion was Hindu, whilst the remainder were fairly equally divided between the Christian (24.1%) and Muslim (21.6%) faiths. A similar trend was observed in the younger and older patient groups.

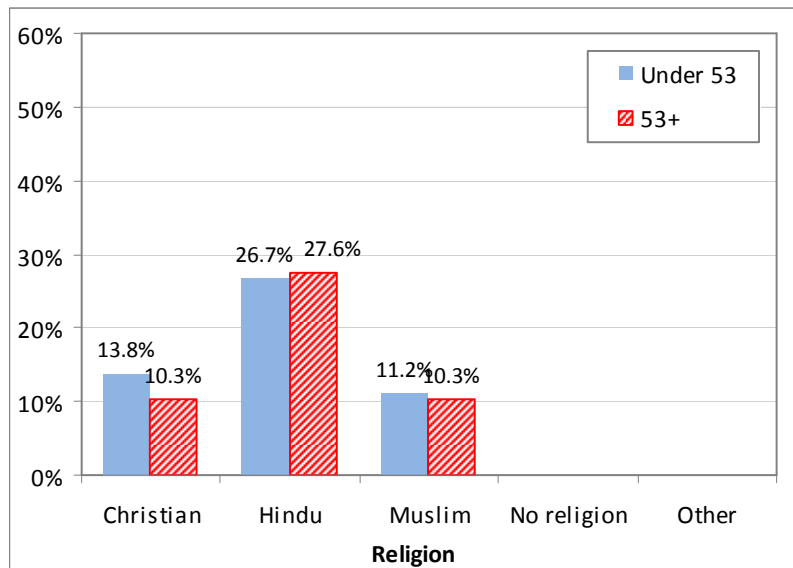


Figure 9. Religious distribution of the younger (n = 60) and older (n = 56) patient groups.

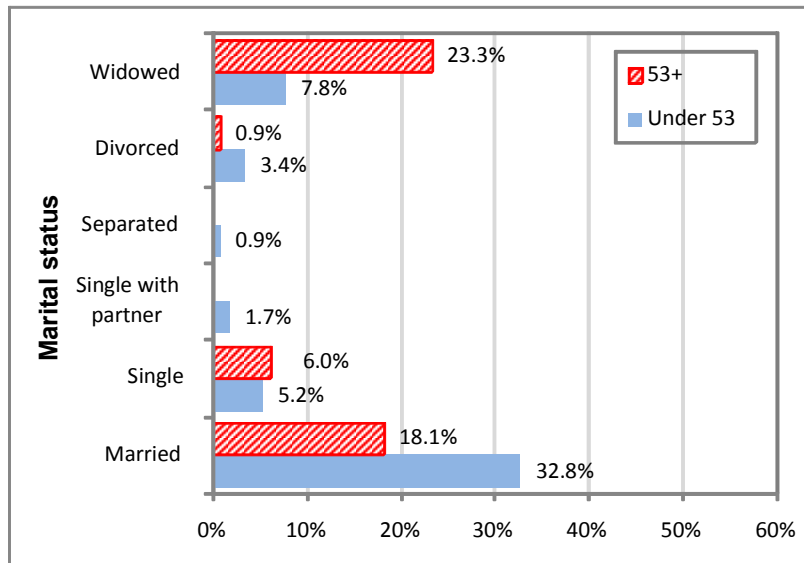


Figure 10. Marital status distribution of the younger (n = 60) and older (n = 56) patient groups.

7.2.1.4 Marital status

Approximately half of the total sample (50.9%) indicated that they were married, while almost one third of the patients (31%), primarily from the older group, indicating that they were widowed.

7.2.1.5 Children and grandchildren

The majority of the total sample had children (86.2%), with this trend observed in both the younger and older patient groups. Approximately half of the entire sample had grandchildren (53.4%), with a significantly greater proportion of the older group contributing to this figure than the younger group.

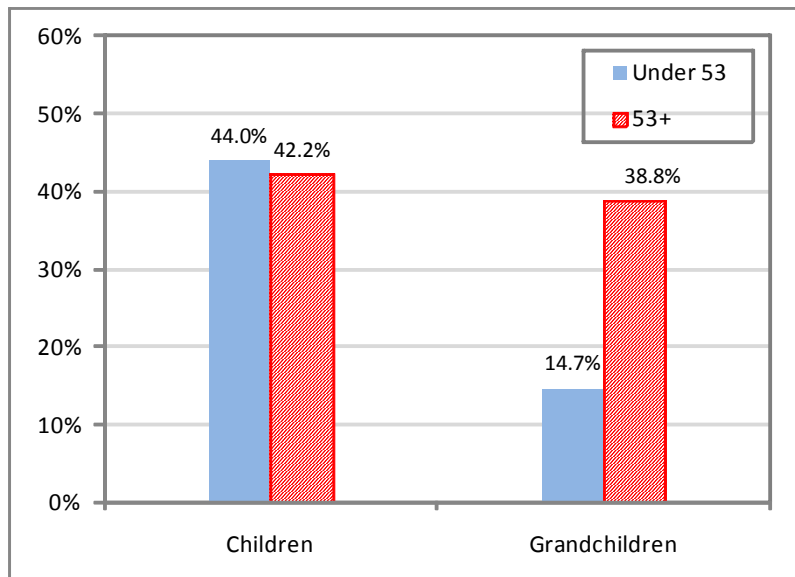


Figure 11. Family of creation distribution of the younger (n = 60) and older (n = 56) patient groups.

7.2.1.6 Level of education

Approximately half of the total sample (53.4%) had a primary school education as their highest educational qualification, whilst a third of the sample (35.3%) had attended secondary school. Only a small proportion of the patients in this study had obtained tertiary education (7.8%). A significant majority of the older sample indicated that they either had not received any formal education or had only attended primary school, whilst the majority of the younger sample had undergone secondary or (to a lesser degree) tertiary education.

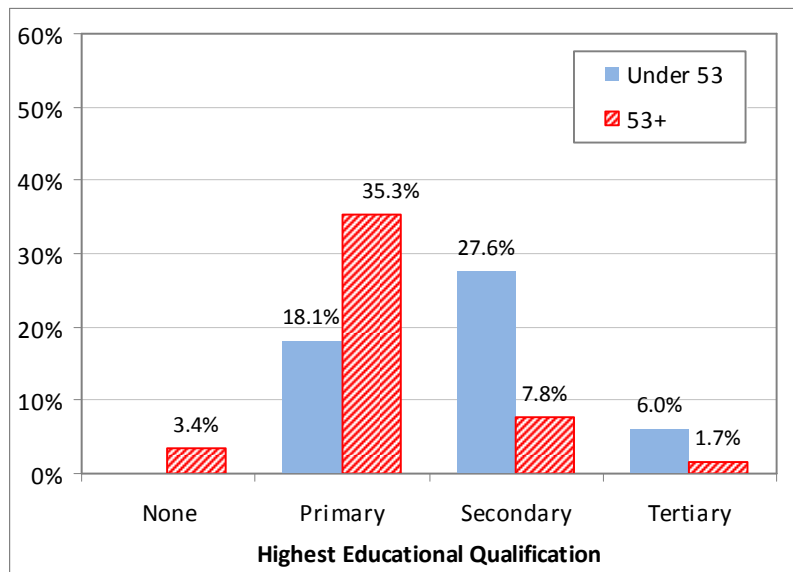


Figure 12. Level of education distribution for the younger (n = 60) and older (n = 56) patient groups.

7.2.1.7 Employment status

The majority of the patients in the total sample (88.8%) were unemployed at the time of the study, with none of the patients in the older sample indicating that they were employed and only 13 patients (11.2%) in the younger sample confirming that they were employed.

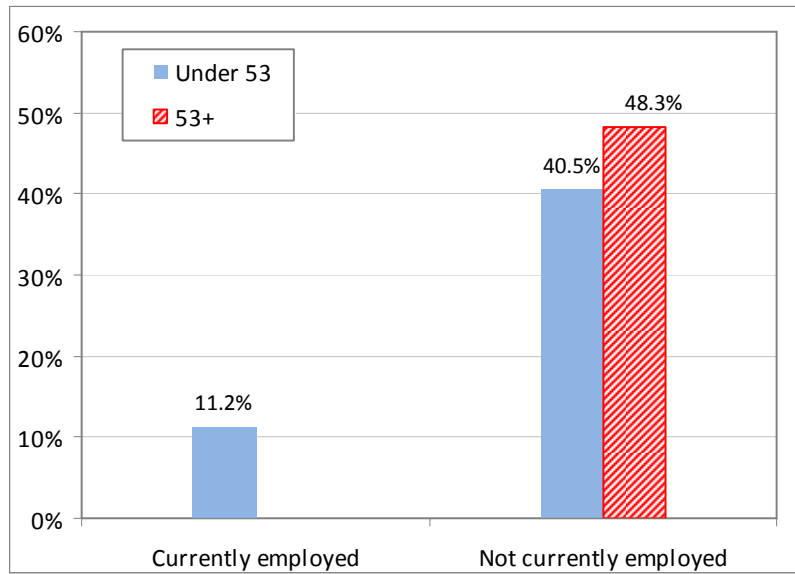


Figure 13. Employment status for the younger (n = 60) and older (n = 56) patient groups.

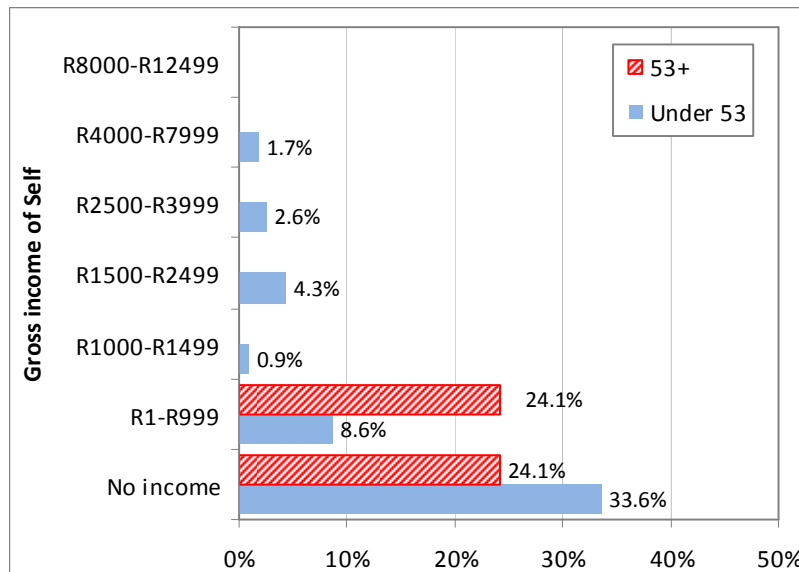


Figure 14. Income distribution for the younger (n = 60) and older (n = 56) patient groups.

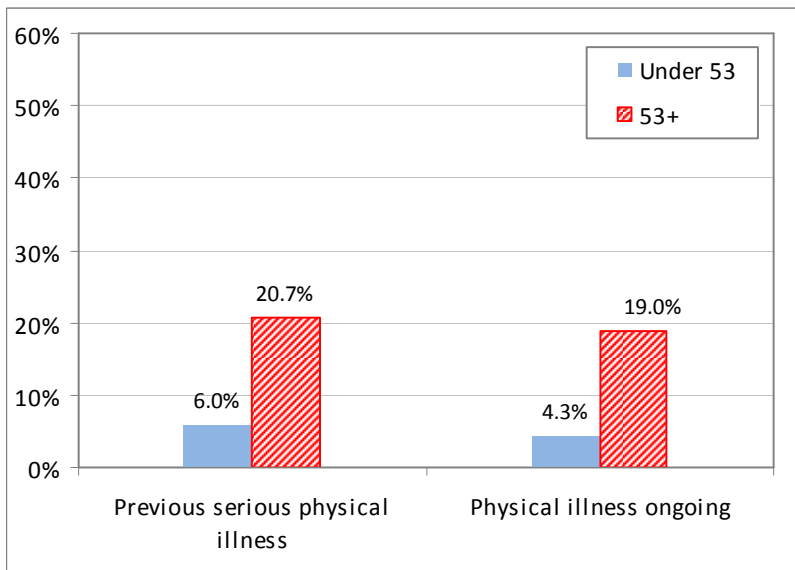
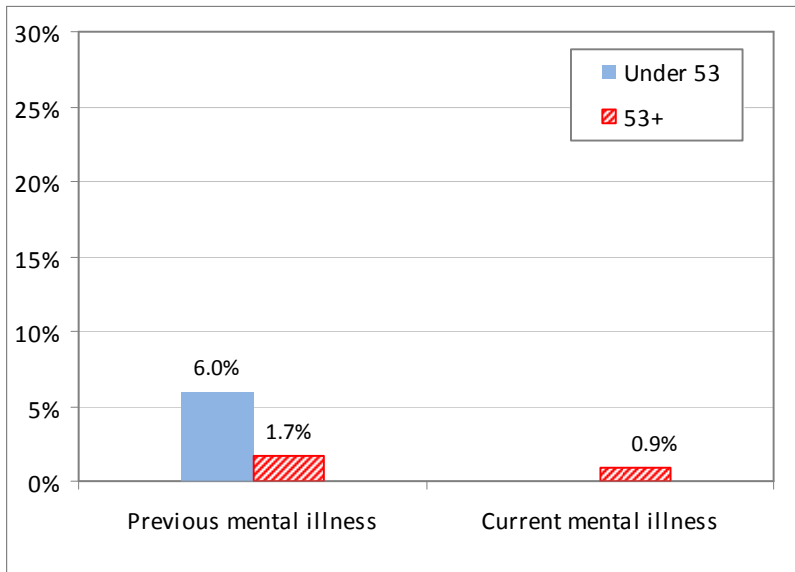
7.2.1.8 Gross household income

The majority of patients in this study (69%) indicated that their gross household income every month was between R0 – R1 499. A small subgroup of patients (11.2%) had an income falling between R1500 – R2 499, and 12.9% indicated that their household income fell between R2 500 – R3 999. No major differences in gross household income per month were observed between the younger and older patient groups.

7.2.1.9 History and current status of mental and physical health

The majority of patients in the sample (92.2%) denied having a history of mental health difficulties, with only one patient indicating that she was currently suffering from mental health problems. Only 22.4% of the sample had received any form of professional counselling since their cancer diagnosis.

Of the total sample, 26.7% stated that they had suffered from a serious physical illness in the past (e.g. diabetes, high blood pressure etc.), with the majority of these patients coming from the older group. Only three patients (2.6%) had ever had a previous (separate) diagnosis of cancer. Of the sample-as-a-whole, 23.3% stated that they were currently suffering from a serious physical illness, again with the majority of these patients coming from the older patient group.



Figures 15/16. Distribution of mental and physical health difficulties of the younger (n = 60) and older (n = 56) patient groups.

7.2.1.10 Premorbid history of traumatic events

Over half of the patients in this study (57.8%) indicated that they had experienced one or more stressful or traumatic events in the year leading up to their cancer diagnosis. This finding was relatively evenly distributed between the younger (30.2%) and older (27.6%) patient groups.

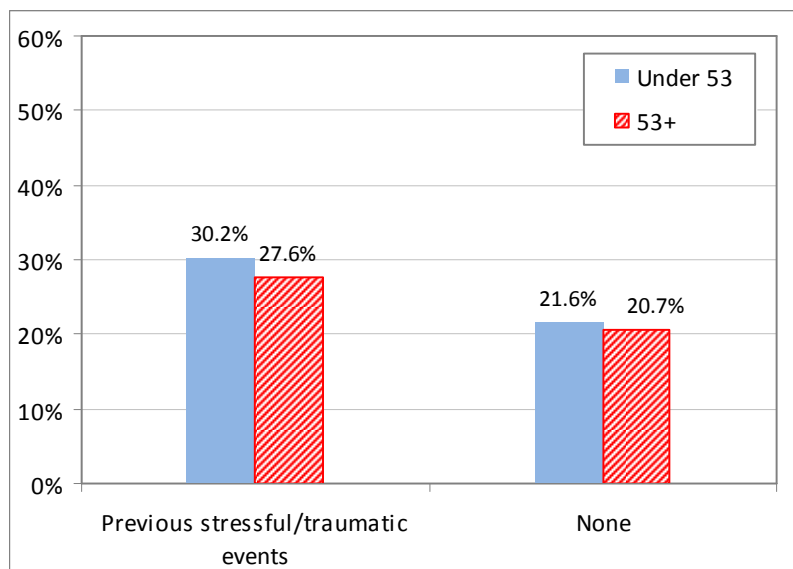


Figure 17. History of traumatic events of the younger (n = 60) and older (n = 56) patient groups.

7.2.1.11 Time of diagnosis

Of the total sample, 3.5% received their diagnosis of breast cancer more than two years prior to the time when the research was undertaken, with 4.4% receiving their diagnosis

two years prior to the research being undertaken, 50% receiving their diagnosis in the previous year and 42.1% receiving their diagnosis in the year the research was undertaken, although none of these patients were tested within three months of their diagnosis as mentioned above.

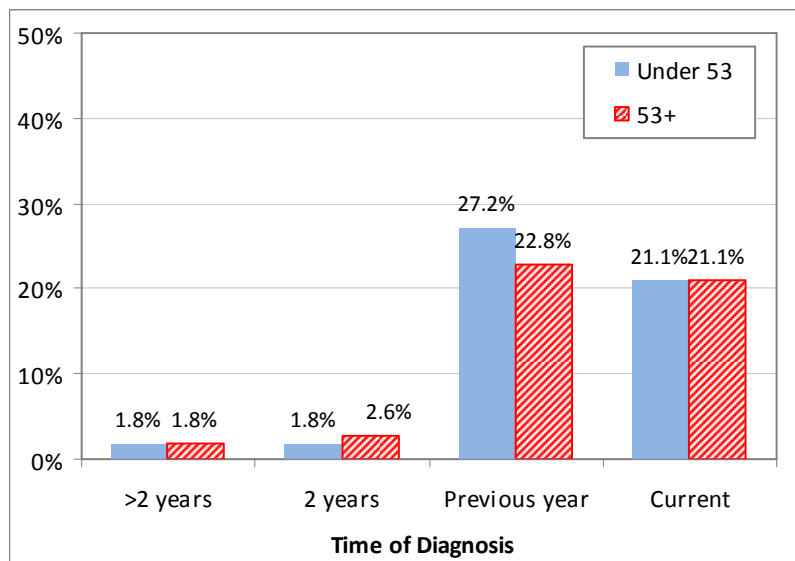


Figure 18. Time of diagnosis of patients in the younger (n = 60) and older (n = 56) patient groups.

7.2.1.12 Type of treatment

Of the total sample, 61.2% had undergone a combination of treatments, 11.5% had undergone a lumpectomy together with adjuvant therapy, 8% had had a mastectomy together with adjuvant therapy, 16.8% had undergone chemotherapy together with adjuvant therapy, and only one patient (0.9%) had undergone radiotherapy as her primary treatment together with adjuvant therapy.

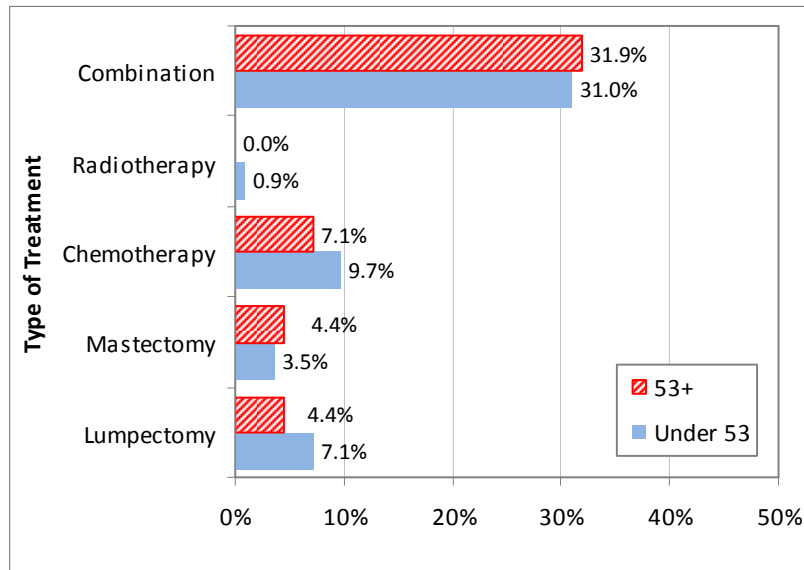


Figure 19. Type of treatment undertaken by patients in the younger (n = 60) and older (n = 56) patient groups.

7.3 UNIVARIATE ANALYSIS

Chi-square tests to compare categorical data, and Mann-Whitney *U* tests to compare means and standard deviations were computed for the following variables:

- Themes of stress
- Stress reactions
- Psychological symptoms
- Coping styles/strategies

The results, discussed in Chapter Six, obtained from administering the various scales/questionnaires to the sample of younger (n = 60) and older (n = 56) Indian breast cancer patients are presented in the various tables and graphs which follow.

7.3.1 Developmental Stress Questionnaire (DSQ) (Selmer, 2000)

Firstly, descriptive statistics and percentages were used to analyse and compare similarities and differences between the younger (N = 60) and older (N = 56) breast cancer groups in the disruption of specific components of life-tasks. Secondly, the Mann-Whitney *U* test was used to compare differences in the mean values and standard deviations of the two groups with regards to i) the five themes of stress, and ii) the overall extent of disruption to life-tasks, occurring as a result of the diagnosis and treatment of breast cancer.

Table 5

Frequencies and Percentages for the Disruption of Specific Life-Tasks of the Younger (n = 60) Breast Cancer Group

	Under 53									
	Not applicable		Never		Rarely		Sometimes		Often/Always	
	n	%	n	%	n	%	n	%	n	%
DS33	1	1.7	3	5.0	2	3.3	7	11.7	47	78.3
DS3	0	0.0	1	1.7	4	6.7	9	15.0	46	76.7
DS85	1	1.7	9	15.0	0	0.0	4	6.7	46	76.7
DS81	10	16.7	4	6.7	0	0.0	3	5.0	43	71.7
DS25	1	1.7	5	8.3	2	3.3	14	23.3	38	63.3
DS56	2	3.3	15	25.0	1	1.7	4	6.7	38	63.3
DS34	2	3.3	7	11.7	0	0.0	14	23.3	37	61.7
DS69	1	1.7	5	8.3	5	8.3	12	20.0	37	61.7

DS74	1	1.7	17	28.3	2	3.3	9	15.0	31	51.7
DS4	1	1.7	8	13.3	1	1.7	21	35.0	29	48.3
DS76	0	0.0	21	35.0	3	5.0	7	11.7	29	48.3
DS30	9	15.0	10	16.7	1	1.7	12	20.0	28	46.7
DS55	0	0.0	17	28.3	0	0.0	16	26.7	27	45.0
DS57	1	1.7	21	35.0	1	1.7	10	16.7	27	45.0
DS79	1	1.7	19	31.7	0	0.0	13	21.7	27	45.0
DS78	0	0.0	17	28.3	2	3.3	15	25.0	26	43.3
DS40	2	3.3	24	40.0	1	1.7	8	13.3	25	41.7
DS52	1	1.7	14	23.3	2	3.3	18	30.0	25	41.7
DS84	2	3.3	23	38.3	1	1.7	9	15.0	25	41.7
DS38	2	3.3	25	41.7	2	3.3	7	11.7	24	40.0
DS51	1	1.7	23	38.3	1	1.7	11	18.3	24	40.0
DS54	1	1.7	20	33.3	1	1.7	14	23.3	24	40.0
DS73	0	0.0	19	31.7	2	3.3	15	25.0	24	40.0
DS29	16	26.7	10	16.7	2	3.3	9	15.0	23	38.3
DS75	1	1.7	23	38.3	3	5.0	10	16.7	23	38.3
DS67	0	0.0	24	40.0	1	1.7	13	21.7	22	36.7
DS80	17	28.3	12	20.0	0	0.0	9	15.0	22	36.7
DS18	8	13.3	21	35.0	4	6.7	8	13.3	19	31.7
DS82	26	43.3	4	6.7	3	5.0	8	13.3	19	31.7
DS66	0	0.0	24	40.0	2	3.3	16	26.7	18	30.0
DS28	27	45.0	10	16.7	2	3.3	4	6.7	17	28.3
DS39	2	3.3	25	41.7	7	11.7	9	15.0	17	28.3
DS35	3	5.0	31	51.7	0	0.0	10	16.7	16	26.7
DS45	36	60.0	4	6.7	0	0.0	5	8.3	15	25.0
DS14	11	18.3	21	35.0	1	1.7	13	21.7	14	23.3
DS27	2	3.3	24	40.0	3	5.0	18	30.0	13	21.7
DS42	34	56.7	12	20.0	0	0.0	1	1.7	13	21.7
DS68	0	0.0	28	46.7	4	6.7	15	25.0	13	21.7
DS46	33	55.0	10	16.7	1	1.7	4	6.7	12	20.0
DS26	2	3.3	36	60.0	0	0.0	11	18.3	11	18.3
DS53	1	1.7	32	53.3	3	5.0	13	21.7	11	18.3
DS43	36	60.0	14	23.3	0	0.0	0	0.0	10	16.7
DS47	32	53.3	15	25.0	2	3.3	1	1.7	10	16.7
DS37	1	1.7	40	66.7	4	6.7	6	10.0	9	15.0
DS58	15	25.0	28	46.7	1	1.7	7	11.7	9	15.0
DS77	0	0.0	43	71.7	3	5.0	5	8.3	9	15.0
DS48	33	55.0	12	20.0	0	0.0	7	11.7	8	13.3
DS41	46	76.7	6	10.0	0	0.0	1	1.7	7	11.7
DS6	17	28.3	29	48.3	1	1.7	7	11.7	6	10.0
DS13	18	30.0	17	28.3	0	0.0	19	31.7	6	10.0
DS19	27	45.0	18	30.0	0	0.0	9	15.0	6	10.0

DS23	2	3.3	45	75.0	0	0.0	7	11.7	6	10.0
DS36	1	1.7	41	68.3	3	5.0	9	15.0	6	10.0
DS61	2	3.3	48	80.0	0	0.0	4	6.7	6	10.0
DS62	15	25.0	30	50.0	1	1.7	8	13.3	6	10.0
DS65	0	0.0	47	78.3	1	1.7	6	10.0	6	10.0
DS71	16	26.7	30	50.0	0	0.0	8	13.3	6	10.0
DS5	15	25.0	26	43.3	2	3.3	12	20.0	5	8.3
DS11	25	41.7	28	46.7	0	0.0	2	3.3	5	8.3
DS70	14	23.3	36	60.0	0	0.0	5	8.3	5	8.3
DS9	2	3.3	50	83.3	0	0.0	4	6.7	4	6.7
DS10	0	0.0	47	78.3	1	1.7	8	13.3	4	6.7
DS15	44	73.3	9	15.0	1	1.7	2	3.3	4	6.7
DS32	4	6.7	25	41.7	7	11.7	20	33.3	4	6.7
DS50	50	83.3	5	8.3	0	0.0	1	1.7	4	6.7
DS72	46	76.7	8	13.3	0	0.0	2	3.3	4	6.7
DS1	1	1.7	48	80.0	2	3.3	6	10.0	3	5.0
DS2	0	0.0	43	71.7	1	1.7	13	21.7	3	5.0
DS7	10	16.7	39	65.0	0	0.0	8	13.3	3	5.0
DS12	27	45.0	29	48.3	1	1.7	0	0.0	3	5.0
DS16	27	45.0	20	33.3	2	3.3	8	13.3	3	5.0
DS21	9	15.0	42	70.0	2	3.3	4	6.7	3	5.0
DS49	46	76.7	11	18.3	0	0.0	0	0.0	3	5.0
DS59	10	16.7	46	76.7	0	0.0	1	1.7	3	5.0
DS17	2	3.3	46	76.7	2	3.3	8	13.3	2	3.3
DS20	46	76.7	8	13.3	1	1.7	3	5.0	2	3.3
DS24	2	3.3	54	90.0	1	1.7	1	1.7	2	3.3
DS60	24	40.0	32	53.3	1	1.7	1	1.7	2	3.3
DS83	42	70.0	8	13.3	0	0.0	8	13.3	2	3.3
DS8	10	16.7	43	71.7	4	6.7	2	3.3	1	1.7
DS22	48	80.0	10	16.7	0	0.0	1	1.7	1	1.7
DS44	35	58.3	24	40.0	0	0.0	0	0.0	1	1.7
DS64	26	43.3	31	51.7	0	0.0	2	3.3	1	1.7
DS31	45	75.0	12	20.0	2	3.3	1	1.7	0	0.0
DS63	9	15.0	50	83.3	0	0.0	1	1.7	0	0.0

Table 6

Frequencies and Percentages for the Disruption of Specific Life-Tasks of the Older (n = 56) Breast Cancer Group

	53+									
	Not applicable		Never		Rarely		Sometimes		Often/Always	
	n	%	n	%	n	%	n	%	n	%
DS3	0	0.0	2	3.6	2	3.6	4	7.1	48	85.7
DS33	3	5.4	2	3.6	0	0.0	7	12.5	44	78.6
DS85	1	1.8	3	5.4	2	3.6	6	10.7	44	78.6
DS25	1	1.8	5	8.9	1	1.8	7	12.5	42	75.0
DS30	7	12.5	2	3.6	3	5.4	9	16.1	35	62.5
DS69	0	0.0	7	12.5	0	0.0	15	26.8	34	60.7
DS52	0	0.0	12	21.4	2	3.6	12	21.4	30	53.6
DS84	3	5.4	20	35.7	1	1.8	6	10.7	26	46.4
DS34	1	1.8	15	26.8	2	3.6	15	26.8	23	41.1
DS56	3	5.4	24	42.9	2	3.6	4	7.1	23	41.1
DS73	0	0.0	20	35.7	2	3.6	11	19.6	23	41.1
DS81	7	12.5	14	25.0	1	1.8	11	19.6	23	41.1
DS4	3	5.4	9	16.1	1	1.8	21	37.5	22	39.3
DS40	2	3.6	19	33.9	1	1.8	13	23.2	21	37.5
DS51	6	10.7	16	28.6	3	5.4	10	17.9	21	37.5
DS74	1	1.8	24	42.9	2	3.6	8	14.3	21	37.5
DS76	1	1.8	26	46.4	3	5.4	7	12.5	19	33.9
DS75	1	1.8	27	48.2	2	3.6	8	14.3	18	32.1
DS18	9	16.1	22	39.3	1	1.8	7	12.5	17	30.4
DS29	33	58.9	4	7.1	0	0.0	4	7.1	15	26.8
DS54	0	0.0	23	41.1	2	3.6	16	28.6	15	26.8
DS67	1	1.8	28	50.0	1	1.8	11	19.6	15	26.8
DS38	0	0.0	28	50.0	1	1.8	14	25.0	13	23.2
DS79	4	7.1	28	50.0	0	0.0	11	19.6	13	23.2
DS80	34	60.7	7	12.5	1	1.8	2	3.6	12	21.4
DS36	3	5.4	33	58.9	2	3.6	7	12.5	11	19.6
DS35	1	1.8	30	53.6	4	7.1	11	19.6	10	17.9
DS31	16	28.6	19	33.9	5	8.9	7	12.5	9	16.1
DS66	1	1.8	32	57.1	2	3.6	12	21.4	9	16.1
DS78	0	0.0	33	58.9	0	0.0	14	25.0	9	16.1
DS27	1	1.8	34	60.7	1	1.8	12	21.4	8	14.3

DS32	4	7.1	23	41.1	9	16.1	12	21.4	8	14.3
DS39	0	0.0	31	55.4	4	7.1	13	23.2	8	14.3
DS57	24	42.9	18	32.1	1	1.8	5	8.9	8	14.3
DS9	0	0.0	40	71.4	0	0.0	9	16.1	7	12.5
DS15	12	21.4	25	44.6	4	7.1	8	14.3	7	12.5
DS77	1	1.8	34	60.7	4	7.1	10	17.9	7	12.5
DS10	1	1.8	38	67.9	2	3.6	9	16.1	6	10.7
DS50	39	69.6	7	12.5	1	1.8	3	5.4	6	10.7
DS55	3	5.4	33	58.9	2	3.6	12	21.4	6	10.7
DS68	0	0.0	36	64.3	2	3.6	12	21.4	6	10.7
DS37	0	0.0	41	73.2	4	7.1	6	10.7	5	8.9
DS2	0	0.0	29	51.8	2	3.6	21	37.5	4	7.1
DS13	33	58.9	13	23.2	1	1.8	5	8.9	4	7.1
DS14	7	12.5	29	51.8	4	7.1	12	21.4	4	7.1
DS5	33	58.9	17	30.4	0	0.0	3	5.4	3	5.4
DS17	3	5.4	44	78.6	4	7.1	2	3.6	3	5.4
DS23	3	5.4	46	82.1	1	1.8	3	5.4	3	5.4
DS26	3	5.4	38	67.9	0	0.0	12	21.4	3	5.4
DS47	51	91.1	2	3.6	0	0.0	0	0.0	3	5.4
DS53	2	3.6	37	66.1	0	0.0	14	25.0	3	5.4
DS65	2	3.6	43	76.8	0	0.0	8	14.3	3	5.4
DS83	42	75.0	8	14.3	0	0.0	3	5.4	3	5.4
DS1	5	8.9	45	80.4	1	1.8	3	5.4	2	3.6
DS6	35	62.5	17	30.4	0	0.0	2	3.6	2	3.6
DS19	49	87.5	5	8.9	0	0.0	0	0.0	2	3.6
DS42	51	91.1	2	3.6	0	0.0	1	1.8	2	3.6
DS43	51	91.1	3	5.4	0	0.0	0	0.0	2	3.6
DS45	52	92.9	2	3.6	0	0.0	0	0.0	2	3.6
DS49	53	94.6	1	1.8	0	0.0	0	0.0	2	3.6
DS58	33	58.9	18	32.1	1	1.8	2	3.6	2	3.6
DS70	32	57.1	18	32.1	0	0.0	4	7.1	2	3.6
DS71	35	62.5	17	30.4	0	0.0	2	3.6	2	3.6
DS7	7	12.5	42	75.0	1	1.8	5	8.9	1	1.8
DS8	7	12.5	43	76.8	1	1.8	4	7.1	1	1.8
DS12	47	83.9	7	12.5	0	0.0	1	1.8	1	1.8
DS21	12	21.4	40	71.4	0	0.0	3	5.4	1	1.8
DS28	50	89.3	5	8.9	0	0.0	0	0.0	1	1.8
DS41	54	96.4	1	1.8	0	0.0	0	0.0	1	1.8
DS46	52	92.9	3	5.4	0	0.0	0	0.0	1	1.8
DS48	52	92.9	3	5.4	0	0.0	0	0.0	1	1.8
DS59	8	14.3	46	82.1	0	0.0	1	1.8	1	1.8
DS61	3	5.4	45	80.4	1	1.8	6	10.7	1	1.8
DS62	32	57.1	20	35.7	0	0.0	3	5.4	1	1.8

DS82	49	87.5	6	10.7	0	0.0	0	0.0	1	1.8
DS11	49	87.5	6	10.7	0	0.0	1	1.8	0	0.0
DS16	48	85.7	7	12.5	0	0.0	1	1.8	0	0.0
DS20	44	78.6	11	19.6	0	0.0	1	1.8	0	0.0
DS22	54	96.4	2	3.6	0	0.0	0	0.0	0	0.0
DS24	2	3.6	51	91.1	2	3.6	1	1.8	0	0.0
DS44	51	91.1	5	8.9	0	0.0	0	0.0	0	0.0
DS60	47	83.9	9	16.1	0	0.0	0	0.0	0	0.0
DS63	7	12.5	46	82.1	0	0.0	3	5.4	0	0.0
DS64	49	87.5	7	12.5	0	0.0	0	0.0	0	0.0
DS72	55	98.2	0	0.0	1	1.8	0	0.0	0	0.0

Only those items where more than 50% of the patients in each group answered ‘often’ or ‘always’ have been analysed. Where reverse scoring applied, the same was undertaken with regard to the categories ‘never’ and ‘rarely’.

