Coping with cancer: The relationships between positive reappraisal coping, positive emotions, dispositional optimism and psychological well-being in cancer survivors

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Submitted as part of the course requirements of the 4th year of the Master of Psychology (Specialisation) program at the University of South Australia, 30th September, 2004

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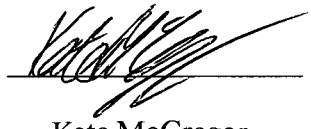
Statement of authorship

This thesis contains no material which has been accepted for the award of any other degree or diploma in any tertiary institution and, to the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference is made in the text.

Signed: 

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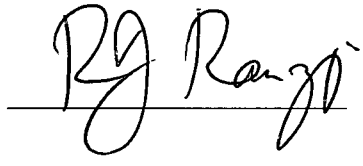
Signed: 

Dr. Rob Ranzijn, PhD

Acknowledgements

To begin with I would like to thank all of the people who participated in my study. The number of people who went out of their way to help me with recruitment and who were happy to share their experiences with me truly amazed me. I was continually surprised at how kind, helpful and positive people were. Your stories of overcoming hardship were inspiring.

Also, sincere thanks to:

My supervisor, Dr Rob Ranzijn for his positivity, encouragement, support, and for his many hours of help with reading my drafts and offering suggestions, despite going through a difficult year himself. Your help was much appreciated.

Jan McInerney for being so helpful with editing and style.

My family, who always offer me their love, support and assistance with everything I do. In particular: my mum who has read every piece of writing I have ever done, and who spent many hours helping me with her support and proof-reading; my dad for his very valuable input and suggestions about the study and also for the time he spent proofreading my writing; and my brother, Mark, for his understanding.

Stefan, for always being there. Your love and support mean so much to me.

My friends: those at uni for their support, advice, understanding and help with this project, and, most importantly, for our lunches; and those out of uni for their long-standing friendship, being willing to go out with me on Saturday nights to de-stress, and just for being such lovely people.

Abstract

The aim of this thesis was to examine the relationships between positive reappraisal coping, positive emotions, optimism and psychological well-being in cancer survivors. A questionnaire was distributed to cancer survivors aged over 18 who had shown no active signs of disease for at least one year. The questionnaire retrospectively measured participants' use of positive reappraisal coping and experience of positive emotions during the time they had cancer. Participants' current levels of optimism were measured. Their current levels of psychological well-being as cancer survivors were also measured using the 12-item General Health Questionnaire (GHQ-12; Goldberg, 1978) and the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985).

Path analysis revealed that, contrary to predictions, the use of positive reappraisal coping during cancer and the experience of positive emotions during cancer did not predict survivors' current psychological well-being. Therefore, the hypothesis that positive emotions would mediate a positive relationship between positive reappraisal coping and psychological well-being could not be supported. However, as hypothesised, the use of positive reappraisal coping during cancer was found to predict the experience of positive emotions during cancer. As hypothesised, optimism was found to predict psychological well-being. It was also found to significantly predict the use of positive reappraisal coping during cancer and the experience of positive emotions during cancer. Finally, the path analysis revealed that the relationship between dispositional optimism and positive emotions during cancer was partially mediated by the use of positive reappraisal coping during cancer.

In addition to these findings, the amount of time passed since the cancer experience was significantly positively associated with Subjective Well-Being as measured by the Satisfaction

With Life Scale. Also, age was significantly negatively associated with Psychological Distress as measured by the GHQ-12.

Some methodological limitations of the study that could have impacted on the results were discussed. These included the retrospective nature of the study design, and the use of measures of well-being that may not have been ideal for the nature of the study.

Despite the limitations, the findings of the present study have important implications for cancer patients and survivors and could be used to develop interventions for improving the psychological well-being of this population. The findings also provide future directions for research into the coping, emotions and personality domains of positive psychology.

1 Introduction

1.1 Aim

The aim of this investigation was to examine factors that predict psychological well-being in cancer survivors. Specifically, the pathways through which positive reappraisal coping, positive emotions and optimism might predict psychological well-being were investigated.

1.2 General background

Many studies (Amir & Ramati, 2002; Hampton & Frombach, 2000; Naidich 1997; Amir and Ramati 2002; Palmer, Kagee et al. 2004) have shown that the experience of a chronically stressful or traumatic event can have detrimental effects on a person's long-term psychological well-being. However, people vary greatly in the type and severity of their reaction to trauma (Amir & Ramati, 2002; Bonanno, 2004). Empirical study has conclusively shown that the utilisation of different coping strategies can partly explain the variation in the psychological well-being of trauma survivors (Banthia, Malcarne et al., 2003; Billings, Folkman et al., 2000; Charlton & Thompson, 1996; Park & Folkman, 2001). Coping research has typically focused on the regulation of distress (Lazarus & Folkman, 1984). However, the rising prominence of a positive psychology philosophy has encouraged coping researchers to examine the possible positive as well as negative outcomes of traumatic situations (Folkman, 1997; Siegel & Schrimshaw, 2000; Tedeschi & Calhoun, 2004). This focus has led to increased interest in the coping strategy of positive reappraisal, where trauma sufferers attempt to regulate their distress by reappraising their objective negative environment such that they focus

on the benefits of their situation (Folkman, 1997; Lazarus & Folkman, 1984). Empirical findings show that positive reappraisal coping is positively related to psychological well-being in a large number of different samples (Park & Folkman, 2001; Sears, Stanton & Danoff-Burg, 2003; Stein, Folkman, Trabasso & Richards, 1997; Velazquez, Saez & Rossello, 1999).

Examination of the literature has revealed that positive reappraisal coping is also positively associated with positive emotions (Bonanno & Keltner, 1997; Stein et al., 1997; Tugade & Fredrickson, 2004). Typically, psychologists have preferred to focus on negative emotions. This has resulted in the existence of a gap in psychological knowledge about the nature of positive emotions and their antecedents and consequences (Folkman, 1997; Fredrickson, 1998). Recently, theories such as Fredrickson's (1998) Broaden and Build theory have renewed scientific interest in the functions of positive emotions. Preliminary evidence suggests that positive emotions can have long-lasting benefits for individuals, particularly in the context of stress and coping (Bonanno & Keltner, 1997; Fredrickson, 2001; Tugade & Fredrickson, 2004).

In summary, the literature implies that a relationship exists between positive emotions, positive reappraisal coping and psychological well-being in survivors of chronic stress or trauma. More specifically, the collation of research on the above areas tentatively suggests that positive emotions mediate the positive relationship between positive reappraisal coping and psychological well-being in trauma survivors. While a number of studies have investigated aspects of this proposed model, a thorough examination of the literature fails to reveal a study that specifically explores this model's conception as a whole.

The present study specifically investigated the prospect that positive emotions would mediate the positive relationship between positive reappraisal coping and psychological well-being. It was hoped that this investigation would therefore provide valuable insights into

factors that are associated with enhanced psychological well-being in survivors of trauma or chronic stress, and the mechanisms by which these factors work. In this vein, the current study also significantly contributed to knowledge in the fields of coping and positive emotions. Knowledge in the aforementioned areas has potential practical applications that could beneficially impact on people's lives. In particular, information about specific coping strategies and other factors that are related to post-trauma psychological well-being could lead to the development of more effective interventions for survivors of trauma.

The current study also sought to investigate the role of the personality trait of optimism in the relationship between positive emotions, positive reappraisal coping and psychological well-being. Empirical evidence strongly suggests that dispositional optimism is positively associated with psychological well-being (Aspinwall & Taylor, 1992; Stanton & Snider, 1993). Theoretical and empirical evidence also suggest that dispositional optimism predicts the experience of positive emotions (Segerstrom, Taylor, Kemeny & Fahey, 1998), and the use of positive reappraisal coping (Brissette, Scheier & Carver, 2002) in trauma situations. Both of these constructs have been shown to predict psychological well-being (Bonanno & Keltner, 1997; Sears et al., 2003). The current study sought to investigate the relationships, both direct and indirect, from optimism to psychological well-being, positive emotions and positive reappraisal coping in the hope that information gained would contribute to knowledge about the mechanisms behind the positive relationship between dispositional optimism and psychological well-being.

1.2.1 Cancer: A context in which to apply the literature on coping with trauma and chronic stress

Cancer is a relatively commonly experienced chronic stressor. According to the *Diagnostic and statistical manual* (DSM-IV; American Psychiatric Association (APA), 1994), cancer and other life-threatening illnesses can also be defined as traumas in the same way that the experience of sexual assault or war have traditionally been conceived of as traumatic (APA, 1994). The demonstration of what people intuitively know–that the experience of cancer is chronically stressful and can be traumatic–suggests that it is appropriate to investigate a general stress and coping model in a population of cancer patients and survivors. This application is supported by the fact that studies have shown that the type of coping responses utilised by cancer patients are related to both their short-term (Heckman et al., 2004) and long-term (Hack & Degner, 2003) psychological health. In particular, preliminary studies have found that the use of positive reappraisal coping during cancer predicts later psychological well-being (Sears et al., 2003).

A significant proportion of the population will experience cancer in their lifetime. The Australian Institute of Health and Welfare (AIHW; 2003) predicts that in Australia, one in three men and one in four women will be diagnosed with cancer before the age of 75. Studies on cancer patients have revealed that this population is vulnerable to psychological ill-health, which is manifested in the form of psychological disorders, such as post-traumatic stress disorder, and high levels of anxiety, depression and distress (Amir & Ramati, 2002; Andrykowski, Cordova, Studts & Miller, 1998; Clark, Botswick & Rummans, 2003). Research has shown that cancer survivors are also susceptible to psychological ill-health, despite the fact that they are no longer physically plagued by the illness (Saleeba, Weitzner & Meyers, 1996). The 2003 AIHW report revealed that the five-year survival rate for cancer in Australia is

56.8% for males and 63.4% for females. This indicates that research into factors associated with psychological well-being in cancer survivors is important as findings in this area will be relevant to a large number of people.

1.3 Coping with cancer

Cancer is a chronic stressor that affects people's lifestyles and perception of themselves, is often associated with invasive or debilitating treatment, and, most importantly, forces people to confront their own mortality. Therefore, it is important to investigate methods by which people can effectively cope with this stressor.

1.3.1 Psycho-oncology

Psycho-oncology is defined as 'the subspecialty of cancer dealing with...the psychological reactions of patients with cancer and their families at all stages of disease' (Holland, 2001, p. 465). Psycho-oncology is a relatively new field, having only been formally established in 1975. Therefore professionals have only recently begun to recognise the importance of addressing the psychological consequences of cancer and of improving the human side of cancer care. Psycho-oncology investigates factors that mediate between cancer and its treatment, and the outcome variable of quality of life. Information about these mediators is then used in psychological interventions designed to improve the quality of life of cancer patients and survivors (Holland, 2001).

1.3.2 Cancer as a trauma

In 1994, the DSM definition of trauma was broadened to include events 'that involve actual or threatened death or serious injury or other threat to one's physical integrity' to which

'the person's response ... involves intense fear, helplessness or horror' (APA, 1994, p. 424). Prior to this edition, illness and medical procedures had been excluded as stressors that could be classified as traumatic. However, in congruence with the changed definition of trauma, cancer can now be considered to be a trauma and hence cancer survivors as survivors of trauma. The fact that 41% of a sample of breast cancer patients reported responding to cancer with intense fear, helplessness or horror, lends credence to the suggestion that cancer can be a traumatic experience (Palmer et al., 2004). The inclusion of cancer as a trauma is also supported by the large number of studies (Amir & Ramati, 2002; Hampton & Frombach, 2000; Naidich, 1997; Posluszny, 2001) which show that cancer sufferers and survivors experience cancer-related post-traumatic symptoms, and that a minority of them (4–19%; reviews by McGrath, 1999; Smith, Redd, Peyser & Vogl, 1999) meet the diagnostic criteria for post-traumatic stress disorder.

1.3.3 Psychological well-being in populations of cancer patients and survivors

Empirical evidence suggests that populations of cancer sufferers also exhibit higher levels of other measures of psychological ill-health, such as affective disorders, anxiety, depression and distress (Gallagher, Parle & Cairns, 2002). For example, in a study of 134 patients with various types of newly diagnosed cancer, 61% reported anxiety, 48% reported insomnia and 33% reported significant distress (Whelan, Mohide & Willan, 1997). Additionally, a study on long-term survivors of cancer who had been disease-free for a minimum of five years revealed that this group had significantly higher levels of depressive symptoms, anxiety and emotional distress when compared to a control group (Saleeba et al., 1996).

The eclectic nature of the above studies in relation to measures of well-being, type of cancer and stage of cancer experience, provides strong grounds for generalising these results to suggest that cancer can be detrimental to people's psychological well-being.

However, despite the difficulties associated with cancer, empirical evidence has demonstrated that it does not inevitably lead to negative psychological outcomes. For example, in one study it was found that breast cancer patients reported an overall quality of life similar to that of women of the same age with no history of cancer (Hann, Jacobsen, Martin, Azzarello & Greenberg, 1998).

These studies on psychological well-being in cancer patients and survivors present an interesting contrast. Some people who are affected by cancer develop persistent and disruptive clinical anxiety or affective disorders (National Cancer Institute, 2001). Others do not have a reaction so severe that they develop a psychological disorder, but they nevertheless experience heightened levels of distress, anxiety or depression (Amir & Ramati, 2002; Heckman et al., 2004). In contrast, the psychological well-being of some cancer sufferers appears to be unaffected in the long-term (Hann et al., 1998). These findings show that the experience of cancer can have different psychological outcomes. This fact precipitates the psycho-oncological concern of which factors mediate between the experience of cancer and psychological well-being so that these differing psychological outcomes are possible.

1.3.4 Coping strategies and psychological well-being in cancer patients and survivors

Theory and empirical study have linked coping strategies to psychological well-being in cancer patients and survivors. For example, the Illness Constellation Model (Morse & Johnson, 1991) suggests that one of the most important factors in adaptation to chronic illness is the efficacy of an individual's coping behaviour. Morse and Johnson (1991) argue that

sufferers and survivors of chronic illness display different psychological outcomes that are not solely due to differences in the severity or biology of the disease; rather, the degree to which an illness is a psychological stress will depend on the individual's personal resources, such as effective coping strategies.

Empirical evidence supports Morse and Johnson's (1991) claim that coping strategies are important factors in the psychological adjustment and well-being of cancer patients and survivors (Banthia et al., 2003; Drageset & Lindstrom, 2003; Kershaw, Northouse, Kripacha, Schafenacker & Mood, 2004; Montgomery, Pocock, Titley & Lloyd, 2003).

Coping strategies have been shown to be related to long-term as well as short-term well-being in cancer survivors. For example, Hack and Degner (2004) found that the use of different coping strategies a short time after diagnosis predicted psychological well-being in breast cancer patients three years later. These findings are consistent with the results of another longitudinal study on coping and distress in cancer patients (Heckman et al., 2004).

1.3.5 The importance of psychological well-being in cancer patients and survivors

Investigating factors that are associated with or influence psychological well-being in cancer patients and survivors is important, because it may help to provide people with a better quality of life. Psychological well-being enables people to appreciate their life and to continue to find meaning and satisfaction in living. It also enables people to continue to enjoy aspects of their life that do not necessarily have to be marred by their physical illness. It ensures that cancer patients are not delivered the 'double blow' of having both body and mind fail. Being sufficiently psychologically well can also help cancer sufferers to deal with their illness and can give them the strength necessary to continue fighting their physical battle.

1.4 Coping

In attempting to understand coping and how it is associated with adaptation and well-being, it is important to first have a conception of stress and situations that evoke the use of coping strategies.

1.4.1 Stress

Early stress theories posited that stress could be explained entirely by environmental characteristics. This suggests that the objective pressure of a situation is the sole determinant of a person's stress level. These theories fail to take into account the fact that, although there are some situations and environments that can safely be considered as likely to result in stress, substantial individual differences always exist in the type and degree of reaction to these environmental demands (Folkman, 1997).

1.4.2 Stress and coping

Lazarus and Folkman's (1984) theory of stress takes other factors such as psychological resources into account. This model of stress is probably currently the best known and most widely used in the area. Lazarus and Folkman's theory of stress and coping recognises the fact that people react in different ways and to different degrees to environmental demands and pressures. Accordingly, their theory emphasises the importance of individuals' subjective interpretations and appraisals of their experiences.

Lazarus and Folkman (1984) contend that people are constantly appraising their interaction with the environment in order to determine its significance for their well-being. They posit that two different appraisals are made. People make a 'primary appraisal', where they assess how the situation impacts or has the potential to impact on their current or future

well-being. Individuals make one of three types of appraisals at this stage: they either appraise the situation as having no impact on their well-being; as having a positive impact on their well-being, or as threatening or having a negative impact on their well-being. Individuals who make the last set of appraisals about their encounter with the environment experience stress. Hence, in this model, stress is defined as a cognitive appraisal of a situation as threatening or harmful.