As indicated in Table 5, the results indicated that for the younger breast cancer patients, the following aspects of life-tasks were most severely disrupted for them:

- Item 33: Increased reliance on staff at the hospital (78.3%)
- Item 77: Feeling less at peace with the idea of dying (76.7%)
- Item 81: Worrying more about the future of children (71.7%)
- Item 25: Increased reliance/dependence on others generally (63.3%)
- Item 56: Feeling less attractive/sexually desirable as a result of treatment (63.3%)
- Item 34: Increased preoccupation with and avoidance of reliance/dependence on others (61.7%)
- Item 69: Perception of change in the appearance/texture of breasts (61.7%)

- Item 74: Preoccupation with thoughts of death/dying (51.7%)

The results, as indicated in Table 6, further indicated that for the older breast cancer patients, the following aspects of life-tasks were most severely disrupted:

- Item 33: Increased reliance on staff at the hospital (78.6%)
- Item 25: Increased reliance/dependence on others generally (75%)
- Item 77: Feeling less at peace with the idea of dying (67.8%)
- Item 30: Increased reliance/dependence on children (62.5%)
- Item 69: Perception of change in the appearance/texture of breasts (60.7%)
- Item 52: Decreased ability to complete routine household chores that are perceived as important (53.6%)

As illustrated below in Table 7, the younger breast cancer group demonstrated that, on average, their interpersonal relationships had been more significantly negatively altered; $\underline{M} \underline{SD} = 51.78 (8.952)$ than the older group; $\underline{M} \underline{SD} = 46.59 (8.355)$. These differences were found to be statistically significant, $p = 0.001$.

The results for the category of dependence-independence suggested a trend towards this being a greater theme of stress for the younger group; $\underline{M} \underline{SD} = 52.58 (8.867)$ than the older group; $\underline{M} \underline{SD} = 49.93 (9.063)$. However this difference was not statistically significant, $p = 0.152$.

Table 7***Means and SDs for Themes of Stress, Psychological Functioning and Coping of the Younger (n = 60) and Older (n = 56) Breast Cancer Groups***

	Age group						Mann-Whitney U	Z	p
	Under 53			53+					
	N	Mean	Std. Deviation	N	Mean	Std. Deviation			
Altered interpersonal relationships	60	51.78	8.952	56	46.59	8.355	1095.000	-3.235	.001*
Dependence-independence	60	52.58	8.867	56	49.93	9.063	1421.000	-1.432	.152
Achievement disruption	60	29.38	11.162	56	22.50	6.883	1045.000	-3.515	.000*
Body or sexual image and integrity	60	53.57	11.853	56	43.64	8.717	867.500	-4.492	.000*
Existential issues	60	43.20	8.758	56	36.41	7.968	951.500	-4.029	.000*
DSQ Total Score	60	230.52	38.598	56	199.07	28.300	873.500	-4.457	.000*
Physical reactions	60	6.57	3.451	56	6.35	3.773	1614.000	-.365	.715
Psychological reactions	60	8.67	6.046	56	6.75	5.248	1357.500	-1.783	.075
Behavioural reactions	60	12.79	7.889	56	10.37	6.903	1389.500	-1.606	.108
Overall level of stress	60	28.03	16.327	56	23.46	14.452	1398.000	-1.558	.119
Somatization	60	6.45	4.496	56	6.50	4.448	1657.500	-.125	.901
Obsession-Compulsion	60	5.10	4.835	56	5.96	4.910	1503.000	-.986	.324
Interpersonal Sensitivity	60	3.38	2.552	56	2.93	2.564	1489.000	-1.066	.286
Depression	60	6.77	5.087	56	5.07	3.921	1357.000	-1.791	.073
Anxiety	60	7.10	5.265	56	5.66	4.449	1432.500	-1.372	.170
Hostility	60	3.65	3.526	56	2.79	2.865	1389.500	-1.623	.104
Phobic Anxiety	60	4.55	4.036	56	4.38	3.915	1648.500	-.175	.861
Paranoid Ideation	60	3.43	3.417	56	2.91	3.354	1514.000	-.931	.352
Psychoticism	60	2.58	2.657	56	2.05	2.292	1482.000	-1.121	.262
Global Severity index	60	1.84	.483	54	1.90	.377	1446.500	-.985	.325
Fighting spirit	60	53.55	7.480	56	48.57	9.508	1135.000	-3.015	.003*
Helpless or Hopeless	60	12.07	4.116	56	12.18	4.593	1672.000	-.044	.965
Anxious preoccupation	60	27.58	4.405	56	24.96	5.634	1219.500	-2.551	.011*
Fatalistic	60	22.73	3.773	56	23.59	4.267	1446.000	-1.298	.194
Avoidance	60	3.08	1.013	56	2.84	1.075	1458.500	-1.297	.195
CEC Angry	60	14.20	6.156	56	15.43	6.638	1511.500	-.934	.350
CEC Anxious	60	16.00	4.683	56	15.11	5.055	1444.000	-1.314	.189
CEC Unhappy	60	15.07	2.773	56	15.34	3.315	1602.000	-.438	.661
Total CEC scale	60	45.27	10.201	56	45.88	11.637	1663.500	-.091	.927
Confrontive Coping	60	6.40	3.163	56	5.75	3.359	1454.500	-1.252	.210
Distancing	60	9.93	3.550	56	9.14	3.887	1516.500	-.907	.364
Self-controlling	60	10.90	3.861	56	9.50	3.379	1268.000	-2.286	.022*
Seeking Social Support	60	9.60	3.441	56	9.14	3.048	1619.500	-.336	.737
Accepting Responsibility	60	5.18	2.182	56	3.98	1.977	1090.000	-3.303	.001*
Escape-Avoidance	60	10.73	4.719	56	9.57	3.818	1455.000	-1.247	.212
Planful Problem Solving	60	7.65	3.817	56	5.79	3.642	1211.500	-2.598	.009*
Positive Reappraisal	60	11.37	4.491	56	9.14	4.308	1154.000	-2.915	.004*

*significant at 95% level

continued.../

	Age group									Mann-Whitney -U	Z	p
	Under 53			53+			Total					
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation			
Relative Confrontive Coping	.56	60	.265	.56	56	.291	.56	116	.277	1639.500	-.224	.823
Relative Distancing	.88	60	.240	.93	56	.352	.90	116	.299	1469.000	1.166	.244
Relative Self-controlling	.96	60	.283	.96	56	.314	.96	116	.297	1648.500	-.174	.862
Relative Seeking Social Support	.85	60	.221	.94	56	.334	.89	116	.284	1342.500	1.865	.062
Relative Accepting Responsibility	.45	60	.153	.39	56	.159	.42	116	.157	1300.500	2.097	.036*
Relative Escape-Avoidance	.96	60	.404	.97	56	.389	.97	116	.395	1609.500	-.390	.697
Relative Planful Problem Solving	.67	60	.278	.56	56	.288	.61	116	.287	1326.500	1.953	.051
Relative Positive Reappraisal	.98	60	.242	1.01	56	.866	.99	116	.624	1353.500	1.804	.071

*significant at 95% level

The results for the category achievement disruption demonstrated that, on average, the younger group experienced a greater level of disruption to their achievement-oriented goals and activities; $\underline{M SD} = 29.38 (11.162)$ than the older group; $\underline{M SD} = 22.50 (6.883)$. These differences were found to be statistically significant, $p = 0.000$.

The results for the category body or sexual image and integrity revealed that, on average, the younger group again experienced a greater level of threat or disruption; $\underline{M SD} = 53.57 (11.853)$ than the older group; $\underline{M SD} = 43.64 (8.717)$. These differences were found to be statistically significant, $p = 0.000$.

The younger breast cancer group also demonstrated that, on average, they experienced more difficulties or struggles in relation to existential issues; $\underline{M} \underline{SD} = 43.20 (8.758)$ than the older group; $\underline{M} \underline{SD} = 36.41 (7.968)$. These differences were found to be statistically significant, $p = 0.000$.

With regard to the overall extent of disruption to life-tasks, the results for the younger group demonstrated that overall, these patients experienced a greater degree of disruption; $\underline{M} \underline{SD} = 230.52(38.598)$ than their older counterparts; $\underline{M} \underline{SD} = 199.07 (28.300)$. These differences were found to be statistically significant, $p = 0.000$.

7.3.2 Stress Symptom Checklist (SSCL) (Schlebusch, 2000)

The results reflect, firstly, the frequency distribution scores for the descriptive data and percentages for the total sample ($N = 116$); and secondly, relevant comparisons within each category between the younger ($n = 60$) and older ($n = 56$) breast cancer groups using the Pearson Chi-Square test. Finally, results are presented of the Mann-Whitney U test comparisons between age groups with regards to means and standard deviations.

Table 8

Frequencies and Percentages for the Stress Symptom Checklist for the Total Sample (N = 116): Physical Reactions

	Frequency	Percent	Valid Percent	Cumulative Percent
Low	58	50.0	50.0	50.0
Moderate	52	44.8	44.8	94.8
High	6	5.2	5.2	100.0
Total	116	100.0	100.0	

As can be noted from the above, with regards to physical reactions, 50% of the sample overall had low scores for physical stress reactions, with 50% of the sample demonstrating moderate (44.8%) to high (5.2%) scores.

Table 9

Frequencies and Percentages for the Stress Symptom Checklist for the Total Sample (N = 116): Psychological Reactions

	Frequency	Percent	Valid Percent	Cumulative Percent
Low	75	64.7	64.7	64.7
Moderate	36	31.0	31.0	95.7
High	5	4.3	4.3	100.0
Total	116	100.0	100.0	

With regards to psychological stress reactions, 64.7% of the total sample had low scores, with 35.3% demonstrating moderate (31%) to high (4.3%) scores.

Table 10

Frequencies and Percentages for the Stress Symptom Checklist for the Total Sample (N = 116): Behavioural Stress Reactions

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Low	75	64.7	64.7	64.7
Moderate	38	32.8	32.8	97.4
High	3	2.6	2.6	100.0
Total	116	100.0	100.0	

Within the behavioural reactions category, 64.7% of the sample had low scores, while 35.4% of the patients had scores demonstrating moderate (32.8%) to high (2.6%) behavioural stress reactions.

Table 11

Frequencies and Percentages for the Stress Symptom Checklist for the Total Sample (N = 116): Overall Level of Stress

	Frequency	Percent	Valid Percent	Cumulative Percent
No stress	2	1.7	1.7	1.7
Low	66	56.9	56.9	58.6
Moderate	44	37.9	37.9	96.6
High	4	3.4	3.4	100.0
Total	116	100.0	100.0	

With regards to overall stress reactions, 58.6% of the sample indicated no (1.7%) or low (56.9%) stress reactions, while 41.4% had scores demonstrating moderate (37.9%) to high (3.4%) overall levels of stress.

Table 12

Frequencies and Percentages for the Stress Symptom Checklist for the Total Sample (N = 116): Present Intensity of Stress

	Frequency	Percent	Valid Percent	Cumulative Percent
No stress	6	5.2	5.2	5.2
Mild stress	27	23.3	23.3	28.4
Moderate stress	44	37.9	37.9	66.4
Severe stress	29	25.0	25.0	91.4
Profound stress	10	8.6	8.6	100.0
Total	116	100.0	100.0	

The above reflect the results of the scores for the total sample with regards to the visual analogue scale in the SSCL.

Of the entire sample, 28.4% of the patients indicated no (5.2%) or mild (23.3%) intensity with regard to present stress levels; 37.9% indicated moderate intensity, and 33.6% indicated severe (25%) to profound (8.6%) intensity.

Table 13

Frequencies and Percentages of Differences in Levels of Physical Stress Reactions between the Younger (n = 60) and Older (n = 56) Patient Groups

		Age group				Total Sample	
		Under 53		53+		Count	Total %
		Count	Total %	Count	Total %		
Physical Reactions category	Low	28	24.1%	30	25.9%	58	50.0%
	Moderate	29	25.0%	23	19.8%	52	44.8%
	High	3	2.6%	3	2.6%	6	5.2%
Total		60	51.7%	56	48.3%	116	100.0%
Pearson Chi-Square=0.624,df=2,p=0.732							

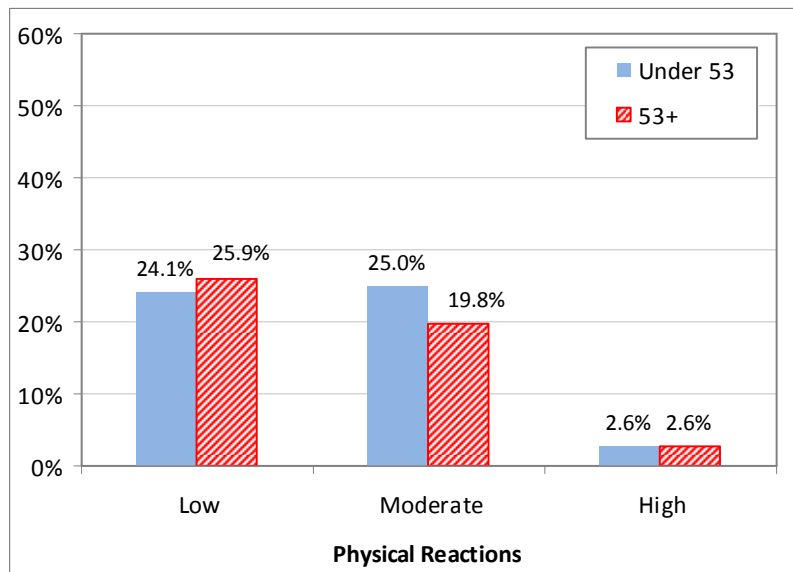


Figure 20. Physical stress reactions for the younger (n = 60) and older (n = 56) patients.

Physical: The frequencies and percentages recorded for the differences between the levels of stress in the older and younger breast cancer sample groups revealed that of the 50% of the total sample with low physical reactions, 24.1% were below 53 years while 25.9% were 53+ years. Of the 44.8% with moderate physical reactions, 25% were under 53 years and 19.8% were 53+ years. Of the 5.2% who scored within the high range for physical reactions, an equal percentage (2.6%) came from the two age groups. On the Pearson Chi-Square test these differences were not significant; $p = 0.732$.

Psychological: The cross-tabulation between the categories of psychological reactions and age revealed that of the 64.7% of the total sample of patients with low psychological reactions, 26.7% were under 53 years while 37.9% were 53+ years. Of the 31% with moderate psychological reactions, 22.4% were under the age of 53 years and 8.6% were

53+ years. Of the 4.3% who scored within the high range for psychological reactions, 2.6% of these came from the younger group, and 1.7% from the older group. These differences were statistically significant according to the Pearson Chi-Square test; $p = 0.009$. They suggest that a significantly greater proportion of the younger patient group experienced unhealthy (moderate) levels of psychological stress reactions than their older counterparts who predominantly experienced low psychological stress.

Table 14

Frequencies and Percentages of Differences in Levels of Psychological Stress Reactions between the Younger (n = 60) and Older (n = 56) Patient Groups

		Age group				Total Sample	
		Under 53		53+		Count	Total %
		Count	Total %	Count	Total %		
Psychological Reactions category	Low	31	26.7%	44	37.9%	75	64.7%
	Moderate	26	22.4%	10	8.6%	36	31.0%
	High	3	2.6%	2	1.7%	5	4.3%
Total		60	51.7%	56	48.3%	116	100.0%
Pearson Chi-Square=9.438,df=2,p=0.009							

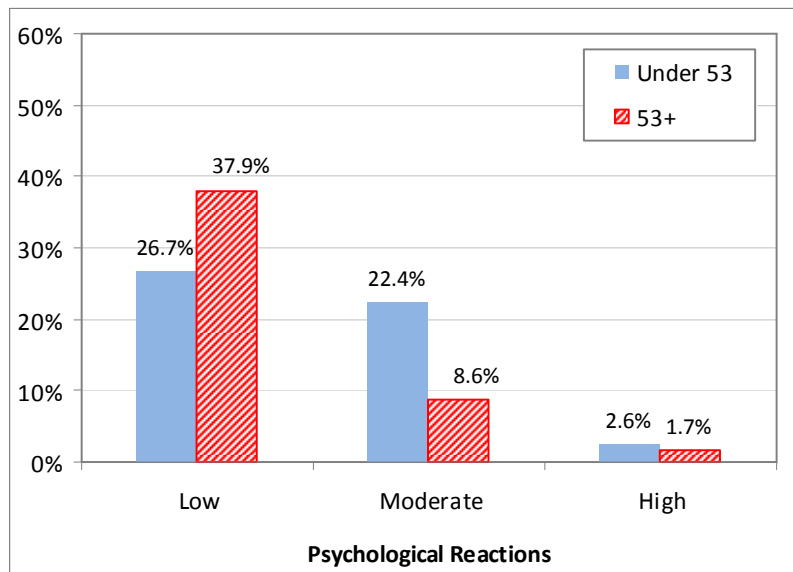


Figure 21. Psychological stress reactions for the younger (n = 60) and older (n = 56) patients.

Table 15

Frequencies and Percentages of Differences in Levels of Behavioural Stress Reactions between the Younger (n = 60) and Older (n = 56) Patient Groups

		Age group				Total Sample	
		Under 53		53+			
		Count	Total %	Count	Total %	Count	Total %
Behavioural Reactions category	Low	36	31.0%	39	33.6%	75	64.7%
	Moderate	23	19.8%	15	12.9%	38	32.8%
	High	1	0.9%	2	1.7%	3	2.6%
Total		60	51.7%	56	48.3%	116	100.0%
Pearson Chi-Square=2.002,df=2,p=0.368							

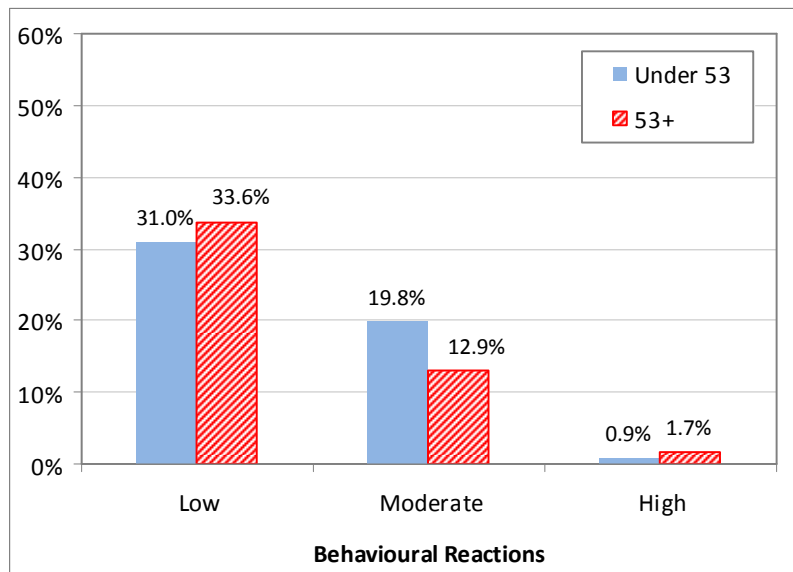


Figure 22. Behavioural stress reactions for the younger (n = 60) and older (n = 56) patients.

Behavioural: The cross-tabulation between the categories of behavioural reactions and age reflect that of the 64.7% of the total sample with low behavioural stress reactions, 31% were under 53 years of age while 33.6% were 53+ years. Of the 32.8% with moderate behavioural reactions, 19.8% were under 53 years and 12.9% were 53+ years. Of the 2.6% with high behavioural stress reactions, 0.9% were from the younger patient group, and 1.7% were from the older group. These differences were not statistically significant according to the Pearson Chi-Square test; $p = 0.368$.

Table 16

Frequencies and Percentages of Differences in Levels of Overall Stress between the Younger (n = 60) and Older (n = 56) Patient Groups

		Age group				Total Sample	
		Under 53		53+		Count	Total %
		Count	Total %	Count	Total %		
Overall Stress category	No stress	0	.0%	2	1.7%	2	1.7%
	Low	30	25.9%	36	31.0%	66	56.9%
	Moderate	28	24.1%	16	13.8%	44	37.9%
	High	2	1.7%	2	1.7%	4	3.4%
Total		60	51.7%	56	48.3%	116	51.7%
Pearson Chi-Square=5.687, df=3, p=0.128							

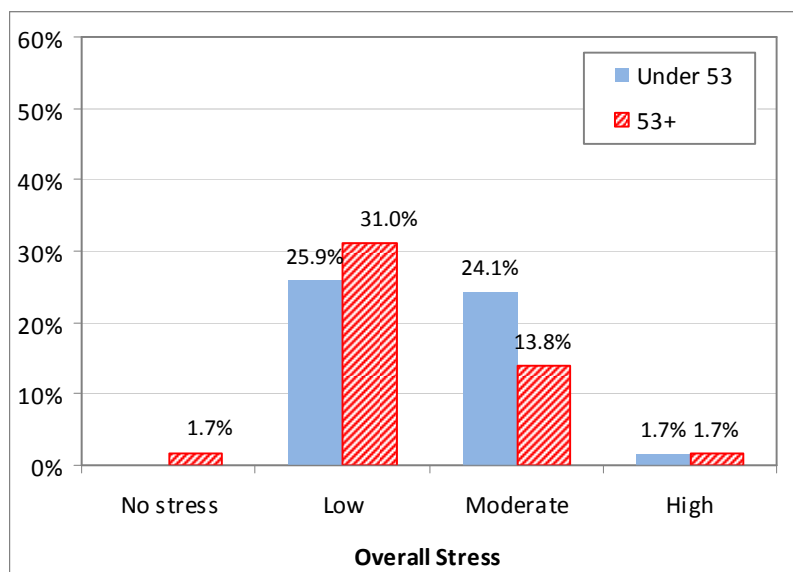


Figure 23. Overall levels of stress for the younger (n = 60) and older (n = 56) patients.

Table 16 reflects the cross-tabulation between the categories of overall stress and age.

The results suggest that 25.9% of the younger group experienced either no or low overall

stress, whereas 32.7% of the older group experienced no or low stress overall. With regard to moderate levels of overall stress, 24.1% of the younger patients fell within this category, with 13.8% of the older patients experiencing moderate stress reactions overall. With regard to high levels of overall stress, an equal percentage (1.7%) of patients from each group experienced this level of stress overall. These differences were not significantly different according to the Pearson Chi-Square test; $p = 0.128$.

Table 17

Frequencies and Percentages of Differences in Levels of Present Intensity of Stress between the Younger (n = 60) and Older (n = 56) Patient Groups

		Age group				Total Sample	
		Under 53		53+		Count	Total %
		Count	Total %	Count	Total %		
Present Intensity category	No stress	3	2.6%	3	2.6%	6	5.2%
	Mild stress	15	12.9%	12	10.3%	27	23.3%
	Moderate stress	19	16.4%	25	21.6%	44	37.9%
	Severe stress	17	14.7%	12	10.3%	29	25.0%
	Profound stress	6	5.2%	4	3.4%	10	8.6%
Total		60	51.7%	56	48.3%	116	100.0%
Pearson Chi-Square=2.278, df=4,p=0.685							

Table 17 reflects the cross-tabulation between the categories of present intensity of stress and age. The results suggest that 15.5% of the younger group fell within the ‘no’ to ‘mild’ present intensity stress category, with 12.9% of the older group falling within these categories. With regard to moderate levels, 16.4% of the younger group described the present intensity of their stress at this level, while 21.6% of the older group experienced the same. Finally, 19.9% of the younger group described the present

intensity of their stress as falling within the ‘severe’ to ‘profound’ levels, with 13.7% of the older group endorsing the same. These differences were not significantly different according to the Pearson Chi-Square test; $p = 0.685$.

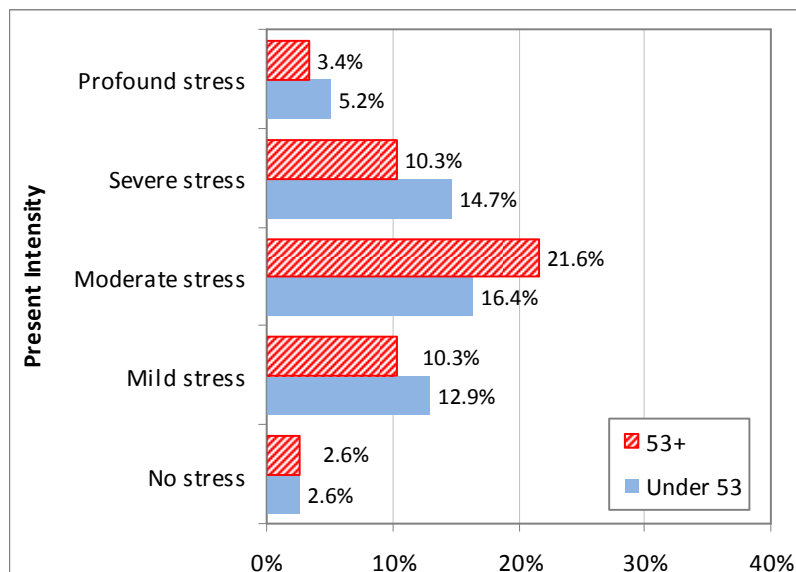


Figure 24. Present intensity of stress for the younger (n = 60) and older (n = 56) patients.

Table 7 (illustrated previously in Section 7.3.1) indicates that, on average, the younger breast cancer group demonstrated similar levels of physical symptoms of stress, $\underline{M} \underline{SD} = 6.57 (3.451)$ to the older group, $\underline{M} \underline{SD} = 6.35 (3.773)$. These symptoms tended, on average, to fall within the ‘low’ category with regard to severity of stress.

On average, the younger group showed a somewhat increased psychological reaction to stress, $\underline{M} \underline{SD} = 8.67 (6.046)$ compared to the older group, $\underline{M} \underline{SD} = 6.75 (5.248)$, although

this difference was not significant according to the Mann-Whitney test; $p = 0.075$. It should be noted, however, that this difference was significant at the 90% level of significance. Again, these symptoms tended, on average, to fall within the 'low' category of severity of stress for both groups, despite the aforementioned finding of a significantly greater proportion of the younger patient group experiencing unhealthy moderate levels of psychological stress than the older patients who predominantly experienced low psychological stress reactions.

With regard to the average behavioural stress reactions for both groups, the younger group showed somewhat greater behavioural stress reactions, $\underline{M} \underline{SD} = 12.79 (7.889)$ than the older group, $\underline{M} \underline{SD} = 10.37 (6.903)$, although again this difference was not significant according to the Mann-Whitney test; $p = 0.108$. As above, these symptoms tended, on average, to fall within the 'low' category of severity of stress for both groups.

The results for the average overall level of stress for both groups revealed that, overall, there was a trend for the younger group to demonstrate greater stress reactions generally, $\underline{M} \underline{SD} = 28.03 (16.327)$ than the older group, $\underline{M} \underline{SD} = 23.46 (14.452)$, although not at a level of statistical significance according to the Mann-Whitney test; $p = 0.119$. The results revealed that overall levels of stress for both groups tended, on average, to fall within the 'low' category of severity of stress. It should be noted, however, that in terms of the alternative scoring criteria for this scale, despite falling within the 'low' stress category across the three dimensions as well as for overall level of stress, both groups, on average, scored above 3 on each of the three dimensions, indicative of elevated stress

levels for each, as well as above 9 across all three dimensions indicative of elevated stress levels overall.

7.3.3 Brief Symptom Inventory (BSI) (Derogatis and Spencer, 1982)

The results reflect, firstly, relevant comparisons with the norms provided in the scoring manual (non-patient female population), including an investigation of ‘caseness’ with regard to the two groups; and secondly, the results of the Mann-Whitney *U* test comparisons between the age groups with regard to means and standard deviations.

Table 18

Converted Mean Scores and T-Scores for the Brief Symptom Inventory for the Younger (n = 60) and Older (n = 56) Patient Groups

Symptom Dimension	Under 53		53+	
	Raw Score	T-Score	Raw Score	T-Score
Somatization	0.92	63	0.93	63
Obsessive-Compulsive	0.85	59	0.99	61
Interpersonal Sensitivity	0.85	61	0.73	59
Depression	1.13	64	0.85	62
Anxiety	1.18	64	0.94	61
Hostility	0.73	60	0.56	58
Phobic Anxiety	0.91	65	0.88	65
Paranoid Ideation	0.69	59	0.59	58
Psychoticism	0.52	63	0.41	63
GSI	1.84	71	1.90	73

7.3.3.1 Comparisons with normative population group

Overall, the results appear, on average, to suggest an above-average level of psychological disturbance evident in both groups (particularly with regard to anxiety and depression), with women from both groups, on average, demonstrating ‘caseness’.

Table 18 indicates that both the younger and older breast cancer groups achieved an average T-score of 63 for the symptom dimension termed ‘somatization’, placing the groups between the 84th to the 93rd centile of the non-patient adult female population to which they are being compared, with regard to this dimension.

The results for the symptom dimension termed ‘obsessive-compulsive’ indicate that the younger group, on average, achieved a T-score of 59, and the older group, on average, achieved a T-score of 61, placing both groups at approximately the 84th centile of the referent population group.

The results for the symptom dimension termed ‘interpersonal sensitivity’ indicate that the younger group, on average, achieved a T-score of 61, and the older group, on average, achieved a T-score of 59, placing both groups at approximately the 84th centile of the normative population group.

The results for the symptom dimension termed ‘depression’ show that the younger group, on average, achieved a T-score of 64, and the older group, on average, achieved a T-score

of 62, placing the younger group at approximately the 93rd centile, and the older group between the 84th and 93rd centiles, of the normative comparison group.

The results for the symptom dimension termed 'anxiety' show that the younger group, on average, achieved a T-score of 64, and the older group, on average, achieved a T-score of 61, placing the younger group at approximately the 93rd centile, and the older group at approximately the 84th centile, of the normative comparison group.