When an event is perceived as stressful, individuals make a 'secondary appraisal' of what can be done to alleviate the stress. This is the stage at which coping strategies are employed. Lazarus and Folkman (1984, p. 141) define coping as 'constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person'. This definition of coping includes all strategies that are used in an attempt to alleviate stress and does not discriminate between effective and ineffective strategies.

Lazarus and Folkman (1984) distinguish between problem-focused coping and emotion-focused coping. Problem-focused coping strategies are directed at managing the problem causing distress, whereas emotion-focused coping strategies are directed at regulating individuals' emotional responses to the problem. Lazarus and Folkman (1984) hypothesise that problem-focused forms of coping are more likely to be used and are more effective in situations that are perceived to be controllable and able to be changed, whereas emotion-focused coping is more likely to occur and is more likely to be effective when the problem is perceived to be out of the control of the individual.

1.4.3 Positive reappraisal coping

Positive reappraisal is a cognitive form of emotion-focused coping. It is also often referred to as 'positive reinterpretation' (Carver, Weintraub & Scheier, 1989, p. 269), or as

'developing positive perceptions about life situations' (Patterson & McCubbin, 1981; cited in Velazquez et al., 1999, p. 70). For the purpose of this investigation, these terms will be used interchangeably with positive reappraisal coping.

Positive reappraisal coping works by altering a person's appraisal of their environment for the better without actually changing their objective situation. People who utilise positive reappraisal reframe what they originally perceive to be a negative situation into perceiving it as having positive benefits. Threat is diminished by altering the meaning that individuals attach to their experiences (Folkman, 1997; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986).

Theorists postulate that a traumatic experience seriously challenges a person's existing set of beliefs and assumptions about the world (Janoff-Bulman, 1992; Park & Folkman, 1997). This is because the meaning of the traumatic situation is inconsistent and incompatible with the established existing global beliefs. This results in a re-evaluation about the nature of one's world, during which time long-held positive schemas may be shattered (Janoff-Bulman, 1992). Positive reappraisal coping is hypothesised to be effective because it changes the meaning of the traumatic event so that it is able to be integrated with the person's existing belief system (Thompson & Janigian, 1988). Distress is expected to be alleviated because positive reappraisal coping reduces the discrepancy between the appraised meaning of the event and the person's global belief. This leads to a sense of coherence and enables people to continue working toward their goals (Davis, Nolen-Hoeksama & Larson, 1998). Thus, positive reappraisal coping is hypothesised to be related to better psychological adjustment to a stressful event as it reconciles discord between the situational meaning of the event and the person's stable global beliefs.

1.4.3.1 Positive reappraisal coping and distorting reality

It has been argued that perceiving benefits from a negative situation is a defensive denial-based strategy that is maladaptive because it prevents acceptance of the full severity of the problem and therefore inhibits the development and utilisation of effective coping strategies (Lazarus, 1983). A significant number of authors and researchers refute this claim and argue that people can change their perception of a situation so that it is construed in a more positive light without distorting or denying its objective reality (e.g. Sears et al., 2003). On a different note, other authors (Heckhausen & Schultz, 1995; Taylor & Armor, 1996) go so far as to suggest that it is psychologically adaptive and commonplace to respond to aversive events with mildly distorted positive perceptions of reality. This argument is supported by empirical evidence (Taylor et al., 1992). For example, a study of breast cancer patients found that the false belief that one could personally control one's cancer was positively associated with psychological adjustment (Taylor, Lichtman & Wood, 1984). The fact that positive illusions are a common response to traumatic events also suggests that they have an adaptive function (Taylor & Armor, 1996). Taylor and Armor (1996) distinguish between positive illusions and denial, suggesting that positive illusions represent people's beliefs about their own personal qualities, their degree of personal control and the nature of their personal future, whereas denial is more focused on how people want their external circumstances to be. Overall, evidence suggests that having positive beliefs about an aversive or stressful situation is associated with psychological well-being and adjustment to a trauma, even in situations where these beliefs reflect a mild distortion of reality.

1.4.3.2 Positive reappraisal coping and psychological well-being

As is conceptually and theoretically suggested, empirical studies show that positive reappraisal coping is positively related to psychological well-being in survivors of chronic stress and trauma.

For example, Stein et al. (1997) reported a positive correlation between various measures of psychological well-being and the proportion of positive appraisals made following bereavement.

Studies have also shown that the use of positive reappraisal coping is negatively correlated with depression both in the general population (Velazquez et al., 1999), and in people suffering from intense stressors such as health-related stress or caregiving (Park & Folkman, 2001).

The aforementioned results are all taken from studies using cross-sectional designs. While these results are useful in demonstrating that there is a significant positive association between positive reappraisal coping and psychological well-being, they do not provide any information about which variable precedes or predicts changes in the other. Longitudinal studies provide more information about temporal precedence and are therefore more suggestive of whether positive reappraisal coping predicts psychological well-being or whether the case is actually vice versa.

A longitudinal study on breast cancer found that women who used more positive reappraisal coping immediately following their treatment had better psychological well-being twelve months later (Sears et al., 2003). This study is flawed in that it does not control for psychological well-being at study entry. Therefore, it fails to rule out the possibility that psychological well-being actually predicted the use of positive reappraisal coping rather than the other way around. However, when these results are placed in the context of the literature,

they are more supportive of the conclusion that positive reappraisal coping leads to better psychological well-being.

1.4.3.3 Summary of evidence on positive reappraisal coping and psychological well-being

In summary, the collation of empirical evidence gathered from the literature on coping is consistent with and supports the conclusion that positive reappraisal is an effective coping strategy that predicts psychological well-being following a stressful situation or trauma. This conclusion has also been supported in populations of cancer patients and survivors (Sears et al., 2003).

1.5 Positive emotions

1.5.1 Emotions

An umbrella definition of emotion encompasses a number of subjectively experienced affective phenomena. Emotions are generally considered to be short-lived, relatively momentary conditions. They are also regarded as intensely experienced states that are non-habitual and arise from an individual's appraisal of their environment. Contemporary theories of emotion are generally in consensus that emotions arise from instigating stimuli, are accompanied by physiological correlates, are dictated by a person's cognitive appraisal of their environment and often compel activity through their motivational properties (Fredrickson, 2001; Reber, 1995).

1.5.2 Positive psychology and emotions

The mission of positive psychology is to understand and foster the factors that allow individuals, communities and societies to thrive and flourish. Scientists who adhere to the

school of positive psychology seek to investigate that which makes life worth living (Carver & Scheier, 2002).

Emotion research has generally focused on negative emotions such as anger, anxiety and sadness, viewing the study of positive emotions as somewhat frivolous. However, the rise of a positive psychology philosophy has led to a greater exploration of positive emotions. By emphasising the importance of concepts such as human strengths, happiness and quality of life, positive psychology highlights the value of studying positive emotions and their relation to well-being (Fredrickson, 2001; Lyubomirsky & Abbe, 2003).

1.5.3 Positive emotions and coping

In the context of trauma and coping literature, positive emotions have often simply been conceived as indicators of effective coping. This view is reflected in the number of coping studies that use measures of positive emotions as markers of psychological well-being following a trauma (e.g. Freund & Baltes, 1998).

Another historically popular view on positive emotions in a coping context has arisen from the bereavement literature. This view, which can be identified as the grief-work account of emotional expression, suggests that experiencing and expressing positive emotion is an indicator of denial. As such, positive emotions are viewed as impeding the process of recovery by disrupting the experience of negative states of mind that are viewed as necessary for adjustment (Horowitz, Bonanno & Holen, 1993; Sanders, 1993).

Recently, however, the popular perception of positive emotions in a coping context has altered somewhat. Researchers have begun to assign a new importance to positive emotions in relation to coping theories. Instead of focusing on positive emotions as outcomes or markers of underlying well-being, the importance of positive emotions in their own right is now being

investigated. Studies have shown that people in traumatic situations commonly experience positive emotions as well as the expected high levels of distress (Folkman, 1997; Grbich, Parker & Maddocks, 2001; Lechner et al., 2003). This has raised the question of whether positive emotions have an adaptive significance in a trauma context (Folkman, 1997), resulting in debate and study regarding the importance and place of positive emotions in coping theories.

For example, Lazarus, Kanner and Folkman (1980) argue that positively toned emotions serve three psychological functions in coping with stressors: firstly, positive emotions are said to provide 'breathers' from stress and in this way act to break a depressive mindset; secondly, they are proposed to help sustain effort and commitment in coping with the stressor through their reinforcement of effective coping strategies and in this way inspire the necessary effort to turn towards another task; thirdly, Lazarus et al. (1980) suggest that positive emotions act as 'restorers', where they facilitate the recovery from harm or loss by replenishing damaged and depleted resources or developing new ones.

In her Broaden and Build theory, Fredrickson (1998, 2001) also argues that the experience of positive emotions helps to develop new psychological resources in stressful situations by momentarily broadening people's scopes of cognition. This leads to a broader use of coping strategies, which builds resources and skills that can be drawn on for more effective management of future adversity.

Finally, it has been argued that positive emotions are indirectly related to psychological well-being following adversity through their association with social support. Bonanno and Keltner (1997) argue that the expression of genuine positive emotions is adaptive, because it encourages contact with and support from important people in the sufferer's life. The authors argue that this evocation of social support directly influences people's adjustment to traumatic events and their subsequent psychological well-being.

The collection of the above theories suggests that the current consensus in the literature is that positive emotions play an important, active and adaptive role in coping with adversity.

1.5.4 Positive emotions and psychological well-being

Empirical evidence supports the theoretical claims that positive emotions are an important and beneficial aspect of coping. Longitudinal investigations into the value of positive emotions in a coping context reveal that they predict improved psychological well-being and adjustment to a trauma or chronic stressor.

For example, in a study on conjugal bereavement, Bonanno and Keltner (1997) found that the expression of genuine positive emotions six months post-loss predicted reduced grief severity at 14 and 25 months post-bereavement. This finding was supported by the results of another study that investigated well-being in bereavement. Stein et al. (1997) found that people who experienced positive emotions during bereavement had better scores on a psychological well-being measure 12 months after their loss.

The above studies focus specifically on a bereaved population. It is possible that the experience of positive emotion is more adaptive in bereavement situations. Therefore, it is important to look at the results of studies utilising other populations.

A number of studies have found that a positive relationship exists between trait resilience and the experience of positive emotions both in general (Block & Kremen, 1996; Klohnen, 1996), and in a coping context (Tugade & Fredrickson, 2004). Trait resilience is a psychological construct that has been characterised as the ability to 'bounce back' from negative events (Block & Kremen, 1996). Therefore, empirical evidence that suggests a positive relationship between resilience and the experience of positive emotions in a coping

context supports the argument that positive emotions are related to psychological adjustment to a stressor and hence, psychological well-being.

Positive emotions have also been empirically shown to be an important and active ingredient in the construct of resilience. In a landmark study in the area, Fredrickson, Tugade, Waugh and Larkin (2003) measured resilience in American college students prior to 11th September, 2001. Following the September 11 attacks on the United States, the students completed follow-up tests that measured their frequency of positive emotions in the aftermath of the crisis. Resilience prior to the attacks was found to predict the frequency of positive emotions shortly after the crisis, even when controlling for current mood. Importantly, the study also revealed that the experience of positive emotions in the aftermath of the attacks mediated the beneficial effect of trait resilience on symptoms of depression. This result supports Fredrickson et al.'s (2003) hypothesis that resilient people are buffered from depression mainly through their heightened experience of positive emotion. This is an important finding, because it provides strong support for the suggestion that positive emotions aid in the recovery from traumatic or chronically stressful events and hence, predict long-term psychological well-being in survivors of trauma.

1.5.5 Summary of evidence on positive emotions and psychological well-being

In summary, positive emotions have been strongly theoretically linked to psychological well-being in survivors of trauma or chronic stress. Empirical studies investigating the relationship between positive emotions and psychological well-being are consistent with the theoretical assertion that positive emotions predict psychological well-being in trauma survivors.

1.6 Positive emotions and coping strategies

It has been established that positive emotions contribute significantly to coping and that they are related to psychological well-being in coping contexts. However, it has not yet been established exactly where positive emotions fit into a coping model.

Folkman and Lazarus (1990) argue that coping can actually affect emotions. They propose that this occurs in one of three ways: firstly, through actions that alter the environment so as to reduce or remove the stress, and hence change the relational meaning and its subsequent emotion; secondly, to deploy attention elsewhere, so as to take a person's mind off the trouble; and thirdly, by changing the way that the relationship between the person and environment is appraised, thus changing the relational meaning of the situation and hence the corresponding emotion.

Empirical evidence is consistent with the assertion that coping strategies predict positive emotions (Stanton & Snider, 1993). For example, one study (Folkman & Lazarus, 1988) has revealed that coping strategies mediate individuals' emotional reactions to a stressor.

1.6.1 Positive reappraisal coping and positive emotions

Positive reappraisal coping was explicitly identified by Folkman (1997) as a meaning-altering process that could lead to the experience of positive emotions in a stressful or adverse situation through its effect on a person's appraisal of their environment.

Therefore, the use of positive reappraisal coping would be expected to be positively associated with the experience of positive emotions in a traumatic situation. However, only a very small number of studies (Gross & John, 2003; Tugade & Fredrickson, 2004) have specifically investigated the relationship between positive reappraisal coping and positive emotions. These preliminary cross-sectional studies support Folkman's (1997) contention with

the finding of a significant positive correlation between the two measures. For example, in their study, Tugade and Fredrickson (2004) found that the use of positive reappraisal coping in relation to the most important personal problem that participants were currently facing was significantly and positively correlated with their experience of positive emotions.

1.6.1.1 Positive affect, positive emotions and positive reappraisal coping

Despite the lack of research into the relationship between positive reappraisal coping and positive emotions, a number of studies have investigated the relationship between positive reappraisal coping and positive affect.

The terms affect and emotion are often used interchangeably and indeed they are similar constructs in that they are both affective phenomena and thus refer to one's feelings. However, despite their similarities, affect and emotion are distinct constructs and differ in some important ways. Affect is more of a general concept than emotion; it simply refers to 'pleasant or unpleasant feeling' (Frijda, 1994, p. 61). Affect is often free-floating, rather than aroused by a personally meaningful circumstance, and typically lasts longer than emotion. Emotions on the other hand are generally acute and object-focused and connote a particular state of action readiness. While emotions always involve affect, affect does not necessarily involve emotions (Frijda, 1994).

The similarities between affect and emotions suggest that research into positive affect may provide information about positive emotions. However, this information must be interpreted cautiously as the two constructs are different.

Studies investigating the relationship between positive affect and positive reappraisal coping have produced mixed results. On the one hand, it has been found that the use of positive reappraisal as a coping strategy is associated with increased positive affect in nursing home

residents suffering from the stress of poor health and limited physical functioning (Drungle, 2001). A longitudinal study on conjugally bereaved participants extended this result with the finding that the use of positive reappraisal coping at the time of bereavement predicted positive affect three months and five months after the loss, even after controlling for positive affect at the time of bereavement (Moskowitz, Folkman, Collette & Vittinghoff, 1996).

On the other hand, in another longitudinal study, Fredrickson and Joiner (2002) found that the use of positive reappraisal coping in college students did not predict positive affect five weeks later.

Despite these mixed results, the studies that suggest that positive reappraisal coping leads to increases in positive affect are more convincing, because they use samples of people who are suffering from a discrete major stressor, such as bereavement (Moskowitz et al., 1996) or poor physical health (Drungle, 2001). In contrast, Fredrickson and Joiner's (2002) study focuses on ordinary people coping with everyday life. The former sample groups are more consistent with the coping theory.

1.6.2 Summary of evidence on the relationship between positive reappraisal coping and positive emotions

Studies have revealed that the use of positive reappraisal coping predicts the experience of positive affect in survivors of stress and trauma. When combining these findings with the available evidence on the relationship between positive reappraisal coping and positive emotion, the literature can be understood as suggesting that the use of positive reappraisal coping in response to a major stressor predicts subsequent positive emotion.

1.7 Summary of the relationships between positive emotions, positive reappraisal coping and psychological well-being

Overall, theoretical and empirical evidence suggests that in traumatic or chronically stressful situations, the use of positive reappraisal coping and the experience of positive emotions predict better psychological well-being. The fact that positive reappraisal coping has been shown to be positively associated with positive emotions raises the suggestion that the relationship between psychological well-being and positive reappraisal coping may be indirect and mediated by positive emotions. A pictorial representation of the suggested relationship between positive reappraisal coping, positive emotions and psychological well-being is displayed in Figure 1.