The results for the symptom dimension termed 'hostility' indicate that the younger group, on average, achieved a T-score of 60, and the older group, on average, achieved a T-score of 58, placing the younger group at the 84th centile, and the older group between the 70th and 84th centiles, of the referent population group.

The results for the symptom dimension termed 'phobic anxiety' indicate that the younger group, on average, achieved a T-score of 65, as did the older group, placing both groups at the 93rd centile of the normative group.

With regard to the symptom dimension termed 'paranoid ideation', the results indicate that the younger group, on average, achieved a T-score of 59, with the older group achieving a score of 58, placing the younger group at approximately the 84th centile, and the older group between the 70th and the 84th centiles, of the referent group.

The results for the symptom dimension termed ‘psychoticism’ show that on average, both the younger and older patient groups achieved a T-score of 63, placing both samples between the 84th and 93rd centiles of the normative comparison group.

Finally, with regard to the Global Severity Index (GSI), the results indicate that the younger group, on average, achieved a T-score of 71, while the older group achieved a T-score of 73, placing the younger group at approximately the 98th centile, and the older group between the 98th and 99th centiles of the normative comparison group. Given that both groups achieved T-scores of greater than 63, the results suggest that the women, on average, in both groups could be considered as having a range of mental health difficulties at the time of assessment, although it should be emphasised that the BSI is not designed to make formal diagnoses.

7.3.3.2 Comparisons between age groups

For the sake of brevity, the results of these comparisons will be summarised here.

Table 7 (illustrated previously in Section 7.3.1) indicates that there were no statistically significant differences with regard to psychological symptoms, on average, between the younger and older breast cancer groups at the 95% level of significance. It should be noted, however, that the results did indicate that the younger group demonstrated, on average, a greater level of the symptom dimension termed ‘depression’, $\underline{M} \underline{SD} = 6.77$ (5.087) than the older patient group, $\underline{M} \underline{SD} = 5.07$ (3.921) at the 90% level of

significance, although not at the level of 95% according to the Mann-Whitney test; $p = 0.073$. Overall, the results suggested a trend for the younger group, on average, to demonstrate somewhat higher scores on all of the symptom dimensions except those termed ‘somatization’ and ‘obsession-compulsion’, which were higher for the older group, although not at a level of statistical significance. Finally, the results indicated that the older group, on average, had a slightly higher GSI score (demonstrating slightly higher overall distress), $\underline{M} \underline{SD} = 1.90 (.377)$ than the younger group, $\underline{M} \underline{SD} = 1.84 (.483)$, although not at a level of statistical significance according to the Mann-Whitney test; $p = 0.325$.

7.3.4 Mental Adjustment to Cancer Scale (MAC) (Watson, Greer and Bliss, 1989)

The Mann-Whitney U test was used to compare differences in the means and standard deviations of the younger ($n = 60$) and older ($n = 56$) breast cancer groups with regard to the five coping scales, which describe the coping styles employed by people with cancer. Thereafter, the results are presented for the comparisons of the proportion of clinical ‘cases’ versus ‘non-cases’ across the age-groups using the Pearson Chi-Square test.

The results demonstrated in Table 7 (illustrated previously in Section 7.3.1) show that the younger patient group, on average, tended to demonstrate somewhat more adaptive coping styles overall, than the older group of patients, although less adaptive coping styles were also used by the younger patients to some extent as well.

With regard to the coping scale termed 'fighting spirit', the results suggested that, on average, this coping style was more prevalent for the younger breast cancer group; $\underline{M} \underline{SD}$ = 53.55 (7.480) than for the older sample; $\underline{M} \underline{SD}$ = 48.57 (9.508). This difference was found to be statistically significant, $p = 0.003$.

The results for the coping scale termed 'helpless or hopeless' suggested that, on average, both the younger group; $\underline{M} \underline{SD}$ = 12.07 (4.116) and the older group; $\underline{M} \underline{SD}$ = 12.18 (4.593) demonstrated this coping style to a similar extent. No statistically significant differences were noted for this category, $p = 0.965$.

The results for the coping scale termed 'anxious preoccupation' suggested that, on average, this coping style was more prevalent for the younger sample; $\underline{M} \underline{SD}$ = 27.58 (4.405) than for the older group; $\underline{M} \underline{SD}$ = 24.96 (5.634). This difference was found to be statistically significant, $p = 0.011$.

The results for the coping scale termed 'fatalistic' suggested an average trend for this coping style to be demonstrated to a somewhat greater extent by the older patient group; $\underline{M} \underline{SD}$ = 23.59 (4.267) than the younger group; $\underline{M} \underline{SD}$ = 22.73 (3.773). However this difference was not statistically significant, $p = 0.194$.

Finally, with regard to the coping scale 'avoidance', the results are suggestive of a trend, on average, for the younger group to demonstrate this coping style to a somewhat greater

extent; $\underline{M SD} = 3.08 (1.013)$ than the older group of women; $\underline{M SD} = 2.84 (1.075)$.

However this difference was not statistically significant, $p = 0.195$.

Table 19

Frequencies and Percentages of Differences in Clinical ‘Cases’ versus ‘Non-Cases’ between the Younger (n = 60) and Older (n = 56) Patient Groups

		Age group				Total	
		Under 53		53+		n	%
		n	%	n	%		
Cases	Non-case	49	81.7%	35	62.5%	84	72.4%
	Clinical case	11	18.3%	21	37.5%	32	27.6%
Total		60	100.0%	56	100.0%	116	100.0%

Chi-Square Tests

	Value	df	p
Pearson Chi-Square	5.327 ^b	1	.021

The results demonstrate that there was a greater proportion of clinical ‘cases’ (defined as those scoring high on helpless/hopeless and low on fighting spirit) in the older patient group than the younger group. The proportion of clinical ‘cases’ was significantly greater for the older patient group (37.5%) than for the younger sample (18.3%). These differences were statistically significant according to the Pearson Chi-Square test, $p = 0.021$.

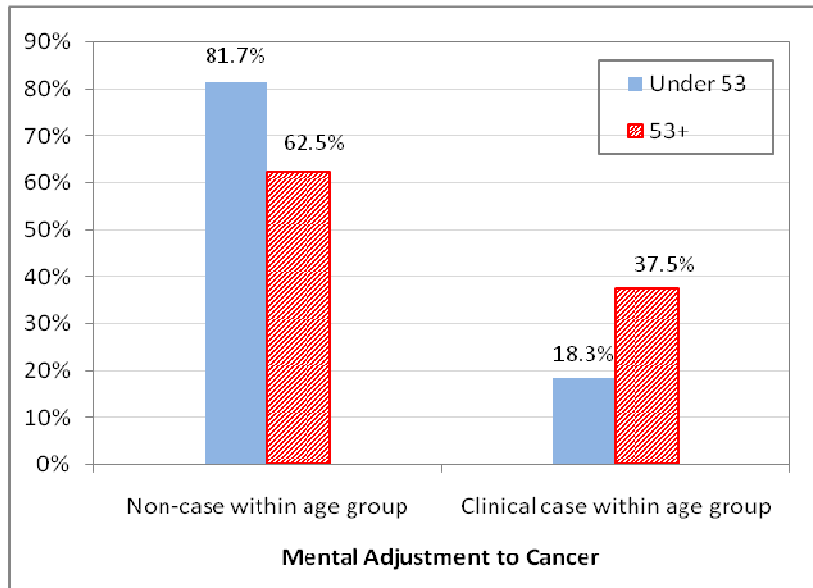


Figure 25. Differential coping style ‘caseness’ of younger (n = 60) and older (n = 56) patients.

7.3.5 Courtauld Emotional Control Scale (CECS) (Watson and Greer, 1983)

The results reflect, firstly, the means and standard deviations for each category of the CECS for the whole sample, which are compared with the norms provided by the authors of the scale based on a study of breast cancer patients (Watson, Greer, et al., 1991).

Secondly, results are presented of the Mann-Whitney *U* test comparisons between the younger (n = 60) and older (n = 56) patient groups with regards to means and standard deviations, which are again compared with the norms provided by the authors of the scale.

Table 20

Means and Standard Deviations for the Courtauld Emotional Control Scale for the Total Sample (N = 116): Anger, Anxiety, Unhappiness

	N	Minimum	Maximum	Mean	Std. Deviation	Norms	
						Mean	Std. Dev
CEC Angry	116	7	28	14.79	6.395	16.2	4.8
CEC Anxiety	116	10	25	15.57	4.866	17.1	4.8
CEC Unhappy	116	10	23	15.20	3.037	17.5	5.0
Total CEC scale	116	30	72	45.56	10.874	50.7	12.5

The results indicate that, on average, the sample as a whole demonstrated fairly similar results with regard to the expression of anger, anxiety and unhappiness generally. In other words, no significant differences were noted for the expression or suppression of these three emotions. However a trend was observed, for this sample to demonstrate somewhat greater emotional expressivity in comparison to the norms provided by the authors, of women in the early stage of breast cancer. Unfortunately, no indication is given as to what constitutes a high/low score for emotional expression/suppression, and the scale is used here primarily for comparative purposes.

On average, the sample in this study showed a slightly greater trend towards more expression/less suppression of anger; $\underline{M} \underline{SD} = 14.79 (6.395)$ than the norms provided, $\underline{M} \underline{SD} = 16.2 (4.8)$.

With regard to anxiety, the results, once again, indicate a slightly greater trend, on average, towards more expression/less suppression of anxiety; $\underline{M} \underline{SD} = 15.57 (4.866)$ than the norms provided, $\underline{M} \underline{SD} = 17.1 (4.8)$.

As can be noted, the results again demonstrate a trend towards a somewhat greater expression/less suppression of unhappiness; $\underline{M} \underline{SD} = 15.20 (3.037)$ than the norms provided, $\underline{M} \underline{SD} = 17.5 (5.0)$.

Finally, the results show that, overall, the sample in this study demonstrated a somewhat greater trend towards the greater expression/less suppression of emotion generally; $\underline{M} \underline{SD} = 45.56 (10.874)$ than the norms provided, $\underline{M} \underline{SD} = 50.7 (12.5)$

Table 7 (illustrated previously in Section 7.3.1) indicates that, on average, there were no statistically significant differences in emotional expressivity with regard to anger between the younger breast cancer group; $\underline{M} \underline{SD} = 14.20 (6.156)$ and the older group of women; $\underline{M} \underline{SD} = 15.43 (6.638)$ according to the Mann-Whitney test; $p = 0.350$. However, as above, a trend towards the greater expression/less suppression of anger by both groups in comparison to the norms provided; $\underline{M} \underline{SD} = 16.2 (4.8)$ was observed.

The results indicated that, with regard to anxiety, there were, on average, no statistically significant differences in emotional expressivity observed between the younger breast cancer group; $\underline{M} \underline{SD} = 16.00 (4.683)$ and the older group; $\underline{M} \underline{SD} = 15.11 (5.055)$ according to the Mann-Whitney test; $p = 0.189$. The trend towards greater emotional expressivity by both groups in comparison to the norms provided; $\underline{M} \underline{SD} = 17.1 (4.8)$ was again observed.

In line with the above, there were, on average, no statistically significant differences in emotional expressivity in relation to unhappiness observed between the younger patient group; \underline{M} \underline{SD} = 15.07 (2.773) and the older patients; \underline{M} \underline{SD} = 15.34 (3.315) according to the Mann-Whitney test; $p = 0.661$. The aforementioned trend towards greater emotional expressivity by both groups in comparison to the norms provided; \underline{M} \underline{SD} = 17.5 (5.0) was observed.

Finally, the results indicate that there were, on average, no statistically significant overall differences in emotional expressivity, generally, between the younger breast patient group; \underline{M} \underline{SD} = 45.27 (10.201) and the older group; \underline{M} \underline{SD} = 45.88 (11.637) according to the Mann-Whitney test; $p = 0.927$. The trend towards greater emotional expressivity overall by both groups in comparison to the norms provided; \underline{M} \underline{SD} = 50.7 (12.5) was again observed.

7.3.6 Ways of Coping Questionnaire (WCQ) (Folkman and Lazarus, 1985)

The Mann-Whitney U test was used to compare differences in the mean values and standard deviations of the younger ($n = 60$) and older ($n = 56$) breast cancer groups with regards to i) the eight coping scales, which describe the coping effort for each of the eight types of coping; and ii) the relative scores, which describe the proportion of effort (relative to all of the scales combined) represented by each type of coping.

As illustrated in Table 7 (previously illustrated in Section 7.3.1), there was a trend towards the younger patients utilising several coping strategies to a greater degree, on average, than the older patient group.

The results for the coping scale termed ‘confrontive coping’ suggested a trend, on average, towards the younger patients; $\underline{M} \underline{SD} = 6.40 (3.163)$ using this as a coping strategy to a greater extent than the older patients; $\underline{M} \underline{SD} = 5.75 (3.359)$. However this difference was not statistically significant, $p = 0.210$.

The results for the coping scale termed ‘distancing’ suggested that, on average, both the younger patient group; $\underline{M} \underline{SD} = 9.93 (3.550)$ and the older patient group; $\underline{M} \underline{SD} = 9.14 (3.887)$ used this coping strategy to a similar extent. No statistically significant differences were observed, $p = 0.364$.

Table 7 demonstrates that the coping strategy termed ‘self-controlling’ was used, on average, to a greater extent by the younger breast cancer patients; $\underline{M} \underline{SD} = 10.90 (3.861)$ than the older patient group; $\underline{M} \underline{SD} = 9.50 (3.379)$. These differences were found to be statistically significant, $p = 0.022$.

The results for the coping scale termed ‘seeking social support’ suggested that, on average, both the younger sample; $\underline{M} \underline{SD} = 9.60 (3.441)$ and the older sample; $\underline{M} \underline{SD} = 9.14 (3.048)$ used this coping strategy to a similar extent. No statistically significant differences were observed, $p = 0.737$.

With regard to the coping strategy termed ‘accepting responsibility’, the results demonstrated that, on average, this strategy was used to a greater extent by the younger breast cancer group; $\underline{M SD} = 5.18 (2.182)$ than the older group; $\underline{M SD} = 3.98 (1.977)$. These differences were found to be statistically significant, $p = 0.001$.

The coping strategy termed ‘escape-avoidance’ was used, on average, to a somewhat greater extent by the younger patients; $\underline{M SD} = 10.73 (4.719)$ than the older patient sample; $\underline{M SD} = 9.57 (3.818)$. However these differences were not statistically significant, $p = 0.212$.

The results demonstrate that, on average, the strategy ‘planful problem solving’ was used to a greater extent by the younger sample; $\underline{M SD} = 7.65 (3.817)$ than the older patients; $\underline{M SD} = 5.79 (3.642)$. These differences were found to be statistically significant, $p = 0.009$.

Finally, the coping strategy termed ‘positive reappraisal’ was used, on average, to a greater extent by the younger patients; $\underline{M SD} = 11.37 (4.491)$ than the older patients; $\underline{M SD} = 9.14 (4.308)$. These differences were found to be statistically significant, $p = 0.004$.

Table 7 also shows the results for the relative scores which, as mentioned, describe the contribution of each coping scale relative to all the scales combined. For the sake of brevity, the results are summarised here. The only statistically significant difference found between the younger and older patient samples with regard to the above, was for ‘accepting responsibility’, which suggests that, on average, this coping strategy was used

by the younger patients to a greater extent than the other coping strategies; $\underline{M SD} = .45$ (.153) in comparison to the older patient sample; $\underline{M SD} = .39$ (.159). These differences were found to be statistically significant, $p = 0.036$.

7.4 MULTIVARIATE ANALYSIS OF VARIANCE

7.4.1 Hotelling's Trace Test

Hotelling's Trace is the MANOVA analogue of the two group t -test. It is used when there is one dichotomous independent variable and multiple dependent variables. The Hotelling's Trace coefficient is, therefore, a statistic for a multivariate test of mean differences between two groups. The goal of the test in this study is to determine the significant differences between the younger and older patient groups in respect of: themes of stress, aspects of coping, stress reactions and psychological symptoms. The null hypothesis is that the centroids (means) don't differ between the two groups, that is, there is no statistical difference between the younger and older patient groups with regard to the aforementioned variables. The alternative hypothesis is that there are statistically significant differences between the two age groups with regard to these groups of interrelated dependent variables. If the overall multivariate test is significant, it can be concluded that the respective effect (age) is significant. F-tests for each variable are then examined in order to identify the specific dependent variable/s that contributed to the significant overall effect. With regards to levels of significance, p -values of 0.05 or less

are considered significant at the 95% level, and p -values that are greater than 0.05 but less than 1 are considered significant at 90%.

7.4.1.1 Dependent variables: Themes of stress

Table 21

Multivariate Analysis of Variance for Differences in Themes of Stress between the Younger (n = 60) and Older (n = 56) Breast Cancer Groups

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig.
Hotellings	.30835	6.78373	5.00	110.00	.000

Variable	F-Test	Significance
Altered Interpersonal Rel. Dependence/Independence	10.39757	.002
Achievement Disruption	2.54166	.114
Body/Sexual Image	2.54166	.000
Existential Issues	26.08317	.000
	18.98515	.000

As indicated above, the overall multivariate test (Hotelling's T) suggests that the statistical analysis for this model is significant ($p = 0.000$), that is, that as a group of dimensions, 'themes of stress' were collectively different between the two groups. Statistically significant differences between the means of the younger ($n = 60$) and older ($n = 56$) patient groups were noted for the following themes of stress: 'altered interpersonal relationships' ($p = 0.002$), 'achievement disruption' ($p = 0.000$), 'body or sexual image and identity' ($p = 0.000$) and 'existential issues' ($p = 0.000$). No statistically significant difference was noted for 'dependence-independence' ($p = 0.114$).

7.4.1.2 Dependent variables: Stress reactions

Table 22

Multivariate Analysis of Variance for Differences in Stress Reactions between the Younger (n = 60) and Older (n = 56) Breast Cancer Groups

<u>Test Name</u>	<u>Value</u>	<u>Exact F</u>	<u>Hypoth. DF</u>	<u>Error DF</u>	<u>Sig.</u>
Hotellings	.05599	1.55379	4.00	111.00	.192

Variable	F-Test	Significance
Physical Reactions	.10606	.745
Psychol. Reactions	3.30367	.072
Behavioural Reactions	3.08750	.082
Present Intensity	.26474	.608

As indicated above, the overall multivariate test suggests that the statistical analysis for this model is not significant ($p = 0.192$). In other words, no statistically significant differences between the means of the younger ($n = 60$) and older ($n = 56$) patient groups were noted with regard to stress reactions collectively.

7.4.1.3 Dependent variables: Psychological symptoms

Table 23

Multivariate Analysis of Variance for Differences in Psychological Symptoms between the Younger (n = 60) and Older (n = 56) Breast Cancer Groups

Test Name	Value	Exact F Hypoth.	DF	Error DF	Sig.
Hotellings	.21193	2.18290	10.00	103.00	.024

Variable	F-Test	Significance
Somatization	.12268	.727
Obsession/Compulsion	1.42447	.235
Interpers. Sensitivity	.52427	.471
Depression	3.11888	.080
Anxiety	1.81107	.181
Hostility	1.57742	.212
Phobic Anxiety	.00030	.986
Paranoid Ideation	.42469	.516
Psychoticism	.94053	.334
Global Severity Index	.54085	.464

As indicated above, the overall multivariate test suggests that the statistical analysis for this model is significant ($p = 0.024$), that is, that ‘psychological symptoms’ as a group of dimensions were collectively different between the two groups. A statistically significant difference between the means of the younger sample ($n = 60$) and the older group ($n = 56$) was noted at the 90% level of significance for ‘depression’ ($p = 0.080$). No other statistically significant differences between the means for the two groups were noted (refer to Table 23 for p -values).

7.4.1.4 Dependent variables: Coping styles

Table 24

Multivariate Analysis of Variance for Differences in Coping Styles between the Younger (n = 60) and Older (n = 56) Breast Cancer Group

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig.
Hotellings	.21876	4.81270	5.00	110.00	.001

Variable	F-Test	Significance
Fighting Spirit	9.89363	.002
Helpless/Hopeless	.01914	.890
Anxious Preocc.	7.83607	.006
Fatalistic	1.31390	.254
Avoidance	1.58429	.211

As indicated above, the overall multivariate test suggests that the statistical analysis for this model is significant ($p = 0.001$), that is, that ‘coping styles’ as a group of dimensions were collectively different between the two groups. Statistically significant differences between the means of the younger ($n = 60$) and older ($n = 56$) sample groups were noted for the following coping styles: ‘fighting spirit’ ($p = 0.002$) and ‘anxious preoccupation’ ($p = 0.006$). No statistically significant differences were noted for: ‘helpless or hopeless’ ($p = 0.890$), ‘fatalistic’ ($p = 0.254$) and ‘avoidance’ ($p = 0.211$).

7.4.1.5 Dependent variables: Emotional expressivity

Table 25

Multivariate Analysis of Variance for Differences in Emotional Expressivity between the Younger (n = 60) and Older (n = 56) Breast Cancer Groups

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig.
Hotellings	.03499	1.30640	3.00	112.00	.276

Variable	F-Test	Significance
Angry	1.06971	.303
Anxious	.97519	.325
Unhappy	.23190	.631

As indicated above, the overall multivariate test suggests that the statistical analysis for this model is not significant ($p = 0.276$). In other words the variables inherent in ‘emotional expressivity’ as a group of dimensions were not collectively different between the two groups.

7.4.1.6 Dependent variables: Coping strategies

Table 26

Multivariate Analysis of Variance for Differences in Coping Strategies Between the Younger (n = 60) and Older (n = 56) Breast Cancer Groups

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig.
Hotellings	.12245	1.63783	8.00	107.00	.123

Variable	F-Test	Significance
Confrontive Coping	1.15214	.285
Distancing	1.31038	.255
Self-Controlling	4.29352	.041
Seeking Support	.57065	.452
Accepting Respons.	9.60635	.002
Escape-Avoidance	2.10729	.149
Problem Solving	7.22214	.008
Positive Reappraisal	7.38642	.008

As indicated above, the overall multivariate test suggests that the statistical analysis for this model is not significant ($p = 0.123$). In other words, ‘coping strategies’ as a group of dimensions were not collectively different between the two groups.

7.5 CORRELATIONS

7.5.1 Spearman’s Rank Correlation Coefficient (Spearman’s Rho)

Spearman’s rho correlation was used to calculate the strength of association between variables for both the younger breast cancer group ($n = 60$) and the older sample ($n = 56$).

Correlations were computed among the main components of the study, namely:

- Themes of stress and stress reactions
- Themes of stress and psychological symptoms
- Themes of stress and coping styles/strategies
- Coping styles/strategies and stress reactions
- Coping styles/strategies and psychological symptoms

For the sake of brevity and clarity, only significant results indicative of moderate or strong relationships between variables are discussed in the text below.

7.5.1.1 Themes of stress and stress reactions

Table 27 indicates that Spearman's rho correlation values were found to be significant at the 0.01 level of significance for certain themes of stress and various stress reactions for the younger breast cancer group, but not for the older group. Only moderate to strong associations are mentioned below.

Table 27

Spearman's Rank Correlation Coefficient Values for the Younger (n = 60) and Older (n = 56) Patient Groups for Themes of Stress and Stress Reactions

		Spearman's rho					
		Age group					
		Under 53			53+		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N
Altered interpersonal relationships	Physical reactions	.463**	.000	60	.185	.173	56
	Psychological reactions	.604**	.000	60	.276*	.040	56
	Behavioural reactions	.485**	.000	60	.124	.364	56
	Overall level of stress	.543**	.000	60	.200	.140	56
	Present Intensity category	.369**	.004	60	.205	.130	56
Dependence-independence	Physical reactions	.236	.070	60	.175	.197	56
	Psychological reactions	.317*	.014	60	.304*	.023	56
	Behavioural reactions	.347**	.007	60	.213	.115	56
	Overall level of stress	.322*	.012	60	.257	.055	56
	Present Intensity category	.242	.062	60	.381**	.004	56
Achievement disruption	Physical reactions	.169	.198	60	.081	.554	56
	Psychological reactions	.288*	.025	60	.275*	.040	56
	Behavioural reactions	.245	.059	60	.279*	.037	56
	Overall level of stress	.245	.060	60	.278*	.038	56
	Present Intensity category	.380**	.003	60	.397**	.002	56
Body or sexual image and integrity	Physical reactions	.557**	.000	60	.154	.257	56
	Psychological reactions	.579**	.000	60	.304*	.023	56
	Behavioural reactions	.575**	.000	60	.143	.293	56
	Overall level of stress	.598**	.000	60	.231	.086	56
	Present Intensity category	.344**	.007	60	.061	.654	56
Existential issues	Physical reactions	.392**	.002	60	.315*	.018	56
	Psychological reactions	.655**	.000	60	.388**	.003	56
	Behavioural reactions	.619**	.000	60	.298*	.026	56
	Overall level of stress	.612**	.000	60	.373**	.005	56
	Present Intensity category	.370**	.004	60	.233	.084	56
DSQ Total Score	Physical reactions	.500**	.000	60	.262	.051	56
	Psychological reactions	.633**	.000	60	.428**	.001	56
	Behavioural reactions	.592**	.000	60	.276*	.040	56
	Overall level of stress	.610**	.000	60	.365**	.006	56
	Present Intensity category	.429**	.001	60	.333*	.012	56

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

With regard to the theme of stress termed 'altered interpersonal relationships', significant correlation values were computed for the younger patient group for: psychological

reactions, $r_s = 0.604$; $p = 0.000$ and overall level of stress, $r_s = 0.543$; $p = 0.000$. These relationships were of moderate strength. There were no moderate to strong relationships noted for the older group of women for this category.

The results for the theme of stress termed 'dependence-independence' suggested that there were no statistically significant moderate to strong relationships with stress reactions noted, for either the younger or older breast cancer groups.

The results for the theme of stress termed 'achievement disruption' again suggested that there were no statistically significant moderate to strong relationships with stress reactions noted, for either the younger or older samples.

With regard to the theme of stress termed 'body or sexual image and integrity', significant correlation values were observed for the younger patient group for: physical reactions, $r_s = 0.557$; $p = 0.000$, psychological reactions, $r_s = 0.579$; $p = 0.000$, behavioural reactions, $r_s = 0.575$; $p = 0.000$ and overall level of stress, $r_s = 0.598$; $p = 0.000$. There were no moderate to strong relationships noted for the older sample for this category.

With regard to the theme of stress termed 'existential issues', significant correlation values were noted for the younger patient group for: psychological reactions, $r_s = 0.655$; $p = 0.000$; behavioural reactions, $r_s = 0.619$; $p = 0.000$, and overall level of stress, $r_s = 0.612$; $p = 0.000$. There were no moderate to strong relationships noted for the older sample for this category.

Finally, the results for the overall extent of disruption to life-tasks termed 'DSQ Total', revealed that significant correlation values were noted for the younger patient group for: physical reactions, $r_s = 0.500$; $p = 0.000$, psychological reactions, $r_s = 0.633$; $p = 0.000$, behavioural reactions, $r_s = 0.592$; $p = 0.000$, and overall level of stress, $r_s = 0.610$; $p = 0.000$. There were no moderate to strong relationships noted overall for the older sample group.

7.5.1.2 Themes of stress and psychological symptoms

Table 28 below indicates that Spearman's rho correlation values were found to be significant at the 0.01 level of significance for certain themes of stress and various psychological symptoms for the younger sample, but not for the older group. Only moderate to strong associations are mentioned below.

With regard to the theme of stress termed 'altered interpersonal relationships', significant correlation values were observed for the younger patient group for: interpersonal sensitivity, $r_s = 0.546$; $p = 0.000$, depression, $r_s = 0.630$; $p = 0.000$, and psychoticism, $r_s = 0.629$; $p = 0.000$. There were no moderate to strong relationships noted for the older sample for this category.

Table 28

Spearman's Rank Correlation Coefficient Values for the Younger (n = 60) and Older (n = 56) Patient Groups for Themes of Stress and Psychological Symptoms

		Spearman's rho					
		Age group					
		Under 53			53+		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N
Altered interpersonal relationships	Somatization	.219	.093	60	-.056	.683	56
	Obsession-Compulsion	.146	.267	60	.092	.499	56
	Interpersonal Sensitivity	.546**	.000	60	.225	.096	56
	Depression	.630**	.000	60	.181	.183	56
	Anxiety	.482**	.000	60	.214	.114	56
	Hostility	.480**	.000	60	-.064	.640	56
	Phobic Anxiety	.376**	.003	60	.075	.583	56
	Paranoid Ideation	.375**	.003	60	.282*	.035	56
	Psychoticism	.629**	.000	60	.155	.254	56
	Global Severity index	.408**	.001	60	-.045	.746	54
Dependence-independence	Somatization	.167	.202	60	.116	.395	56
	Obsession-Compulsion	.019	.886	60	.307*	.022	56
	Interpersonal Sensitivity	.368**	.004	60	.295*	.027	56
	Depression	.464**	.000	60	.374**	.004	56
	Anxiety	.298*	.021	60	.239	.076	56
	Hostility	.310*	.016	60	.149	.273	56
	Phobic Anxiety	.318*	.013	60	.162	.234	56
	Paranoid Ideation	.149	.257	60	.259	.054	56
	Psychoticism	.367**	.004	60	.400**	.002	56
	Global Severity index	.423**	.001	60	-.005	.972	54
Achievement disruption	Somatization	.203	.120	60	.139	.307	56
	Obsession-Compulsion	.088	.501	60	.248	.066	56
	Interpersonal Sensitivity	.338**	.008	60	.206	.128	56
	Depression	.375**	.003	60	.388**	.003	56
	Anxiety	.270*	.037	60	.322*	.016	56
	Hostility	.355**	.005	60	.054	.691	56
	Phobic Anxiety	.224	.085	60	.255	.058	56
	Paranoid Ideation	.333**	.009	60	.036	.793	56
	Psychoticism	.354**	.006	60	.232	.086	56
	Global Severity index	.311*	.016	60	-.020	.886	54

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

continued.../

		Spearman's rho					
		Age group					
		Under 53			53+		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N
Body or sexual image and integrity	Somatization	.374**	.003	60	-.024	.858	56
	Obsession-Compulsion	.090	.492	60	.145	.286	56
	Interpersonal Sensitivity	.614**	.000	60	.166	.222	56
	Depression	.652**	.000	60	.156	.252	56
	Anxiety	.407**	.001	60	.180	.183	56
	Hostility	.456**	.000	60	-.051	.710	56
	Phobic Anxiety	.536**	.000	60	.207	.127	56
	Paranoid Ideation	.219	.092	60	.066	.629	56
	Psychoticism	.522**	.000	60	.052	.704	56
	Global Severity index	.499**	.000	60	-.101	.469	54
Existential issues	Somatization	.277*	.032	60	.171	.208	56
	Obsession-Compulsion	.202	.122	60	.417**	.001	56
	Interpersonal Sensitivity	.542**	.000	60	.258	.055	56
	Depression	.661**	.000	60	.411**	.002	56
	Anxiety	.518**	.000	60	.478**	.000	56
	Hostility	.440**	.000	60	.077	.571	56
	Phobic Anxiety	.457**	.000	60	.359**	.007	56
	Paranoid Ideation	.152	.246	60	.140	.304	56
	Psychoticism	.560**	.000	60	.271*	.043	56
	Global Severity index	.531**	.000	60	.044	.752	54
DSQ Total Score	Somatization	.336**	.009	60	.104	.444	56
	Obsession-Compulsion	.144	.272	60	.357**	.007	56
	Interpersonal Sensitivity	.612**	.000	60	.310*	.020	56
	Depression	.716**	.000	60	.414**	.002	56
	Anxiety	.495**	.000	60	.374**	.005	56
	Hostility	.514**	.000	60	.069	.613	56
	Phobic Anxiety	.501**	.000	60	.291*	.030	56
	Paranoid Ideation	.350**	.006	60	.186	.169	56
	Psychoticism	.624**	.000	60	.331*	.013	56
	Global Severity index	.562**	.000	60	-.015	.914	54

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The results for the theme of stress termed 'dependence-independence' suggested that there were no statistically significant moderate to strong relationships with psychological symptoms noted, for either the younger breast cancer group or the older group.

The results for the theme of stress termed ‘achievement disruption’ similarly suggested an absence of statistically significant moderate to strong relationships with psychological symptoms for both sample groups.

With regard to the theme of stress termed ‘body or sexual image and integrity’, significant correlation values were observed for the younger patient group for: interpersonal sensitivity, $r_s = 0.614$; $p = 0.000$, depression, $r_s = 0.652$; $p = 0.000$, phobic anxiety, $r_s = 0.536$; $p = 0.000$, and psychoticism, $r_s = 0.522$; $p = 0.000$. No moderate to strong relationships were noted for the older sample in this category.

The results for the theme of stress termed ‘existential issues’ suggested significant correlation values for the younger group for: interpersonal sensitivity, $r_s = 0.542$; $p = 0.000$, depression, $r_s = 0.661$; $p = 0.000$, anxiety, $r_s = 0.518$; $p = 0.000$, psychoticism, $r_s = 0.560$; $p = 0.000$, and for the overall GSI, $r_s = 0.531$; $p = 0.000$. No moderate to strong relationships were noted for the older group in this category.

Finally, the results related to the overall extent of disruption to life-tasks termed ‘DSQ Total’, revealed that significant correlation values were noted for the younger group for: interpersonal sensitivity, $r_s = 0.612$; $p = 0.000$, depression (for which the strongest association was noted), $r_s = 0.716$; $p = 0.000$, hostility, $r_s = 0.514$; $p = 0.000$, phobic anxiety, $r_s = 0.501$; $p = 0.000$, psychoticism, $r_s = 0.624$; $p = 0.000$ and the overall GSI, $r_s = 0.562$; $p = 0.000$.

7.5.1.3 Themes of stress and coping

7.5.1.3.1 Themes of stress and coping styles (MAC)

Table 29

Spearman's Rank Correlation Coefficient Values for the Younger (n = 60) and Older (n = 56) Patient Groups for Themes of Stress and Coping Styles

		Spearman's rho					
		Age group					
		Under 53			53+		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N
Altered interpersonal relationships	Fighting spirit	-.045	.734	60	.193	.155	56
	Helpless or Hopeless	.417**	.001	60	.081	.552	56
	Anxious preoccupation	.557**	.000	60	.390**	.003	56
	Fatalistic	.336**	.009	60	.033	.808	56
	Avoidance	.253	.052	60	.244	.069	56
Dependence-independence	Fighting spirit	.108	.413	60	.150	.270	56
	Helpless or Hopeless	.304*	.018	60	.152	.263	56
	Anxious preoccupation	.441**	.000	60	.525**	.000	56
	Fatalistic	.233	.073	60	.048	.723	56
	Avoidance	.214	.100	60	.164	.227	56
Achievement disruption	Fighting spirit	.126	.336	60	-.067	.621	56
	Helpless or Hopeless	.177	.177	60	.344**	.009	56
	Anxious preoccupation	.387**	.002	60	.412**	.002	56
	Fatalistic	.316*	.014	60	.309*	.020	56
	Avoidance	.119	.366	60	.165	.225	56
Body or sexual image and integrity	Fighting spirit	-.181	.167	60	.272*	.042	56
	Helpless or Hopeless	.403**	.001	60	.109	.422	56
	Anxious preoccupation	.608**	.000	60	.609**	.000	56
	Fatalistic	.346**	.007	60	.075	.581	56
	Avoidance	.235	.071	60	.188	.165	56
Existential issues	Fighting spirit	-.181	.167	60	-.052	.703	56
	Helpless or Hopeless	.510**	.000	60	.317*	.017	56
	Anxious preoccupation	.647**	.000	60	.562**	.000	56
	Fatalistic	.300*	.020	60	.079	.560	56
	Avoidance	.272*	.035	60	.224	.098	56
DSQ Total Score	Fighting spirit	-.054	.681	60	.182	.178	56
	Helpless or Hopeless	.442**	.000	60	.250	.063	56
	Anxious preoccupation	.644**	.000	60	.726**	.000	56
	Fatalistic	.392**	.002	60	.114	.402	56
	Avoidance	.285*	.027	60	.239	.076	56

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 29 indicates that Spearman's rho correlation values were found to be significant at the 0.01 level of significance for certain themes of stress and different coping styles – particularly anxious preoccupation. Various associations were noted for both the younger breast cancer group and the older sample. Only moderate to strong associations are mentioned below.

With regard to the theme of stress termed 'altered interpersonal relationships', a significant correlation value was observed for the younger group for anxious preoccupation, $r_s = 0.557$; $p = 0.000$. No moderate to strong relationships were noted for the older sample in this category.

The results for the theme of stress termed 'dependence-independence' suggested a significant correlation value for the older group for anxious preoccupation, $r_s = 0.525$; $p = 0.000$. No moderate to strong relationships were noted for the younger sample in this category.

The results for the theme of stress termed 'achievement disruption' suggested that there were no statistically significant moderate to strong relationships with coping styles for either group.

With regard to the theme of stress termed 'body or sexual image and integrity', significant correlation values were observed in relation to anxious preoccupation for both the younger group, $r_s = 0.608$; $p = 0.000$ and the older sample, $r_s = 0.609$; $p = 0.000$.

With reference to the theme of stress termed ‘existential issue’, significant correlation values were, once again, observed in relation to anxious preoccupation for both the younger sample, $r_s = 0.647$; $p = 0.000$ and the older one, $r_s = 0.562$; $p = 0.000$. An additional association was noted for the younger group in this category for the helpless or hopeless coping style, $r_s = 0.510$; $p = 0.000$.

Finally, the results of overall disruption to life-tasks (DSQ Total) revealed significant correlation values in relation to anxious preoccupation for both the younger sample, $r_s = 0.644$; $p = 0.000$ and the older group, $r_s = 0.726$, $p = 0.000$ (particularly strong).

7.5.1.3.2 Themes of stress and emotional expressivity (CEC)

As illustrated below in Table 30, no statistically significant moderate to strong relationships between themes of stress and emotional expressivity were noted for either of the sample groups.

7.5.1.3.3 Themes of stress and coping strategies (WoC)

As illustrated below in Table 31, no statistically significant moderate to strong relationships between themes of stress and coping strategies were noted for either of the sample groups.

Table 30

Spearman's Rank Correlation Coefficient Values for the Younger (n = 60) and Older (n = 56) Patient Groups for Themes of Stress and Emotional Expressivity

		Spearman's rho					
		Age group					
		Under 53			53+		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N
Altered interpersonal relationships	CEC Angry	.005	.967	60	-.198	.143	56
	CEC Anxious	-.217	.096	60	-.144	.289	56
	CEC Unhappy	-.224	.086	60	-.122	.371	56
Dependence-independence	CEC Angry	.013	.920	60	-.023	.867	56
	CEC Anxious	-.065	.624	60	.010	.941	56
	CEC Unhappy	-.079	.548	60	-.073	.591	56
Achievement disruption	CEC Angry	-.231	.076	60	.088	.520	56
	CEC Anxious	.003	.980	60	.185	.172	56
	CEC Unhappy	.001	.992	60	.086	.528	56
Body or sexual image and integrity	CEC Angry	-.065	.620	60	.117	.392	56
	CEC Anxious	.046	.726	60	.054	.691	56
	CEC Unhappy	-.157	.231	60	.130	.340	56
Existential issues	CEC Angry	-.051	.697	60	-.031	.821	56
	CEC Anxious	.091	.490	60	.113	.405	56
	CEC Unhappy	-.256*	.049	60	.002	.991	56
DSQ Total Score	CEC Angry	-.111	.400	60	-.012	.933	56
	CEC Anxious	-.057	.668	60	.082	.549	56
	CEC Unhappy	-.195	.135	60	.016	.908	56

*. Correlation is significant at the 0.05 level (2-tailed).

Table 31

Spearman's Rank Correlation Coefficient Values for the Younger (n = 60) and Older (n = 56) Patient Groups for Themes of Stress and Coping Strategies

		Spearman's rho					
		Age group					
		Under 53			53+		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N
Altered interpersonal relationships	Confrontive Coping	.003	.982	60	.141	.301	56
	Distancing	-.040	.762	60	-.034	.805	56
	Self-controlling	.120	.360	60	.070	.609	56
	Seeking Social Support	.178	.173	60	-.067	.625	56
	Accepting Responsibility	.348**	.006	60	.168	.216	56
	Escape-Avoidance	.401**	.001	60	.159	.242	56
	Planful Problem Solving	-.042	.750	60	.077	.575	56
	Positive Reappraisal	.158	.228	60	.109	.422	56
Dependence-independence	Confrontive Coping	.172	.188	60	.070	.607	56
	Distancing	.167	.203	60	.063	.647	56
	Self-controlling	.266*	.040	60	.223	.099	56
	Seeking Social Support	.122	.353	60	.154	.256	56
	Accepting Responsibility	.232	.075	60	.164	.227	56
	Escape-Avoidance	.373**	.003	60	.260	.053	56
	Planful Problem Solving	-.049	.710	60	.318*	.017	56
	Positive Reappraisal	.218	.094	60	.276*	.039	56
Achievement disruption	Confrontive Coping	.068	.607	60	-.021	.877	56
	Distancing	.101	.442	60	-.049	.721	56
	Self-controlling	.171	.191	60	.114	.404	56
	Seeking Social Support	.202	.121	60	-.086	.531	56
	Accepting Responsibility	.457**	.000	60	.103	.451	56
	Escape-Avoidance	.197	.131	60	.228	.092	56
	Planful Problem Solving	.083	.530	60	-.118	.385	56
	Positive Reappraisal	.166	.204	60	-.120	.379	56
Body or sexual image and integrity	Confrontive Coping	-.091	.489	60	-.072	.599	56
	Distancing	-.140	.287	60	.281*	.036	56
	Self-controlling	.096	.464	60	.137	.313	56
	Seeking Social Support	.113	.388	60	.007	.961	56
	Accepting Responsibility	.341**	.008	60	.011	.935	56
	Escape-Avoidance	.381**	.003	60	.284*	.034	56
	Planful Problem Solving	-.134	.307	60	-.043	.751	56
	Positive Reappraisal	-.085	.516	60	.158	.245	56
Existential issues	Confrontive Coping	-.239	.066	60	-.027	.843	56
	Distancing	-.110	.402	60	.031	.823	56
	Self-controlling	.147	.263	60	.050	.715	56
	Seeking Social Support	.008	.951	60	.221	.102	56
	Accepting Responsibility	.366**	.004	60	.024	.862	56
	Escape-Avoidance	.328*	.011	60	.182	.179	56
	Planful Problem Solving	-.188	.149	60	-.169	.212	56
	Positive Reappraisal	-.023	.859	60	-.054	.695	56
DSQ Total Score	Confrontive Coping	.019	.883	60	.005	.969	56
	Distancing	.009	.948	60	.131	.334	56
	Self-controlling	.214	.101	60	.154	.257	56
	Seeking Social Support	.217	.096	60	.081	.555	56
	Accepting Responsibility	.474**	.000	60	.125	.359	56
	Escape-Avoidance	.443**	.000	60	.334*	.012	56
	Planful Problem Solving	-.081	.537	60	-.012	.931	56
	Positive Reappraisal	.125	.343	60	.104	.444	56

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

7.5.1.4 Coping and stress reactions

Table 32

Spearman's Rank Correlation Coefficient Values for the Younger (n = 60) and Older (n = 56) Patient Groups for Coping and Stress Reactions

	Age group	Spearman's rho														
		Behavioural reactions			Physical reactions			Psychological reactions			Overall level of stress			Present Intensity		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N
Fighting spirit	Under 53	-.266*	.040	60	-.254*	.050	60	-.271*	.036	60	-.285*	.027	60	-.374**	.003	60
	53+	-.156	.251	56	-.262	.051	56	-.117	.389	56	-.206	.127	56	-.225	.096	56
Helpless or Hopeless	Under 53	.573**	.000	60	.372**	.003	60	.560**	.000	60	.557**	.000	60	.519**	.000	60
	53+	.443**	.001	56	.437**	.001	56	.439**	.001	56	.504**	.000	56	.444**	.001	56
Anxious preoccupation	Under 53	.435**	.001	60	.262*	.044	60	.468**	.000	60	.427**	.001	60	.434**	.001	60
	53+	.275*	.040	56	.205	.130	56	.440**	.001	56	.359**	.007	56	.399**	.002	56
Fatalistic	Under 53	.172	.188	60	.101	.444	60	.246	.058	60	.207	.112	60	.222	.089	60
	53+	.243	.071	56	.142	.296	56	.199	.142	56	.222	.101	56	.129	.344	56
Avoidance	Under 53	.234	.072	60	.114	.387	60	.225	.084	60	.221	.090	60	.182	.164	60
	53+	.311*	.020	56	.067	.622	56	.138	.311	56	.220	.103	56	.161	.236	56
Confrontive Coping	Under 53	-.207	.113	60	-.021	.874	60	-.202	.122	60	-.181	.166	60	-.225	.084	60
	53+	.017	.903	56	-.103	.450	56	-.101	.459	56	-.053	.698	56	-.023	.865	56
Distancing	Under 53	-.035	.792	60	-.006	.964	60	-.083	.530	60	-.039	.766	60	-.167	.203	60
	53+	-.019	.891	56	-.120	.378	56	-.171	.206	56	-.123	.365	56	-.357**	.007	56
Self-controlling	Under 53	.213	.102	60	.094	.474	60	.193	.139	60	.200	.125	60	.192	.141	60
	53+	.277*	.039	56	.044	.750	56	.169	.213	56	.201	.138	56	-.045	.739	56
Seeking Social Support	Under 53	-.011	.935	60	.020	.879	60	.041	.754	60	.014	.915	60	.049	.713	60
	53+	-.028	.836	56	-.006	.967	56	.005	.971	56	-.025	.857	56	-.103	.449	56
Accepting Responsibility	Under 53	.378**	.003	60	.225	.084	60	.365**	.004	60	.352**	.006	60	.406**	.001	60
	53+	.055	.687	56	-.179	.187	56	-.051	.708	56	-.042	.757	56	-.007	.962	56
Escape-Avoidance	Under 53	.332**	.010	60	.389**	.002	60	.335**	.009	60	.358**	.005	60	.281*	.030	60
	53+	.218	.106	56	-.032	.814	56	.011	.939	56	.095	.486	56	.133	.328	56
Planful Problem Solving	Under 53	-.151	.250	60	.005	.970	60	-.122	.353	60	-.114	.387	60	-.155	.236	60
	53+	-.020	.886	56	-.036	.790	56	-.045	.741	56	-.047	.729	56	-.087	.522	56
Positive Reappraisal	Under 53	-.030	.820	60	.065	.620	60	-.004	.974	60	-.004	.978	60	.012	.930	60
	53+	-.044	.746	56	-.092	.498	56	.039	.776	56	-.059	.668	56	-.140	.305	56
CEC Angry	Under 53	-.018	.892	60	-.109	.406	60	.087	.507	60	.030	.821	60	-.037	.780	60
	53+	-.065	.635	56	-.003	.980	56	.046	.739	56	-.025	.854	56	-.049	.717	56
CEC Anxious	Under 53	.004	.976	60	.030	.823	60	.013	.922	60	.029	.827	60	-.209	.110	60
	53+	.134	.324	56	.120	.378	56	.112	.413	56	.144	.290	56	.096	.482	56
CEC Unhappy	Under 53	-.261*	.044	60	-.063	.632	60	-.202	.121	60	-.200	.126	60	-.067	.609	60
	53+	-.097	.479	56	.021	.878	56	.038	.782	56	-.018	.894	56	-.186	.170	56
Total CEC scale	Under 53	-.111	.399	60	-.116	.379	60	-.035	.788	60	-.064	.629	60	-.112	.393	60
	53+	-.033	.808	56	.044	.749	56	.079	.560	56	.022	.872	56	-.016	.907	56

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 32 indicates that Spearman's rho correlation values were found to be significant at the 0.01 level of significance for a specific type of coping style and various stress reactions for both sample groups. Only moderate to strong associations are mentioned here.

7.5.1.4.1 Coping styles (MAC) and stress reactions

With regard to the coping style termed 'helpless or hopeless', significant correlation values were observed for the younger group for: behavioural reactions, $r_s = 0.573$; $p = 0.000$, psychological reactions, $r_s = 0.560$; $p = 0.000$, overall level of stress, $r_s = 0.557$; $p = 0.000$, and present intensity, $r_s = 0.519$; $p = 0.000$. A significant correlation value was noted for the older group for overall level of stress, $r_s = 0.504$; $p = 0.000$. No other significant moderate to strong associations were noted for this category.

7.5.1.4.2 Emotional expressivity (CEC) and stress reactions

No statistically significant moderate to strong relationships between emotional expressivity and stress reactions were noted for either of the sample groups.

7.5.1.4.3 Coping strategies (WoC) and stress reactions

No statistically significant moderate to strong associations between coping strategies and stress reactions were noted for either of the sample groups.

7.5.1.5 Coping and psychological symptoms

Table 33

Spearman's Rank Correlation Coefficient Values for the Younger (n = 60) and Older (n = 56) Patient Groups for Coping and Psychological Symptoms

	Age group	Spearman's rho														
		Somatization			Obsession-Compulsion			Interpersonal Sensitivity			Depression			Anxiety		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N
Fighting spirit	Under 53	-.325*	.011	60	-.434**	.001	60	-.177	.175	60	-.323*	.012	60	-.242	.062	60
	53+	-.264*	.049	56	-.306*	.022	56	-.184	.175	56	-.375**	.004	56	-.191	.158	56
Helpless or Hopeless	Under 53	.482**	.000	60	.617**	.000	60	.517**	.000	60	.706**	.000	60	.624**	.000	60
	53+	.371**	.005	56	.562**	.000	56	.255	.058	56	.597**	.000	56	.347**	.009	56
Anxious preoccupation	Under 53	.298*	.021	60	.133	.310	60	.461**	.000	60	.479**	.000	60	.448**	.000	60
	53+	.044	.748	56	.274*	.041	56	.122	.371	56	.298*	.026	56	.365**	.006	56
Fatalistic	Under 53	-.058	.659	60	.040	.761	60	.162	.217	60	.254	.051	60	.109	.407	60
	53+	.271*	.043	56	.290*	.030	56	.123	.366	56	.292*	.029	56	.258	.055	56
Avoidance	Under 53	.045	.735	60	.209	.109	60	.214	.101	60	.305*	.018	60	.214	.101	60
	53+	.076	.577	56	.259	.054	56	.209	.122	56	.198	.143	56	.215	.112	56
Confrontive Coping	Under 53	-.139	.291	60	-.227	.081	60	-.119	.363	60	-.103	.434	60	-.095	.471	60
	53+	.173	.203	56	-.039	.773	56	.239	.076	56	.018	.894	56	.096	.481	56
Distancing	Under 53	-.112	.395	60	-.058	.662	60	-.122	.354	60	-.075	.567	60	-.039	.767	60
	53+	-.047	.731	56	-.014	.917	56	.127	.352	56	-.094	.489	56	-.057	.676	56
Self-controlling	Under 53	.039	.769	60	.090	.495	60	.135	.304	60	.121	.357	60	.187	.153	60
	53+	.070	.610	56	.121	.376	56	.112	.409	56	.090	.511	56	.097	.477	56
Seeking Social Support	Under 53	-.212	.104	60	-.153	.245	60	.033	.804	60	-.051	.700	60	-.041	.753	60
	53+	.247	.066	56	.059	.665	56	.046	.736	56	.051	.707	56	.202	.135	56
Accepting Responsibility	Under 53	.349**	.006	60	.303*	.019	60	.456**	.000	60	.458**	.000	60	.390**	.002	60
	53+	.097	.478	56	-.036	.792	56	.076	.580	56	.059	.668	56	.083	.544	56
Escape-Avoidance	Under 53	.175	.182	60	.186	.155	60	.361**	.005	60	.488**	.000	60	.395**	.002	60
	53+	.030	.824	56	.213	.115	56	.318*	.017	56	.255	.057	56	.228	.091	56
Planful Problem Solving	Under 53	-.126	.337	60	-.143	.276	60	.034	.796	60	-.187	.154	60	-.145	.270	60
	53+	.063	.642	56	-.211	.119	56	.076	.579	56	-.158	.245	56	-.163	.230	56
Positive Reappraisal	Under 53	.012	.926	60	-.131	.319	60	.088	.503	60	-.029	.825	60	.029	.823	60
	53+	-.150	.271	56	-.258	.055	56	.021	.880	56	-.231	.087	56	-.185	.172	56
CEC Angry	Under 53	-.042	.751	60	-.012	.928	60	-.034	.799	60	-.020	.881	60	.102	.439	60
	53+	.063	.645	56	-.047	.728	56	-.243	.071	56	-.041	.764	56	-.061	.657	56
CEC Anxious	Under 53	.013	.920	60	-.078	.555	60	-.025	.849	60	-.098	.457	60	-.144	.272	60
	53+	.201	.137	56	.071	.604	56	.048	.728	56	.136	.316	56	.038	.779	56
CEC Unhappy	Under 53	-.239	.065	60	-.196	.133	60	-.097	.463	60	-.143	.277	60	-.151	.249	60
	53+	.140	.305	56	-.184	.176	56	.075	.581	56	.036	.794	56	.039	.773	56
Total CEC scale	Under 53	-.078	.552	60	-.091	.488	60	-.078	.551	60	-.125	.341	60	-.065	.624	60
	53+	.157	.249	56	-.105	.441	56	-.077	.575	56	.034	.803	56	.003	.984	56

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

continued.../

		Spearman's rho														
		Hostility			Phobic Anxiety			Paranoid Ideation			Psychoticism			Global Severity index		
		Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N	Correlation Coefficient	p	N
Age group																
Fighting spirit	Under 53	-.279*	.031	60	-.261*	.044	60	-.019	.886	60	-.092	.486	60	-.245	.059	60
	53+	-.144	.289	56	-.173	.202	56	-.213	.115	56	-.240	.074	56	-.228	.097	54
Helpless or Hopeless	Under 53	.526**	.000	60	.539**	.000	60	.224	.086	60	.482**	.000	60	.502**	.000	60
	53+	.187	.167	56	.434**	.001	56	.248	.065	56	.433**	.001	56	.330*	.015	54
Anxious preoccupation	Under 53	.368**	.004	60	.363**	.004	60	.105	.423	60	.404**	.001	60	.322*	.012	60
	53+	-.029	.832	56	.265*	.048	56	.066	.629	56	.204	.132	56	.112	.421	54
Fatalistic	Under 53	.155	.238	60	.083	.531	60	.204	.118	60	.225	.084	60	.233	.073	60
	53+	-.007	.959	56	.361**	.006	56	.147	.280	56	.134	.325	56	.185	.180	54
Avoidance	Under 53	.161	.220	60	.180	.170	60	.140	.287	60	.277*	.032	60	.139	.290	60
	53+	.045	.741	56	.298*	.026	56	.249	.064	56	.039	.775	56	.294*	.031	54
Confrontive Coping	Under 53	-.033	.800	60	-.234	.072	60	.197	.132	60	-.089	.501	60	-.035	.789	60
	53+	.269*	.045	56	-.029	.832	56	.221	.102	56	.044	.746	56	.193	.163	54
Distancing	Under 53	.070	.598	60	-.068	.605	60	.140	.287	60	.123	.351	60	.033	.804	60
	53+	.115	.397	56	.057	.676	56	-.009	.947	56	-.134	.324	56	-.092	.508	54
Self-controlling	Under 53	.170	.194	60	.102	.436	60	.097	.462	60	.222	.089	60	.249	.055	60
	53+	-.049	.720	56	.114	.403	56	.075	.584	56	.053	.699	56	.085	.541	54
Seeking Social Support	Under 53	-.013	.921	60	-.097	.462	60	.141	.281	60	-.050	.704	60	-.024	.853	60
	53+	.114	.404	56	.154	.258	56	-.067	.622	56	.139	.307	56	-.029	.837	54
Accepting Responsibility	Under 53	.340**	.008	60	.236	.069	60	.433**	.001	60	.470**	.000	60	.387**	.002	60
	53+	-.073	.594	56	-.043	.755	56	.023	.868	56	.096	.484	56	-.089	.520	54
Escape-Avoidance	Under 53	.403**	.001	60	.425**	.001	60	.348**	.006	60	.362**	.004	60	.533**	.000	60
	53+	.247	.066	56	.108	.426	56	.288*	.031	56	.293*	.028	56	.106	.445	54
Planful Problem Solving	Under 53	-.112	.395	60	-.297*	.021	60	.076	.561	60	-.024	.857	60	-.130	.321	60
	53+	-.069	.615	56	-.264*	.050	56	.123	.368	56	.070	.607	56	-.064	.647	54
Positive Reappraisal	Under 53	-.008	.953	60	-.167	.202	60	.166	.204	60	.129	.327	60	.043	.746	60
	53+	-.124	.363	56	-.305*	.022	56	-.122	.369	56	-.066	.630	56	-.151	.276	54
CEC Angry	Under 53	-.106	.419	60	.065	.624	60	.005	.969	60	-.031	.815	60	-.020	.877	60
	53+	-.209	.121	56	-.167	.219	56	-.183	.178	56	-.061	.654	56	-.141	.310	54
CEC Anxious	Under 53	-.089	.500	60	.047	.719	60	-.098	.455	60	-.037	.780	60	-.083	.527	60
	53+	.084	.536	56	.005	.969	56	-.059	.664	56	.069	.613	56	.054	.698	54
CEC Unhappy	Under 53	-.049	.709	60	-.066	.615	60	.012	.925	60	-.310*	.016	60	-.068	.608	60
	53+	.025	.857	56	-.066	.627	56	.090	.508	56	-.196	.147	56	-.007	.957	54
Total CEC scale	Under 53	-.158	.229	60	.028	.833	60	-.032	.809	60	-.175	.180	60	-.097	.460	60
	53+	-.092	.501	56	-.146	.284	56	-.076	.577	56	-.083	.545	56	-.080	.566	54

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

7.5.1.5.1 Coping styles (MAC) and psychological symptoms

Table 33 indicates that Spearman's rho correlation values were found to be significant at the 0.01 level of significance for a particular coping style and various psychological symptoms for both patient groups. Only moderate to strong relationships are discussed.

With regard to the coping style termed ‘helpless or hopeless’, significant correlation values were observed for the younger group for: obsession-compulsion, $r_s = 0.617$; $p = 0.000$, interpersonal sensitivity, $r_s = 0.517$; $p = 0.000$, depression, $r_s = 0.706$; $p = 0.000$ (for which the strongest association was noted), anxiety, $r_s = 0.624$; $p = 0.000$, hostility, $r_s = 0.526$; $p = 0.000$, phobic anxiety, $r_s = 0.539$; $p = 0.000$, and GSI, $r_s = 0.502$, $p = 0.01$. Significant correlation values noted for the older group included: obsession-compulsion, $r_s = 0.562$; $p = 0.000$ and depression, $r_s = 0.597$; $p = 0.000$. No other significant moderate to strong associations were noted for this category for either group.

7.5.1.5.2 Emotional expressivity (CEC) and psychological symptoms

No statistically significant moderate to strong relationships between emotional expressivity and psychological symptoms were noted for either of the sample groups.

7.5.1.5.3 Coping strategies (WoC) and psychological symptoms

Table 33 indicates that a Spearman’s rho correlation value was found to be significant at the 0.01 level of significance for the coping strategy termed ‘escape-avoidance’ in relation to the GSI for the younger group, $r_s = 0.533$, $p = 0.000$. No further moderate to strong associations were noted for this category for either group.

7.6 MULTIPLE REGRESSION ANALYSIS

7.6.1 Stepwise Regression Analysis

The primary dependent and independent variables of the study were included in the Stepwise Regression Analysis. The independent variables included: various demographic variables (marital status, children, grandchildren, previous traumatic events, current physical illness, year diagnosis made and treatment type), coping variables (MAC, WoC and CEC) and the themes of stress (DSQ). The dependent variables included: stress reactions (SSCL) and psychological symptoms (BSI).

Stepwise regression analysis was used to determine which variables independently contribute to the outcome variables for both groups of patients. The analysis of variance for each regression reported was significant at the 0.01 level, meaning that all the models were statistically significant. The adjusted R^2 result estimates the percentage of the variation in the dependent variable that can be explained by the independent variables. For every unit increase in the independent variables, the dependent variables will increase (or decrease) by the relative coefficient. A p -value of 0.05 or less indicates a significant impact. The degree of impact is measured by Beta (β) (standardised regression coefficient), with negative values for Beta indicating an inverse relationship. Predictors are reported based on the descending order of Beta values.

It should be noted that the adjusted R² values generally indicated a better ‘fit’ for the younger group for the regressions than for the older sample.

7.6.1.1 Dependent variables: Stress reactions

Table 34

Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Physical Stress Reactions

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	3	.629 ^c	.395	.362	2.767
53+	2	.506 ^e	.256	.226	3.298

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	3	(Constant)	6.553	3.533		1.855	.069
		Body or sexual image and integrity	.135	.032	.460	4.259	.000
		Fighting spirit	-.185	.061	-.399	-3.037	.004
		Positive Reappraisal	.225	.099	.295	2.272	.027
53+	2	(Constant)	5.353	1.814		2.951	.005
		Helpless or Hopeless	.344	.099	.425	3.486	.001
		Previous stressful/traumatic events	-2.132	.920	-.283	-2.318	.025

For the younger breast cancer group (n = 60), physical reactions were predicted by: the theme of stress termed ‘body or sexual image and integrity’ ($\beta = 0.460, p = 0.000$), followed by an inverse relationship with the coping style termed ‘fighting spirit’

($\beta = -0.399, p = 0.004$), and finally by the coping strategy termed ‘positive reappraisal’ ($\beta = 0.295, p = 0.027$). The associated predictor variables contributed by 36.2% to the criterion variable ‘physical reactions’ (Adj. $R^2 = 0.362$). For the older breast cancer group ($n = 56$), physical reactions were predicted by: the coping style termed ‘helpless or hopeless’ ($\beta = 0.425, p = 0.001$) followed by an inverse relationship with the demographic variable ‘previous stressful/traumatic events’ ($\beta = -0.283, p = 0.025$). These predictor variables contributed by 22.6% to the criterion variable ‘physical reactions’ (Adj. $R^2 = 0.226$).

Table 35

Stepwise Regression Analysis for the Younger ($n = 60$) and Older ($n = 56$) Patient Groups for Psychological Stress Reactions

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	4	.800 ^d	.639	.613	3.759
53+	3	.585 ^g	.343	.302	4.426

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	4	(Constant)	-19.696	3.195		-6.165	.000
		Existential issues	.242	.076	.350	3.162	.003
		Helpless or Hopeless	.491	.138	.334	3.550	.001
		Altered interpersonal relationships	.169	.071	.252	2.376	.021
		Self-controlling	.281	.131	.178	2.139	.037
53+	3	(Constant)	-8.949	5.847		-1.531	.132
		DSQ Total Score	.087	.024	.432	3.557	.001
		Marital Status	.614	.255	.281	2.402	.020
		Previous stressful/traumatic events	-2.633	1.287	-.247	-2.045	.046

For the younger breast cancer group ($n = 60$), psychological reactions were predicted by: the theme of stress termed ‘existential issues’ ($\beta = 0.350, p = 0.003$), followed by the coping style termed ‘helpless or hopeless’ ($\beta = 0.334, p = 0.001$), then the theme of stress termed ‘altered interpersonal relationships’ ($\beta = 0.252, p = 0.021$), and finally by the coping strategy termed ‘self-controlling’ ($\beta = 0.178, p = 0.037$). These predictor variables contributed to the criterion variable ‘psychological reactions’ by 61% (Adj. $R^2 = 0.613$). For the older group ($n = 56$), psychological reactions were predicted by: the overall extent of disruption to life-tasks termed ‘DSQ Total’ ($\beta = 0.432, p = 0.001$), followed by the demographic variable ‘marital status’ ($\beta = 0.281, p = 0.020$), and finally by an inverse relationship with the demographic variable ‘previous stressful/traumatic events’ ($\beta = -0.247, p = 0.046$). These predictor variables contributed to the criterion variable ‘psychological reactions’ by 30% (Adj. $R^2 = 0.302$).

Table 36

Stepwise Regression Analysis for the Younger ($n = 60$) and Older ($n = 56$) Patient Groups for Behavioural Stress Reactions

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	4	.793	.628	.601	4.963
53+	3	.502	.252	.207	6.147

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	p
			B	Std. Error	Beta		
Under 53	4	(Constant)	-20.719	3.763		-5.505	.000
		Existential issues	.206	.110	.229	1.876	.066
		Helpless or Hopeless	.789	.180	.413	4.374	.000
		Self-controlling	.462	.173	.226	2.668	.010
		Body or sexual image and integrity	.182	.077	.273	2.368	.022
53+	3	(Constant)	4.201	3.986		1.054	.297
		Helpless or Hopeless	.664	.197	.446	3.373	.001
		Planful Problem Solving	.613	.252	.322	2.427	.019
		Previous stressful/traumatic events	-3.666	1.721	-.264	-2.130	.038

For the younger group (n = 60), behavioural reactions were predicted by: the coping style termed 'helpless or hopeless' ($\beta = 0.413, p = 0.000$), then the theme of stress termed 'body or sexual image and integrity' ($\beta = 0.273, p = 0.022$), and finally by the coping strategy termed 'self-controlling' ($\beta = 0.226, p = 0.010$). These predictor variables contributed to the criterion variable 'behavioural reactions' by 60% (Adj. $R^2 = 0.601$).