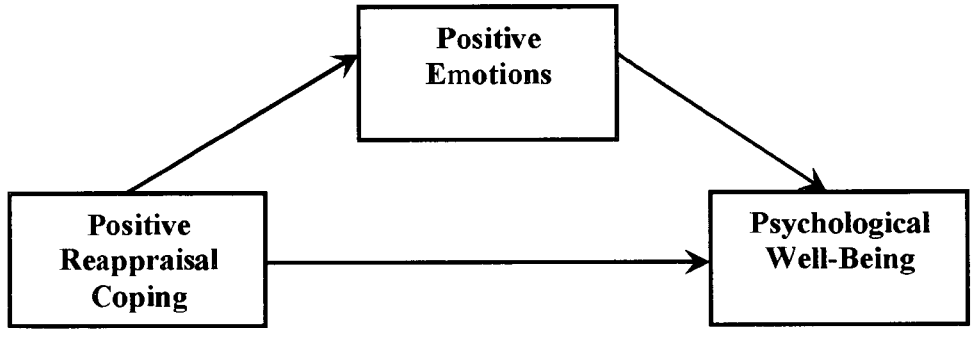


Figure 1

Theoretical model for the relationships between positive emotions, positive reappraisal coping and psychological well-being

1.8 Optimism

Dispositional optimism is a general expectation that good outcomes will occur across important life domains (Scheier & Carver, 1985). From this definition it is important to note that this expectation is stable and therefore optimism can be considered to be a personality trait which originates from within an individual and is maintained over time and across situations (Wrosch & Scheier, 2003).

1.8.1 The importance of investigating optimism

There is a tendency in psychological well-being research to treat personality factors as nuisance variables which should be controlled for so that variables of interest can be studied more intensely. However, this approach involves some potential disadvantages in that it is possible that the personality trait may in fact be a distal or causal factor which influences well-being. Therefore, the inclusion of personality factors as variables of interest has the potential to provide a more thorough understanding of the pathways that lead to well-being (Wrosch & Scheier, 2003).

Optimism has been shown to be positively related to both positive reappraisal coping and the experience of positive emotions (Davis et al., 1998; Segerstrom et al., 1998). It has also been strongly linked to psychological well-being in populations of the general public and in populations of trauma survivors (Aspinwall & Taylor, 1992). Therefore, in the interest of providing a more thorough understanding of the pathways associated with psychological well-being, it is important to include this personality trait as part of the current investigation.

1.8.2 Optimism and coping strategies

Based on expectancy-value models of motivation, it has been hypothesised that optimism will be related to the use of particular coping strategies. Expectancy-value models of motivation begin with the assumption that people's behaviour is centred on the pursuit of goals, which are defined as 'states or actions that people view as desirable' (Wrosch & Scheier, 2003, p. 231). The second conceptual element of the theory is that people will only exert continued effort to reach their goals if they are sufficiently confident in their attainability. This theory suggests that optimists will therefore use more active and effective coping strategies because they believe that their goals can be achieved (Scheier & Carver, 1985).

Empirical evidence has soundly established that optimism is related to the use of different coping strategies. Research has shown that optimists are more likely to adopt more effective coping styles and that they make greater use of approach-based coping, which involves directly resolving the stressor (Moos, Brennan, Fondicaro & Moos, 1990), and less use of avoidant styles of coping, which involve attempts to avoid thinking about the stressor (Moos et al., 1990) (e.g., Fontaine, Manstead & Wagner, 1993; Gaudreau & Blondin, 2004; Iwanaga, Yokoyama & Seiwa, 2004; Saneha, 2000; Scheier, Weintraub & Carver, 1986).

1.8.2.1 Optimism and positive reappraisal coping

Positive reappraisal is one coping strategy that has been theoretically linked to dispositional optimism. Optimists by definition hold generalised expectancies of positive outcomes (Scheier & Carver, 1985). Based on this assumption, some theorists contend that optimists seek opportunities to transform negative situations into positive ones to ensure that their expected positive outcomes occur (Davis et al., 1998; Sears et al., 2003). Theories such as this contend that people who are more optimistic will be more likely to use positive reappraisal

coping, because this strategy helps to ensure that exposure to an aversive environment does not threaten their positive world view.

Empirical evidence provides support for the assertion that optimism is positively related to the use of positive reappraisal coping in adverse circumstances (Brissette et al., 2002; Davis et al., 1998; Scheier et al., 1986; Sears et al., 2003).

These findings have been replicated in a population of cancer survivors. In their longitudinal study, Carver et al. (1993) reported that women who were more optimistic were more likely to use positive reappraisal as a coping strategy both before and after breast cancer surgery.

1.8.3 Optimism and positive emotions

Optimism has also been theoretically linked to positive emotions. Scheier and Carver (1985) argue that because optimists expect good outcomes even in difficult situations, they generally experience more positive feelings and emotions.

Empirical study supports Scheier and Carver's (1985) proposal that optimism is related to positive emotions and affect (Segerstrom et al., 1998). For example, Tennen, Affleck, Urrows, Higgins and Mendola (1992) found that, in individuals with rheumatoid arthritis, people who were more optimistic reported significantly higher levels of positive affect over a period of 75 days.

Preliminary evidence suggests that the relationship between optimism and positive emotions may be mediated by coping strategies. For example, in their study on athletes' coping during a sport competition, Gaudreau and Blondin (2004) found that a particular coping strategy partially mediated the relationship of optimism with post-competition positive affect. Although no study has investigated this proposed model with the involvement of positive

reappraisal as the specific coping strategy being investigated, the fact that this type of coping has been shown to be positively correlated with both positive emotions and optimism suggests that the same would be true in this case.

1.8.4 Optimism and psychological well-being

Optimism has been consistently shown to be positively associated with measures of psychological well-being both in the general population (Marshall & Lang, 1990) and in those adjusting to stressful or aversive life events (Aspinwall & Taylor, 1992; Carver & Gaines, 1987; Chang, 1998; Khoo & Bishop, 1997). These include cancer (Epping-Jordan et al., 1999; Stanton & Snider, 1993) and other health-related stressors (Ebert, Tucker & Roth, 2002; Fitzgerald, Tennen, Affleck & Pransky, 1993; Scheier et al., 1989; Taylor et al., 1992). The fact that some of these results have been taken from longitudinal studies suggests that optimism predicts psychological well-being in survivors of health-related trauma. For example, Epping-Jordan et al. (1999) conducted a longitudinal study investigating psychological adjustment to breast cancer. Results showed that lower levels of optimism predicted symptoms of anxiety at diagnosis and six months later.

1.8.4.1 Do coping strategies mediate the relationship between optimism and psychological well-being?

Given the well-established relationship between optimism and psychological well-being it is of interest to investigate how and why optimism predicts psychological well-being.

It has been suggested that optimism acts indirectly on psychological well-being through its association with coping strategies (Wrosch & Scheier, 2003; Scheier & Carver, 1985). Given the fact that optimism has been consistently found to be associated with both

psychological well-being and with the use of more effective coping strategies, this hypothesis is well-founded. A number of studies have investigated a mediational role of coping in the relationship between optimism and psychological well-being. Results from the majority of these studies suggest that the positive relationship between optimism and psychological well-being is indirect and is mediated by coping strategies. (Scheier et al., 1989; Iwanaga et al., 2004; Gaudreau & Blondin, 2004; Fontaine et al.,1993). However, there is some dissent in that one study found a direct relationship between optimism and well-being and failed to find that coping strategies mediated this relationship (Zhu, 2003). Overall though, the weight of empirical evidence supports the first hypothesis.

1.8.4.2 Positive reappraisal coping as a mediator for the relationship between optimism and psychological well-being

Positive reappraisal is one of the coping strategies that has been shown to mediate the positive relationship between optimism and well-being. For example, in a longitudinal study investigating coping with breast cancer, Carver et al. (1993) found that optimism was positively associated with positive reappraisal coping, which in turn was strongly inversely related to reports of distress. Further analyses revealed that the effect of optimism on distress was largely mediated by positive reappraisal coping. These results have been replicated in a number of studies (e.g. Brissette et al., 2002) and are consistent with the existing literature on the positive relationships between positive reappraisal coping, optimism and psychological well-being.

1.8.5 Summary of findings on the relationships between optimism, psychological well-being, positive reappraisal coping and positive emotions

In conclusion, dispositional optimism has been shown to be positively related to psychological well-being, the experience of positive emotions and the use of positive reappraisal coping. Further investigation suggests that optimism acts indirectly on positive emotions and psychological well-being through its association with coping strategies, including positive reappraisal coping. For the most part, these findings have been replicated in populations of cancer patients and survivors, or, at the very least, sufferers of health-related stress, indicating that it is appropriate to use them to generate hypotheses about this population.

1.9 Summary of research leading to the hypotheses

In summary, previous research has indicated that relationships exist between optimism, positive reappraisal coping, positive emotions and psychological well-being. However, no known study has investigated a model involving all four of these variables. The present study aimed to examine the relationships between these constructs in a population of cancer survivors.

The use of different coping strategies has been shown to be related to psychological well-being in survivors of chronic stressors or trauma. Positive reappraisal coping is hypothesised to be related to better psychological adjustment to a stressful event as it changes the meaning of the adverse event. This reconciles discord between the situational meaning and the person's stable global beliefs and meaning. Empirical evidence strongly supports this assertion with findings that show that positive reappraisal coping is associated with psychological well-being in survivors of trauma. Studies of cancer survivors also suggest that positive reappraisal coping predicts psychological well-being. Thus, it was hypothesised that

people who reported greater use of positive reappraisal when coping with cancer would have higher levels of psychological well-being as survivors.

Many theories suggest that the experience of positive emotions plays an important role in coping with a chronic stressor. Empirical evidence supports the assertions of these theories with findings that show that positive emotions predict psychological well-being in survivors of trauma and chronic stress. Therefore, it was also hypothesised that people who experienced more positive emotions during the time they had cancer would have better psychological well-being as survivors.

It has been argued that coping strategies affect emotions by changing the relational meaning of the situation. Positive reappraisal coping alters the meaning of an adverse situation for the better: hence, its use is expected to predict greater experience of positive emotions in people suffering from chronic stress. This leads to the hypothesis that people who utilised more positive reappraisal coping during the time they had cancer would also have experienced more positive emotions during this time.

A review of the literature on the area of positive reappraisal coping, positive emotions and psychological well-being failed to reveal a study that investigated the relationship between all three of these constructs. However, available evidence suggests that positive reappraisal coping predicts psychological well-being. Positive reappraisal coping also has been shown to predict the experience of positive emotions. In turn, positive emotions have been shown to predict psychological well-being. The combination of these findings suggests that positive emotions may mediate the relationship between positive reappraisal coping and psychological well-being. The present study examined the hypothesis that there would be an indirect positive relationship between positive reappraisal coping and psychological well-being that would be mediated by the experience of positive emotions.

Optimism is hypothesised to be related to the use of more effective coping strategies because optimists believe that they are able to attain their goals and therefore are more likely to exert continuing effort to reach them. Optimism has been theoretically and empirically linked to the use of positive reappraisal coping. Therefore, it was hypothesised that, in the present study, optimism would be significantly positively associated with positive reappraisal coping.

Optimism has also been theoretically linked to positive emotions. Scheier and Carver (1985) suggest that optimists experience more positive emotions because of their positive expectations for the future. This suggestion is supported by research that shows that optimism is positively related to positive affect and positive emotions. Therefore, it was also hypothesised that dispositional optimism would be positively related to the experience of positive emotions during the time a person had cancer.

Previous findings suggest that coping strategies may mediate the positive relationship between optimism and positive emotions. Although no study has specifically investigated this proposal using positive reappraisal coping, the fact that this coping strategy has been shown to be associated with both optimism and positive emotions suggests that the above would be true in this case as well. Therefore, it was hypothesised that there would be an indirect positive relationship between optimism and positive emotions that would occur through positive reappraisal coping.

Optimism has been consistently shown to be positively associated with measures of psychological well-being in the general population and survivors of trauma and health-related stressors, including cancer. Therefore, it was hypothesised that in the present study people who were more optimistic would have better psychological well-being.

The literature in this area suggests that the relationship between optimism and psychological well-being is mediated by coping strategies. Previous studies have shown that

positive reappraisal coping acts as a mediator for the positive relationship between optimism and psychological well-being. Therefore, in the present study it was hypothesised that the positive relationship between dispositional optimism and psychological well-being would be indirect and mediated by positive reappraisal coping.

The above hypotheses suggest a series of relationships between psychological well-being, optimism, positive reappraisal coping and positive emotions. These relationships form a series of pathways predicting psychological well-being. A representation of the hypothesised path model is displayed in Figure 2.

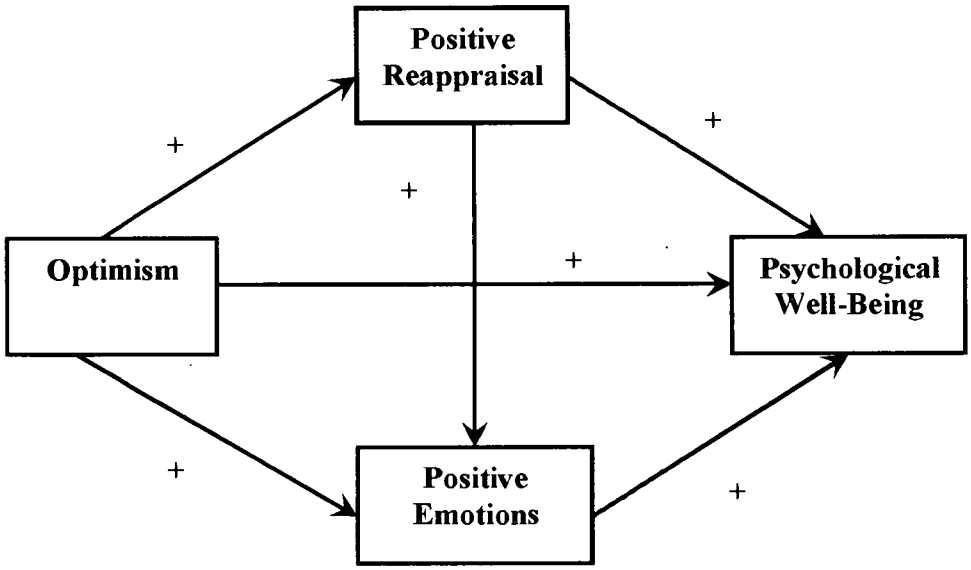


Figure 2

The hypothesised path model between positive reappraisal coping, positive emotions, psychological well-being and optimism

Note: The signs on the arrows indicate hypothesised relationships

Other demographical variables have been found to be related to psychological well-being. For example, several researchers agree that younger age, female gender and not attending a support group are inversely related to psychological well-being in cancer patients and survivors (Andrykowski, Cordova, McGrath, Sloan & Kenady, 2000; Breslau, Davis, Andreski & Peterson, 1991; Cordova et al., 1995; Green et al., 1998; Heinonen et al., 2001). Disease-related variables have also been found to be associated with cancer-related psychological well-being. For example, severity of illness and perceived stressfulness have been shown to be inversely related to psychological well-being, while time passed since the event has been shown to be positively related to psychological well-being (Amir & Ramati, 2002; Andrykowski et al., 1998; Sears et al., 2003). As the above factors have been shown to the dependent variable in the current study, it was important that they were also controlled for in the present investigation.

2 Method

2.1 Ethics approval

Approval to conduct the study was granted by the Division of Education, Arts and Social Sciences Human Research Ethics Committee on 31st May, 2004 (see Appendix A).

2.2 Design

The research was a correlational design using a survey method. Due to the nature of the hypotheses of the study, some of the variables being investigated were classified as both independent and dependent. The independent variables were Positive Emotions, Positive Reappraisal Coping and Optimism. The dependent variables were Psychological Distress, Subjective Well-Being, Positive Emotions and Positive Reappraisal Coping. The control variables were Age, Sex, Perceived Severity of Cancer, Perceived Stressfulness of Cancer, Support Group Attendance, Type of Cancer and Time Passed Since Cancer.

2.3 Participants

Two hundred questionnaires were sent out to cancer survivors who had indicated that they would be interested in participating. Participants had to be at least 18 years old and have had no active signs of cancer for at least one year. One hundred and eight questionnaires were returned, indicating a relatively good response rate of 54%. Of the 108 returned questionnaires, four were excluded because they were incomplete. The sample being used in this study therefore consisted of 104 cancer survivors. Participants ranged in age from 28 to 88 years

(M=56.9, SD=11.162). Approximately 22% of the sample were male, and 78% were female. Sixty two percent of respondents indicated that they had had breast cancer, 12% indicated that they had suffered from prostate cancer, 4% had suffered from bowel cancer, 3% had suffered from head and neck cancer, 3% from Non-Hodgkins lymphoma and 3% from parotid gland cancer, while 11% had suffered from other types of cancer. Seventy one percent of the sample indicated that they had attended a cancer-related support group.

Table 1 shows the distributions of the Perceived Severity of Cancer, the Perceived Stressfulness of Cancer and the Time Passed Since Cancer. From this table it can be seen that the majority of respondents perceived their experience of cancer to be 'moderately stressful' and 'very severe'. Table 1 also shows a large proportion of participants had gone through their cancer experience over five years before.

2.4 Recruitment

Participants were recruited from South Australian cancer support groups, including the Prostate Cancer Support Awareness Adelaide Group and the Hills, Mallee, Southern Region Breast Cancer Support groups. Participants were also recruited from a national breast cancer support group and a dragon boat club, Dragons Abreast Australia, and from the Australian general public (see Appendix B for correspondence and written permission from each organisation). An advertisement calling for participants was also placed in the July edition of the South Australian *The cancer connect newsletter* and in the September editions of the Australian *Cancer information and support society newsletter* and the *Wellness news* from the Cancer Support Association of Western Australia (see Appendix C for a copy of the advertisement).

Table 1

Frequency distribution of Perceived Severity of Cancer, Perceived Stressfulness andtime Passed Since Cancer (N=104)

Variable	Response	Frequency of Response (%)
Perceived Severity of Cancer	*Not very severe*	10.3
	Mildly severe	19.6
	Moderately severe	36.1
	Severe	23.7
	Very Severe	10.3
Perceived Stressfulness of Cancer	*Not at all Stressful*	-
	A Little stressful	17.6
	Moderately Stressful	31.0
	Very Stressful	35.2
	Extremely Stressful	16.2
Time Passed Since Cancer	*1 – 2 years*	23.5
	2 – 3 years	18.4
	3 – 4 years	16.4
	4 – 5 years	7.4
	More than 5 years	34.3

2.5 Materials

2.5.1 Information sheet

An information sheet stating that the study aimed to investigate the relationships between optimism, coping strategies, positive emotions and psychological well-being was provided to all participants (see Appendix D). People who were aged 18 years and over, had experienced cancer and had been in remission for at least one year were invited to participate in the study.

Remission was defined as the absence of any signs of active cancer. For individuals who had suffered from prostate cancer, the criterion was that at least one year had passed since successful treatment of their condition. The information sheet stated that participation was voluntary and that responses would be confidential.

2.5.2 Questionnaire

The questionnaire contained the following: a modified version of the Revised Ways of Coping (WOC) scale (Folkman et al., 1986); the Positive Reinterpretation and Growth subscale of COPE (Carver, Weintraub & Scheier,1989); a modified version of Watson, Clark and Tellegen's (1988) Positive and Negative Affect Schedule (PANAS); the 12-item General Health Questionnaire (GHQ-12; Goldberg, 1978); the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985); and the Life Orientation Test (LOT; Scheier & Carver, 1985). The questionnaire also contained some demographic and cancer related questions. The complete questionnaire can be viewed in Appendix E.

2.5.2.1 The Positive Reinterpretation and Growth subscale of COPE

The first section of the questionnaire utilised the Positive Reinterpretation and Growth subscale from the COPE inventory as a measure of positive reappraisal coping (Carver et al., 1989). This subscale contained four items. An example of these items was 'I try to see it in a different light to make it seem more positive'. This subscale was chosen because it has been widely used as a measure of positive reappraisal coping and therefore provided significant opportunities for comparing the results of the sample in the present study with the results of other samples taken from recent investigations (Gray & Hedge, 1999; Sears et al., 2003; Todd, Tennen, Carney, Armeli & Affleck, 2004).

Items from the Revised Ways of Coping scale (Folkman et al., 1986) were also included in the first part of the questionnaire to act as filler items. These items measured types of coping strategies other than positive reappraisal. Their inclusion ensured that participants were being asked about their use of many different types of coping strategies rather than just one. This strategy helped to reduce the possibility of a social desirability bias and avoided the risk that respondents would feel pressured to indicate that they had utilised positive reappraisal as a coping strategy because it was the only form of coping that appeared to be being measured in the scale.

Participants were instructed to read each item and to rate the extent to which they used the described strategy to cope with their experience of cancer. Ratings were recorded on a 4-point Likert scale, ranging from 1 (does not apply/not used at all) to 4 (used a great deal). Previous research has reported an internal alpha reliability of .68 for the COPE Positive Reinterpretation and Growth subscale (Carver et al., 1989). In the present study an internal reliability alpha of .81 was obtained.

2.5.2.2 The Positive and Negative Affect Schedule (PANAS)

The second section of the questionnaire used a modified version of the PANAS (Watson et al., 1988) to measure the frequency of positive emotions experienced during the time that participants had cancer. The PANAS consisted of ten emotional descriptors such as 'distressed', 'irritable' and 'guilty', and ten positive emotions such as 'interested', 'excited' and 'proud'. This scale was modified to include additional emotions that were hypothesised to be relevant to a person suffering from cancer. The additional emotions included items such as 'strong' and 'loved or loving'. Although this investigation was only concerned with the experience of positive emotions, the negative emotion items from the PANAS were included to

avoid participants feeling that their negative emotions pertaining to cancer were being discounted.

The original general PANAS instructed participants to indicate the extent to which they feel each emotion in general or on average. In this study, these instructions were modified in order to measure the frequency that participants generally experienced emotions during the time they had cancer. The modified instructions asked participants to 'indicate how often you experienced the following emotions during the time you had cancer'.

Participants rated how often they felt each emotion during the time they had cancer on a 5-point Likert scale ranging from 1 (never) to 5 (always).

Previous research reported internal reliability alphas of .88 for the positive subscale and .87 for the negative subscale of the general version of the PANAS (Watson et al., 1988). The present study obtained an internal reliability alpha of .88 for the modified version of the positive subscale of PANAS.

2.5.2.3 Psychological well-being measures

Psychological well-being was measured with two different scales. The 12-item General Health Questionnaire (Goldberg, 1978) was used to measure current psychological distress, and The Satisfaction With Life Scale (Diener et al., 1985) was used to measure current subjective well-being. Two different measures of psychological well-being were utilised in order to provide a multi-faceted measure of this construct.

2.5.2.3.1 The 12-item General Health Questionnaire (GHQ-12)

The GHQ is designed to detect psychiatric disorders or psychological morbidity. This scale was selected for this study because it has been extensively used in a variety of settings as

a measure of psychological distress or morbidity (e.g. Saab, Chaaya, Doumit & Farhood, 2003). This precedence ensures that results from this study can be easily compared to the existing literature in the area. The GHQ-12 (Goldberg, 1978) was developed from the original 60-item GHQ and recent findings suggest that it is as accurate as the longer versions of GHQ (Goldberg et al.,1997). The shortened version was selected to make it easier and less time-consuming for participants to respond to. The GHQ-12 consists of 12 questions about general levels of happiness, depression, anxiety and sleep disturbance over the previous two weeks. A sample item from the GHQ is 'Have you recently felt that you could not overcome your difficulties?' Participants indicate one of four possible responses to each question, which are typically 'not at all', 'no more than usual', 'rather more than usual' and 'much more than usual'.

There are a number of different methods of scoring the GHQ. For this study, the Likert method with scores ranging from 0 to 3 has been chosen as it has been shown to produce a less-skewed distribution of total GHQ scores than other scoring methods such as the binary or the C-GHQ method (Goldberg & Williams, 1988; Goodchild & Duncan-Jones, 1985). Item scores were totalled to produce a sum GHQ score with a higher score indicating greater psychological distress and lower levels of psychological well-being. Previous research utilising the Likert-scoring method for the GHQ-12 has recommended cut-off points for classification of psychiatric morbidity ranging from 8/9 (Politi, Piccinelli & Wilkinson, 1994) to 17/18 (Hawley, Ward, Magnay & Long, 2003). However, analysis of the 1997 Australian National Survey of Health has revealed that a threshold score of 10/11 provides the best balance between sensitivity and specificity for an Australian sample (Donath, 2001). Therefore, participants scoring more above nine on the GHQ were classified as being psychologically distressed at a clinically significant level. Psychological distress was also calculated using the

more common binary method of scoring which uses an 0-0-1-1 format, so that the scores on this psychological distress measure could be compared to scores using the same measure in samples of cancer patients (Ananth, Jones, King & Tookman, 2003). With this method of scoring, a 2/3 threshold has been suggested as optimal (Goldberg, Gater, Sartorius, Ustun et al., 1997). Scores from the GHQ were referred to in the analysis as a measure of psychological distress. Previous research utilising the Likert scoring method has reported an internal reliability alpha ranging from .81 to .91 (Politi et al., 1994). In the current study the scale had an internal reliability alpha of .70 using the Likert scoring method. This was not as high as expected; however, considering the scale only consisted of twelve items, this reliability is still acceptable.

2.5.2.3.2 The Satisfaction With Life Scale (SWLS)

The Satisfaction With Life Scale (SWLS; Diener et al., 1985) was chosen as a measure of psychological well-being because, unlike the GHQ, where psychological well-being is determined as an absence of psychological pathology, the SWLS measures psychological well-being in non-pathological terms, so that well-being is understood in a more positive sense in terms of quality of life. Another reason for selecting the Satisfaction With Life Scale as an additional measure of psychological well-being is because it measures subjective well-being. Subjective well-being measures an individual's beliefs about the quality of their life. This provides a valid measure of well-being that is different to the more objective measure found in the GHQ-12. Scores from the SWLS will be referred to in the analysis as a measure of subjective well-being.

This scale consists of five statements such as 'in most ways my life is close to ideal'. Participants rate the extent to which they agree with each statement on a 7-point Likert scale

ranging from 1 (strongly disagree) to 7 (strongly agree). Response scores are summed to produce a total life satisfaction score with high scores indicating higher life satisfaction and greater subjective well-being. Previous research has shown the internal reliability alpha ranges from .80 to .89 (see Sherman, DeVinney & Sperling, 2004). In this study, the scale had an internal reliability alpha of .87.

2.5.2.4 Life Orientation Test (LOT)

Optimism was measured with the Life Orientation Test (LOT; Scheier & Carver, 1985). This scale is one of the most widely used measures of optimism. It contains 12 items including four filler questions and eight statements about people's general expectations of life. An example of one of these statements is 'In uncertain times, I usually expect the best'. Participants are instructed to rate the extent to which they agree with each statement on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Of the eight scored items, four are worded in a positive direction and four are worded in a negative direction. After reverse scoring the negatively worded items, item scores are totalled to yield an overall optimism score with high scores representing greater optimism. Previous research has revealed an internal reliability alpha of .82. The current study obtained an internal reliability alpha of .79 for this scale.

2.5.2.5 Demographic and cancer-related questions

Finally, the questionnaire asked participants to provide some demographic and cancer-related information. The demographic questions included age and sex. Participants were then asked to indicate the type of cancer they experienced. Following this question, participants were asked: 'How long has it been since you were declared to be in complete remission (i.e.

have no active signs of disease)?', and they responded on a 5-point Likert-scale with the categories between one and two years, between two and three years, between three and four years, between four and five years, and over five years. Participants were also asked to 'Please indicate the severity of your cancer' on a 5-point Likert scale ranging from 'not very severe' to 'very severe'. Finally, participants were asked: 'How stressful would you say your experience of cancer has been for you?'. They responded on a 5-point Likert scale ranging from 'not at all stressful' to 'extremely stressful'. Participants were also encouraged to make any other comments.

2.6 Procedure

Participants completed the questionnaire by circling the appropriate responses in their own time. They sealed the completed questionnaire in an envelope and returned it to the researcher by mail via a reply-paid envelope.

3 Results

3.1 Data preparation and screening

Data from the completed surveys were entered into SPSS. Questionnaires missing more than 5% of responses on a single scale were excluded from the analysis. The data were then screened for missing values, which were replaced with the mean score for that scale as recommended by Tabachnick and Fidell (2001) for cases with few missing scores.

Total scale scores were computed by summing the scores for the individual items on the Positive Emotions scale, the COPE Positive Reappraisal subscale, the Satisfaction With Life Scale, the 12-item General Health Questionnaire and the Life Orientation Test.

Each scale was screened for the assumptions of normality. The Psychological Distress scores were positively skewed as were the Perceived Stressfulness of Cancer scores. Logarithm transformations were performed on these scales for the inferential analyses as recommended by Tabachnick & Fidell (2001). This reduced the skewness of both scales to an acceptable level. The Subjective Well-Being scores were negatively skewed. A square root reflection transformation and a logarithm reflection transformation were performed on this scale for the inferential analysis (Tabachnick & Fidell, 2001). However, neither of these analyses reduced the skewness of this scale. Subsequently, the untransformed Subjective Well-Being scores were used for inferential analysis.

3.2 Descriptive results

The descriptive results for the untransformed dependent and independent variables are shown in Table 2.

Table 2

Descriptive results for the dependent and independent variables (N = 104)

	Possible Range	Mid-point	Min. Score	Max. Score	*M (SD)*
Positive Emotions	20 – 100	60	36	89	65.38 (12.74)
Positive Reappraisal Coping	4 – 16	10	4	16	10.58 (3.21)
Psychological Distress–Likert scored	0 – 36	18	2	29	9.94 (5.45)
Psychological Distress–Binary scored	0 - 12	6	0	11	1.45 (2.64
Subjective Well-Being	5 – 35	20	7	35	26.58 (6.48)
Optimism	12 – 60	36	28	51	30.43 (4.73)

The descriptive results in Table 2 show that the mean scores for this sample were higher than the respective scale midpoints for Positive Emotions and Subjective Well-Being. The mean score for Optimism in this sample was slightly lower than the scale midpoint. The mean scores for Psychological Distress were both lower than the midpoint of this scale. The mean score for Positive Reappraisal Coping in this sample was very similar to the midpoint for this scale.

Frequency tables revealed that 15.5% of respondents received a score of more than three on the binary-scored Psychological Distress scale. According to Goldberg et al. (1997), this indicates that 15.5% of this sample experienced clinically significant levels of psychological distress. When using the Likert-scoring method to measure Psychological Distress, 28.8% of participants scored above the recommended threshold of eleven.

3.2.1 Bivariate correlations

Table 3 shows the bivariate correlations between the demographic variables, the cancer-related variables, Optimism, Positive Emotions, Positive Reappraisal Coping, Subjective Well-Being and the transformed Psychological Distress variables. To prevent confusion, the transformed variables are referred to by their original variable name.

Table 3

Bivariate correlations between the independent and dependent variables

	Sex	Time	Sev.	Stress	Supp.	Opt.	Pos. Em.	PRC	SWB	PD
Age	-.241*	.258*	-.069	-.246*	-.163	.131	.087	-.130	.076	-.191
Sex	-	.040	-.130	.166	.113	-.038	-.281**	-.058	.013	.006
Time	-	-	.039	-.079	-.014	.167	.027	-.005	.351**	-.088
Sev.	-	-	-	.299**	-.127	-.017	-.037	.137	.140	-.113
Stress	-	-	-	-	-.074	-.358**	-.371**	-.033	-.180	.071
Supp.	-	-	-	-	-	-.092	-.101	-.198	-.060	.131
Opt.	-	-	-	-	-	-	.403**	.260*	.477**	-.530**
Pos Em.	-	-	-	-	-	-	-	.438**	.245*	-.204
PRC	-	-	-	-	-	-	-	-	.158	-.152
SWB	-	-	-	-	-	-	-	-	-	-.390**

Sev. = Perceived Severity of Cancer, Stress = Perceived Stressfulness of Cancer, Supp. = Support Group Attendance, Opt. = Optimism, Pos. Em. = Positive Emotions, PRC = Positive Reappraisal Coping, SWB = Subjective Well-Being, PD = Psychological Distress.
** $p < .001$, * $p < .05$.

3.2.1.1 Demographic and cancer-related variable correlations

The correlations presented in Table 3 revealed that Age and Perceived Stressfulness of Cancer were significantly negatively correlated, indicating that younger people in this sample perceived their experience of cancer to be more stressful.

Perceived Stressfulness of Cancer was also found to be negatively correlated with Positive Emotions and Optimism, suggesting that people who perceived their experience of cancer to be more stressful were less optimistic and experienced less positive emotions during this time.

Interestingly, Sex and Positive Emotions were found to be negatively correlated, indicating that men experienced more positive emotions during the time they had cancer.

3.2.1.2 Optimism, positive reappraisal coping and well-being correlations

Positive Emotions were found to be significantly positively correlated with Positive Reappraisal Coping in this sample.

The descriptive results also reveal significant positive correlations from Optimism to Positive Emotions, Positive Reappraisal Coping and Subjective Well-Being. Optimism was also shown to be significantly negatively correlated with Psychological Distress.

The two measures of psychological well-being–Psychological Distress and Subjective Well-Being–were also found to be significantly negatively correlated.

3.3 Inferential analysis

As Support Group Attendance, Sex, Perceived Severity of Cancer and Perceived Stressfulness of Cancer were not found to be associated with either of the dependent variable well-being measures, these hypothesised confounding variables were excluded from inferential analysis.

3.3.1 Path analysis

A path analysis was used to test the hypotheses of this study. Path analysis is a method for illustrating the total, direct, and indirect effects of independent variables on dependent variables. A recursive path analysis model compares the relative impacts of endogenous (dependent) and exogenous (independent) variables (Klem, 1997).