For the older group of patients (n = 56), behavioural reactions were predicted by: the coping style 'helpless or hopeless' ($\beta = 0.446, p = 0.001$), followed by the coping strategy 'planful problem solving' ($\beta = 0.322, p = 0.019$), and finally by an inverse relationship with the demographic variable 'previous stressful/traumatic events' ($\beta = -0.264, p = 0.038$). These predictor variables contributed to the criterion variable 'behavioural reactions' by 20% (Adj. $R^2 = 0.207$).

Table 37

Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Overall Level of Stress

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	4	.788 ^d	.621	.593	10.385
53+	3	.591 ^g	.350	.310	11.968

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	4	(Constant)	-41.154	7.876		-5.226	.000
		Existential issues	.427	.229	.229	1.861	.068
		Helpless or Hopeless	1.527	.377	.386	4.047	.000
		Body or sexual image and integrity	.428	.161	.309	2.663	.010
		Self-controlling	.801	.363	.189	2.210	.031
53+	3	(Constant)	10.191	7.930		1.285	.205
		Helpless or Hopeless	1.572	.378	.506	4.161	.000
		Previous stressful/traumatic events	-10.832	3.396	-.374	-3.190	.002
		Positive Reappraisal	1.110	.423	.324	2.625	.012

The younger patient's (n = 60) overall level of stress was predicted by: the coping style 'helpless or hopeless' ($\beta = 0.386, p = 0.000$), then the theme of stress 'body or sexual image and integrity' ($\beta = 0.309, p = 0.010$), and finally by the coping strategy 'self-controlling' ($\beta = 0.189, p = 0.031$). These predictor variables contributed to the criterion variable 'overall level of stress' by 59% (Adj. $R^2 = 0.593$). The older sample's (n = 56) overall level of stress was predicted by: the coping style 'helpless or hopeless' ($\beta = 0.506, p = 0.000$), followed by an inverse relationship with the demographic variable 'previous stressful/traumatic events' ($\beta = -0.374, p = 0.002$), and finally by the coping strategy

‘positive reappraisal’ ($\beta = 0.324, p = 0.012$). These predictor variables contributed to the criterion variable ‘overall level of stress’ by 31% (Adj. $R^2 = 0.310$).

Table 38

Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Present Intensity of Stress

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	3	.685 ^c	.470	.441	2.209
53+	4	.650 ^g	.422	.374	2.090

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	3	(Constant)	.673	2.335		.288	.774
		Helpless or Hopeless	.229	.077	.320	2.975	.004
		Previous stressful/traumatic events	-2.116	.619	-.355	-3.421	.001
		Anxious preoccupation	.178	.072	.265	2.471	.017
53+	4	(Constant)	3.334	1.803		1.849	.071
		Anxious preoccupation	.237	.067	.493	3.555	.001
		Distancing	-.205	.083	-.288	-2.488	.016
		Achievement disruption	.129	.045	.340	2.870	.006
		Body or sexual image and integrity	-.120	.047	-.381	-2.567	.013

Finally, the present intensity of stress for the younger sample (n = 60) was predicted by: an inverse relationship with the demographic variable ‘previous stressful/traumatic events’ ($\beta = -0.355, p = 0.001$), followed by the coping style termed ‘helpless or hopeless’ ($\beta = 0.320, p = 0.004$), and finally by the coping style termed ‘anxious preoccupation’ ($\beta = 0.265, p = 0.017$). These predictor variables contributed to the

criterion variable ‘present intensity of stress’ by 44% (Adj. $R^2 = 0.441$). For the older patient group ($n = 56$), their present intensity of stress was predicted by: the coping style termed ‘anxious preoccupation’ ($\beta = 0.493, p = 0.001$), followed by an inverse relationship with the theme of stress termed ‘body or sexual image and integrity’ ($\beta = -0.381, p = 0.013$), then by the theme of stress termed ‘achievement disruption’ ($\beta = 0.340, p = 0.006$), and finally by an inverse relationship with the coping strategy termed ‘distancing’ ($\beta = -0.288, p = 0.016$). These predictor variables contributed to the criterion variable ‘present intensity of stress’ by 37% (Adj. $R^2 = 0.374$).

7.6.1.2 Dependent variables: Psychological symptoms

Table 39

Stepwise Regression Analysis for the Younger ($n = 60$) and Older ($n = 56$) Patient Groups for Somatization

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	5	.699 ^e	.489	.441	3.383
53+	3	.567 ^g	.321	.280	3.660

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	5	(Constant)	.786	3.388		.232	.817
		Helpless or Hopeless	.544	.128	.495	4.240	.000
		Positive Reappraisal	.474	.133	.475	3.574	.001
		Fatalistic	-.398	.129	-.332	-3.093	.003
		Body or sexual image and integrity	.141	.045	.366	3.148	.003
		Seeking Social Support	-.501	.179	-.383	-2.795	.007
53+	3	(Constant)	-4.434	2.545		-1.742	.088
		Helpless or Hopeless	.448	.111	.482	4.043	.000
		Confrontive Coping	.440	.161	.330	2.729	.009
		CEC Anxious	.215	.100	.258	2.149	.037

For the younger patient group ($n = 60$), somatization was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.495, p = 0.000$), followed by the coping strategy ‘positive reappraisal’ ($\beta = 0.475, p = 0.001$), then by an inverse relationship with the coping strategy ‘seeking social support’ ($\beta = -0.383, p = 0.007$), followed by the theme of stress termed ‘body or sexual image and integrity’ ($\beta = 0.366, p = 0.003$), and finally by an inverse relationship with the coping style ‘fatalistic’ ($\beta = -0.332, p = 0.003$). These predictor variables contributed to the criterion variable ‘somatization’ by 44% ($\text{Adj.}R^2 = 0.441$). For the older group ($n = 56$), somatization was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.482, p = 0.000$), followed by the coping strategy ‘confrontive coping’, and finally by a measure of emotional expressivity referred to here as ‘CEC Anxious’ (or suppression of anxiety) ($\beta = 0.258, p = 0.037$). These predictor variables contributed to the criterion variable ‘somatization’ by 28% ($\text{Adj.} R^2 = 0.280$).

Table 40***Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Obsession-Compulsion*****Model Summary**

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	3	.758 ^c	.574	.551	3.269
53+	2	.598 ^d	.358	.332	4.009

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	3	(Constant)	-4.795	2.522		-1.901	.063
		Helpless or Hopeless	1.052	.125	.888	8.383	.000
		Body or sexual image and integrity	-.093	.039	-.225	-2.357	.022
		Planful Problem Solving	.280	.125	.221	2.240	.029
53+	2	(Constant)	-5.962	2.725		-2.188	.033
		Helpless or Hopeless	.490	.125	.463	3.935	.000
		Existential issues	.167	.072	.273	2.319	.025

For the younger sample (n = 60), obsession-compulsion was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.888, p = 0.000$), followed by an inverse relationship with the theme of stress termed ‘body or sexual image and integrity’ ($\beta = -0.225, p = 0.022$), and finally by the coping strategy ‘planful problem solving’ ($\beta = 0.221, p = 0.029$). These predictor variables contributed to the criterion variable ‘obsession-compulsion’ by 55% (Adj. $R^2 = 0.551$). For the older group of patients (n = 56), obsession-compulsion was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.463, p = 0.000$), followed by the theme of stress termed ‘existential issues’

($\beta = 0.273, p = 0.025$). These predictor variables contributed to the criterion variable ‘obsession-compulsion’ by 33% (Adj. $R^2 = 0.332$).

Table 41

Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Interpersonal Sensitivity

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	4	.789 ^d	.622	.594	1.633
53+	3	.536 ^g	.288	.244	2.236

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	4	(Constant)	-885.947	336.818		-2.630	.011
		Body or sexual image and integrity	.101	.020	.465	5.140	.000
		Helpless or Hopeless	.315	.063	.505	5.012	.000
		Planful Problem Solving	.229	.063	.344	3.623	.001
53+	3	(Constant)	.036	2.360		.015	.988
		Escape-Avoidance	.242	.087	.338	2.785	.008
		Altered interpersonal relationships	.104	.039	.324	2.646	.011
		Fighting spirit	-.087	.033	-.319	-2.610	.012

With regard to the younger group (n = 60), interpersonal sensitivity was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.505, p = 0.000$), followed by the theme of stress termed ‘body or sexual image and integrity’ ($\beta = 0.465, p = 0.000$), and finally by the coping strategy ‘planful problem solving’ ($\beta = 0.344, p = 0.001$). These predictor variables contributed to the criterion variable ‘interpersonal sensitivity’ by 59% (Adj. R^2

= 0.594). For the older sample (n = 56), interpersonal sensitivity was predicted by: the coping strategy ‘escape-avoidance’ ($\beta = 0.338, p = 0.008$), followed by the theme of stress termed ‘altered interpersonal relationships’ ($\beta = 0.324, p = 0.011$), and finally by an inverse relationship with the coping style ‘fighting spirit’ ($\beta = -0.319, p = 0.012$). These predictor variables contributed to the criterion variable ‘interpersonal sensitivity’ by 24% (Adj. $R^2 = 0.244$).

Table 42

Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Depression

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	3	.822 ^c	.675	.657	2.970
53+	4	.793 ^e	.629	.598	2.467

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	3	(Constant)	-16.198	2.510		-6.453	.000
		Helpless or Hopeless	.571	.106	.463	5.363	.000
		DSQ Total Score	.083	.015	.625	5.381	.000
		Achievement disruption	-.102	.048	-.225	-2.105	.040
53+	4	(Constant)	-7.589	3.421		-2.219	.031
		Helpless or Hopeless	.288	.093	.343	3.095	.003
		DSQ Total Score	.063	.014	.426	4.440	.000
		Marital Status	.499	.148	.312	3.367	.002
		Fighting spirit	-.103	.045	-.249	-2.303	.026

For the younger sample (n = 60), depression was predicted by: the overall extent of disruption to life-tasks termed ‘DSQ Total’ ($\beta = 0.625, p = 0.000$), followed by the

coping style 'helpless or hopeless' ($\beta = 0.463, p = 0.000$), and finally by an inverse relationship with the theme of stress termed 'achievement disruption' ($\beta = -0.225$). These predictor variables contributed to the criterion variable 'depression' by 66% (Adj. $R^2 = 0.657$). For the older group ($n = 56$), depression was predicted by: the overall extent of disruption to life-tasks termed 'DSQ Total' ($\beta = 0.426, p = 0.000$), followed by the coping style 'helpless or hopeless' ($\beta = 0.343, p = 0.003$), then by the demographic variable 'marital status' ($\beta = 0.312, p = 0.002$), and finally by an inverse relationship with the coping style 'fighting spirit' ($\beta = -0.249, p = 0.026$). These predictor variables contributed to the criterion variable 'depression' by 60% (Adj. $R^2 = 0.598$).

Table 43

Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Anxiety

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	2	.713 ^b	.508	.491	3.778
53+	4	.571 ^f	.326	.299	3.649

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	2	(Constant)	-8.219	2.352		-3.495	.001
		Helpless or Hopeless	.960	.127	.747	7.588	.000
		Positive Reappraisal	.327	.115	.280	2.847	.006
53+	4	(Constant)	8.433	3.050		2.765	.008
		Fighting spirit	-.244	.057	-.529	-4.253	.000
		Anxious preoccupation	.378	.099	.476	3.824	.000

For the younger group ($n = 60$), anxiety was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.747, p = 0.000$), followed by the coping strategy ‘positive reappraisal’ ($\beta = 0.280, p = 0.006$). These predictor variables contributed to the criterion variable ‘anxiety’ by 49% (Adj. $R^2 = 0.491$). With regard to the older group of women ($n = 56$), anxiety was predicted by: an inverse relationship with the coping style termed ‘fighting spirit’ ($\beta = -0.529, p = 0.000$), followed by the coping style ‘anxious preoccupation’ ($\beta = 0.476, p = 0.000$). These predictor variables contributed to the criterion variable ‘anxiety’ by 30% (Adj. $R^2 = 0.299$).

Table 44

Stepwise Regression Analysis for the Younger ($n = 60$) and Older ($n = 56$) Patient Groups for Hostility

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	2	.608 ^b	.370	.347	2.872
53+	2	.434 ^d	.188	.156	2.659

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	2	(Constant)	-5.417	1.770		-3.060	.003
		Body or sexual image and integrity	.117	.036	.389	3.285	.002
		Escape-Avoidance	.253	.092	.326	2.760	.008
53+	2	(Constant)	4.828	2.123		2.274	.027
		Escape-Avoidance	.269	.103	.334	2.615	.012
		Fighting spirit	-.094	.039	-.307	-2.400	.020

With regard to the younger group of patients ($n = 60$), hostility was predicted by: the theme of stress termed ‘body or sexual image and integrity’ ($\beta = 0.389, p = 0.002$), followed by the coping strategy ‘escape-avoidance’ ($\beta = 0.326, p = 0.008$). These predictor variables contributed to the criterion variable ‘hostility’ by 35%

(Adj. $R^2 = 0.347$). For the older group ($n = 56$), hostility was predicted by: the coping strategy ‘escape-avoidance’ ($\beta = 0.334, p = 0.012$), followed by an inverse relationship with the coping style ‘fighting spirit’ ($\beta = -0.307, p = 0.020$). These predictor variables contributed to the criterion variable ‘hostility’ by 16% (Adj. $R^2 = 0.156$)

Table 45

Stepwise Regression Analysis for the Younger ($n = 60$) and Older ($n = 56$) Patient Groups for Phobic Anxiety

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	2	.631 ^b	.398	.377	3.209
53+	2	.531 ^c	.282	.253	3.352

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	2	(Constant)	-6.854	2.051		-3.341	.001
		Helpless or Hopeless	.407	.110	.412	3.691	.001
		Body or sexual image and integrity	.121	.039	.349	3.132	.003
53+	2	(Constant)	3.824	2.023		1.890	.064
		Helpless or Hopeless	.360	.100	.430	3.584	.001
		Physical illness ongoing	-2.276	.936	-.292	-2.433	.019

For the younger group (n = 60), phobic anxiety was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.412, p = 0.001$), followed by the theme of stress termed ‘body or sexual image and integrity’ ($\beta = 0.349, p = 0.003$). These predictor variables contributed to the criterion variable ‘phobic anxiety’ by 38% (Adj. $R^2 = 0.377$). With regard to the older group of patients (n = 56), phobic anxiety was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.430, p = 0.001$), followed by an inverse relationship with the demographic variable – an additional ongoing (pre-existing) physical illness ($\beta = -0.292, p = 0.019$). These predictor variables contributed to the criterion variable ‘phobic anxiety’ by 25% (Adj. $R^2 = 0.253$).

Table 46

Stepwise Regression Analysis for the Younger (n = 60) and Older (n = 56) Patient Groups for Paranoid Ideation

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	3	.564 ^c	.318	.280	2.922
53+	6	.600 ⁱ	.360	.307	2.828

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	3	(Constant)	-1305.410	634.343		-2.058	.044
		Escape-Avoidance	.180	.096	.239	1.872	.067
		Accepting Responsibility	.599	.202	.382	2.963	.004
53+	6	(Constant)	2.825	3.057		.924	.360
		Altered interpersonal relationships	.138	.050	.326	2.788	.008
		Fighting spirit	-.126	.042	-.351	-3.002	.004
		Confrontive Coping	.394	.125	.375	3.152	.003

For the younger sample ($n = 60$), paranoid ideation was predicted by the coping strategy ‘accepting responsibility’ ($\beta = 0.382, p = 0.004$). This predictor variable contributed to the criterion variable by 28% ($\text{Adj. } R^2 = 0.280$). For the older group of women ($n = 56$), paranoid ideation was predicted by: the coping strategy ‘confrontive coping’ ($\beta = 0.375, p = 0.003$), followed by an inverse relationship with the coping style ‘fighting spirit’ ($\beta = -0.351, p = 0.004$) and finally by the theme of stress termed ‘altered interpersonal relationships’ ($\beta = 0.326, p = 0.008$). These predictor variables contributed to the criterion variable ‘paranoid ideation’ by 31% ($\text{Adj. } R^2 = 0.307$).

Table 47

Stepwise Regression Analysis for the Younger ($n = 60$) and Older ($n = 56$) Patient Groups for Psychoticism

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	2	.618 ^b	.382	.360	2.137
53+	2	.477 ^d	.228	.197	2.080

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	2	(Constant)	-6.569	1.647		-3.988	.000
		Altered interpersonal relationships	.137	.034	.464	4.034	.000
		Helpless or Hopeless	.170	.075	.261	2.273	.027
53+	2	(Constant)	-1.899	1.095		-1.734	.089
		Helpless or Hopeless	.178	.062	.355	2.847	.006
		Escape-Avoidance	.188	.081	.290	2.328	.024

With regard to the younger group of patients ($n = 60$), psychoticism was predicted by: the theme of stress termed ‘altered interpersonal relationships’ ($\beta = 0.464, p = 0.000$), and the coping style ‘helpless or hopeless’ ($\beta = 0.261, p = 0.027$). These predictor variables contributed to the criterion variable ‘psychoticism’ by 36% ($\text{Adj. } R^2 = 0.360$). For the older sample ($n = 56$), psychoticism was predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.355, p = 0.006$), followed by the coping strategy ‘escape-avoidance’ ($\beta = 0.290, p = 0.024$). These predictor variables contributed to the criterion variable ‘psychoticism’ by 20% ($\text{Adj. } R^2 = 0.197$).

Table 48

Stepwise Regression Analysis for the Younger ($n = 60$) and Older ($n = 56$) Patient Groups for Global Severity Index (GSI)

Model Summary

Age group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Under 53	3	.685 ^c	.470	.441	.357
53+	2	.589 ^e	.346	.320	.308

Age group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Under 53	3	(Constant)	.184	.288		.638	.526
		DSQ Total Score	.004	.001	.342	2.968	.004
		Escape-Avoidance	.031	.012	.296	2.681	.010
		Helpless or Hopeless	.028	.013	.245	2.232	.030
53+	2	(Constant)	1.974	.187		10.583	.000
		Helpless or Hopeless	.032	.009	.399	3.472	.001
		Any grandchildren	-.393	.113	-.399	-3.473	.001

Finally, for the younger group of patients ($n = 60$), the overall GSI was predicted by: the overall extent of disruption to life-tasks termed ‘DSQ Total’ ($\beta = 0.342, p = 0.004$), followed by the coping strategy ‘escape-avoidance’ ($\beta = 0.296, p = 0.010$), and finally by the coping style ‘helpless or hopeless’ ($\beta = 0.245, p = 0.030$). These predictor variables contributed to the criterion variable ‘GSI’ by 44% ($\text{Adj. } R^2 = 0.441$). For the older sample ($n = 56$), the overall GSI was equally predicted by: the coping style ‘helpless or hopeless’ ($\beta = 0.399, p = 0.001$) and an inverse relationship with the demographic variable ‘presence of grandchildren’ ($\beta = -0.399, p = 0.001$). These predictor variables contributed to the criterion variable ‘GSI’ by 32% ($\text{Adj. } R^2 = 0.320$).

The results presented in this Chapter will now be evaluated and discussed in Chapter Eight.

CHAPTER EIGHT

GENERAL DISCUSSION, RECOMMENDATIONS AND CONCLUSION

8.1 OVERVIEW

The purpose of this study was to examine, as the primary aim, some major themes of stress, intrapersonal coping styles and strategies, and psychological adjustment to breast cancer, of Indian South African women at different developmental stages of the life-cycle. The interrelationships among variables were examined, together with an exploration of those factors which appear to have had an impact on psychological adjustment, with the aim of contributing to the paucity of research in this area for Indian South African women.

The results of the study are discussed here in order to fulfil the stated objectives of the study (c.f., 1.2) which were to:

- assess and delineate sources of stress and psychological morbidity in Indian South African women with breast cancer at different developmental stages of the life-cycle in order to derive serviceable concepts for intervention and future research
- assess and delineate the stress-related responses and levels of psychological morbidity of Indian South African women with breast cancer at different

developmental stages of the life-cycle in order to derive serviceable concepts for intervention and future research

- assess and delineate the coping styles and strategies of Indian South African women with breast cancer at different developmental stages of the life-cycle in order to derive serviceable concepts for intervention and future research
- to create and pilot a developmental stress questionnaire for South African women with severe/life-threatening illness

The intention of the study has been to investigate, in an holistic and culture/gender-sensitive manner, the complex interweaving of various biological, psychological and social variables influencing the research participants' subjective experience of the disease. Because of the widely-acknowledged influence of cognitions on affect and behaviour, and the complex feedback loops between these three aspects of human experience - both for disease-free (Beck, 1976) as well as chronically ill individuals (Sage et al., 2008), the findings are integrated within a cognitive-behavioural formulation of illness in this thesis. However because another central theoretical tenet underpinning this research (explored in detail in Chapter Four) has been the focus on various developmental factors hypothesised as potentially influencing women's experience of, and subsequent adaptation to breast cancer, consideration is given to the findings within an overarching 'cognitive-developmental' model of breast cancer. This was presented in Chapter Five.

8.2 CHAPTER SUMMARY

The results of the statistical data were presented and interpreted in Chapter Seven. Chapter Eight highlights the relevant findings, which are evaluated and discussed within the context of the appropriate scientific literature and aforementioned psychological models. Final conclusions are presented, where possible, and recommendations are made both in terms of clinical practice, and with respect to future research in this area of psycho-oncology.

Following a summary of the demographic profile of the sample groups in order to contextualise the findings, the discussion is presented in terms of the sequences of the hypotheses and their accompanying variables.

8.3 DEMOGRAPHIC PROFILE

The sample was comprised of 116 Indian South African women between the ages of 26 to 79 years old, who had formally been diagnosed with breast cancer, and were receiving treatment at one of three local teaching hospitals in Durban, South Africa. For the purposes of the study, the sample was divided into two groups: the ‘younger’ group (considered to be generally pre-menopausal) was comprised of 60 women with an age-range of 26-52 years; and the ‘older’ group (considered generally to be post-menopausal) was comprised of 56 women with an age-range of 53-79 years. Almost the entire sample spoke English as their first language. Approximately half of the patients in the sample

were of the Hindu religion, with roughly a quarter of the sample belonging to the Christian faith, and the remaining quarter belonging to the Muslim faith – a pattern that was also demonstrated in the two groups. Approximately half of the sample (mostly from the younger group) were married, while approximately one third of the sample (mostly from the older group) indicated that they were widowed. The majority of the women in both groups had children, while approximately half of the women in the sample (mostly from the older group) had grandchildren. A significant majority of the older group had not received any formal education or had only attended primary school, whilst the majority of the younger sample had received only secondary education. Only 11.2% of the sample (all from the younger group) were employed at the time of assessment, with the majority of the sample indicating that they were of low socioeconomic status.

With regard to history of mental health, over half of the patients in this sample (evenly distributed between the groups) indicated that they had experienced one or more stressful or traumatic events in the year leading up to their cancer diagnosis. However the majority of the patients in the sample denied having a history of mental health difficulties, with only one patient indicating that she was suffering from mental health difficulties at the time of the assessment. With regard to history of physical health, a little under a third of the total sample (mostly from the older group) indicated that they had suffered from a (non-cancerous) serious physical illness in the past, with a significant proportion of these women still suffering from these illnesses at the time of assessment. Only three patients had ever received a previous diagnosis of cancer. Over 90% of the sample had received their current diagnosis of breast cancer either in the same year that the assessment took

place, or in the previous year, however none were assessed within three months of their diagnosis. The majority of the sample had received a combination of treatments for their breast cancer, while 16.8% had received chemotherapy as their primary treatment, 11.5% had undergone a lumpectomy as their primary treatment, 8% had undergone a mastectomy as their primary treatment, and only one patient had received radiotherapy as their primary treatment.

8.4 HYPOTHESES ONE AND TWO: THE IMPACT OF THE DIAGNOSIS AND TREATMENT OF BREAST CANCER ON LIFE TASKS/ DEVELOPMENTAL MILESTONES AT DIFFERENT STAGES OF THE LIFE-CYCLE

Hypotheses one and two (c.f., 1.3.1/2) were accepted at the 0.05 level of significance given the overall differences, evaluated comparatively, demonstrated by the results of the Developmental Stress Questionnaire (DSQ) for the younger (n = 60) and older (n = 56) breast cancer patients.

Various univariate analyses were included in the analysis of the impact of the experience of having breast cancer on life tasks/developmental milestones. These took the form of comparisons of descriptive frequencies and percentages related to specific items of the DSQ (Tables 5/6), and comparisons of the mean values and standard deviations with regard to the five themes of stress and the overall extent of disruption to life-tasks (Table 7). Multivariate analysis of variance (Table 21) confirmed the alternative hypothesis that there were statistically significant differences between the two age groups with regard to 'themes of stress' collectively, and that the respective effect (age) was significant, as well

as indicating which of the specific themes of stress contributed to the significant overall result.

A summary will be presented, of the results relating to the disruption of specific aspects of life tasks for the two groups, followed by a comparative analysis of the themes of stress and overall disruption to life tasks. This will be accompanied by a discussion of these results within the context of previous research findings in this area, as highlighted in Chapters Two and Three, as well as the relevant developmental theory presented in Chapter Four.

8.4.1 Disruption of Specific Components of Life Tasks

The results suggested that, not only were certain aspects of life tasks perceived as being more significantly disrupted than others by the experience of having breast cancer for this sample of women, but that both similarities as well as differences were observed with regard to the above for the younger and older groups.

The results (Table 5) indicated that the following were the outstanding areas of change for the younger group, in descending order of importance:

- Increased reliance on staff at the hospital (dependence-independence)
- Feeling less at peace with the idea of dying (existential issues)
- Worrying more about the future of children (existential issues)

- Increased reliance/dependence on others generally (dependence-independence)
- Feeling less attractive/sexually desirable as a result of treatment (body/sexual image and integrity)
- Increased preoccupation with and avoidance of reliance/dependence on others (dependence-independence)
- Perception of change in the appearance/texture of breasts (body/sexual image and identity)
- Preoccupation with thoughts of death/dying (existential issues)

The results (Table 6) indicated that the following were the outstanding areas of change for the older group, in descending order of importance:

- Increased reliance on staff at the hospital (dependence-independence)
- Increased reliance/dependence on others generally (dependence-independence)
- Feeling less at peace with the idea of dying (existential issues)
- Increased dependence/reliance on children (dependence-independence)
- Perception of change in the appearance/texture of breasts (body/sexual image and identity)
- Decreased ability to complete routine household chores that are perceived as important (achievement disruption)

8.4.2 Themes of Stress and Overall Disruption to Life Tasks

The results (Table 7), confirmed by the multivariate analysis of variance for differences in themes of stress between the two groups (Table 21), demonstrate that the younger

group of women, on average, experienced more disruption by breast cancer, conceptualised here in terms of various ‘themes of stress’, than the older group of women. However, as is illustrated by the results presented above, the older women were also shown to experience significant changes related to certain aspects of these themes of stress - both similar and different to the younger women. Interestingly, not all of these appear to have been perceived as disruptive to this group, unlike the younger group of breast cancer patients. In addition, as discussed further on, the results also demonstrate that an association between themes of stress and stress reactions/psychological symptoms is only demonstrated for the younger breast cancer patients, and with only certain themes of stress demonstrating this association.

As can be observed from the results, the younger group of patients appeared, on average, to have experienced greater disruption to their interpersonal relationships than the older group of women, at a level of statistical significance. Holland and Rowland’s (1989) conceptualisation of this theme of stress termed ‘**altered interpersonal relationships**’ includes stressors such as: feeling more isolated, perception of lack of support, problems in relationships with loved ones/friends, the experience of social alienation, a decrease in ‘quality time’ with loved ones/friends, concerns related to the financial needs of loved ones, the prevention of marriage and/or children as a result of illness, fears of abandonment and difficulties relating to medical staff. In terms of this theory, major issues for younger cancer patients (incorporating their categories termed ‘Young Adult’ and ‘Mature Adult’) with regard to interpersonal relationships include disruptions to the establishment of new and maintenance of old relationships, and fears and concerns

related to the well-being of dependent children and ageing parents. The results suggested greater disruption by cancer to the interpersonal relationships of the younger breast cancer patients. This was supported by the association, discussed below (c.f., 8.5.2), of this theme of stress with stress reactions and psychological symptoms demonstrated by this group. However, none of the specific aspects of this theme of stress were highlighted as being of particular importance by 50% or more of the women in either of these groups, as can be seen from the results presented above (c.f., 8.4.1).

These results are in line with the plethora of research findings which have demonstrated that older patients generally show better psychosocial adjustment to breast cancer than do younger women (e.g. Broeckel et al., 2000; Ganz et al., 1993; Ganz et al., 1998; Ganz et al., 2003; Pozo et al., 1992; Schag et al., 1993; Simonton & Sherman, 1998; Vinokur et al., 1990). The results may be closely linked to the findings related to the theme of stress termed 'dependence-independence', which is discussed next. In addition, the difficulties experienced by the younger patients in particular, associated with a change in body/sexual image, achievement disruption and various existential struggles would have all impacted either directly or indirectly on their interpersonal relationships to varying degrees, as will be discussed in more detail below.

The only category which was shown to have equal relevance for both the younger and older breast cancer patients was the theme of stress termed '**dependence-independence**'. It had no association with stress reactions/psychological symptoms for either group of patients. Holland and Rowland's (1989) conceptualisation of this theme of stress include:

perception of increased reliance/dependence on others, preoccupation and/or dissatisfaction with increased dependence on others, concerns related to dependence-independence issues in the future, and specific concerns related to physical/emotional/financial dependence on others. Of interest, however, was the finding that various aspects of this theme of stress were highlighted as areas of importance by 50% or more of both the younger and older patients, despite its lack of association with psychological morbidity.

With regard to the younger patients, the increased reliance/dependence on hospital staff and on other people generally, were highlighted as important areas of change as a result of having breast cancer. The stated 'increased preoccupation with and avoidance of reliance/dependence on others' by 61.7% of the respondents in this group suggests that the younger patients tended to experience these changes as aversive. With regard to the older group of patients, however, despite an equally significant proportion highlighting the increased reliance/dependence on hospital staff, on others generally, as well as on children, as important areas of change, there was no indication that this was experienced as aversive. In other words, it appears that although both groups of patients appeared to experience a similar amount of change with regard to dependence-independence related issues, it appears that these were perceived more negatively by the younger group of patients, despite this category not being associated with psychological morbidity. It may be that these results provide at least a partial explanation for some of the difficulties experienced by the younger patients in terms of their interpersonal relationships, as discussed above.

In terms of Holland and Rowland's (1989) theory presented in Chapter Four, for younger cancer patients (incorporating their categories termed 'Young Adult' and 'Mature Adult'), some of the key developmental tasks include the establishment of autonomy and the achievement of intimacy, usually with marriage and parenthood. As the young adult matures, social and emotional tasks centre around establishing a family and child rearing, with sexual and social relationships ideally functioning optimally. The disruption of illness may affect the individual's ability to develop or sustain these roles and relationships given the fear and guilt related to the potential consequences of the illness. In addition, according to the authors, the need for increased dependence on family and medical staff negatively affects self-esteem at this stage of development, as normal responsibilities may need to be handed over to others with the assumption of a more passive role which may lead to anger, resentment and rebelliousness. They note that difficulties, both in terms of interpersonal functioning, as well as with regard to psychological adaptation, may arise out of excessive overprotection by family members and/or excessive dependence by the patient on others, or alternatively, overcompensation and a desire for excessive independence, with a premature and untenable resumption of previous roles and responsibilities.

Clearly, these issues cannot be separated from those described under the theme of stress termed 'altered interpersonal relationships', and may provide some explanation for the findings of the association between that theme of stress and stress reactions/psychological symptoms in the younger patient group. Evidence for this hypothesis may be provided by studies investigating the role of social support and psychological adjustment to cancer

(presented in Chapter Two) which suggest that, although feeling close to family and friends and belonging to a group who could share one's concerns could lessen the cancer patient's sense of isolation and alienation (Dukes Holland et al., 2003), ultimately it is her sense of family cohesiveness, social affiliation and presence of a confidante, together with the availability and perceived adequacy of the support and the opportunity for reciprocity that has been shown to be related to adjustment to the diagnosis of breast cancer (e.g. Bloom, 1986; Ell et al., 1989; Nosarti et al., 2002; Spiegel, 1984;). Research indicates that it is only the 'right kind' of support from family, friends and medical staff that has been found to assist the individual's coping efforts, with effective social support depending on a match between what one needs and what one receives within one's social network. What is perceived as helpful may be influenced by the patient's stage of development. Should elements of social support be compromised or be perceived to be compromised by the dependence-independence related issues discussed above, it is likely that psychological adaptation to the illness would also be compromised according to the social support literature, as with the younger patients in this study.

The results for the theme of stress termed '**achievement disruption**' demonstrated that, on average, the younger group experienced a greater level of disruption to their achievement-oriented goals and activities than the older group at a level of statistical significance. Once again, however, this theme of stress was not associated with stress reactions or psychological symptoms for either of the groups of patients. In fact, as demonstrated by the results of the regression analysis discussed in Section 8.7,

‘achievement disruption’ was shown to impact inversely on the younger patients’ depressive symptoms.