To determine the relationships of Optimism, Positive Reappraisal Coping, Positive Emotions, Time and Age to psychological well-being and to examine whether these relationships are mediated through Positive Reappraisal Coping and/or Positive Emotions, the variables were entered into a path analysis. Because two different measures of psychological well-being were being used, two similar path models were developed– one with Subjective Well-Being as the main endogenous variable and one with Psychological Distress as the main endogenous variable. Figures 3 and 4 show the proposed models with the obtained path coefficients. They represent the direct relationships of Optimism, Positive Reappraisal Coping, Positive Emotions, Time and Age to the two measures of psychological well-being. The models also represent the indirect relationships of Optimism to psychological well-being, mediated by Positive Reappraisal Coping or Positive Emotions; and of Optimism to Positive Emotions, mediated by Positive Reappraisal Coping.

These models permit a test of the hypotheses that Optimism, Positive Reappraisal Coping, Positive Emotions, Time and Age predict psychological well-being. These hypotheses will be supported if the above variables show a direct significant negative relationship to Psychological Distress and a direct significant positive relationship to Subjective Well-Being. The models also allow a test of the other direct relationships hypothesised, namely that Optimism will predict Positive Reappraisal Coping and Positive Emotions; and that Positive Reappraisal Coping will predict Positive Emotions. These hypotheses will be supported if positive significant relationships are found between the two variables that are hypothesised to be associated.

These models also allow a test of the hypotheses regarding indirect effects and mediating variables. A strong version of the hypothesis that the positive relationship between Optimism and well-being is mediated by Positive Reappraisal Coping would be supported if Optimism were not found to have a significant direct relationship to measures of well-being, and if only a significant indirect effect mediated through Positive Reappraisal Coping were found. A weak version of the hypothesis would permit Optimism to show a significant direct relationship to Subjective Well-Being or Psychological Distress in addition to a significant indirect relationship mediated by Positive Reappraisal Coping.

Similarly, a strong version of the hypothesis that the positive relationship between Optimism and well-being is mediated by Positive Emotions would be supported if Optimism were not found to have a significant direct relationship to measures of well-being, and if only a significant indirect effect mediated through Positive Emotions were found. A weak version of the hypothesis would permit Optimism to show a significant direct relationship to Subjective Well-Being or Psychological Distress, in addition to a significant indirect relationship mediated by Positive Emotions.

The models also permit the testing of the hypothesis that Positive Reappraisal Coping mediates the positive relationship between Optimism and Positive Emotions. The method for determining the significance of this relationship is the same as described directly above.

Finally, the models allow the testing of the hypothesis that Positive Emotions mediate the positive relationship between Positive Reappraisal Coping and psychological well-being. Again, the method for testing this hypothesis is the same as described above for the previous hypotheses regarding indirect relationships.

Because the models being investigated are fully recursive, the fit of the hypothesised models cannot be tested (Klem, 1997).

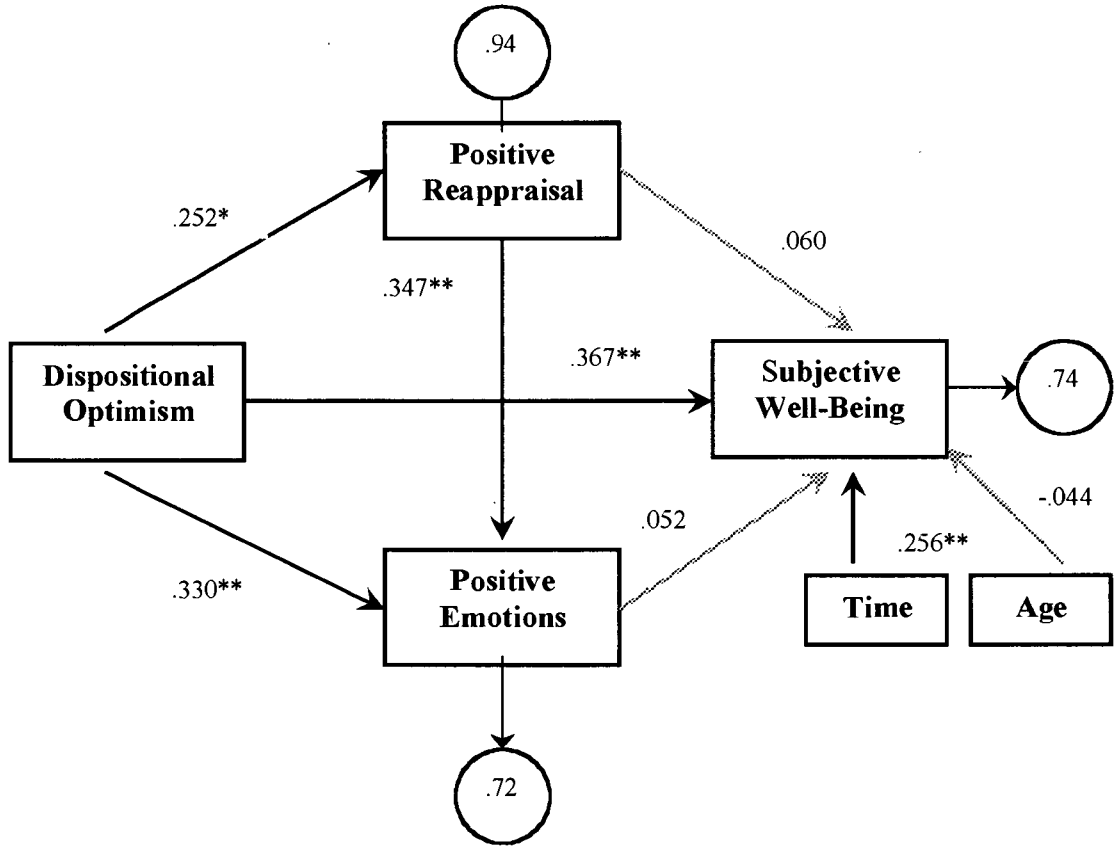


Figure 3 Standardised path coefficients for the proposed model predicting subjective well-being Statistically significant paths are shown in bold

The numbers inside the circles represent the residuals
* p <.05, ** p <.01

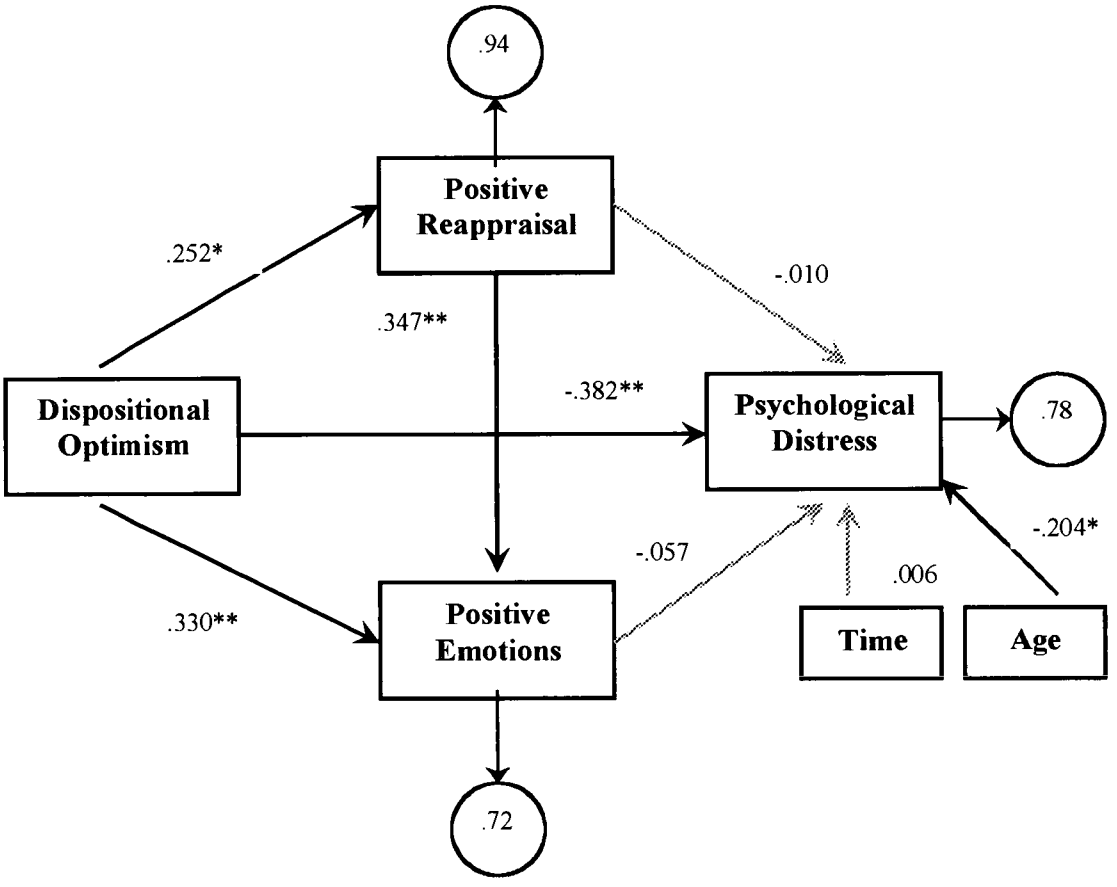


Figure 4 Standardised path coefficients for the proposed model predicting psychological distress. Statistically significant paths are shown in bold

The numbers inside the circles represent the residuals
* p <.05, ** p <.01

3.3.1.1 Direct relationships

Figures 3 and 4 show the standardised path coefficients for the tested models. For the following paragraphs the in text labeling method for path analysis was recommended by Klem (1997). In this instance, p = the standardized path coefficient and s = the standard error. The subscripts following p are used to identify the particular paths, with the subscript for the dependent variables coming first: a = Age, d = Psychological Distress, e = Positive Emotions, o = Optimism, p = Positive Reappraisal Coping, t = Time, w = Subjective Well-Being.

As can be seen in Figures 3 and 4, both Optimism (p_{wo} = .367 , s = .138, p<.001). and Time (p_{wt} = .256, s = .382, p<.01) had a direct significant positive relationship to Subjective Well-Being. Neither Positive Reappraisal Coping, Positive Emotions nor Age were found to have a significant direct relationship with Subjective Well-Being.

Figure 4 shows that Optimism (p_{do} = -.382, s = .005, p<.001) and Age (p_{da} = -.204, s = .002, p<.05) were both directly significantly negatively related to Psychological Distress. Neither Positive Reappraisal Coping, Positive Emotions nor Time were found to have a significant direct relationship with Psychological Distress.

Optimism, Positive Reappraisal Coping, Positive Emotions, Time and Age explained a significant proportion of the variance of both Psychological Distress (R^2 = .222, p<.001) and Subjective Well-Being (R^2=.263, p <.001).

As can be seen in Figures 3 and 4, the direct positive relationship between Optimism and Positive Reappraisal Coping was significant (p_{po} = .252, s = .069, p<.05). Optimism explained 6.4% of the variance of Positive Reappraisal Coping (R^2=.064, p <.05).

The direct positive relationships of Optimism (p_{eo} = .330, s = .232, p<.001) and Positive Reappraisal Coping (p_{ep}= .347, s = .331, p<.001) to Positive Emotions were also significant. Together, Optimism and Positive Reappraisal Coping explained 28.7% of the variance of Positive Emotions in this sample (R^2 =.29, p<.001).

3.3.1.2 Indirect relationships

As no significant direct relationships were found between Positive Emotions and Psychological Distress or Subjective Well-Being, it can be concluded that neither Optimism nor Positive Reappraisal Coping were significantly related to either Psychological Distress or Subjective Well-Being through their relationship to Positive Emotions.

In addition to this, as no significant direct relationship was found between Positive Reappraisal Coping and either measure of psychological well-being, it can also be concluded that Optimism was not significantly related to either Psychological Distress or Subjective Well-Being through its relationship with Positive Reappraisal Coping.

Direct relationships were observed from Optimism and Positive Reappraisal Coping to Positive Emotion. Therefore, the indirect relationship between Optimism and Positive Emotions mediated by positive reappraisal coping was examined. The indirect path coefficient was calculated by multiplying p_{op} with p_{pe} to obtain their product as recommended by Klem (1997). The significance of this path was calculated using the formula recommended by Baron and Kenny (1986). Analysis revealed that Optimism was significantly related to Positive Emotion through its relationship with Positive Reappraisal Coping (β=.087, p< .01).

4 Discussion

4.1 Summary of findings

The major aim of this study was to determine the relationships between positive reappraisal coping, positive emotions, dispositional optimism and psychological well-being.

The hypothesis that people who utilised more positive reappraisal coping during the time they had cancer would subsequently have higher levels of psychological well-being was not supported. In addition to this, the hypothesis that people who experienced more positive emotions during the time they had cancer would also have higher levels of psychological well-being as cancer survivors was not supported. As these two hypotheses were not supported, the hypothesis that the experience of positive emotions during cancer mediated the positive relationship between positive reappraisal coping and current psychological well-being could not be supported. However, as predicted, people who used more positive reappraisal coping during the time that they had cancer also experienced significantly more positive emotions.

Also consistent with predictions was the finding that people who had higher levels of dispositional optimism also had higher levels of current psychological well-being. As hypothesised, people who were more optimistic utilised positive reappraisal coping more during the time they had cancer. The hypothesis that people who were more optimistic would have experienced more positive emotions during the time they had cancer was also supported. An analysis of the indirect relationships between optimism, positive reappraisal coping and positive emotions supported a weak version of the hypothesis that the positive relationship between optimism and positive emotions was mediated by the use of positive reappraisal coping.

As no significant relationships were found to exist from positive reappraisal coping and positive emotions to either measure of psychological well-being, the hypothesis that the positive relationship between optimism and psychological well-being during cancer would be mediated by either positive reappraisal coping, positive emotions, or both, was not supported. Contrary to predictions, bivariate correlations revealed that sex, support group attendance, perceived severity of cancer and perceived stressfulness of cancer were unrelated to measures of psychological well-being.

However, as hypothesised, survivors for whom more time had passed since their experience of cancer reported higher levels of subjective well-being. Interestingly however, psychological distress was not found to be significantly related to the amount of time that had passed since a person's experience of cancer. Also consistent with predictions was the finding that younger age was associated with higher levels of psychological distress in cancer survivors. However, no significant relationship between age and subjective well-being was found.

4.2 Sample characteristics

4.2.1 Psychological well-being

The descriptive results revealed that cancer survivors in this study were on average 'satisfied with their life' and had higher mean levels of subjective well-being (M=26.6, SD= 6.5) than a sample of Dutch medical outpatients (M=23.6, SD=7.0; Arrindell, Meeuwesen & Huyse, 1991) and a control group sample of older American adults (M=23.6, SD=6.1; Pavot, Diener, Colvin & Sandvik, 1991) who both completed the same Satisfaction With Life Scale (Diener et al., 1985). This finding suggests that cancer does not necessarily have long-term negative effects on people's subjective well-being and that, in the long-term the experience of

cancer can actually improve people's life satisfaction. This could be due to the concept of post-traumatic growth (for a review see Linley & Joseph, 2004).

The psychological well-being of the present sample also compared well with other studies on the psychological distress measure (GHQ-12; Goldberg, 1978). Using Likert scoring, cancer survivors in the present study had lower mean scores (M=9.94) than samples of people suffering from other types of chronic stressors such as the parents of children with a traumatic brain injury (M=13.32; Hawley et al., 2003). However, the mean score on the GHQ-12 was slightly higher than the reported mean score for the general Australian population (M=8.98; Donath, 2001). These findings suggest that the cancer survivors in the present study had slightly higher levels of psychological distress than the general population, but that they were generally less psychologically distressed than people facing other forms of chronic stress such as the illness of a child.

A comparison of psychological distress scores using the GHQ-12 with binary scoring revealed that cancer survivors in the present study had lower mean scores (M= 1.45) than samples of cancer patients from other studies (M=2.4; Ananth et al., 2003). Using Likert scoring, 28.8% of the current sample scored above the recommended threshold of 11, while binary scoring indicated that 15.6% of cancer survivors in the current study scored above the recommended threshold score of three, indicating that they had clinically significant levels of psychological distress.

Overall, the descriptive results on well-being suggest that cancer survivors have slightly higher levels of subjective well-being and psychological distress than the general population. The results also suggest that a small but significant proportion of cancer survivors have clinically significant levels of psychological distress, suggesting the need for intervention.

4.2.2 Positive reappraisal coping

A comparison of the mean positive reappraisal coping score (M=10.5) in this study with those of samples from other studies using the same measure reveals that cancer survivors reported using positive reappraisal coping during the time they had cancer to a lesser extent that the general population (M=12.1) utilises this coping strategy, and to a similar extent to other samples of people dealing with health-related stressors such as psoriasis (M=11.0; Fortune, Richards, Main & Griffiths, 2002), spinal cord injury (M=11.2; Kennedy, Lowe, Grey & Short, 1995) and atrial fibrillation (M=9.3; Steed, Newman & Hardman, 1999). This suggests that people dealing with serious health-related stressors are slightly less likely to utilise positive reappraisal coping than the general population is when attempting to cope with everyday stressors.

4.2.3 Dispositional optimism

Cancer survivors in the present study have been shown to be more optimistic (M=30.7) than previous samples of cancer patients (M = 27.1; Stiegelis et al., 2003) and the general population (M=24.4; Stiegelis et al, 2003). There are two plausible explanations for these findings. The first is that people who are more optimistic were more likely to volunteer to participate in the present study. The second explanation is that optimism is not a completely stable trait and that the experience of cancer may tend to make people more optimistic. The second explanation has some methodological implications for the present study. These implications are discussed later under section 4.7.

4.3 Positive reappraisal coping and psychological well-being

The present study did not support the hypothesis that the use of positive reappraisal coping during cancer would predict long-term psychological well-being.

This result does not support Morse and Johnson's (1991) Illness Constellation Model where it is suggested that the efficacy of an individual's coping behaviour is very important for adaptation to chronic illness. However, this result also does not disprove Morse and Johnson's (1991) theory, as the present study only investigated the relationship between positive reappraisal coping and psychological well-being and made no attempt to examine other coping strategies.

On a more specific note, this result does not support theorists' (Davis et al., 1998; Thompson & Janigian, 1988) contention that positive reappraisal coping alleviates the psychological distress resulting from a trauma by reducing the discrepancy between a person's world views and their appraisal of the traumatic event or situation. This could be due to flaws in the theory that led to this hypothesis. Janoff-Bulman's (1992) theory that suggests that psychological distress from a trauma results from a discrepancy between a person's appraisal of the aversive event and their existing world view assumes that people have unrealistically positive general beliefs about the world such that they never expect anything bad to happen to them. This assumption is not necessarily supported, particularly in a culture and age where people are vicariously exposed to trauma through the media. If people have realistic beliefs about the world, then the experience of a trauma is unlikely to result in a discrepancy between the perception of the event and the person's world-views. Without this discrepancy, there is no reason why positive reappraisal coping would be related to enhanced psychological well-being.

There are a number of other possible explanations for the finding that positive reappraisal coping during cancer did not predict current psychological well-being. The first and

most obvious explanation is that the use of positive reappraisal coping in response to a trauma such as cancer is only related to psychological well-being in the short term. Certainly it seems logical that, as more time passes after a traumatic event, factors other than the coping strategy used in this event become more important or influential to a person's current psychological well-being. The significant relationship between time and subjective well-being also supports this contention. The majority of studies in the literature that have investigated coping and psychological well-being, have measured well-being only a short time after the traumatic or stressful event that instigated the use of coping strategies (Drageseset & Lindstrom, 2003; Kershaw et al., 2004). However, a small number of studies have investigated the long-term effects of cancer-related coping on psychological well-being. For example, Hack and Degner (2004) found that the use of coping strategies in people with cancer predicted their psychological adjustment three years later. Despite the existence of this study, no one has ever investigated whether the use of coping strategies during cancer predicts psychological well-being after a period of more than three years. Given that 34% of participants in the current study had experienced cancer more than five years earlier, had the effects of positive reappraisal coping on the psychological well-being of cancer patients and survivors ceased to be significant after three or four years, a significant relationship between these two constructs would not be expected in the present study. In order to gain a more accurate picture of the effects of positive reappraisal coping on cancer patients and survivors' psychological well-being, it would be worthwhile to conduct a longitudinal study, measuring people's use of positive reappraisal coping at one point in time such as at diagnosis, and then measuring the psychological well-being of participants annually over a period of five to ten years. This would help to show how long the use of positive reappraisal coping during a stressful period could continue to influence a person's psychological well-being.

The instruments used to measure psychological well-being may also account for the finding that positive reappraisal coping was not significantly associated with psychological well-being. Both the GHQ-12 (Goldberg, 1978) and the SWLS (Diener et al., 1985) were designed for use in the general population and not with cancer survivors or health-related concerns in mind. As the current study was seeking to investigate factors that predicted long-term psychological well-being, and for all participants at least one year had passed since their experience with cancer, it is possible that these measures were not sensitive enough to detect the effects of a coping strategy on psychological well-being measured some time after the event. The use of a cancer-related anxiety or depression scale, or an adjustment to illness scale would probably have been a better measure of the psychological adjustment to cancer and more sensitive to the psychological well-being factors that are particularly relevant to cancer survivors. It is possible that had cancer-related well-being rather than general psychological well-being been measured, a significant relationship would have been observed between positive reappraisal coping and the subsequent well-being of survivors.

The presence of a suppressor variable may also explain the lack of a significant relationship between positive reappraisal coping and psychological well-being in the present study. Research has shown that the use of positive reappraisal coping is significantly positively associated with the use of a coping strategy labeled mental disengagement (Carver et al., 1989). Mental disengagement serves to distract a person from thinking about the goal with which the stressor is interfering (Carver et al., 1989). A large number of studies have shown that mental disengagement is positively associated with psychological distress and inversely associated with psychological adjustment to a stressor (Eisengart, 2002; Gray & Hedge, 1999; Jacox, 1996;). This has also been shown to be true in populations of cancer patients and survivors (Broeckel, 2000; Noukki, 2001). As previous research has shown that people who

use positive reappraisal coping are also more likely to use mental disengagement coping, it is possible that the negative effects of the latter coping strategy mask the positive effects of positive reappraisal coping on psychological well-being. This seems likely in the present study as no attempt was made to control for mental disengagement or any other forms of coping. Future studies investigating the unique relationship between positive reappraisal coping and psychological well-being should attempt to control for the use of other coping strategies, particularly mental disengagement.

Another explanation for the failure to find a significant relationship between positive reappraisal coping and psychological well-being is that positive reappraisal coping was not accurately measured. The retrospective nature of the study meant that participants were being asked to recall their use of coping strategies for a period of time that occurred at least a year before. Recent research suggests that retrospective coping assessments may not be accurate measures of coping. For example, Smith, Leffingwell and Ptacek (1999) compared daily measures of coping in the week before an exam with a retrospective assessment of coping at the end of this week. On average, only 25% of shared variance was found between the daily and retrospective accounts. Stone et al. (1998) replicated these findings with their study that revealed relatively poor correspondence between momentary coping reports and short-term retrospective reports. These findings suggest that retrospective reports of coping do not provide an accurate assessment of coping. As the present study utilised a very extreme form of a retrospective coping report where participants had to remember how they coped with an event that occurred years before, it seems probable that an accurate measure of the use of positive reappraisal coping during cancer was not obtained.

Overall, given the weight of previous empirical evidence, the nature of the present sample and the observed significant correlation between time and subjective well-being, it

seems likely that the most suitable explanation for the results of the present study is that the situational use of positive reappraisal coping is only associated with short-term psychological well-being.

4.4 Positive emotions and psychological well-being

In the present study, it was hypothesised that people who experienced more positive emotions during the time they had cancer would have higher levels of current psychological well-being. This hypothesis was not supported. Therefore, the present study did not reflect the findings in the literature (Bonanno & Keltner, 1997; Stein et al., 1997; Fredrickson et al., 2003). It also does not support the various theories (Lazarus et al., 1980; Fredrickson, 1998, 2001; Bonanno & Keltner, 1997) that suggest that positive emotions act in some way to enhance psychological adaptation to trauma or stressful situations. Although the results of the present study suggest that positive emotions do not predict long-term psychological well-being in cancer survivors, they do not suggest that the experience of positive emotions during cancer do not predict enhanced psychological well-being over a shorter period of time. It is possible that the effects that the experience of positive emotions during cancer have on psychological adjustment and well-being, are reduced as the years pass. However, this is not consistent with Fredrickson's (1998, 2001) Broaden and Build hypothesis that states that the experience of positive emotions during a crisis predicts long-term psychological well-being through their building effect on psychological resources. Therefore, the results from the present study can be seen to be wholly inconsistent with Fredrickson's (1998, 2001) hypothesis that positive emotions predict long-term psychological well-being following a crisis.

One reason for this may be that it is inappropriate to classify emotions in terms of valence. It has been argued that individual emotions, such as happiness, pride, anger and

sadness, are conceptually distinct and should as such only be measured as discrete constructs rather than being dichotomised. Campos (2003) argues that classifying emotions as 'positive' or 'negative' is superficial and misleading. He suggests that apparently positive emotions can be inappropriate in certain contexts and that 'appropriateness' of emotional feeling rather than 'positivity' is important. This argument highlights problems in positive emotion theories such as those by Lazarus et al. (1980), Bonanno & Keltner (1997) and Fredrickson (1998, 2001), that suggest that all positive emotions are uniformly adaptive and beneficial in all stressful situations. These theories appear to have oversimplified the phenomena of emotions, such that their individual natures, predictors and antecedents can be understood simply by categorising them as either positive or negative.

4.5 Positive emotions, positive reappraisal coping and psychological well-being

The hypothesis that the experience of positive emotions during cancer would mediate the positive relationship between positive reappraisal coping and current psychological well-being was not supported. This is due to the fact that no significant relationships from positive reappraisal coping or positive emotions to psychological well-being were observed in the present study.

This result does not necessarily mean that this theory should be discarded. A number of methodological issues concerning the present study have been raised, such as the amount of time passed since participants' cancer experience. Therefore, it is suggested that further investigation of the aforementioned theory be undertaken in studies that have resolved some of these outlined concerns.

4.6 Positive reappraisal coping and positive emotions

As hypothesised, people who utilised positive reappraisal coping more often during the time they had cancer also experienced more positive emotions during this time. This is consistent with the argument by Folkman and Lazarus (1990) that coping strategies can affect emotions. It is also consistent with the preliminary findings that suggest that the use of positive reappraisal coping during a trauma predicts increased experience of positive emotions (Gross & John, 2003; Tugade & Fredrickson, 2004). On a more specific note, this finding is also consistent with Folkman's (1997) conception of positive reappraisal coping as a meaning-altering process that could lead to the experience of positive emotions in stressful situations. However, whether this is the reason behind the observed relationship between positive reappraisal coping and positive emotions was not specifically investigated. It is suggested that further research be conducted before Folkman's (1997) theory is accepted as it appears to be based on a weak argument: it is presumptuous to assume that positively reframing a negative situation would necessarily lead to the experience of positive emotions such as joy.

While a number of studies have investigated the relationship between coping strategies and positive emotions (e.g. Fredrickson & Joiner, 2002), to date only two studies have specifically investigated the relationship between positive reappraisal coping and positive emotions in a coping context (Gross & John, 2003; Tugade & Fredrickson, 2004). The present study adds to previous research in that it provides further support for the assertion that positive reappraisal coping predicts the experience of positive emotions. Examination of the literature reveals that the current study is the first to investigate this relationship in the context of cancer patients. Therefore, it can be seen to contribute significantly to the field of psycho-oncology by outlining coping strategies that may be related to cancer patients' experience of more positive emotions. However, as the present study was only correlational in design, it is possible that the

reported relationship between positive reappraisal coping and positive emotions actually reflects the fact that the use of positive reappraisal coping is the consequence of the experience of positive emotions.

4.7 Optimism and positive reappraisal coping

In the present study, it was hypothesised that people who had higher levels of dispositional optimism would have been more likely to utilise positive reappraisal coping during the time they had cancer. This hypothesis was supported. Therefore, the present study adds to the literature suggesting that optimists make more use of positive reappraisal coping (Brissette et al., 2002; Davis et al., 1998).

However, of concern, is the possibility of a conceptual overlap between positive reappraisal coping and optimism. It could be argued that the expectation of good outcomes and the development of positive perceptions about an objectively negative situation are very similar constructs. Expecting good outcomes could simply be viewed as one way of positively reappraising a negative situation. Based on this argument, one explanation for the results obtained in the present study would be that dispositional optimism only appears to be significantly associated with positive reappraisal coping because the two measures are the same in some respects.

4.8 Optimism and positive emotions

Scheier and Carver (1985) argue that optimists experience more positive emotions in traumatic or stressful situations because of their general expectation of good outcomes. In the present study it was hypothesised that people with higher levels of dispositional optimism

would experience positive emotions more often during the time they had cancer. This hypothesis was supported. This finding contributes to the existing empirical evidence that suggests that there is a positive significant relationship between dispositional optimism and positive affect (e.g. Tennen et al., 1992).

4.9 Optimism, positive reappraisal coping and positive emotions

It was hypothesised that the use of positive reappraisal coping during cancer would mediate the positive relationship between dispositional optimism and the experience of positive emotions during cancer. A weak version of this hypothesis was supported in the present study, suggesting that positive reappraisal coping partially mediated the positive relationship between optimism and positive emotions.

This finding is consistent with the Gaudreau and Blondin's (2004) finding that coping partially mediated the positive relationship between optimism and positive affect. It suggests that coping strategies are one of the mechanisms through which dispositional optimism is related to the experience of positive emotions during cancer or other stressful periods. As a direct relationship between optimism and positive emotions was observed, the finding of an indirect relationship does not necessarily disprove Scheier and Carver's (1985) assertion that optimism acts directly on the experience of positive emotions simply because optimists expect good outcomes. Rather, the finding of the present study adds to Scheier and Carver's hypothesis. It suggests that optimism acts in two ways to predict the experience of positive emotions: directly, through the dispositional expectation of good outcomes, and, indirectly, through the use of positive reappraisal coping.

As far as can be established, the present study is the first to investigate the possibility that positive reappraisal coping mediates the positive relationship between optimism and

positive emotions. Therefore, this study provided a significant contribution to the literature on optimism by suggesting mechanisms through which its effects occur. More specifically, this study provided preliminary information about how the variables optimism, positive reappraisal coping and positive emotions interact.

4.10 Optimism and psychological well-being

The hypothesis that dispositional optimism would predict better current psychological well-being in cancer survivors was supported. This provides further weight to the suggestion that optimism is linked to psychological well-being.

However, there is another possible explanation for the finding in the present study that dispositional optimism was significantly positively associated with psychological well-being. The present study assumed that optimism was a stable trait and therefore that scores on an optimism measure would remain the same across a person's life span. However, recently it has been suggested that optimism may be able to be learned, and that an individual's level of optimism can therefore change over time to some extent (Seligman, 2004). The finding that cancer survivors in the present study are on average more optimistic than a sample of the general population supports the assertion that optimism can change over an individual's life span and suggests that specific factors can prompt these changes. If optimism is indeed not as stable as first thought, then the present study's assumption that participants' current optimism levels would be the same as during the time they had cancer has been violated. This leads to the possibility that optimism is an outcome of cancer rather than a predictor variable of psychological well-being. In this instance, current levels of optimism could be considered to be an indicator of an individual's psychological adjustment to cancer. Therefore, any association between optimism and psychological well-being measures that is observed could simply be the

result of conceptual overlap. It would be valuable to conduct a longitudinal study on cancer patients, including a baseline measure of optimism taken at diagnosis, followed by a measure of optimism a few years later to reveal if the experience of cancer has any effects on people's levels of optimism.

4.11 Optimism, psychological well-being and positive reappraisal coping

As positive reappraisal coping was not significantly related to either measure of psychological well-being in the current study, it was impossible to support the current study's hypothesis that the use of positive reappraisal coping during cancer would mediate the positive relationship between dispositional optimism and current psychological well-being. This finding is not consistent with existing empirical evidence (e.g. Brissette et al., 2002). In order to accurately test this mediating hypothesis, a significant positive relationship between positive reappraisal coping and psychological well-being would first have to be established.

4.12 Demographic-related variables, cancer-related variables and psychological well-being

Contrary to hypotheses, sex, perceived severity of cancer, perceived stressfulness of cancer and support group attendance were not significantly associated with either psychological distress or subjective well-being.

However, as hypothesised, both age and time were significantly associated with differential measures of psychological well-being. The negative path coefficient from age to psychological distress was significant, but the positive path coefficient from age to subjective well-being was not. This finding suggests that older people in this sample were less

psychologically distressed than younger people. This result is consistent with other empirical evidence (Cordova et al., 1995).

In addition to this finding, the positive path coefficient from time to subjective well-being was significant, although the negative path coefficient from time to psychological distress was not. This finding suggests that the more time that has passed since a person's experience with cancer, the better their subjective well-being. This finding is particularly valuable as it suggests that time helps to heal some of the negative effects that cancer has on psychological well-being. This finding provides sufferers of cancer with the hope that if they physically survive the experience of cancer, in time their emotional scars will also heal.

The fact that age and time were differentially related to the two measures of psychological well-being suggests that the method chosen to measure psychological well-being has a real and significant bearing on results. This finding suggests that researchers should be cautious when selecting measures of psychological well-being and should be more specific in defining exactly what they want to measure.

4.13 Limitations of the study

The findings of the present study should be treated with caution. The design was correlational and therefore causal conclusions about the relationships between positive reappraisal coping, positive emotions, dispositional optimism and psychological well-being cannot be made. However, as the study also used a retrospective design, observed relationships are more suggestive of causality than if the study simply utilised a cross-sectional design.

However, restrospectivity also has disadvantages. Participants were required to make retrospective reports about their use of positive reappraisal coping and their experience of positive emotions. It is possible that participants completed these measures in the context of

their current mental state, rather than providing an objective assessment of their experience of positive emotions and use of coping strategies during the time they had cancer. In an effort to address this problem, participants were instructed to respond to the coping and positive emotion items according to their experience of cancer at the time. Although this solution is far from perfect, it does help to guide participants to make an effort to address the emotion and coping questions according to their experience of cancer at the time.