Holland and Rowland’s (1989) conceptualisation of this theme of stress includes stressors such as: having to delay educational/career goals, impairment with regard to occupational (work/study) performance and achievement, feeling forced into early retirement and/or feeling cheated out of enjoying it, inability to dedicate time to hobbies/leisure activities and/or household chores considered to be important, and having to change certain life goals. Although no specific aspects of this theme of stress were highlighted by the younger group of patients, 53.6% of the older breast cancer patients raised as an important area of change, their decreased ability to complete routine household chores considered to be important by the individual. Holland and Rowland’s (1989) theory suggests that for older cancer patients (incorporating their categories termed ‘Older Adult’ and ‘Ageing Adult’), the prospect of enforced early retirement for individuals in the early stage of this phase who may have had to give up the prospect of potential achievements, or for those approaching retirement or who had already retired, the prospect of possibly being cheated out of the much-anticipated healthy retirement may cause distress. This is exacerbated if the life review process is unsatisfying. However it may be that this perspective is oriented towards a westernised, middle-class population with important differences to the older women under investigation in this study. They had received little education, were unemployed at the time of the study, and may never have been part of the world of commerce, but possibly had more traditional roles of primary caregivers within the family. Looked at from this perspective, it is understandable that

having to relinquish at least part of this role (for example, by not being able to complete routine household chores considered important) would have the same or a similar impact as the inability to continue working at a commercial job that one has been doing for many years would have on a similarly-aged individual in another context. This would be emphasised if these roles had formed an important part of the woman's identity or sense of self, or was felt to define their worth.

With regard to the younger patients, the results suggested that this group, on average, appeared, unsurprisingly, to experience greater disruption overall to their achievement-oriented goals and activities than the older patients – a finding that is line with developmental theory and research in this area. In terms of Holland and Rowland's (1989) theory, for younger adults, this stage of development is generally associated with establishing and consolidating one's career, or pursuing further educational goals. The diagnosis and treatment of cancer severely hampers these ambitions, and may affect opportunities for advancement etc. In addition, job disruptions and medical costs may threaten immediate and long-term personal and familial financial commitments, and certain life goals may be compromised or even abandoned, all of which could lead to depression, according to these authors. Interestingly, the opposite appears to have been the case with this sample of younger patients, as no association with achievement disruption and psychological morbidity was noted. There may be several explanations for this finding. Firstly, as has been mentioned, one of the weaknesses of this theory is that it doesn't differentiate between gender, class and culture – all variables that can have an important impact on how illness-related changes are perceived and managed. The

demographic analysis of this group of patients revealed that a significant majority of the younger patients in this study had received only secondary education (if that), with only 11.2% of this group being employed at the time of the study. Although it is unclear whether those who were unemployed had ever had a job, these statistics do suggest that this group of younger patients may have been less career and achievement-oriented than assumed by the authors of this model. As mentioned, this theme of stress was actually shown to impact inversely on the younger patients' depressive symptoms. A potential explanation for this is that an enforced reduction in achievement-oriented goals and activities may have come as a relief to some younger women, who could have been more emotionally invested in focusing on other areas (such as ensuring the well-being of children) at such a time. As can be seen from the results, other aspects of change related to the diagnosis and treatment of cancer appear to have been perceived as more disruptive and distressing, on the face of it. This is not to say, however, that the inability to work, for example, did not have a negative impact on other areas of the patient's life, and in so doing, indirectly impacted on other themes of stress. As is well known, chronic illness inevitably affects the lives of others close to the patient. Chandra et al. (1998) found that there was a perceived decrease in concern (experienced by the cancer patient) by the family and primary support group over time, which they attributed to the burden that the family and primary support group may have been experiencing in a developing country such as India. They felt that financial and other aspects of family strain might alter the family functioning. It could be that although the younger female patients in this study did not experience achievement disruption by cancer as directly distressing, the consequences of not being able to work or to having to change certain family goals, may have had a

negative impact on their interpersonal relationships with family or friends, or contributed to worries related to the well-being of loved ones in the future. These are both elements of the themes of stress termed ‘altered interpersonal relationships’ and ‘existential issues’.

The results for the theme of stress termed ‘**body or sexual image and integrity**’ also indicated that the younger group, on average, experienced a greater level of disruption to their body/sexual image than the older group, again at a level of statistical significance. This theme of stress was associated with psychological morbidity for the younger patients in the study.

Holland and Rowland’s (1989) conceptualisation of this theme of stress includes stressors such as: feeling less feminine, attractive and/or sexually desirable (which may or may not be attributed to the effects of treatment), loss of libido, loss of desire for physical intimacy with loved ones/friends, loss of desire for emotional intimacy with loved ones/friends, shame related to the perceived appearance of body/breasts, perception that one’s partner avoids physical/sexual intimacy as a result of the cancer, and concerns related to infertility as a result of having cancer and/or treatment. Of interest is that, although approximately 61% of patients from both groups highlighted their perception of a change in the appearance/texture of their breasts, only a significant majority of the younger breast cancer patients, and not the older patients, highlighted ‘feeling less attractive/sexually desirable as a result of treatment’ as an issue. This may suggest that the younger patients were more sensitive to physical changes as a result of

cancer/treatment than the older patients in this study – an hypothesis supported by the association of this theme of stress with psychological morbidity only observed for the younger breast cancer patients.

These findings are, again, in line with the research in this area (presented in Chapter Two) which clearly illustrates the negative impact that breast cancer and its treatment, in particular, has on body image and sexuality (e.g. Grabsch et al., 2006; Oktay, 1998; Sharma et al., 2003) - especially for younger patients. For example, Lindop et al.(2001) found that the younger women with breast cancer in their sample expressed a stronger need to adjust to their changed appearance and to have this accepted by their husband/partner than the older patients. The explanation put forward for this was that the older women may have been in longer-established relationships which were less affected by this consequence of breast cancer, or their partner may have died (a pattern observed amongst the older women in this study) making issues related to femininity and body image (as well as sexuality) of less concern to them. In line with the above, and in terms of Holland and Rowland's (1989) theory, younger patients with cancer tend to experience greater disruption to their sense of body image and integrity due to the illness' "...feared or actual association with diminished attractiveness, effect on the patient's ability to elicit affection from others, and the effect on the ability to establish or maintain a sexual relationship" (p. 31). According to these authors, the side effects of cancer treatment, including the real possibility of reduced fertility and reduced libido may profoundly affect the sexual and partner roles of the younger patient, which in turn, may be further exacerbated by anxiety and depression. They continue that towards the upper boundaries

of this developmental stage, these issues may exacerbate the feelings of physical vulnerability normally associated with the onset of ageing. For women, ageing is often associated with the onset of menopause, which has consistently been identified as the period most frequently associated with psychological symptoms (Ballinger, 1985; Cooke, 1984). For many women, the menopause is associated with the perception of the loss of femininity and sexual attractiveness (Parlee, 1980). In particular, research suggests that women in lower socio-economic classes with lower income and less education (such as the sample in this study) are more at risk for psychological symptoms in response to the onset of menopause due to the greater value placed on childbearing and rearing (Ballinger, 1985; Cooke, 1984; Van Keep, 1983). In addition, and as has been alluded to above, research has demonstrated that while work represents a safety factor for menopausal women of high socio-economic status, the same does not apply to women of low socio-economic status (ibid).

The results for the theme of stress termed '**existential issues**' once again showed that the younger group, on average, experienced more conflict in relation to existential issues than their older counterparts, again at a level of statistical significance. This theme of stress was also associated with stress reactions and psychological symptoms for the younger patients in this study.

Holland and Rowland's (1989) conceptualisation of this theme of stress include stressors such as: fears related to disease progression, a preoccupation with death and/or dying, a preoccupation with life-review, concerns about the well-being of loved ones and pets in

the future, and issues related to spirituality/religion. Specific issues highlighted by both the younger and older patients included feeling less at peace with the idea of dying since having cancer, which for 51.7% of the younger sample appeared to be associated with a preoccupation with thoughts of death/dying.

As discussed in Chapter Two, the literature indicates that the strongest concerns for women with early-stage breast cancer in particular, are those relating directly to cancer as a health and life threat, the most salient being the possibility of recurrence (Spencer et al., 1999). According to these researchers, the experience of breast cancer often forces women to confront fear and uncertainty, and most overwhelmingly, the idea of their own mortality, raising existential questions related to the importance and meaning of their lives. Other high-rated concerns include sickness and potential damage from undergoing potential adjuvant therapies, pain and premature death. Concerns regarding personal relationships include not being able to live out important relationships, and younger patients with dependent children are often in a dilemma as to what to disclose to their offspring; whether they have the resources to cope with the disease and provide good parenting at the same time; how the children will be affected in the future by their illness; and issues related to their care should they not survive (Ashing-Giwa et al., 2003; Lydon, 2009; Oktay, 1998). These issues may account for the finding in the present study of this theme of stress apparently being associated with a greater and more negative impact on psychological functioning for the younger patients.

In terms of Holland and Rowland's (1989) model and in line with the aforementioned research, for younger cancer patients, the fear of death is a constant worry (as has been demonstrated in this study), and the concept of the finality of death represents a threat to personal identity and sense of continuity, particularly if the individual has no children of her own yet. Other existential issues, related to the theme of stress termed 'altered interpersonal relationships', involve, as mentioned above, major concerns for the psychological, social and financial well-being of both dependent children and ageing parents (who may be just as dependent), and which would be less of a stressor for older women whose own parents were deceased and whose children were no longer dependent on them. According to Holland and Rowland (1989), anger and depression may also be related to envy at loved one's ongoing survival.

Finally, with regard to the **overall extent of disruption to life-tasks**, the results indicated that the younger group of breast cancer patients, on average, experienced a greater degree of disruption overall in comparison to the older group of women, at a level of statistical significance, which was associated with stress reactions and psychological symptoms in this group. In fact, as will be discussed in Section 8.7, the overall disruption to life-tasks was found to be the variable that contributed most significantly to the younger patients' depressive symptoms.

In summary, the results of this study are consistent with previous research in this area with regard to the different issues and stressors confronting younger and older women with breast cancer. They also contribute towards an explanation for the well-established

and consistent findings in the literature, of younger women with breast cancer generally having greater levels of psychological morbidity, and worse psychological adjustment to the disease than their older counterparts – an issue that is discussed in more detail next, with reference to this study. In short, the results discussed above provide further evidence for the theory (c.f., 2.2.1.1) that the perceived losses for older people may not be as great, as the major part of their lives and accomplishments are already behind them, and they have fewer responsibilities to others with regard to the provision of financial and psychological support. On the other hand, younger women are at a time in their lives when a serious disease like cancer is not anticipated and is very disruptive – particularly to interpersonal relationships, which are affected by and interwoven through, all five themes of stress as has been demonstrated by the results in this study.

8.5 HYPOTHESIS THREE: THE ASSOCIATION OF THEMES OF STRESS WITH PSYCHOLOGICAL FUNCTIONING AT DIFFERENT STAGES OF THE LIFE-CYCLE

Hypothesis three (c.f., 1.3.3) was accepted at the 0.05 level of significance given the overall differences, evaluated comparatively, demonstrated by the results of the various questionnaires/scales used to evaluate this hypothesis for the younger (n = 60) and older (n = 56) age groups. These include: the Developmental Stress Questionnaire (DSQ), the Stress Symptom Checklist (SSCL), and the Brief Symptom Inventory (BSI). Univariate analysis included in the evaluation of the association between the five themes of stress and psychological functioning included an initial exploration of the comparisons between the two groups, of the descriptive frequencies and percentages of the SSCL (Tables 13-

17) demonstrating stress reactions. There was an examination of the converted mean scores and T-scores for the BSI for the two groups (Table 18) demonstrating psychological symptoms, in comparison to a normative population. This was followed by a comparison of the two samples' mean scores and related standard deviations with regard to specific stress reactions and psychological symptoms (Table 7). Multivariate analysis of variance (Table 22) confirmed that there were no statistically significant differences between the two age groups with regard to stress reactions collectively, although significant differences were noted collectively for psychological symptoms (Table 23). Correlational analyses of the themes of stress and stress reactions (Table 27), and themes of stress and psychological symptoms (Table 28) showed various moderate to strong relationships at the 0.01 level of statistical significance that differed between the two groups.

The psychological functioning of the two groups of patients, categorised here as 'stress reactions' and 'psychological symptoms', will first be discussed, after which their association with the various themes of stress (already alluded to in the previous section) will be discussed in more detail.

8.5.1 Psychological Functioning of Participants

8.5.1.1 Stress reactions

The results for stress reactions (Tables 8 - 12) demonstrated firstly, that despite indications of elevated stress levels for both groups of patients across the physical, psychological and behavioural stress dimensions, as well as with regard to their overall levels of stress, only a small minority of patients in the sample-as-a-whole demonstrated what is defined as 'high' levels of stress in terms of the scale used to measure it, both overall, or within either the physical, psychological or behavioural domains. Half of the sample demonstrated what is defined as 'low' scores for physical stress reaction, and 64.7% of the sample had low scores for both the psychological and the behavioural stress reactions categories. However over 40% of the patients in the sample demonstrated 'moderate' physical stress reactions, almost one third of the sample demonstrated moderate psychological stress reactions, and almost one third of the sample demonstrated moderate behavioural stress reactions. Just over one third of the sample demonstrated moderate overall levels of stress, although 58.6% of the sample indicated no or low overall stress. Interestingly - given the results for the overall levels of stress, with regard to the patients' self-acknowledged 'present intensity' of stress (measured by the visual analogue scale), over one third of the sample indicated moderate levels of present intensity, while one quarter of the sample indicated a present intensity of stress that fell within the severe range. Only 28.4% of the sample indicated no or low levels of stress with regard to present intensity.

These results tend to be consistent with findings of research on women with breast cancer from other population groups in South Africa, who have also demonstrated clinically significant levels of stress (Lo Castro & Schlebusch, 2006). These results

tended to be distributed fairly evenly across the two age groups (Tables 13 - 17), with no statistically significant differences between the groups observed, with the exception of psychological stress reactions, where the results showed that a greater proportion of women from the younger sample experienced moderate psychological stress reactions than those from the older group, the majority of whom tended to demonstrate scores that clustered at the low end of psychological stress reactions. These differences were found to be statistically significant.

According to Schlebusch (2004), there is an association between 'psychological' stress - which in terms of his model incorporates many 'depressogenic' and 'anxiogenic' cognitions - with symptoms such as depression and anxiety. An interesting possibility could be that there may be a link between the higher levels of psychological stress reactions observed amongst the younger breast cancer patients, and their comparatively high levels of depressive symptoms (discussed in the next session). This could be explained in terms of Beck's (1976) cognitive theory of depression which emphasises an association with depressogenic cognitions (particularly related to the self, current circumstances and the future) and low mood.

As can be observed from the results (Table 7), despite a trend for the younger group of patients to demonstrate, on average, somewhat higher scores on all dimensions related to stress reactions in comparison to the older group, these differences were, overall, not significant at the 95% level of significance. As above, the only exception was the observed difference with regard to psychological stress reactions, where the younger

group showed, on average, a somewhat increased psychological reaction to stress compared to the older group, which was significant at the 90% level of significance. Despite indications of elevated stress levels for both groups, on average, across the physical, psychological and behavioural stress dimensions, as well as with regard to overall levels of stress, the results suggested that the aforementioned levels of stress for both groups tended, on average, to fall within the 'low' range with regard to severity of stress. Interestingly, as above, the results for both groups with regard to the average 'present intensity' of stress revealed that women from both groups scored, on average, within the 'moderate' range of severity for this category – surprising given that, despite being elevated, their scores fell within the 'low' range of severity on all the other dimensions of stress, (although probably a more accurate reflection of their stress levels given the finding of above-average levels of psychological distress noted in both groups and discussed in the next section). One explanation for this, as discussed in Chapter Six, is that visual analogue scales, such as the one used to measure the patients' subjective rating of their 'present intensity' of stress, offer a higher degree of sensitivity and provide a more accurate representation of current symptoms than many other standard forms of assessment (Bech, 1993).

Despite the aforementioned findings of various differences between the means of the two groups with regard to stress reactions as individual dimensions, however, the results of the multivariate analysis of variance for differences in stress reactions between the younger and older breast cancer groups (Table 22) found that collectively as a group of

dimensions, there were no reliable statistically significant differences between the average scores of the younger and older patient groups for stress reactions.

In summary, it would appear that although the patients in both groups demonstrated elevated stress levels across the physical, psychological and behavioural stress dimensions, with indications that they experienced moderate levels of stress with regard to their perception of ‘present intensity’, no reliable differences between the younger and older breast cancer patients were observed with regard to their average stress reactions when compared as two groups. Of interest, however, is the statistically significant finding that a greater percentage of women from the younger sample experienced moderately higher levels of ‘psychological’ stress than the older patients, which may possibly be related to their higher levels of depressive symptomatology, discussed below.

8.5.1.2 Psychological symptoms

With regard to psychological symptoms, the results of this study (Table 18), which are consistent with both national and international research findings (discussed below), demonstrated an above-average level of psychological disturbance evident in both groups of women in comparison to other non (psychiatric) patient adult females to whom they were compared. However caution should be exercised when making interpretations, given the cross-cultural nature of the comparative samples, possibly affecting the reliability of such a comparison. In addition, the comparatively high levels of emotional

expressivity demonstrated as a coping style by both groups of patients, and discussed in more detail below, may have contributed to some extent to this finding.

Both groups of patients achieved mean higher-than-average scores for all of the symptom dimensions including: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. It should be emphasised that these categories do not represent diagnosable psychiatric disorders, but rather suggest elements of clinical syndromes aimed at providing some insight into broad patterns of psychological disturbance experienced by respondents. Of note is the finding that symptoms consistent with anxiety and depression were particularly prevalent, on average, for the younger group of breast cancer patients in comparison to the normative population. In addition, the results suggested that the patients, on average, in both age groups could be considered as ‘positive cases’, or as suffering from mental health difficulties.

Overall, the results (Table 7) suggested that there were no statistically significant differences with regard to psychological symptoms, on average, between the younger and older breast cancer patients at the 95% level of significance. It should be noted, however, that the results did indicate that the younger group demonstrated, on average, a higher level of the symptom dimension termed ‘depression’ than the older group at the 90% level of significance, which was confirmed by the multivariate analysis of variance (Table 23) conducted to examine differences in psychological symptoms collectively between the younger and older patient groups. In addition, the results suggested a trend

for the younger group, on average, to demonstrate somewhat higher scores on all of the symptom dimensions except those termed ‘somatization’ and ‘obsession-compulsion’, which were somewhat higher for the older sample, although not at a level of statistical significance. .

As discussed in Chapters Two and Three, a review of the literature in psycho-oncology indicates that these results are consistent with the vast body of evidence regarding the psychosocial effects of cancer, including anxiety, depression, adjustment disorder, somatisation, body-image disturbances, shame, post-traumatic stress symptomatology, sexual dysfunctions and conditioned nausea (Avis et al., 2004; Johnson et al., 2010; Turner et al., 2005). The literature suggests that international prevalence rates of anxiety and depression range between 15-50% (Grassi et al., 1996; Kissane et al., 2004; McDaniel et al., 1995; Mehnert & Koch, 2007; Minagawa et al., 1997), and that these disorders, in particular, have been found to be particularly prevalent in women diagnosed with breast cancer (Glanz & Lerman, 1992; Howard & Harvey, 1998; Kissane et al., 2004; Mehnert & Koch, 2007) – again, a finding consistent with the results of this study.

Also consistent with the findings in this study are the results of numerous research studies on breast cancer and other types of cancer cited in the psycho-oncology literature which show that younger patients tend to experience more distress, anxiety and depression than older patients, who generally demonstrate better psychosocial adjustment (Broeckel et al., 2000; Ganz et al., 1993; Ganz et al., 1998; Ganz et al, 2003, Pozo et al., 1992; Schag et al., 1993; Simonton & Sherman, 1998; Vinokur et al., 1990; Zainal et al., 2007). As

discussed in Chapter Two, results are not always consistent, however, with some studies having found no correlation between age and distress (Jacobson et al., 2005; Ransom et al, 2006), and others finding that some of these differences were only noted close to diagnosis (Compas et al., 1999). What does seem fairly consistent in the research in this area, however, is that women with breast cancer have to contend with different issues and stressors at different stages of the life-cycle, and the diagnosis of breast cancer can hinder or completely interrupt various important developmental tasks, resulting in high levels of stress and psychological morbidity. What the results of this study and other research has tended to demonstrate , as discussed in Section 8.4.2, is that many younger women with breast cancer seem to experience more disruption to developmental tasks than older women, very often because of their increased roles and responsibilities. When this happens, as is demonstrated in this study, this disruption to important developmental tasks is often associated, at least in part, with the increased levels of psychological distress and poor adjustment often noted in younger patients. This, in turn, may further impede their ability to accommodate the changes imposed on them, and the adaptations required of them by the illness, resulting in a vicious cycle. The link between the disruption to developmental tasks and psychological distress is discussed more explicitly in the next section.

8.5.2 Themes of Stress and Psychological Morbidity

8.5.2.1 Themes of stress and stress reactions

The results (Table 27) confirmed statistically significant moderate-strength relationships, at the 0.01 level of significance, between certain themes of stress and various stress reactions for the younger breast cancer group, but not for the older group. Statistically significant relationships were noted between the following themes of stress and stress reactions for the younger breast cancer patients:

- altered interpersonal relationships and psychological reactions (moderate association)
- altered interpersonal relationships and overall level of stress (moderate association)
- body or sexual image and integrity and physical reactions (moderate association)
- body or sexual image and integrity and psychological reactions (moderate association)
- body or sexual image and integrity and behavioural reactions (moderate association)
- body or sexual image and integrity and overall level of stress (moderate association)
- existential issues and psychological reactions (moderate association)
- existential issues and behavioural reactions (moderate association)
- existential issues and overall level of stress (moderate association)
- overall disruption to life-tasks and physical reactions (moderate association)
- overall disruption to life-tasks and psychological reactions (moderate association)
- overall disruption to life-tasks and behavioural reactions (moderate association)
- overall disruption to life-tasks and overall level of stress (moderate association)

As can be seen from the above, three of the five themes of stress were associated with the various stress reactions investigated in this study, including: 'altered interpersonal relationships', 'body or sexual image and integrity', and 'existential issues', suggesting that for this group of younger Indian South African women, these developmental themes of stress had a significant association with various unhealthy stress reactions. As the various themes of stress were discussed in great detail in Section 8.4.2, this will not be repeated here. However it is noteworthy that apart from the obvious association between overall extent of disruption to life-tasks and stress reactions, the theme of stress termed 'body or sexual image and integrity' had the greatest association with stress reactions of all the themes of stress. Given the impact of the potentially disfiguring nature of the disease on a cohort of women where issues related to body image and sexuality have been shown to be an important part of development at this stage of the life-cycle (c.f., 8.4.2), this association is not surprising and clearly needs to be an area of focus in psychological intervention with younger Indian South African women, as well as taken into account by medical practitioners as an issue requiring special sensitivity in the process of the delivery of treatment.

Of further interest is the finding that there was no association between any of the themes of stress investigated and stress reactions noted for the older patients with breast cancer in this study, possibly offering support for the hypothesis that the disruption of developmental life-tasks by breast cancer at a later stage in the life-cycle has less deleterious effects on psychological functioning than when this occurs at an earlier stage of female psychosocial development.

8.5.2.2 Themes of stress and psychological symptoms

The results (Table 28) confirmed statistically significant moderate-strength or strong relationships, at the 0.01 level of significance, between certain themes of stress and various psychological symptoms, again for the younger group alone. Statistically significant relationships were noted between the following themes of stress and psychological symptoms for the younger breast cancer patients:

- altered interpersonal relationships and interpersonal sensitivity (moderate association)
- altered interpersonal relationships and depression (moderate association)
- altered interpersonal relationships and psychoticism (moderate association)
- body or sexual image and integrity and interpersonal sensitivity (moderate association)
- body or sexual image and integrity and depression (moderate association)
- body or sexual image and integrity and phobic anxiety (moderate association)
- body or sexual image and integrity and psychoticism (moderate association)
- existential issues and interpersonal sensitivity (moderate association)
- existential issues and anxiety (moderate association)
- existential issues and psychoticism (moderate association)
- existential issues and overall psychological distress (moderate association)
- overall disruption of life-tasks and interpersonal sensitivity (moderate association)
- overall disruption of life-tasks and depression (strong association)
- overall disruption of life-tasks and hostility (moderate association)

- overall disruption of life-tasks and phobic anxiety (moderate association)
- overall disruption of life-tasks and psychoticism (moderate association)
- overall disruption of life-tasks and overall psychological distress (moderate association)

As can be seen from the above, the same three themes of stress were associated with various psychological symptoms, as was noted with regard to the various stress reactions (c.f., 8.5.2.1), namely: ‘altered interpersonal relationships’, ‘body or sexual image and integrity’, and ‘existential issues’. As with stress reactions, the more obvious association between the overall extent of disruption to life-tasks and psychological distress was again noted. Once again, there was only an association between themes of stress and psychological symptoms noted for the younger patients, with the same conclusions reached as expressed in the previous section. As discussed above, these results again suggest that for this group of younger Indian South African women, these particular developmental themes of stress had a significant association with psychological distress and psychological morbidity. The results also indicate that, as with stress reactions, the greater the overall extent of disruption to life-tasks for these women, the greater the association with psychological morbidity.

Of interest, is that, with one exception, the various themes of stress were associated with the same symptom dimensions, namely: interpersonal sensitivity, psychoticism, depression and anxiety or phobic anxiety. In terms of the definitions of these symptom dimensions (Derogatis, 1993), the ‘interpersonal sensitivity’ dimension which centres on feelings of personal inadequacy and is marked by self-doubt during interpersonal

interactions, may be linked with the 'psychoticism' dimension which provides for a graduated continuum from mild interpersonal alienation to psychosis. It is hypothesised that there is a link specifically between the younger patients' experience of interpersonal sensitivity and their sense of interpersonal alienation. The results suggest that both are associated with all three of the themes of stress highlighted here, which have been shown in the literature to be associated with various aspects of disruption to developmental life-tasks incorporated by these particular themes of stress, as discussed in detail in Section 8.4.2.

The results related to the associations of these three themes of stress with depression and anxiety in the younger patients are interesting firstly, because of the well-established finding in the literature (c.f., 8.5.1.2) of women (particularly younger women) with breast cancer being especially vulnerable to the development of these disorders; and secondly, because the results of this study have suggested a similar trend for the younger patients in this study (c.f., 8.5.1.2). The above suggests that a partial explanation for these findings in younger women with breast cancer may be related to the disruption of the specific developmental tasks related to altered interpersonal relationships, body or sexual image and integrity, and existential issues.

It would seem that these areas may require special attention and focus by mental health and medical practitioners alike, in their interactions with younger Indian South African women with breast cancer. The apparent heightened sense of interpersonal sensitivity and alienation associated with all of these themes of stress should also be borne in mind when

working with these patients. Finally, the strong association between the patient's experience of overall extent of disruption to developmental life-tasks and depression, suggests that this should be routinely assessed and monitored during the course of her treatment, and perhaps even once it has been completed.

In summary, this section has focused on the association of themes of stress with psychological functioning at different developmental stages of the life-cycle. The results, discussed in detail, suggest that participants in this study had elevated levels of stress across the physical, psychological and behavioural stress dimensions, particularly with regard to their perception of 'present intensity' of stress, and demonstrated above-average levels of psychological disturbance in comparison to other non-patient adult females. These results are consistent with national and international research findings in this area. The younger breast cancer patients in this study demonstrated moderately higher levels of 'psychological' stress, as well as higher levels of depressive symptomatology – findings that may be linked. Various associations between certain themes of stress and stress reactions/psychological symptoms were noted, but only for the younger breast cancer patients, possibly suggesting that the disruption of developmental life-tasks by breast cancer has less profound negative effects on psychological functioning at later stages in the life-cycle. Only the themes of stress termed 'altered interpersonal relationships', 'body or sexual image and integrity' and 'existential issues' and the overall extent of disruption to life-tasks were associated with stress reactions and psychological morbidity in the younger patients. A sense of interpersonal sensitivity and alienation appeared to be particularly associated with these themes of stress, in addition to symptoms consistent

with depression and anxiety – again, findings that are consistent with the literature in psycho-oncology.

8.6 HYPOTHESIS FOUR: THE ASSOCIATION OF COPING STYLES AND STRATEGIES WITH PSYCHOLOGICAL FUNCTIONING AT DIFFERENT STAGES OF THE LIFE-CYCLE

Hypothesis four (c.f., 1.3.4) was accepted at the 0.05 level of significance given the overall differences, evaluated comparatively, demonstrated by the results of the various questionnaires/scales used to evaluate this hypothesis for the younger (n = 60) and older (n = 56) patient groups. These include the Mental Adjustment to Cancer Scale (MAC), the Courtauld Emotional Control Scale (CECS), the Ways of Coping Questionnaire (WCQ), the Stress Symptom Checklist (SSCL) and the Brief Symptom Inventory (BSI). Univariate analyses included in the evaluation of the association between the various coping styles and strategies and psychological functioning, centred around a comparison of the two samples' mean scores and related standard deviations with regard to specific coping styles as measured by the MAC and the CECS, and coping strategies as measured by the WoC (Table 7). Multivariate analyses of variance (Tables 24, 25 and 26) confirmed the statistical significance of various collective differences observed between the two groups, and correlational analyses (Tables 32 and 33) established the strength of relationships between coping styles/strategies and psychological functioning for the two groups at the 0.01 level of significance (only moderate or strong associations are discussed).

8.6.1 Coping Profiles of Participants

8.6.1.1 Coping styles and strategies

The concepts of coping ‘styles’ and ‘strategies’ tends to be used interchangeably in much of the research on differences the in age-related use of these ways of coping, or simply discussed under the umbrella-term of ‘coping mechanisms’, and for this reason, the results for coping styles and strategies will be discussed together in this section, although they are conceptualised differently from a theoretical standpoint.

With regard to the general coping dispositions or styles demonstrated by the two groups, the results overall (Table 7) tended to suggest that the younger group, on average, demonstrated a somewhat more adaptive combination of coping styles overall, than the older group of breast cancer patients. However the results also demonstrated the presence of certain less adaptive coping styles amongst the younger patients as well. Interestingly, despite this pattern, as was noted earlier, the younger group demonstrated, on average, significantly greater levels of symptoms consistent with depression than the older group of patients, with a greater proportion demonstrating moderate ‘psychological’ stress. In addition, as will be noted below, the results indicated that there were stronger associations between the use of what are generally considered to be ‘less adaptive’ coping styles and poor psychological adjustment observed for the younger group of patients, on average, than for the older group of women.

As can be observed from the results (Table 7), the younger group of patients, on average, demonstrated a greater prevalence of the coping styles termed ‘fighting spirit’ and ‘anxious preoccupation’ than the older group of breast cancer patients at a level of statistical significance. Although a trend was observed for the younger group, on average, to demonstrate the coping style termed ‘avoidance’ to a somewhat greater extent, and for the older group, on average, to demonstrate the coping style termed ‘fatalistic’ to a somewhat greater degree, these differences were not statistically significant. The results for the coping style termed ‘helpless or hopeless’ suggested that both the younger group and the older group, on average, demonstrated this coping style to a similar extent. The results (Table 19) also indicated that there was approximately double the number of clinical ‘cases’ (defined as those scoring high on ‘helpless/hopeless’ and low on ‘fighting spirit’) in the older patient group (37.5%) than in the younger sample (18.3%), and that this difference between the groups was statistically significant. The results of the multivariate analysis of variance for differences in coping styles collectively between the younger and older breast cancer groups (Table 24) confirmed that there were statistically significant differences overall between the coping styles of the younger and older patient groups, due to statistically significant differences, on average, between the groups with regard to the coping styles termed ‘fighting spirit’ and ‘anxious preoccupation’.

The results related to emotional control (Table 7) as assessed in this study, represented a particular style of coping across stressful situations (indicative of a coping disposition) related to emotional expressivity (expression/suppression of emotion). The findings

suggested that, on average, there were no statistically significant differences between the expression or suppression of anger, anxiety or unhappiness observed between the two groups of patients, or with regard to overall emotional expressivity. The results also indicated a trend, on average, towards greater expression/less suppression of emotion, both in terms of the three emotions mentioned above, and overall, by both groups of patients in comparison to the norms provided. One potential explanation for these results could be that emotional expressivity may be more acceptable within this culture than in other cultures, such as within the black South African culture with its traditional emphasis on stoicism in the face of adversity (Ngubane, 1977). At least one study has found evidence of high 'emotional outlet' amongst Indian participants with breast cancer (Sharma et al., 2003). The multivariate analysis of variance for differences in coping styles collectively with regard to emotional expressivity (Table 25) confirmed that there were no statistically significant differences evident overall between the younger and older breast cancer groups for this category.

With regard to the general coping strategies or processes demonstrated by the two groups, the results overall (Table 7) suggested a trend towards the younger patients using more coping strategies generally. These appeared to be fairly equally balanced between what are generally considered in the literature to be 'adaptive' and 'non-adaptive' coping strategies. Although certain coping strategies were found to be used, to a greater degree by the younger group of participants, no statistically significant differences were observed between groups with regard to coping strategies collectively, or as a whole. Of interest, is the finding, once again, of an association between coping and psychological

distress for the younger group of breast cancer patients which was not observed for the older women. This is discussed in more detail further on.

As can be observed from the results (Table 7), the younger patients, on average, used the following coping strategies to a greater extent than the older cancer patients: ‘self-controlling’, ‘accepting responsibility’, ‘planful problem-solving’, and ‘positive reappraisal’ at a level of statistical significance. No other statistically significant differences with regard to coping strategies were noted between the two groups, although a trend was observed for the younger group, on average, to use ‘confrontive coping,’ ‘escape-avoidance’ and ‘accepting responsibility’ to a somewhat greater extent than the older group. The coping strategies termed ‘distancing’ and ‘seeking social support’ appeared, on average, to be used to a similar extent by both groups. As mentioned above, despite these results, however, which demonstrate differences between the two groups with regard to individual coping strategies, the multivariate analysis of variance for differences in coping strategies between the younger and older breast cancer groups (Table 26) found that with regard to coping strategies collectively, there were no reliable statistically significant differences between the younger and older patient groups.

A review of the literature related to psycho-oncology research on breast cancer suggests that the role of coping responses and their association with subsequent psychological adjustment to the disease in relation to age/developmental stage, may not have been adequately or appropriately investigated thus far. Various explanations have been put forward in an attempt to explain the differential age-related coping and adjustment

patterns, although it appears that these have often been speculative in nature, or not tied to a comprehensive theoretical framework specifically designed to account for these differences. There appears to have been an assumption in much of the research on coping and adjustment to date that people of different ages either employ similar coping mechanisms or that the effectiveness and utility of different ways of coping remain the same for people across the life-span. However research is increasingly demonstrating that there are differences in the types of coping styles and strategies demonstrated by patients at different developmental stages of the life-cycle, although results are not always consistent, and appear to be influenced by demographic variables such as culture, socioeconomic status and level of education, as well as illness-related factors such as stage of disease. In addition, it is far from clear whether similar coping mechanisms employed by women at different developmental stages of the life-cycle have the same or different outcomes with regard to psychological morbidity and adjustment to breast cancer.

Results of studies investigating age-related differences in coping have, as mentioned above, tended to yield seemingly contradictory results. For example, in cross-sectional analyses of community based samples (Aldwin, 1991; McCrae, 1982, 1989) and chronically ill adults (Felton et al., 1987), older people have been found to engage in fewer coping responses that involve avoidance strategies or ventilation of emotion (both of which are considered 'less adaptive') which has been used to account for some of the age-related differences in emotional distress observed in older and younger cancer patients. However Folkman et al. (1987) found in their study that the younger group used

proportionately more active, interpersonal problem-focused forms of coping (generally considered 'more adaptive') across various contexts and situations. Compas et al. (1999) found that the younger participants in their sample of women with breast cancer who were assessed close to initial diagnosis, had a tendency to use what was defined as 'less adaptive' ways of coping than their older counterparts. However, they found no differences between the younger and older women over the subsequent course of treatment and initial recovery. Finally, as in the present study, Sharma et al. (2003), in their sample of Indian women, found that the younger Indian women with breast cancer used significantly more coping strategies, which appeared ineffectual given that results indicated that these women experienced greater difficulty, generally, in adapting to the stress and limitations that breast cancer imposed on them.

It may be that the results appear contradictory because of the terminology that has been used across studies, that is, 'adaptive' versus 'non-adaptive'. It may be more useful to consider age-related differences found in research on coping from a perspective of 'developmental utility', rather than what is traditionally considered 'adaptive' or 'non-adaptive' in a 'one size fits all' approach. As discussed in Chapter Two, Schultz et al. (1996) have observed that one of the hallmarks of aging is the increased reliance on more passive and introverted ways of coping, as opposed to active, primary control coping strategies directed at the external environment. Under threatening conditions, different ways of coping provide options to maintain high levels of functioning within the context of a familiar environment. Baider et al. (2003) observe that, for an older person, endorsing pessimism may simply reflect a way of coping that has become adaptive in the

face of a declining ability to control important life outcomes such as health. In contrast, younger people endorsing such coping strategies may be reflecting genuine hopelessness and despair about the future. Some studies suggest that older women with breast cancer often cope better than their younger counterparts by employing a variety of previously learned coping methods (ibid). Related to this, Halstead et al. (1994) observe that life experiences, family relationships, previous losses, and problem-solving skills may all contribute to older people's ways of coping. These theoretical explanations are discussed in greater detail below in relation to the findings in this study.

8.6.2 Coping Styles/Strategies and Psychological Functioning

With regard to coping styles/dispositions, the results (Table 32) indicated that only one particular coping disposition termed 'helpless or hopeless' had a moderate or strong association with stress reactions at a statistically significant 0.01 level of significance.

These associations were as follows for the younger breast cancer patients:

- helpless or hopeless coping style and behavioural reactions (moderate association)
- helpless or hopeless coping style and psychological reactions (moderate association)
- helpless or hopeless coping style and overall level of stress (moderate association)
- helpless or hopeless coping style and present intensity of stress (moderate association)

With regard to the older group of patients, a statistically significant relationship was noted for:

- helpless or hopeless coping style and overall level of stress (moderate association)

No statistically significant moderate or strong associations between emotional expressivity and stress reactions were noted for either group.

With regard to psychological symptoms, the results (Table 33) indicated that, once again, only the coping style termed ‘helpless or hopeless’ had a moderate or strong association with psychological symptoms at a 0.01 level of statistical significance for either of the two patient groups. These associations were as follows for the younger breast cancer group:

- helpless or hopeless coping style and obsession-compulsion (moderate association)
- helpless or hopeless coping style and interpersonal sensitivity (moderate association)
- helpless or hopeless coping style and depression (strong association)
- helpless or hopeless coping style and anxiety (moderate association)
- helpless or hopeless coping style and hostility (moderate association)
- helpless or hopeless coping style and phobic anxiety (moderate association)
- helpless or hopeless coping style and GSI (moderate association)

Statistically significant relationships noted for the older group included:

- helpless or hopeless coping style and obsession-compulsion (moderate association)
- helpless or hopeless coping style and depression (moderate association)

No statistically significant moderate or strong relationships between emotional expressivity and psychological symptoms were noted for either of the sample groups.

As discussed in Chapters Two and Three, there is a wealth of research which indicates that the use of various coping styles have important implications for outcomes, not only with regard to psychological morbidity, but also with regard to actual longevity. As with much of the research in this area, however, the findings are not always consistent, although general trends can be observed. The coping style termed 'fighting spirit' - shown in this study to be demonstrated, on average, to a greater extent by the younger breast cancer patients, is generally acknowledged to be associated with better outcomes in terms of psychological morbidity and physical/psychological adjustment to cancer, than those defined as having a 'helpless/hopeless' way of coping (e.g. DiClemente & Temoshok, 1985; Grassi et al., 1993; Greer et al., 1979; Morris et al., 1992; Pettingale et al., 1985; Temoshok and Fox, 1984; Watson et al., 1991). Theoretical explanations that have been put forward by these researchers have centred around the buffering effects that more positive beliefs can have on both psychological functioning and behaviour (such as facilitating goal-directed behaviour, engendering social support etc.), as well as on actual

physiological processes, with the opposite true with regard to the more pessimistic set of beliefs associated with the 'helpless/hopeless' coping style (e.g. Kamen & Seligman, 1987). These explanations are in line with Beck's cognitive theory of depression (Beck et al., 1979) which emphasises the impact of 'depressogenic' cognitions (and specifically the cognitive triad) on affect, physiological signs/symptoms and behaviour, and the vicious cycle that this can produce with regard to feedback loops (originally referred to by Beck (1976) as the 'exacerbation cycle').

By extension, and more specifically conceptualised as an illness-model of coping and adaptation to cancer, is Moorey and Greer's (1989, 2002) cognitive behavioural model, which also supports and offers explanations for the aforementioned research findings (c.f., 3.3.1.5). In terms of this theory, specific schemas are at the core of each of the coping or 'adjustment' styles, which select, filter and interpret information about cancer based on current information as well as past experience, and which in turn predict patterns of thoughts, feelings and behaviours in relation to the illness. Therefore individuals with the coping style termed 'fighting spirit' can be expected to view the diagnosis as a challenge, which would have a more positive effect on affect and behaviour, whereas those demonstrating the coping style termed 'helpless or hopeless' could be expected to become overwhelmed by the threat posed by the disease, having a deleterious effect on psychological functioning and behaviour. Those with low 'fighting spirit' and high 'helpless or hopeless' coping style, as was demonstrated, on average, by more of the older patients than the younger patients in this study, would therefore be expected to demonstrate greater levels of psychological distress.

As can be seen from the results, however, this association was not demonstrated in this study. One explanation for this is that the findings mentioned above are not always as clear-cut as they appear, or as they are made out by the conceptualisation of positive 'cases' (those achieving a combination of high 'helpless/hopeless scores and low 'fighting spirit' scores) on the MAC scale. For example, researchers such as Petticrew et al. (2002) have not always noted the positive effects of the coping style 'fighting spirit', and authors such as Sage et al. (2008) have suggested that the relationship between different types of cognitive responses to cancer is now accepted as being more complex than originally understood, with different cognitive responses appearing to help patients to cope at different stages of different cancers. Sage et al. (2008) observe that a 'fighting spirit' may be helpful in coping with some aspects of the illness, "...but if the individual is exhausted and emotionally depleted a more passive approach may be useful at least in the short term" (p. 25). They suggest that this could be more helpful to a person trying to cope with life in the face of enormously stressful life-events, and indeed, many of the studies cited above have also found 'denial' to be associated with good outcomes in terms of psychological morbidity. However a review of the literature would suggest that most researchers and authors would appear to concur with the overwhelming amount of scientific evidence, some of which is mentioned above, that a 'helpless/hopeless' coping style would be detrimental to psychological functioning and adaptation, at any stage of the disease, given that the patient basically 'gives up' with a complete absence of active strategies for fighting the cancer noted (Moorey & Greer, 1989, 2002). The maintenance cycle that this creates is illustrated by Figure 5 (c.f., 3.3.1.5.1.4). The same could be said for the coping style termed 'anxious preoccupation', demonstrated to a significantly

greater extent in the younger group, where much of the time is spent worrying about the disease getting worse or coming back, and physical symptoms are immediately interpreted as such (ibid). This coping style has also consistently been shown to have a negative impact on psychological functioning and adjustment by research in this area (e.g. Watson et al., 1988, 1991). The maintenance cycle that is created is illustrated by Figure 6 (c.f., 3.3.1.5.1.5).

The results in this study certainly demonstrate the strong association between the coping style ‘helpless and helpless’ with psychological distress (conceptualised as stress reactions and psychological symptoms), and particularly so with regards to depression, which is consistent with all of the research and theory in this area – particularly with Beck’s (Beck et al., 1979) theory of depression (mentioned above). Interestingly, however, although both groups demonstrated similar levels of the ‘helpless and hopeless’ coping style, there appeared to be a stronger association of this coping style with psychological distress for the younger breast cancer patients. A potential theoretical explanation for these results, alluded to previously, centres around the possibility that the various coping styles and strategies discussed in this study have different outcomes on psychological functioning and adaptation depending on the individual’s age/developmental stage – a theory that is discussed in more detail further on.

Although no statistically significant association was observed between the coping style termed ‘anxious preoccupation’ and psychological distress, as noted earlier, symptoms of anxiety were particularly prevalent for the younger breast cancer patients in this study,

possibly suggestive of a link between ‘anxious preoccupation’ and the observed (non-statistically significant) trend towards high levels of anxiety in the younger group of breast cancer patients. In addition, and as was demonstrated in Chapter Seven, an interesting association between various themes of stress and ‘anxious preoccupation’ (a ‘trait’ way of coping) was noted in this study - possibly suggestive of a feedback loop between certain ways of coping, and the patient’s ability to adapt to and manage important life changes (associated with psychological functioning) brought about as a result of the illness. This hypothesis should potentially be more thoroughly investigated in future research, particularly as, according to Fishbain et al. (2006), there is some recent evidence from the psychiatric literature that indicates that the measurement of personality characteristics (traits) can be affected or changed by the presence of state psychiatric disorders such as depression.

With regard to coping strategies or processes and stress reactions (Table 32), no statistically significant moderate or strong relationships were noted for either of the sample groups. With regard to coping strategies or processes and psychological symptoms, the results (Table 33) suggested that the only moderate or strong statistically significant relationship at the 0.01 level of significance that existed for either group was for the younger breast cancer group with regard to:

- the coping strategy termed ‘escape-avoidance’ and the GSI (moderate association)

No further moderate to strong associations were noted for either of the two groups.

As mentioned earlier, the results indicated that the younger group used a number of coping strategies, considered in the literature to be both 'adaptive' ('planful problem-solving' and 'positive reappraisal') and 'non-adaptive' ('self-controlling' and 'accepting responsibility'), to a statistically significantly greater extent, on average, than the older group of women. They also demonstrated a tendency to use more coping strategies generally. However only one coping strategy - shown to be used to the same extent by both groups, and termed 'escape-avoidance' - was found to be associated with psychological distress in this (or either) group.

As discussed in Chapters Two and Three, research has tended to indicate that the coping strategy termed 'escape-avoidance' (sometimes also referred to as 'wishful thinking') is associated with increased psychological distress and poor adjustment to illness (Aldwin & Revenson, 1987; Coyne et al., 1981; Felton et al., 1984; Manne & Sandler, 1984; Vitaliano, 1985, 1987). For example, Sharma et al. (2003) found in their sample of Indian women with breast cancer, a connection between higher body image disturbance and the excessive use of denial as a coping strategy (a variant of 'escape-avoidance'). In terms of Folkman and Lazarus' (1986, 1988) transactional model of coping, the coping strategy 'escape-avoidance' is described as a type of wishful thinking accompanied by behavioural efforts to escape or avoid the problem. It is conceptualised as an example of emotion-focused coping, the function of which is to change either the way the stressful relationship with the environment is attended to, or the relational meaning of what is happening. This relieves the stress even though the actual conditions of the relationship remain unchanged. In terms of this theory, emotion-focused coping strategies tend to be

employed in stressful conditions viewed as refractory to change, such as health-related encounters. However in line with the findings of the studies cited above, and consistent with the findings in this study, Folkman and Lazarus (1986, 1988) found that the use of emotion-focused coping strategies in such situations does not guarantee a positive outcome with regard to psychological morbidity and adjustment, given that some coping strategies such as ‘planful problem solving’ and ‘positive reappraisal’ appear to be associated with changes in emotion from negative to less negative or positive, while others such as escape-avoidance, confrontive coping, self-control, accepting responsibility and distancing correlate with more distress regardless of the situation, and possibly because of their link with more stable personality characteristics or traits (Lazarus, 1993). More recent research appears to offer further explanation for some of these findings. As has been discussed in Chapter Three, although findings are not completely uniform, and again are influenced by demographic variables, stage of disease etc., current research investigating coping and psychological adaptation amongst samples of women with breast cancer, suggests that coping through cognitive, emotional or behavioural disengagement is detrimental to psychological adjustment, especially in the long-term. However cancer-specific ‘approach coping’ (such as active acceptance, seeking social support, emotional expression) has been found in some studies to be more adaptive and to predict diminished distress over time (e.g. Hack et al., 2004; Low et al., 2006). These results are consistent with the literature related to other cancers (Costanzo et al., 2006; Roesch et al., 2005). Low et al. (2006) offer the explanation that ‘approach coping’ strategies may be useful in managing the stress and challenges related to breast cancer (and other illnesses) as they facilitate the processing and communication of

affective states, which may in turn "...call attention to primary concerns, facilitate goal-directed action relevant to these concerns, and engender social support" (p. 235).

Conversely, as seems to be the case in this study with regard to the use of the coping strategy 'escape-avoidance', the attempt by the younger breast cancer patients, on average, to escape or avoid the stressor of breast cancer by means of cognitive, emotional and/or behavioural disengagement is associated with overall levels of psychological distress, possibly for the reasons mentioned above.

However, once again, as with the coping style 'helpless or hopeless' to some extent, the results demonstrated that despite the younger and older patients using the coping strategy 'escape-avoidance' to the same degree, on average, only the younger group demonstrated an association between this coping strategy and psychological distress; that is, the use of this coping strategy by patients in the older group did not have the same association with psychological distress as it did in the younger group. This may be further evidence of the previously-discussed hypothesis that developmental stage/age has an important mediating effect on the relationship between coping and psychological adjustment to breast cancer. For this group of patients, at least, it would appear that confronted with the threat of breast cancer, certain more passive, pessimistic and introverted coping styles and avoidant coping strategies had a differential and more negative impact on the psychological functioning and adjustment of the younger women than on the older patients.

In summary, it may be, as discussed previously, that endorsing pessimism and coping with this by means of escape or avoidance, although not adaptive, is a less destructive way of dealing with the reality of a declining ability to control important life outcomes such as health, for the older Indian South African women with breast cancer in this study, than for the younger patients. However for the younger women, the ‘approach-coping’ ways of coping may, at different stages of the disease, with different types of cancer, be more effective in promoting emotional well-being and psychological adjustment to breast cancer, for the reasons stated above. As will be seen below, however, these associations also still apply to the older patients – but seemingly to a lesser degree.

8.7 HYPOTHESIS FIVE: THE IMPACT OF DEMOGRAPHIC VARIABLES, THEMES OF STRESS AND COPING STYLES/STRATEGIES ON PSYCHOLOGICAL FUNCTIONING AT DIFFERENT STAGES OF THE LIFE-CYCLE

Hypothesis five (c.f., 1.3.5) was accepted at the 0.05 level of significance given the overall differences, evaluated comparatively, demonstrated by the results of the various questionnaires/scales and demographic data, used to evaluate this hypothesis for the younger (n = 60) and older (n = 56) age groups. Predictor variables included: various demographic/historical variables (marital status, children, grandchildren, previous traumatic events, current physical illness in addition to breast cancer, year of diagnosis and treatment type), coping variables (MAC, WoC and CEC) and the themes of stress (DSQ). The dependent variables included: stress reactions (SSCL) and psychological symptoms (BSI).

Stepwise regression analysis was used to determine which of the aforementioned variables independently contributed to the outcome variables for each group of patients. Although the analyses of variance for each of the regressions was significant at the 0.01 level of significance, it should be noted that the adjusted R² values indicated a better ‘fit’, generally, for the younger group of patients. Predictors are reported based on the descending order of Beta values, that is, from those demonstrated as having greatest impact first.

Following a summary of the results for each category of psychological functioning, the discussion will focus on firstly, the themes that have emerged with regard to the prevalence of various predictor variables and their impact on the patients’ psychological functioning; and secondly, the impact of various predictor variables on those stress reactions and psychological symptoms that have been highlighted in the results, and discussed in the previous sections.

8.7.1 Impact of Demographic Variables, Themes of Stress and Coping Styles/Strategies on Stress Reactions

The results (Table 34) confirmed that the following variables impacted on the physical stress reactions of the younger group of breast cancer patients by 36.2% in descending order of importance:

- Body or sexual image and integrity (Theme of stress)
- - Fighting spirit (Coping style)

- Positive reappraisal (Coping strategy)

The following variables (Table 35) impacted on the psychological stress reactions of the younger group of patients by 61% in descending order of importance:

- Existential issues (Theme of stress)
- Helpless or hopeless (Coping style)
- Altered interpersonal relationships (Theme of stress)
- Self-controlling (Coping strategy)

The following variables (Table 36) impacted on the behavioural stress reactions of the younger group of patients by 60% in descending order of importance:

- Helpless or hopeless (Coping style)
- Body or sexual image and integrity (Theme of stress)
- Self-controlling (Coping strategy)

The following variables (Table 37) impacted on the overall levels of stress of the younger patients by 59% in descending order of importance:

- Helpless or hopeless (Coping style)
- Body or sexual image and integrity (Theme of stress)

- Self-controlling

Finally, the following variables (Table 38) impacted on the present intensity of stress of the younger sample by 44% in descending order of importance:

- - Previous stressful or traumatic events (Demographic/historical variable)
- Helpless or hopeless (Coping style)
- Anxious preoccupation (Coping style)

With regard to the older breast cancer group, the results indicated that the following variables (Table 34) impacted on their physical stress reactions by 22.6% in descending order of importance:

- Helpless or hopeless (Coping style)
- - Previous stressful or traumatic events (Demographic/historical variable)

The following variables (Table 35) impacted on the psychological stress reactions of the older patient group by 30% in descending order of importance:

- Overall disruption to life-tasks (Themes of stress combined)
- Marital status (Demographic/historical variable)
- - Previous stressful/traumatic event (Demographic/historical variable)

The following variables (Table 36) impacted on the behavioural stress reactions of the older group of patients by 20% in descending order of importance:

- Helpless or hopeless (Coping style)
- Planful problem solving (Coping strategy)
- - Previous stressful/traumatic events (Demographic/historical variable)

The following variables (Table 37) impacted on the overall levels of stress of the older group by 31% in descending order of importance:

- Helpless or hopeless (Coping style)
- - Previous stressful or traumatic events (Demographic/historical variable)
- Positive reappraisal (Coping strategy)

Finally, the following variables (Table 38) impacted on the present intensity of stress of the older group of patients by 37% in descending order of importance:

- Anxious preoccupation (Coping style)
- - Body or sexual image and integrity (Theme of stress)
- Achievement disruption (Theme of stress)
- - Distancing (Coping strategy)

The themes that emerged out of this analysis, of those predictor variables which appear to have impacted most frequently on the patients' stress reactions in this study, will now be discussed.

As can be seen from the above, for the younger patients, the coping style 'helpless and hopeless' and the theme of stress 'body or sexual image and integrity' were the predictor variables that were demonstrated most frequently to impact on their stress reactions. As has been discussed previously (c.f., 8.4.2 and 8.5.2.1), previous research and the current study have highlighted the negative impact that breast cancer and its treatment can have on, in particular, a younger woman's, body image and sexuality. A high percentage of the younger women in this study noted that not only had they perceived a change in the appearance/texture of their breasts, but that they also felt less attractive and/or sexually desirable as a result of treatment. With regard to the coping style 'helpless and hopeless', as has already been discussed in detail (c.f., 8.6) this finding is, once again, consistent with previous research which has routinely demonstrated the deleterious effects of this pessimistic approach to coping on psychological functioning and adjustment to the illness. It has been shown in this study to be particularly associated with higher levels of stress and psychological distress in the younger breast cancer patients. It would therefore seem that younger Indian South African women with breast cancer, experiencing high levels of disruption with regard to their sense of body or sexual image and integrity, and demonstrating a 'helpless and hopeless' style of coping, would be significantly more at risk for unhealthy levels of stress. This could potentially increase the likelihood of

psychological morbidity in the future and result in difficulties related to poor psychological adjustment to the illness overall.

With regard to the older breast cancer patients, the coping style 'helpless and hopeless' was again demonstrated to be one of the predictor variables to most frequently contribute to their stress reactions. However the results of this study have indicated that this type of coping style is less associated with stress and psychological morbidity in older Indian South African breast cancer patients, than in the younger patients, the possible reasons for which have been discussed in detail above (c.f., 8.6). In addition, the experience of stressful or traumatic event/s in the year leading up to the cancer diagnosis was found to be another of the most frequent predictor variables associated with levels of stress for the older patients, although this variable was inversely related to stress reactions in this sample of patients. This was an unexpected finding, given the research evidence, presented in Chapter Three, which has shown an association between stressful events prior to the onset of cancer and subsequent psychological morbidity and poor adjustment to the illness. However it does provide some evidence for the hypothesis, discussed in Section 8.6.1.1, that older people may cope better with, and possibly even benefit from stressful life events, with respect to managing future stressors. As discussed, some studies suggest that older women with breast cancer cope better than their younger counterparts by employing a variety of previously-learned coping methods, and their life experiences, family relationships, and previous losses have resulted in, and continue to enhance, problem-solving skills which have been developed and refined over the years (Baider et al., 2003; Halstead et al., 1994).

As discussed in Section 8.5.1.1, a greater proportion of younger patients experienced moderate ‘psychological’ stress reactions than older women, which these results demonstrate were predicted by the following variables. Two themes of stress, termed ‘existential issues’ and ‘altered interpersonal relationships’ were found to impact on psychological stress in the younger breast cancer patients. As discussed in Section 8.4.2, both of these themes of stress were found to be more prevalent for the younger patients in this study, and to be associated with stress reactions and psychological symptoms for the younger patients, but not for the older women. As was highlighted in the earlier discussion (c.f., 8.4.2), these themes of stress are particularly concerned with difficulties in relationships with family, friends and medical staff as a result of the illness, concerns related to one’s own mortality (which the majority of the younger patients were shown to be preoccupied with), and concerns related to the well-being of loved ones in the future. With regard to the latter, the majority of the younger patients highlighted ‘worrying more about the future of children’ as being an area of particular concern. Another variable shown to impact on psychological stress for the younger patients was the aforementioned coping style termed ‘helpless and hopeless’ which has already been discussed. In addition, however, the contribution of this coping style to the younger patients’ elevated levels of psychological stress is interesting, given the similar depressogenic cognitions associated with both of these variables, and the strong associations in the cognitive psychology literature of such cognitions with depression – which the results of this study suggest was also more prevalent amongst the younger breast cancer patients. Finally, the coping strategy termed ‘self-controlling’ was also shown to contribute to the psychological stress experienced by the younger breast cancer patients. As discussed in

Chapter Three, 'self-controlling' describes efforts to regulate one's feelings and actions, and has been associated with elevated levels of psychological distress in cancer patients (Folkman & Lazarus, 1988; Lazarus, 1993). This was an unexpected finding, given that both the younger and the older patients in this study demonstrated greater emotional expressivity than other non (psychiatric) patient adults to whom they were compared. One potential explanation is that this coping strategy refers more to efforts to control behaviour, rather than to suppress emotion, which could be linked to and explained by other factors observed in the younger patient population such as their increased preoccupation with and avoidance of reliance/dependence on others, which was discussed in Section 8.4.2.

8.7.2 Impact of Demographic Variables, Themes of Stress and Coping Styles/Strategies on Psychological Symptoms

The results (Table 39) confirmed that the following variables impacted on the psychological symptom dimension termed 'somatization' of the younger group of breast cancer patients by 44% in descending order of importance:

- Helpless or hopeless (Coping style)
- Positive reappraisal (Coping strategy)
- - Seeking social support (Coping strategy)
- Body or sexual image and integrity (Theme of stress)
- - Fatalistic (Coping style)

The following variables (Table 40) impacted on the symptom dimension termed 'obsession-compulsion' of the younger group of patients by 55% in descending order of importance:

- Helpless or hopeless (Coping style)
- - Body or sexual image or integrity (Theme of stress)
- Planful problem solving (Coping strategy)

With regard to the symptom dimension of the younger group termed 'interpersonal sensitivity', the following variables (Table 41) were shown to impact on this psychological symptom by 59% in descending order of importance:

- Helpless or hopeless (Coping style)
- Body or sexual image or integrity (Theme of stress)
- Planful problem solving (Coping strategy)

The following variables (Table 42) impacted on the symptom dimension termed 'depression' of the younger group of patients by 66% in descending order of importance:

- Overall disruption to life-tasks (Themes of stress)
- Helpless or hopeless (Coping style)
- - Achievement disruption (Theme of stress)

The following variables (Table 43) impacted on the symptom dimension termed ‘anxiety’ of the younger group of patients by 49% in descending order of importance:

- Helpless or hopeless (Coping style)
- Positive reappraisal (Coping strategy)

These variables (Table 44) impacted by 35% on the symptom dimension termed ‘hostility’ for the younger group of patients in descending order of importance:

- Body or sexual image and integrity (Theme of stress)
- Escape-avoidance (Coping strategy)

The following variables (Table 45) impacted on the symptom dimension termed ‘phobic anxiety’ of the younger group of patients by 38% in descending order of importance:

- Helpless or hopeless (Coping style)
- Body or sexual image or integrity (Theme of stress)

The following variable (Table 46) impacted on the symptom dimension termed ‘paranoid ideation’ of the younger group of patients by 28%:

- Accepting responsibility (Coping strategy)

The following variables (Table 47) impacted on the symptom dimension termed 'psychoticism' of the younger group of patients by 36% in descending order of importance:

- Altered interpersonal relationships (Theme of stress)
- Helpless or hopeless (Coping style)

Finally, the following group of variables (Table 48) impacted on the overall levels of distress of the younger patient group by 44% in descending order of importance:

- Overall disruption to life-tasks (Themes of stress)
- Escape-avoidance (Coping strategy)
- Helpless or hopeless (Coping style)

With regard to the older breast cancer group, the results (Table 39) indicated that the following variables impacted on the psychological symptom 'somatization' by 28% in descending order of importance:

- Helpless or hopeless (Coping style)
- Confrontive coping (Coping strategy)
- Suppression of anxiety (Emotional expressivity)

The following variables (Table 40) impacted on the symptom dimension termed ‘obsession-compulsion’ of the older group of patients by 33% in descending order of importance:

- Helpless or hopeless (Coping style)
- Existential issues (Theme of stress)

The following variables (Table 41) impacted on the symptom dimension termed ‘interpersonal sensitivity’ of the older group of patients by 24% in descending order of importance:

- Escape-avoidance (Coping strategy)
- Altered interpersonal relationships (Theme of stress)
- - Fighting spirit (Coping style)

With regard to the symptom dimension termed ‘depression’, the following variables (Table 42) impacted on the older sample of patients by 60% in descending order of importance:

- Overall disruption to life-tasks (Themes of stress)
- Helpless or hopeless (Coping style)
- Marital status (Demographic/historical variable)
- - Fighting spirit (Coping style)

- Anxious preoccupation (Coping style)

The following variables (Table 43) impacted on the symptom dimension termed ‘anxiety’ demonstrated by the older group of patients by 30% in descending order of importance:

- - Fighting spirit (Coping style)
- Anxious preoccupation (Coping style)

The following variables (Table 44) impacted on the symptom dimension termed ‘hostility’ demonstrated by the older group of patients by 16% in descending order of importance:

- Escape-avoidance (Coping strategy)
- - Fighting spirit (Coping style)

With regard to the symptom dimension termed ‘phobic anxiety’, the following variables (Table 45) impacted on the older sample of patients by 25% in descending order of importance:

- Helpless or hopeless (Coping style)
- - Additional ongoing physical illness (Demographic/historical variable)

The following variables (Table 46) impacted on the symptom dimension termed 'paranoid ideation' of the older group of patients by 31% in descending order of importance:

- Confrontive coping (Coping strategy)
- - Fighting spirit (Coping style)
- Altered interpersonal relationships (Theme of stress)

The following variables (Table 47) impacted on the symptom dimension termed 'psychoticism' of the older group of patients by 20% in descending order of importance:

- Helpless or hopeless (Coping style)
- Escape-avoidance (Coping strategy)

Finally, the following group of variables (Table 48) impacted on the overall levels of distress of the older patient group by 32%, demonstrated as being of equal importance:

- Helpless or hopeless (Coping style)
- and
- – Presence of grandchildren (Demographic/historical variable)

The themes that emerged out of this analysis, of those predictor variables which have been demonstrated to impact most frequently on the patients' psychological symptoms in this study, will now be discussed.

As can be seen from the above, the same two predictor variables found to impact most frequently on the stress reactions of the younger patients - namely the coping style termed 'helpless and hopeless' and the theme of stress termed 'body or sexual image and identity', were also demonstrated to impact most frequently on their psychological symptoms. The same analysis of those results and the conclusions drawn, will apply here, and therefore need not be repeated. With regard to the older breast cancer patients, as with stress reactions, the coping style termed 'helpless or hopeless' was again demonstrated to be one of the predictor variables that most frequently impacted on the psychological symptoms of the older patients with breast cancer, with the same analysis of those results and the conclusions drawn applying here.