The scales used also limit the findings of the present study. The GHQ-12 (Goldberg, 1978) was used as a measure of psychological well-being. This scale asks participants to indicate if they have been experiencing symptoms of psychological distress more or less than usual in the previous two weeks. This format is not well-suited for use in studies investigating the long-term effects of different factors on psychological well-being as participants with high levels of psychological distress as a result of their experience with cancer six years before would not be likely to report that they had been feeling symptoms of distress more than usual over the previous two weeks. The GHQ-12 would be better suited for use in determining the psychological reactions to a recent stressor.

Another methodological issue pertaining to the measurement of constructs in this study was the fact that participants were asked to indicate their coping responses to the experience of cancer as a whole. The large time frame and the number of different aspects relating to cancer, such as diagnosis and treatment, were treated indiscriminately. However, Lazarus and Folkman (1985) have repeatedly emphasised that coping is a continual process that plays out across time and changing circumstances. Coping reactions that are relevant at one phase of the transaction may be used less, or may even have different effects, if used at a different phase of the transaction. This assessment by Lazarus and Folkman (1985) also raises the issue that the use

of positive reappraisal was expected to have a uniform effect on psychological well-being, regardless of the time or stage during the cancer experience that it was used.

The findings of the present study were also limited by the sample characteristics. The mean age of the sample was relatively high (56.9 years), and, therefore, the results from this study may not be applicable to populations of younger cancer patients and survivors. The fact that age was shown to be significantly related to psychological distress provides support for this contention. Also of concern is the fact that participants varied to a great extent in the time that had passed since they had had cancer. Some participants had only faced their experience of cancer one year before. However, for others, up to 48 years had passed. As no upper limit for time passed since cancer was placed on potential participants, the sample cannot be considered to be homogenous in this respect. Another limitation relating to the sample was that the majority of participants had attended a cancer-related support group. It is possible that this characteristic could skew the results of this study so that they are not generalisable to populations of cancer patients and survivors who have never attended a cancer-related support group. However, this is not of great concern as no significant correlations were found between support group attendance and other variables of interest in the study. Finally, it must be remembered that participants in the present study were all volunteers. It is possible that people who choose to participate in research on coping with cancer have special characteristics, such as being better psychologically adjusted to their cancer experience, that differentiate them from people who chose not to participate. This concern has the potential to limit the findings of the present study to a general population of cancer sufferers and survivors.

4.14 Theoretical and practical applications

Despite these limitations, the findings of this research do have important theoretical and practical implications. Firstly, the descriptive results show that cancer survivors in the present study had higher mean levels of psychological distress than a sample of the Australian general population (Donath, 2001). They also show that a significant proportion of cancer survivors experience clinically significant symptoms of psychological distress. These results have potential practical implications as they highlight the need for continuing psychological support for cancer patients even after they have entered remission.

The finding that neither positive reappraisal coping nor the experience of positive emotions during cancer predicted the long-term psychological well-being of cancer survivors suggests that the method with which people deal with cancer is only related to psychological well-being for a certain period of time. This finding provides an impetus for researchers to investigate the length of time over which positive reappraisal coping and positive emotions during cancer continue to predict psychological well-being.

Another potential application of the present study relates to the finding that positive reappraisal coping during cancer was positively associated with the experience of positive emotions. This finding has important practical applications for cancer patients, as it provides them with information about mechanisms via which they may experience more positive emotions during the time they have cancer. Regardless of whether the experience of positive emotions has long-term psychological benefits, the short-term or even momentary pleasure that they provide to people facing such a chronic stressor is still valuable. The fact that research has demonstrated that coping strategies can be learned enhances the practical applications of this finding as it means that interventions can be structured for cancer patients that encourage the

development of positive reappraisal coping, which, in turn, promotes the experience of positive emotions.

The findings pertaining to optimism also have important implications. To begin with, the fact that dispositional optimism was found to be positively associated with both positive reappraisal coping and positive emotions during cancer provides further information about the nature of optimism and how optimistic people respond to cancer. Also, the fact that positive reappraisal coping was found to mediate the positive relationship between optimism and positive emotions in the present study contributes significantly to the literature on the mechanisms through which optimism acts. This finding suggests that people who are optimistic experience more positive emotions partly because of their use of a particular coping strategy. Because research has shown that cancer patients can alter their use of particular coping strategies either by will or by outside intervention (Edgar, Rosberger & Collet, 2001; Spiegel et al., 1999), this finding suggests a method via which people who are not optimistic might be able to take advantage of some of the psychological benefits associated with optimism.

The finding that dispositional optimism was significantly positively associated with psychological well-being also has important theoretical implications, because it suggests that optimism is a valuable personal resource for people coping with cancer.

The fact that younger cancer survivors were found to have significantly higher levels of psychological distress even when controlling for time passed since cancer, has important theoretical and practical implications, because it suggests that younger cancer patients and survivors are vulnerable and more at risk for experiencing high levels of psychological distress. This information can be used to provide extra support to young people dealing with the psychological concomitants of cancer. The finding that time is positively correlated with

subjective well-being is also important, because it gives hope to cancer patients and survivors that eventually the negative psychological symptoms of cancer will fade. It also has valuable theoretical implications as it provides limited support for the old adage 'time heals all wounds'. It would be worthwhile to conduct a longitudinal study on cancer patients where their psychological well-being is measured annually from diagnosis over 10 years in order to determine how long it generally takes people to recover from the psychological effects of cancer.

4.15 Conclusion

In conclusion, the present study offers partial support for the proposed path model. Positive emotions and positive reappraisal coping were not significant predictors of long-term psychological well-being in cancer survivors. However, positive reappraisal coping was shown to be significantly associated with the experience of positive emotions during cancer. Optimism was shown to be positively associated with psychological well-being in cancer survivors. It was also found to be significantly positively associated with the use of positive reappraisal coping during cancer and with the experience of positive emotions during cancer. Positive reappraisal coping was shown to partially mediate the positive relationship between optimism and the experience of positive emotions during cancer. Finally, time since cancer and age were shown to be differentially associated to the two measures of psychological well-being. These findings contribute significantly to the literature on positive psychology and may have potential positive benefits for cancer patients through their practical implications. Further longitudinal research investigating how long emotions and the use of coping strategies during cancer continue to influence cancer survivors' psychological well-being is needed.

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Appendices

Appendix A

Ethics Approval

From: Rhonda Porter
To: Mc Gregor, Kate E - MCGKE002
Cc: Rob Ranzijn

Subject: Ethics protocol approved
Sent: 31/05/2004 1:29 PM **Importance:** Normal

Division of Education, Arts & Social Sciences

Divisional Human Research Ethics Committee

Y3-39 Academic Services, City West Campus

Ph 8302 0341

Fax 8302 0334

Email rhonda.porter@unisa.edu.au

31 May 2004

Kate McGregor

Email mcgke002

Dear Kate

Project Title: Coping with cancer

Thank you for the amended information provided to DHREC about your research project.

Your submission was assessed by the Committee and has been approved as being in accordance with the guidelines set by the Divisional Human Research Ethics Committee.

Best wishes for your study.

Yours sincerely

Rhonda Porter

Executive Officer

Divisional Human Research Ethics Committee

cc Supervisor

Chair – DHREC

AFTER YOU HAVE RECEIVED APPROVAL FOR YOUR RESEARCH

Human Research Ethics approval is always made on the basis of a number of conditions. It is important that you are familiar with, and abide by, these conditions.

Any serious or unexpected adverse effects on research participants must be reported immediately to the Ethics Officer.

Any unforeseen events which might affect the continued ethical acceptability of the research project must be reported immediately to the Ethics Officer.

The Ethics Committee must be notified of, and approve, any changes to the original protocol.

The Ethics Committee must be notified of any changes in membership of the research team.

In Australia there is a legal obligation for raw data arising from human research to be held securely. The University requires that research data be retained for a period of seven years in your school office.

Approval is for a period of twelve months only. Researchers should make requests for extension using the Application for Extension form which can be downloaded from http://www.unisa.edu.au/orc/ethics/AEFform.rtf

A project completion report must be made to DHREC within three months of the project's completion.

These conditions enable the University to monitor ethics approvals as required by AHEC as well as helping to protect all the participants in the research.

Rhonda Porter

Executive Officer

DEAS

Human Research Ethics Committee

Y3-39 City West

8302 0341

PROJECT COMPLETION FORM

Please send this completed form within three months of completing your research to

Rhonda Porter

EAS DHREC, Y3-39, City West

Researcher's name

_____

Title of project

_____

_____

Location where the project was conducted_____

Date original approval was granted

_____

Completion date

_____

Were there any deviations from the approved ethics protocol?
YES/NO

Were there any adverse effects reported?
YES/NO

Please attach a short report, outlining your findings and detailing any deviations from or amendments to your protocol.

Researcher's signature _____ **Date** _____

Supervisor's signature _____ **Date** _____

Appendix B

Correspondence and written approval from

participating organisations

From: peter daale [SMTP pdaale@attglobal.net]
To: MCGKE002@students.unisa.edu.au
Cc:

Subject: RE: coping with cancer study
Sent: 9/08/2004 6:31 PM **Importance:** Normal

Dear Kate,

Yes, we would be pleased to assist you.

You will need to send me by e-mail a 1 page "invitation to participate" which outlines your research & process, stating 'e-mail', fax and full postal address for contact. This e-mail will need to reach me by 19 August 2004.

We will then photocopy the invitation and circulate it as an insert in the September Wellness News issue to all CSA members (550), to be posted 26 August 2004. You can then selectively respond to individuals wishing to participate, saving on costs.

You will also need to confirm that your research has been cleared by the University's Ethics Committee.

Kindest regards,

Dr Peter Daale
Chief Executive Officer
Cancer Support Association of Western Australia Inc.

-----Original Message-----
From: CSA Default [mailto:csa@cancersupportwa.org.au]
Sent: Monday, August 09, 2004 2:33 PM
To: Peter Daale - CSA
Subject: Fw: coping with cancer study

Cancer Support Assoc of WA Inc
80 Railway Street, Cottesloe
Western Australia 6911
Ph +61 8 9384 3544 Fx +61 8 9384 6196
CSA Online www.cancersupportwa.org.au
----- Original Message -----
From: "Mc Gregor, Kate E - MCGKE002" <MCGKE002@students.unisa.edu.au>
To: <csa@cancersupportwa.org.au>
Sent: Monday, August 09, 2004 10:31 AM
Subject: coping with cancer study

> To Whom it May Concern,

>
> A website stated that this was the contact e-mail address for the
Cancer
> Support Association of WA.
>
> I am currently studying Honours Level Psychology at the University of
South
> Australia. As part of the requirement of this degree I am conducting a
research
> project into coping with cancer. More specifically, I am investigating
the
> relationship between positive coping strategies, positive emotions and
> psychological well-being in cancer survivors. To conduct this research
I
> require cancer survivors who have had no active signs of cancer for at
least
> one year (for prostate cancer survivors the criteria is that one year
has
> passed since successful treatment)who would be willing to participate
by
> completing an anonymous 20 minute written questionnaire.
>
> I am wondering if any members of your support group qualify for and
would
be
> interested in participating in this study. If you believe that this is
the
> case, perhaps you could suggest to me how many people would be
interested
and I
> can post the required number of questionnaires, information sheets and
> reply-paid envelopes out to you. Alternatively, if members of your
support
> group have e-mail addresses, perhaps you could circulate this e-mail
among
them
> and ask them to contact me directly so that I can individually post
out
the
> questionnaire packs. (My contact details are listed below).If you have
any
> other suggestions for recruiting participants, I would be grateful to
hear
> them.
>
> Thanks for your time,
>
> Kate McGregor
>
> CONTACT DETAILS
> Phone: (08) 8331 8864
> E-mail: mcgke002@students.unisa.edu.au
>
>

From: Don Benjamin [SMTP:Don.Benjamin@bigpond.com]
To: Mc Gregor, Kate E - MCGKE002
Cc:

Subject: Re:
Sent: 8/08/2004 3:05 PM **Importance:** Normal

Hi Kate,

We publish our newsletters six times a year. They go to the printer during the first week in July, September, November, etc. Deadlines are the last week in the previous month, ie June, August, October.
Re an ad in our newsletter, you have three options:
1. A free quarter page ad, something like the one I have attached. However it refers to information sheets, questionnaires and reply paid envelopes so this would have to be changed to read "Information sheets, questionnaires and reply paid enveloped are available from .....or by calling ....."
2. A larger ad would have to be paid for starting from about $100, which would run for 3 issues.
3. An insert in the newsletter. This could include the information sheets, questionnaires and replt paid envelopes. For this we charge the costs of printing the insert sheets if they are not already delivered to the printer, the collating and inserting and any extra postage if the weight takes the issue over the maximum for the current postage rate. Usually 2-3 sheets and an envelope would not incur extra postage.

Please contact me on the above email address if you wish to follow this up.

Don Benjamin
Convenor
Cancer Information & Support Society
6/56 Chandos St
St Leonards NSW 2065
----- Original Message -----
From: "Mc Gregor, Kate E - MCGKE002" <MCGKE002@students.unisa.edu.au>
To: <editor@ciss.org.au>
Sent: Tuesday, August 03, 2004 3:25 PM

>
> To the editor of the CISS newsletter,
>
> I am writing to ask which months you produce your newsletter in and the
> deadline dates that you have for including articles in the newsletter.
>
> I am currently studying Honours Level Psychology at the University of
South
> Australia. As part of the requirement of this degree I am conducting a
research
> project into coping with cancer. More spcifically I am investigating the
> relationship between positive reappraisal coping, positive emotions and
> psychological well-being in cancer survivors. To conduct this research I
> require cancer survivors who have had no active signs of cancer for at

least
> one year (for prostate cancer survivors the criteria is that one year has
> passed since successful treatment)who would be willing to participate by
> completing an anonymous 20 minute written questionnaire.
>
> I was wondering if, depending on your deadline dates and when your
newsletter
> goes out, you would be willing to include an advertisement of my study and
a
> request for participants in your newsletter. I have enclosed a copy of
what the
> advertisement would look like as an attachment.
>
> Thanks for your time. If you have any questions please contact me via
e-mail.
>
> Sincerely,
>
> Kate McGregor
>
>


appendix3newsletter small.doc

From: hanton@ozemail.com.au [SMTP:hanton@ozemail.com.au]
To: Mc Gregor, Kate E - MCGKE002
Cc:

Subject: Re: RE: coping with cancer study
Sent: 23/06/2004 12:22 PM **Importance:** Normal

Oops sorry Kate! I was under the impression you would send the questionnaire to me and I will send on to the relevant ladies - that way their details remain confidential, and they can just respond back to you.

Is that okay? Post to me at GPO Box 1948, DARWIN NT 0801.

Now just to be quite clear - are you dealing with any of our other DA coordinators in the other States? Because I know a couple had heard from you direct and flicked the email to me. SO if I am doing on behalf of all our DAA members just let me know, that way I can be sure you get the cross section you want.

Please also let me know any other specifics you would like to have in the respondent group.
Michelle

>
> From: "Mc Gregor, Kate E - MCGKE002" <MCGKE002@students.unisa.edu.au>
> Date: 23/06/2004 12:43:08
> To: 'Michelle Hanton ' <hanton@ozemail.com.au>
> Subject: RE: coping with cancer study
>
> Dear Michelle,
>
> I am just writing as a follow-up to my request for help in contacting cancer
> survivors who might be interested in participating in my study on positive
> coping strategies and psychological well-being.
>
> Look forward to hearing from you,
>
> Kate McGregor
>
> -----Original Message-----
> From: Michelle Hanton
> To: 'Mc Gregor, Kate E - MCGKE002'
> Cc: 'Catherine McGrath'
> Sent: 15/06/2004 3:09 PM
> Subject: RE: coping with cancer study
>
> Hi Kate,
>
> We have several that would qualify - many are long term survivors! Do
> you
> just want this for NT or across Australia - DAA has a huge data base.
>
> I am cc'ing this to Catherine McGrath who was also on Australian Story -
> this is Catherine's area of specific interest and work!
> Kind regards
> Michelle
>

> -----Original Message-----
> From: Mc Gregor, Kate E - MCGKE002
> [mailto:MCGKE002@students.unisa.edu.au]
> Sent: Tuesday, June 15, 2004 9:47 AM
> To: 'hanton@ozemail.com.au'
> Subject: coping with cancer study
>
> Dear Ms. Hanton,
>
> I found your e-mail address on the Dragons Abreast Australia webpage.
> My name is Kate McGregor and I am currently studying Honours Level
> Psychology at the University of South Australia. The major requirement
> for this course is to conduct a major research project and to produce a
> thesis. To fulfil this requirement I have chosen to investigate the use
> of positive coping strategies and the effects that these strategies have
>
> on cancer survivors' psychological well-being.
>
> In order to carry out this research, I need approximately 120 cancer
> survivors (i.e. people who have been in complete remission - had no
> active
> signs of cancer - for at least one year)who would be willing to
> participate
> in
> this study by filling out a 20 minute questionnaire. All respondents
> would
> remain anonymous.
>
> I wondered if you or any members of the Dragons Abreast NT group
> would be eligible for and interested in participating in this study. If
> so I would be happy to post some questionnaires out to you in stamped
> self-addressed envelopes that you could distribute to group members who
> would be interested in participating or I would be grateful even if you
> would
> circulate this e-mail to Dragons Abreast members on your e-mail list so
> that
> people can contact me if they are interested and I can post the
> questionnaires
> out individually.
>
> Thankyou for your time, I look forward to hearing from you soon.
>
> Sincerely,
>
> Kate McGregor
>
> Ph: (08) 8331 8864
> Mob: 0403 059 680
> Please don't hesitate to call or e-mail me if you would like me to phone
> you
> if
> you have any queries or suggestions about this study.
>
> PS I saw a story on your group and some of your members on Australian
> story
> last night that was inspiring and very beautiful. Congratulations.
>
>

From: Vicary, Carla (HMSRHS) [SMTP:vicary.carla@saugov.sa.gov.au]
To: 'Mc Gregor, Kate E - MCGKE002'
Cc:

Subject: RE: research into coping with cancer
Sent: 2/06/2004 12:34 PM **Importance:** Normal

Terrific, the address is Riverside Hotel, 80 Princess Highway Tailem Bend. It's on the right as you drive through TB on the highway. my mobile is 0422692326 just in case you fly past it. if you're through the town you've missed it. yes, I understand those you can include, many of the women have been in remission for more than a year, some many, many years. look forward to meeting you.

-----Original Message-----
From: Mc Gregor, Kate E - MCGKE002
[mailto:MCGKE002@students.unisa.edu.au]
Sent: Wednesday, 2 June 2004 12:23 PM
To: 'Vicary, Carla (HMSRHS) '
Subject: RE: research into coping with cancer

Dear Carla,

Lunch sounds really lovely and like a good opportunity to get to talk to some
people about their experience with cancer and the coping strategies they utilised during that time. I would definitely be interested in coming along. Please send me the address and I will see you there at 12pm.

I am interested to hear about everyone's experiences, however, I just want to
check that you understand that for my study I can only include people who have
survived cancer (i.e. been in remission for at least a year).

The printing of my questionnaires may not have come through by this stage, but
anyone who is interested in participating can provide me with contact details
so that I can post the questionnaires out to them in stamped self-addressed envelopes.

Thanks for all your help Carla. look forward to meeting you and everyone on Monday.

Cheers, Kate

-----Original Message-----
From: Vicary, Carla (HMSRHS)
To: 'Mc Gregor, Kate E - MCGKE002'
Sent: 1/06/2004 1:48 PM

Subject: RE: research into coping with cancer

Hello Kate, thanks for your email.sounds a good topic for research. as it happens our Hills Mallee Southern Region breast cancer support groups are having lunch together at Tailem Bend next Monday 7th at 12noon. I've checked out with a few members who thought it would be a good opportunity for you to come along and join us for lunch, give us a run down and see who might be interested in participating. women are from Mannum, Strathablbyn, Milang, Pinnaroo, Murray Bridge, Tailem Bend amongst other places so you would get to speak to women from rural communities who face some different issues than metro people, so coping strategies would be interesting and so on. If you are interested/available let me know. I'll be in today and tomorrow until 3.00pm but then out until next Monday. Cheers, Carla

-----Original Message-----
From: Mc Gregor, Kate E - MCGKE002
[mailto:MCGKE002@students.unisa.edu.au]
Sent: Monday, 31 May 2004 5:05 PM
To: 'vicary.carla@saugov.sa.gov.au'
Subject: research into coping with cancer

Dear Carla,

I found your e-mail address from the contact for the Murray Bridge Breast Cancer Survivors Group on the internet.

My name is Kate McGregor and I am currently studying Honours Level Psychology at the University of South Australia. The major requirement for this course is to conduct a major research project and to produce a thesis. To fulfil this requirement I have chosen to investigate the use of positive coping strategies and the effects that these strategies have on cancer survivors' psychological well-being.

In order to carry out this research, I need approximately 120 cancer survivors (i.e. people who have been in complete remission for at least one year)who would be willing to participate in this study by filling out a 20 minute questionnaire. All respondents would remain anonymous.

I wondered if I could perhaps attend one of your support group meetings for breast cancer survivors in order to give your members some information about the study and present them with the opportunity of participating. I would also be interested inhearing any other suggestions as to where and how I could

get
in contact with cancer survivors who would be interested in
participating in
this study.

Thankyou for your time, I look forward to hearing from you soon.

Sincerely,

Kate McGregor

Ph: (08) 8331 8864
Mob: 0403 059 680
Please don't hesitate to call if you have any queries or suggestions.

Appendix C

Advertisement

VOLUNTEERS NEEDED

You are invited to participate in a study investigating:

Coping with cancer

People who have survived cancer and are willing to participate in this study by completing a 20-minute anonymous survey are needed. Participants must be over 18 and have been in complete remission (i.e. have had no evidence of active disease) for at least one year. **Criteria for prostate cancer survivors is that at least one year has passed since successful treatment.

The study is being conducted by a University of South Australia Honours Psychology student. It has been designed to produce minimum inconvenience and no out of pocket expenses, with the survey either being e-mailed or posted to participants in a stamped self-addressed envelope. All responses will be greatly appreciated in what is believed to be worthwhile research.

To register your interest in participating, please contact:

Kate McGregor by phone: 0403 059680
or e-mail: mcgke002@students.unisa.edu.au

If you would like to discuss the project in more detail, please contact my supervisor, Dr. Rob Ranzijn on 83024468

Appendix D

Information sheet

INFORMATION SHEET - Coping with Cancer

Dear Sir/Madam,

You are invited to participate in a research project that I am conducting as part of my Psychology Honours program at the University of South Australia.

This research aims to discover the relationship between particular coping strategies, positive emotions and psychological well-being. Participants for this study will include people aged over 18 who have survived cancer and have been in complete remission (i.e. have had no evidence of active cancer) for at least one year.

If you agree to participate you will be asked to complete a confidential questionnaire that asks about your experience with cancer and the manner in which you coped with this. It should take no longer than 20 minutes to complete. If you decide to participate, please complete the following questionnaire and then seal it in the envelope provided and return it to the researcher.

Your participation in this research is voluntary. You are under no obligation to participate and you are free to withdraw from the study at any time. All responses are completely confidential and you will not be able to be identified. For subjects that choose to e-mail their responses, the researcher will take every care to remove responses from any identifying material as early as possible. Likewise individual's responses will be kept confidential by the researcher and not be identified in the reporting of the research. However, the researcher cannot guarantee the confidentiality or anonymity of material transferred by e-mail or the internet.

It is not expected that you should suffer any adverse effects from participating in this study, however, if you feel that you have, please consult your GP or a psychologist. All information collected as part of this study will be stored for 7 years in a secure room in the School of Psychology, University of South Australia.

For further details about the study or a summary of results please contact me, Kate McGregor by e-mail: mcgke002@students.unisa.edu.au, or my Research Supervisor, Rob Ranzijn by phone: 8302 4468. To discuss ethical concerns about the project phone Rhonda Porter, the Executive of the Human Research Ethics Committee of the Division of Education, Arts and Social Sciences, on 8302 0341.

Thankyou for your time,

Kate McGregor
University of South Australia,
Division of Education, Arts and Social Sciences
School of Psychology

Appendix E

Questionnaire

Coping, Emotions and Psychological Well-Being Questionnaire

SECTION 1 – COPING

Modified Ways of Coping (WOC) Scale

Individuals who suffer from cancer face a great deal of stress. Cancer-related stress can include: undergoing treatment that is painful, makes you sick or affects your appearance; facing your own mortality and the possibility that you may not live through this experience; changes in your lifestyle; changes in roles you play; and, changes in relationships. We are interested in the way you **responded to and attempted to cope** with stressors such as these **during the period of time that you had and were being treated for cancer.** There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you **generally** did and felt during the time that you had cancer. Obviously, different events bring about somewhat different responses, but think about what you **usually** did when you were stressed. Please read **each** item below and indicate, by circling the appropriate response, to what extent you used it to cope with your experience with cancer.

	Does not apply /not used.	**Used somewhat**	**Used quite a bit**	**Used a great deal**
C1. Just concentrated on what I had to do next – the next step.	1	2	3	4
C2. Criticised or lectured myself.	1	2	3	4
C3.Talked to someone to find out more	1	2	3	4
C4. Hoped a miracle would happen.	1	2	3	4
C5. I looked for something good in what was happening.	1	2	3	4
C6. Went on as if nothing had happened.	1	2	3	4
C7. I tried to keep my feelings to myself.	1	2	3	4
C8. Looked for the silver lining so to speak; tried to look on the bright side of things.	1	2	3	4
C9. Accepted sympathy and understanding from someone.	1	2	3	4
C10. I was inspired to do something creative.	1	2	3	4
C11.Went along with fate, sometimes I just have bad luck.	1	2	3	4

	Does not apply/not used.	Used somewhat.	Used quite a bit.	Used a great deal.
C12. Tried to forget the whole thing.	1	2	3	4
C13. I got professional help.	1	2	3	4
C14. Changed or grew as a person in a good way.	1	2	3	4
C15. I made a plan of action and followed it.	1	2	3	4
C16. I let my feelings out somehow.	1	2	3	4
C17. I tried to see it in a different light to make it seem more positive.	1	2	3	4
C18. I came out of the experience better than when I went in.	1	2	3	4
C19. Talked to someone who could do something concrete about the problem.	1	2	3	4
C20. Tried to make myself feel better by eating, drinking, smoking, using drugs or medication and so forth.	1	2	3	4
C21. Found new faith	1	2	3	4
C22. Rediscovered what is important in life.	1	2	3	4
C23. Changed something so things would turn out all right.	1	2	3	4
C24. Kept others from knowing how bad things were.	1	2	3	4
C25. I tried to learn something from the experience.	1	2	3	4
C26. I prayed.	1	2	3	4
C27. Didn't let it get to me; refused to think about it too much.	1	2	3	4

	Does not apply/not used.	Used somewhat.	Used quite a bit.	Used a great deal.
C28. Talked to someone about how I was feeling.	1	2	3	4
C29. Took it out on other people.	1	2	3	4
C30. Drew on my past experiences; I was in a similar position before.	1	2	3	4
C31. I knew what had to be done so I doubled my efforts to make things work.	1	2	3	4
C32. I made a promise to myself that things would be different next time.	1	2	3	4
C33. I tried to grow as a person as a result of the experience.	1	2	3	4
C34. I tried to keep my feelings from interfering with other things too much.	1	2	3	4
C35. I changed something about myself.	1	2	3	4
C36. I thought about how a person I would admire would handle the situation and used that as a model.	1	2	3	4

SECTION 2 – EMOTIONS
Modified Positive and Negative Affect Schedule (PANAS)

Now we would like to know what **emotions** you experienced, in other words, how you felt during the time you had cancer. Try to cast your mind back to that time. Try to **remember how you felt** during the period from when you were diagnosed with cancer up until the time that your treatment was finished. We understand that this may be a painful thing to do due to the sensitive nature of what you are recalling. Below are a list of words that describe different feelings and emotions. Read each item and then indicate your response by circling the appropriate number. Indicate how **often** you experienced the following emotions **during the time you had cancer**.

		Never	**Only a little of the time**	**Some of the time**	**Quite often**	**Always**
E1.	Interested	1	2	3	4	5
E2.	Distressed	1	2	3	4	5
E3.	Excited	1	2	3	4	5
E4.	Upset	1	2	3	4	5
E5.	Strong	1	2	3	4	5
E6.	Guilty	1	2	3	4	5
E7.	Serene	1	2	3	4	5
E8.	Thankful	1	2	3	4	5
E9.	Scared	1	2	3	4	5
E10.	Close to others	1	2	3	4	5
E11.	Hostile	1	2	3	4	5
E12.	Enthusiastic	1	2	3	4	5
E13.	Proud	1	2	3	4	5
E14.	Irritable	1	2	3	4	5
E15.	Alert	1	2	3	4	5
E16.	Trusting	1	2	3	4	5
E17.	Ashamed	1	2	3	4	5
E18.	Inspired	1	2	3	4	5
E19.	Nervous	1	2	3	4	5
E20.	Determined	1	2	3	4	5
E21.	Attentive	1	2	3	4	5

		Never	Only a little of the time	Some of the time	Quite often	Always
E22.	Active	1	2	3	4	5
E23.	Amused	1	2	3	4	5
E24.	Content	1	2	3	4	5
E25.	Hopeful	1	2	3	4	5
E26.	Loved or Loving	1	2	3	4	5
E27.	Joyful	1	2	3	4	5
E28.	Happy	1	2	3	4	5
E29.	Optimistic	1	2	3	4	5

SECTION 3 – CURRENT WELL-BEING

3A – The Satisfaction With Life Scale

We are now asking you to think about how well off you believe yourself to be **now.** Below are five statements with which you may agree or disagree. Using the 1 – 7 scale below, indicate your agreement with **each item at this point in time** by placing the appropriate number on the line following that item. Please be open and honest in your responding.

Key: 1 = strongly disagree; 2 = disagree; 3 = slightly disagree; 4 = neither agree nor disagree; 5 = slightly agree; 6 = agree; 7 = strongly agree.

LS1. In most ways my life is close to ideal. _____

LS2. The conditions of my life are excellent. _____

LS3. I am satisfied with my life. _____

LS4. So far I have gotten the most important things I want in life. _____

LS5. If I could live my life over I would change almost nothing. _____

3B – Shortened General Health Questionnaire

The following questions are regarding your general health and well-being. Please circle the response that best fits how often you have felt this way during the **past two weeks.**

H1. Have you recently been able to concentrate on whatever you are doing?	Better than usual	Same as usual	Less so than usual	Much less than usual
H2. Have you recently lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
H3. Have you recently felt that you are playing a useful part in things?	More than usual	Same as usual	Less so than usual	Much less than usual
H4. Have you recently felt capable of making decisions about things?	More than usual	Same as usual	Less so than usual	Much less than usual
H5. Have you recently felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
H6. Have you recently felt that you could not overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
H7. Have you recently been able to enjoy your normal day-to-day activities?	More than usual	Same as usual	Less so than usual	Much less than usual
H8. Have you recently been able to face up to your problems?	More than usual	Same as usual	Less so than usual	Much less than usual
H9. Have you recently been feeling unhappy and depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
H10. Have you recently been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
H11. Have you recently been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
H12. Have you recently been feeling reasonably happy, all things considered?	More than usual	Same as usual	Less so than usual	Much less than usual

SECTION 4 – Life Orientation Test

Listed below are a number of statements. Please indicate how much you **currently** agree or disagree with each statement by circling one of the numbers, 1 to 5, provided alongside.

	strongly disagree	**disagree**	**neutral**	**agree**	**strongly agree**
L1. In uncertain times, I usually expect the best	1	2	3	4	5
L2. It's easy for me to relax	1	2	3	4	5
L3. If something can go wrong for me, it will	1	2	3	4	5
L4. I always look on the bright side of things	1	2	3	4	5
L5. I'm always optimistic about the future	1	2	3	4	5
L6. I enjoy my friends a lot	1	2	3	4	5
L7. It's important for me to keep busy	1	2	3	4	5
L8. I hardly ever expect things to go my way	1	2	3	4	5
L9. Things never work out the way I want them to	1	2	3	4	5
L10. I don't get upset too easily	1	2	3	4	5
L11. I'm a believer in the idea that "every cloud has a silver lining"	1	2	3	4	5
L12. I rarely count on good things happening to me	1	2	3	4	5

SECTION 5 - DEMOGRAPHIC INFORMATION

Finally, please provide some information about yourself.

D1. **Age:** ____ years D2. **Sex:** Male / Female (please circle)

D3. Have you ever been involved in a cancer-related support group? **YES/NO**

D4. What type of cancer did you have? _____

D5. How long has it been since you were declared to be in complete remission (i.e. have no active signs of disease)? Please circle the appropriate response.

NB For prostate cancer survivors please indicate how long it has been since your last successful treatment.

Between 1 and 2 years	**Between 2 and 3 years**	**Between 3 and 4 years**	**Between 4 and 5 years**	**Over 5 years.**

D6. Please indicate the severity of your cancer. Please circle the appropriate response.

Not very severe	**Mildly severe**	**Moderately severe**	**Severe**	**Very severe**

D7. Finally, how stressful would you say your experience of cancer has been for you? Please circle the appropriate response.

Not at all stressful	**A little stressful**	**Moderately stressful**	**Very stressful**	**Extremely stressful**

Please feel free to make any other comments

_____

_____

_____

_____

_____

Thankyou for participating.

If you would like to view the results of this study, a complete copy of it will be available in the University of South Australia library on the Magill Campus from December 2004.