However, of interest, particularly with reference to the results analysed and discussed in Section 8.6, is the finding that the other predictor variable found to contribute most frequently to psychological symptoms in the older cohort of patients, was a lack of the coping style termed 'fighting spirit'. These results are interesting in that they confirm the findings, discussed in detail in Section 8.6, which demonstrated that despite older patients demonstrating more 'coping caseness' due to a significantly greater proportion of the older patients having, what is generally considered to be an unhealthy combination of high levels of the coping style 'helpless and hopeless' in combination with low levels of

'fighting spirit', the results demonstrated that these variables did not correlate with psychological functioning, as they did with the younger patients. The hypothesised reasons for this were discussed in detail. What these results demonstrate, which may add to this explanation, is that although these variables were indeed shown to contribute, in small part, to psychological distress, the poor 'fit' of these statistical models for the older patients, while significant, suggested that these predictor variables were probably not as important as others, not measured in this study. This adds credence to the hypothesis, proposed in Section 8.6, that endorsing pessimism and coping with this by means of escape or avoidance, although not adaptive, was a less destructive way of dealing with the reality of a declining ability to control important life outcomes such as health for the older Indian South African women with breast cancer in this study, then for the younger patients. As seems to be suggested by the results of this regression analysis, it may be that there are other, less obvious factors that contribute to psychological distress and poor adjustment to breast cancer, in older Indian South African women.

As discussed in Section 8.5.1.2, the younger breast cancer patients experienced, on average, more symptoms consistent with depression, than did the older breast cancer patients, which the results of this regression analysis demonstrate were predicted by the following variables. The overall extent of disruption to life-tasks was found to contribute most significantly to the younger patients' depressive symptoms. This result supports other findings in this study in relation to this cohort of patients, of the importance with regard to psychological functioning and adjustment, of a woman's stage of psychosocial development at the time of diagnosis and treatment for breast cancer, and of the number

(as demonstrated here), as well as the type (as demonstrated in Sections 8.4 and 8.5) of developmental life-tasks that are disrupted. The coping style termed ‘helpless and hopeless’ was also shown to contribute to depressive features in the younger sample of patients, adding support for the hypothesis, discussed above, of a connection between the ‘depressogenic’ cognitions inherent to this coping style, and depression. Finally, the theme of stress termed ‘achievement disruption’ was shown to impact inversely on the younger patients’ depressive symptoms. As discussed in Section 8.4.2, although the younger patients were shown, on average, to experience a greater level of disruption to their achievement-oriented goals and activities than the older patients, which at an intuitive level is not surprising given the particular demands at their stage of life, this was not associated with psychological distress in the form of stress reactions and/or psychological symptoms (c.f., 8.5.2) in this study. A potential explanation for the inverse relationship between this theme of stress and depressive symptomatology in the younger patients may be that an enforced reduction in achievement-oriented goals and activities may come as a relief to some younger women, who may be more invested in focusing on other areas at such a time. An additional (and not necessarily alternative) explanation could be that the items representing ‘achievement-oriented goals and activities’ that were measured in this study were not important to this cohort of patients, who may have accomplished a sense of achievement in other ways.

8.8 SUMMARY AND INTEGRATION OF THEMES OF DISCUSSION

The results of this study have clearly demonstrated that developmental stage and methods of coping are two important mediating variables with regard to psychological functioning and adjustment for Indian South African women with breast cancer. This discussion has highlighted the importance of the disruption of developmental life-tasks by cancer and its treatment, on younger women in particular, who demonstrated more disruption than the older patients with regard to: altered interpersonal relationships, achievement-related goals and activities, body or sexual image and integrity, and existential issues.

A potential explanation for these results is the theory that the perceived losses for many older people may not be as great, as the major part of their lives and accomplishments are already behind them, and they have fewer responsibilities to others with regard to the provision of financial and psychological support. In addition, they may be more resilient to stressful life events given their life experiences, endurance of previous losses etc. It should be noted, however, that some of the personal characteristics of the respondents in this study may well have impacted on these results. For example, the fact that only a very small proportion of the women from the older group had a living partner to take into consideration at the time of the study, may provide an alternative explanation for the absence of an association between 'existential issues' and stress reactions/psychological symptoms for this group.

Most research in this area, however, would support the hypothesis that younger women are at a time in their lives when a serious disease like cancer is not anticipated and is very disruptive - a theory supported by the finding in this study, that the younger patients experienced greater overall disruption to life-tasks than the older group of women. In addition, and providing further evidence for this hypothesis, is the finding that the disruption of life-tasks by breast cancer had less profound negative effects on psychological functioning at later stages of the female life-cycle among the women in this study, with the three aforementioned themes of stress, together with the overall disruption to life-tasks, demonstrated as being associated with unhealthy levels of stress and psychological morbidity only in the younger patients.

With regard to the latter, the three themes of stress were shown to be particularly associated with interpersonal sensitivity and a sense of interpersonal alienation for the younger patients, as well as with symptoms consistent with depression and anxiety – findings that are consistent with the literature in psycho-oncology, which has also demonstrated increased levels of psychological morbidity in younger breast cancer patients, and for which the results of this study provide at least a partial explanation. The overall extent of disruption to life-tasks was shown to directly contribute to the younger patients' depressive symptomatology. The theme of stress termed 'body or sexual image and integrity' was demonstrated as being one of two predictor variables shown to most frequently contribute to the younger patients' stress reactions generally, with a majority of the younger patients stating that they felt less attractive and/or sexually desirable as a result of treatment. The themes of stress termed 'existential issues' and 'altered

interpersonal relationships' were both found to contribute to 'psychological' stress in the younger breast cancer patients, which, as discussed below, may also be linked to depression. A more surprising finding, was that the theme of stress termed 'achievement disruption' - also experienced to a greater degree by the younger patients than the older, was found to impact inversely on the younger patients' depressive symptomatology.

A potential explanation for this finding is that an enforced reduction in achievement-oriented goals and activities may possibly come as a relief to some younger women with breast cancer, who could be more emotionally invested in focusing on other areas (such as attending to the well-being of children) at such a time. In addition, the fact that the women in this study were generally considered to be of low socio-economic status, had had minimal educational opportunities, and were mostly unemployed at the time of the study may certainly provide further explanation for this finding. Had the sample been comprised of a group of career-oriented women, the relationship between 'achievement disruption' and stress reactions/psychological symptoms may well have been different.

Although both the older and younger patients demonstrated elevated levels of stress, particularly with regard to their perception of its 'present intensity', as well as above-average levels of psychological distress, a greater percentage of women from the younger sample experienced moderately higher levels of 'psychological' stress than the older patients, as well as demonstrating higher levels of depressive symptomatology. The suggestion was made that there may be a connection between the greater prevalence of 'psychological' stress (incorporating various depressogenic and anxiogenic cognitions)

observed in the younger patients, and their comparatively higher levels of depressive symptomatology, given the well-established link between depressogenic cognitions and low mood. An interesting finding related to this, is that the coping style termed 'helpless and hopeless' (also known to incorporate depressogenic cognitions) was found to contribute to both 'psychological' stress and depression, which may suggest a type of 'depressogenic maintenance cycle' incorporating all three variables. The coping strategy termed 'self-controlling' was also shown to contribute to the elevated levels of moderate 'psychological' stress demonstrated by the younger patients, which, given their comparatively-speaking, above-average levels of emotional expressivity, was attributed more to efforts to control behaviour than to suppress emotion.

Despite the results demonstrating higher levels of psychological distress in the younger patients, it was the older patients who were shown to have less adaptive coping styles overall than the younger patients, demonstrating what is considered to be an unhealthy pattern of high 'helpless and hopeless' coping style and low 'fighting spirit', which has been associated with higher levels of psychological morbidity in the literature. In addition, despite a similar presence of the coping style termed 'helpless and hopeless' evident for both groups, which was consistently associated with psychological distress for the younger patients in this study, there was a much less prevalent association evident between this coping style and psychological morbidity noted for the older patients. The same was true with regard to the coping strategy termed 'escape-avoidance' which was associated with overall psychological distress in the younger patient group, but not in the older patient group, despite being used to a similar extent.

It was suggested that a possible explanation for these results may be that endorsing pessimism and coping with this by means of escape or avoidance, although not adaptive, is a less destructive way of dealing with the reality of a declining ability to control important life outcomes such as health, than for the younger patients. However for the younger women, the ‘approach-coping’ ways of coping may, at different stages of the disease, with different types of cancer, be more effective in promoting emotional well-being and psychological adjustment to the illness.

The results of the regression analysis further suggested that there may be other, more significant predictor variables for psychological distress in older breast cancer patients, not assessed in this study – a potential area for future research. Finally, a further area that may be usefully investigated in the future, is the interesting association noted in this study, between various themes of stress and the coping style termed ‘anxious preoccupation’, which, it was suggested, may be indicative of a feedback loop between certain ways of coping and the patient’s ability to adapt to, and manage, important life changes brought about as a result of illness.

8.9 A DYNAMIC COGNITIVE-DEVELOPMENTAL MODEL OF BREAST CANCER AND PSYCHOLOGICAL FUNCTIONING IN A COHORT OF YOUNGER INDIAN SOUTH AFRICAN WOMEN

The following model (Figure 26) provides an integration of the results of this study, with various theories proposed by Moorey and Greer (1989, 2002) and Holland and Rowland (1989). It attempts to bring together several ideas based on research in psycho-oncology,

classical psychological theory and current thinking. It also aims to demonstrate the dynamic interplay and complex feedback loops hypothesised as existing between variables, in order to highlight and demonstrate the fluidity, complexity and ever-changing nature of this process, as well as to highlight areas of this process that have not been investigated or comprehensively investigated in this study. These include: various cancer-related details such as stage of disease, various historical and idiosyncratic details such as family history and history of early experiences, and associated cognitive variables such as patients' appraisal processes and core beliefs/schemas, and current systemic/contextual factors.

The model presented here is a representation of the integration of the aforementioned theory with the results obtained in this study for the younger cohort of cancer patients, given that the results of the regression analysis suggest that the variables investigated in this study possibly provided a better explanation of this process for the younger Indian South African women assessed in this study, than they did for the older patients.

It is suggested that this model contributes to, and elaborates on, existing theoretical models by illustrating the impact that the 'threat to self' (changes in mental/physical abilities; changes in personal/social roles; and changes in physical appearance) can have with regard to disruptions to important developmental tasks in any given population. In this sample of low SES Indian South African women, developmental disruptions were observed in relation to interpersonal relationships, patients' body/sexual image and

integrity, and sense of purpose with regard to their future/related issues regarding their own mortality.

The model also elaborates on the appraisal process, making it more sensitive to developmental issues within a given population. It hypothesises that the aforementioned developmental disruptions would also impact on the women's appraisal of their illness (among other variables), resulting in the activation of 'survival schema' at the core of coping/ adjustment styles considered both adaptive and less adaptive. With regard to the less adaptive coping styles, the findings suggest that for younger breast cancer patients in this ethnic group, the predominant meaning of their illness that may emerge out of this appraisal process is that of harm or loss. This has resulted in a 'helpless and hopeless' coping style that is particularly associated with 'psychological' stress reactions and depressive symptoms. It has also resulted in a sense of threat, resulting in an adjustment style termed 'anxious preoccupation' associated with symptoms of anxiety, and possibly also part of a feedback loop with the perceived disruptions, 're-influencing' appraisal.

In addition, this model incorporates the concept of coping strategies as well, which are a more dynamic and 'process-oriented' construct, and are hypothesised as being actively used by individuals to cope (as opposed to the more stable and enduring 'styles' of coping), but also represent a cognitive/affective/behavioural response to the threat. What this model adds to existing models, therefore, is a greater integration of coping styles (traits) and strategies (process) which can both be linked to certain 'survival schema'. In this way, the process of coping is shown, in a more integrated manner, to rely both on a

patient's pre-existing 'psychological make-up', as well as reflecting the dynamic, mutually reciprocal, bidirectional relationship between the person and their environment. This allows coping to be a fluid and dynamic process, while remaining idiosyncratic. The coping strategies found to be used by this sample of women, based on their appraisal to the threat to survival, were 'escape avoidance' and 'self-controlling'. In terms of the model proposed here, it is hypothesised that these coping strategies are also driven by 'survival schema' - in this case, particularly by 'denial', and were associated with psychological distress and poor adjustment.

The implications of this model and these findings for psychological intervention will now be explored.

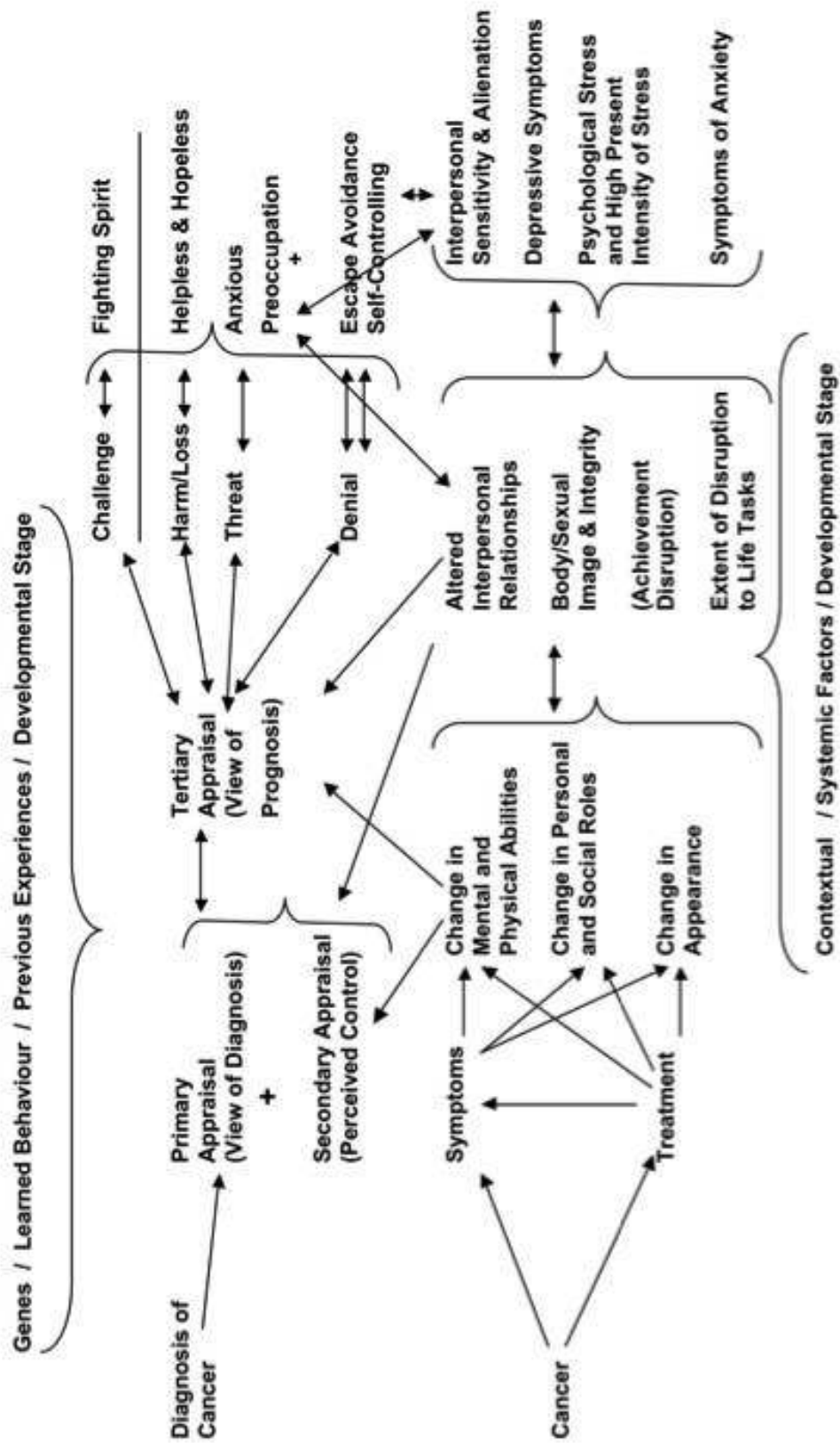


FIGURE 26. A dynamic cognitive-development model of breast cancer and psychological functioning in a sample of younger Indian South African women.

8.10 IMPLICATIONS OF THE STUDY FOR INTERVENTION

There has been a shift in research from focussing on survival only, to prevention, detection, QoL, psychosocial issues and distress and psychosocial interventions, as well as end of life and palliative care (Kissane, 2009). Various health-care experts have noted that knowledge of the health-care target population and their beliefs and attitudes towards their illness are a sine qua non of treatment in order to fulfil the important goal of prevention of psychological problems (Schlebusch & Ruggieri, 1996; Schlebusch et al., 1989). It is now widely-acknowledged that this is especially important with regard to the treatment of breast cancer, in view of the high survival rate (Letton et al., 1996), the need for patients to prepare themselves for treatments that may be painful and/or disfiguring (Berger & Bostwick, 1994), and the need to cope with the overall stress of having cancer (Schlebusch, 1998b).

With reference to the South African context, Schlebusch and van Oers (1999) observe that “Unless the process of identification of psychological disturbance with all its vicissitudes across cultures is known, effective treatment in a multiethnic setting is not possible” (p. 34). They continue, with reference to breast cancer, that specialists in psycho-oncology need to be aware of possible cross-cultural differences in different patient populations in order to maximise psychological well-being and quality of life in these patients. They need to be able to target those individuals for psychological intervention who appear to be at risk for poor psychological adjustment, and in this way, optimise treatment outcome. As was mentioned in Chapter One, there is a dearth of

research related to the psychological adjustment of Indian South African women with breast cancer, despite the comparatively high incidence of this disease in this population group. One of the main objectives of this study has therefore been to establish the variables that appear to be associated with psychological morbidity and poor adjustment in this patient group, so that firstly, vulnerable patients can be identified early on; and secondly, so that serviceable concepts for intervention, with this particular group of cancer patients, can be derived. With regard to the former, a clear 'profile of psychological vulnerability' for (particularly younger) Indian South African women with breast cancer has emerged out of this study, and is summarised in Section 8.8. With regard to psychological intervention with vulnerable patients from this group, the findings of this study can be usefully integrated into a standard cognitive behavioural therapy approach, which will be discussed in greater detail below.

As discussed in Chapter Three, psycho-oncology research on the alleviation of physical and psychological symptoms of cancer patients has tended to focus on the efficacy of: the alleviation of physical symptoms, such as pain management (Turk & Rennert, 1981) and treating anticipatory nausea and vomiting (Burish et al., 1987); body image counselling (Ogden, 1996); social support interventions (Giese-Davis et al., 2002); and cognitive adaptation strategies (Moorey & Greer, 1989, 2002; Taylor, 1983). With regard to the latter, which is the area of focus with regard to the present study, most experts in the field would agree that there is a good and growing body of evidence that cognitive behavioural therapy (CBT) is beneficial for people with cancer, although the benefits are more in terms of quality of life and not duration of survival (Coyne et al., 2007). One of the biggest international meta-reviews of the best available evidence of the treatment of

choice in psychological therapies and counselling (DoH, 2001), found an impressive evidence base for the efficacy of CBT with a range of psychological difficulties in a mental health context. As most specialists in psycho-oncology would agree, there is a significant overlap between the psychological issues that arise in relation to cancer, and the issues that arise in the mental health context. This has been illustrated in the literature review and by the results of this study, highlighting the relevance and potential efficacy of CBT with cancer patients presenting with psychological difficulties and poor adjustment.

Sage et al. (2008) note that it is important that psychological difficulties that extend beyond a period of adjustment in time and intensity are identified and managed. These authors observe that “Whilst distress is inevitable, there is good evidence that ... CBT is effective in treating depression and anxiety (associated with cancer) and no patient should be left to struggle with clinically significant symptoms that will impair quality of life and complicate the management of their illness” (p. 22). Moorey and Greer (2002), in their review of the available evidence found that, overall, CBT appears to be effective in enhancing quality of life for people experiencing cancer. In particular, they note that the form of cognitive behavioural therapy that they developed for treating cancer patients, termed Adjuvant Psychological Therapy (Moorey & Greer, 1989, 2002), has been found to be particularly effective in enhancing quality of life when compared to other forms of psychological intervention, or no intervention at all (Greer et al., 1992; Moorey et al., 1994; Moorey et al., 1998). Their work has paved the way for CBT in the field of psychological intervention for cancer patients (Sage et al., 2008), and it is within the

framework of this approach, and the cognitive-developmental model described above (Figure 26), that the following suggestions are made.

As discussed previously, Moorey and Greer's (1989, 2002) cognitive model of adjustment to cancer states that it is the appraisals, interpretations and evaluations that the individual makes about cancer which determine his or her emotional and behavioural reactions. In other words, it is not the symptoms of the disease or the effects of treatment per se which produce the emotional response, but the meanings they hold for the person involved. However the results of this study have revealed the importance of the patient's developmental stage with regard to how she thinks about the illness, and the implications for her life, based on the type and extent of disruption to important developmental life-tasks by cancer and its treatment. For younger Indian South African women, in particular, it appears that changes in mental and physical abilities, personal and social roles and physical appearance, have resulted in disruptions related to interpersonal relationships, patients' body/sexual image and integrity, and sense of purpose with regard to their future and related issues regarding their own mortality. This has impacted on their appraisal of their illness, resulting in the activation of 'survival schema' at the core of coping/adjustment styles considered both adaptive and less adaptive. With regard to the less adaptive coping styles, the findings suggest that for younger breast cancer patients in this ethnic group, the predominant meaning of their illness that may emerge out of this appraisal process is that of harm or loss. This has resulted in a 'helpless and hopeless' coping style that is particularly associated with 'psychological' stress reactions and depressive symptoms. It has also resulted in a sense of threat, resulting in an adjustment

style termed ‘anxious preoccupation’ associated with symptoms of anxiety, and possibly also part of a feedback loop with the perceived disruptions, ‘re-influencing’ appraisal.

The implications for psychological intervention are that it would be vital that the patient’s perception of the aforementioned developmental disruptions be targeted and examined, perhaps by means of Socratic dialogue. Unhelpful cognitive distortions and negative automatic thoughts should be challenged using standard CBT techniques such as dysfunctional thought records and behavioural experiments. It is likely, however, that some of the changes caused by cancer and its treatment are indeed disruptive and damaging, and current clinical thinking with regard to these sorts of difficulties would suggest the application of the newer ‘third wave approaches’ to CBT such as Mindfulness-Based Cognitive Therapy (Segal et al., 2002), Acceptance and Commitment Therapy (Hayes et al., 2003), and Rumination-Focused Cognitive Behavioural Therapy (Watkins, 2009).

With regard to the coping style termed ‘fighting spirit’, which has at its core the ‘challenge’ schema, although this is often thought of as an adaptive adjustment style, resulting in good outcomes both with regard to psychological functioning and longevity (as discussed in Chapters Two and Three), Sage et al. (2008) suggest that this is not always the case. Although this coping style may be helpful in coping with some aspects of the illness, it may actually be counter-productive for clinicians to routinely promote this way of coping if the individual is exhausted and emotionally depleted. This should always be borne in mind when treating women with breast cancer.

Finally, the results of this study demonstrated the use of the coping strategies ‘escape avoidance’ and ‘self-controlling’ by the younger patients in this study. In terms of the model proposed in this thesis, it is hypothesised that these coping strategies are also driven by ‘survival schema’ – in this case, particularly by ‘denial’, and were associated with psychological distress and poor adjustment. Because, from a theoretical point of view, these strategies are more malleable and flexible than coping styles, it may be a useful part of the therapy to help the client learn more practical ‘problem-focused’ and ‘approach-coping’ skills which have been shown to be beneficial for psychological adjustment to breast cancer (Low et al., 2006).

The scope of this thesis prohibits a more detailed exploration of these issues, however the above discussion hopefully demonstrates the clinical utility of the Developmental Stress Questionnaire and Cognitive-Developmental Model with regard to the assessment of, and psychological intervention with, women with breast cancer, with the findings discussed here aimed at adding to the dearth of research that exists with respect to the psychological adjustment of Indian South African women with breast cancer. It is hoped that this will contribute to better recognition and understanding of their particular difficulties, ideally leading to improved medical and psychological intervention for them. Cancer-related distress is frequently unrecognised and untreated (Ryan et al., 2005) as a result of factors such as lack of physician training in recognition and treatment of distress, patients not communicating their distress and fearing stigmatization, and the perception that depression/anxiety are ‘normal’ reactions to a diagnosis of cancer (ibid). Hopefully

ongoing research in this area will contribute to improvements in understanding of the issues involved, leading to improvements in patient care.

8.11 LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FUTURE RESEARCH

8.11.1 Potential Limitations of the Study

There are several limitations and potential criticisms of this study, which need to be taken into account when considering the generalisability of this study, both to the index population and to women with breast cancer more generally.

The relatively small sample sizes of each group – although having sufficient statistical ‘power’ to generate statistically reliable results, may have revealed additional trends not noted here, or magnified the strength or weakness of various associations between variables, had the sample sizes been bigger.

As discussed previously, the age boundary between the two groups, while based on conceptual considerations, was also based on practical ones (c.f., 6.4.1/2). The author concurs with other researchers in this area (e.g. Rowland, 1989), that the finding of age markers with which to label developmental stages is difficult and somewhat arbitrary, with enormous overlap across stages, and this necessitates flexibility when making interpretations based on this. Had the sample size been larger, with a greater age distribution, it would have been preferable to have a wider gap between the two groups,

which may have allowed more group differences to emerge, and allowed for a more robust comparison overall.

The research context, by its very nature, presents limitations on the study's external and internal validity. The main threat to external validity is that volunteer participants, as part of a convenience sample, are likely not to be fully representative of the target population as a whole, the most incapacitated of whom are generally unlikely to participate.

However the participation rate in this study was very good, and there is no reason to believe that this sample of individuals would respond differently to a random sample from the same patient population. With regard to internal validity, the main threat to this in cross-sectional research is the possibility of confounding among the key variables, such that the direction of mooted cause-and-effect relationships cannot always be specified.

Although the assumptions about data made by the statistical tests used in this study were mostly met, there are some exceptions. The Pearson's chi-square test assumes the sample is selected randomly, and convenience sampling was employed in this study. As has been mentioned, the participation rate in this study was very good, and there is no reason to believe that this sample of individuals would respond differently to a random sample from the same patient population. With regard to the multivariate analyses of variance, the required assumption of a normal distribution and homoscedasticity of variables was not met for the theme of stress subscore 'achievement disruption' (Appendix C), meaning that the finding of statistically significant differences between the two groups with regard

to this variable, may not be statistically reliable when this test was used to analyse the data. Finally, with regard to the multiple regression analyses, the required assumption of a normal distribution and homoscedasticity of variables was not met for the following variables (only those relevant to the findings of this study are discussed) (Appendix C): that psychological and behavioural stress reactions, together with ‘overall level of stress’, were predicted by the coping strategy termed ‘self-controlling’ for the younger group; that the ‘present intensity of stress’ was predicted by the theme of stress termed ‘anxious preoccupation’ for the older sample; and that depression was predicted by the theme of stress ‘achievement disruption’ for the younger patients. Caution is required when assuming the reliability of this data.

Cronbach’s alphas (α) were reported for each yielded subscore. The aim was not only to demonstrate the internal validity of the study, but also to confirm the construct validity of the instruments for which psychometric details have not previously been published. As can be seen (Appendix C), most of the instruments used are shown to have maintained acceptable-good construct validity, given that most of the subscores demonstrate reliability of 0.7 (or close to this) or above. The exceptions were ‘confrontive coping’ and ‘accepting responsibility’ (coping strategies); and ‘interpersonal sensitivity’ and ‘psychoticism’ (psychological symptoms). These subscales showed poor internal consistency for this sample. However, only ‘interpersonal sensitivity’ is of relevance in this study, given the aforementioned results and interpretations made from these. While the lack of internal consistency for this subscore suggests that interpretations involving this construct should be made with caution, it is proposed that this subscore may have

shown poor internal consistency because of the small number of items making it up (alpha increases as a function of length). In addition, it should be remembered that the BSI is widely used in research, among many different populations, and is generally considered to have strong psychometric properties.

With regard to the instruments used in this study, the statistical reliability of the Developmental Stress Questionnaire (DSQ) is unknown as it was constructed specifically to test out the various hypotheses proposed for investigation by this study given the absence of a suitable alternative, and results obtained were therefore only used comparatively within this sample. However it is theoretically-derived, and was subjected to a small qualitative investigation in order to establish its face and content validity. The data derived was also subjected to a Cronbach alpha test (Appendix C) and demonstrated reasonable construct validity for this sample. A further criticism, which is in connection to Holland and Rowland's (1989) theoretical model on which the DSQ was based, is that the theory itself is not particularly culture/gender/class-sensitive, which has been taken into account in the interpretation of the results. A final criticism of the instruments used in the present study is that, although they are well-established in health research with considerable evidence of their reliability and validity, they have not been standardised for the population under investigation, which may have implications for their validity and reliability within this context.

A final area of weakness, already mentioned in Chapter Five, is that it was beyond the scope of this study to measure all aspects of the highly complex process associated with

psychosocial adaptation to breast cancer, and the following areas have been alluded to only hypothetically, based on theory and available research findings: various illness-related details such as stage of disease and prognosis, historical factors such as family history and history of early experiences, current systemic/contextual factors, and various cognitive variables such as patients' appraisal processes and core beliefs/schemas. It is possible that these variables, had they been included and assessed in the current investigation, may have influenced or even altered the interpretation of the results of this study, as presented here.

8.11.2 Recommendations for Future Research

The results of this study have highlighted several areas considered worthy of future investigation. These are briefly considered below.

Firstly, as has been emphasised by researchers such as DeLongis et al.(1988), future research in this area could potentially benefit from a within-subject, intra-individual design which involves obtaining multiple measures of psychological functioning and health-related variables over various time intervals, which are used to calculate a separate correlation for each participant – the participant serving as her own control. The potential effects of between-subject differences, which could obscure nuances in results would, in this way, be eliminated. In addition, this approach would be able to ascertain whether themes of stress and ways of coping do, indeed, change over time and in dynamic

interrelation with one another, and the impact of this on psychological functioning and adjustment to illness.

A second potential area for future investigation, is related to the possibility, suggested by the results of this study, that the variables assessed here as being associated with psychological functioning in Indian South African breast cancer patients, while clearly having relevance for the younger breast cancer patients, did not appear to have as good a 'fit' for the older patients. Given that these patients demonstrated similarly high levels of stress and psychological distress as the younger patients, it seems important that future studies in this area attempt to ascertain which additional variables may be associated with psychological distress in older Indian South African women with breast cancer.

A third area highlighted by this study warranting further investigation, relates to potential associations between variables that have not, to the author's knowledge, been investigated in previous research in this area. These have already been highlighted within the context of the current findings, summarised in Section 8.8, and include firstly, the interesting association between 'psychological' stress, the coping style termed 'helpless and hopeless' and symptoms of depression; and secondly, the potential feedback loops between various ways of coping and themes of stress in different patient populations.

Finally, the use of the Developmental Stress Questionnaire in future research with this and other patient groups with breast cancer, would help to establish its reliability and

validity as a viable psychometric instrument, as well as help to standardise it for these patient populations.

8.12 SUMMARY AND CONCLUSIONS

The present study proposed to examine as its primary aim, some major themes of stress, intrapersonal coping styles and strategies and psychological adjustment to breast cancer of Indian South African women at different developmental stages of the life-cycle. The secondary aim was to investigate the interrelationship among variables, and to identify those variables which habituated or facilitated positive or negative outcomes in terms of psychological functioning.

The general findings indicate that both the older and the younger patients demonstrated elevated stress levels and above-average levels of psychological distress, but that a greater percentage of the younger patients demonstrated moderate levels of 'psychological' stress, and on average, demonstrated more depressive symptomatology than the older patient group.

Three themes of stress termed 'altered interpersonal relationships', 'body/sexual image and integrity' and 'existential issues' were associated with stress reactions and psychological distress for the younger patients, but disruptions to life-tasks was not associated with poor adjustment for the older patients in this study. A strong association with overall extent of disruption to life-tasks and symptoms of depression was noted for

the younger patients. Despite the older patients demonstrating a less adaptive combination of coping styles, these were not as frequently associated with psychological morbidity as the younger patients, although the coping style 'helpless and hopeless' was associated with psychological distress for both younger and older patients. The same applies to the coping strategy termed 'escape avoidance' which was only associated with psychological distress for the younger patients.

An important finding of this study was that the variables measured in relation to psychological adjustment to breast cancer were shown to have a better 'fit' for the younger patients in this study than for the older patients, suggesting a need for further research with this population group to establish which variables predict psychological distress and poor adjustment in older Indian South African women with breast cancer.

In conclusion, it is hoped that this study has highlighted the significance of the developmental stage as part of the process of psychological adjustment to breast cancer, and that this will not only contribute to aspects of psychological assessment and intervention with Indian South African women with breast cancer, but stimulate further research in this area.

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APPENDIX A: PATIENT INFORMATION LEAFLET

Many people find the diagnosis and treatment of breast cancer stressful, and some people have difficulty in coping with this. The following questionnaires have been designed to measure some of your thoughts, feelings and behaviours related to your experience with breast cancer. The results of this study will be used to help other women with breast cancer cope better with stress. All questionnaires will be treated with complete confidentiality.

You are free to decline to participate or to withdraw from the study at any time without suffering any disadvantage or prejudice to your treatment.