THE EFFICACY OF GUIDED IMAGERY TO ENHANCE APPROACH COPING, EMOTIONAL EXPRESSIVENESS, AND PSYCHOLOGICAL WELL-BEING OF WOMEN WITH BREAST CANCER

By

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“Sometimes God calms the storm and sometimes God lets the storm rage and calms his child”

(Unknown)
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Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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By

Linda Kathryn Goodwin

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Breast cancer is the most common form of cancer in women and many women develop anxiety and depression while struggling with the onset and course of the disease, side effects from treatment, and the stress of life. Coping and emotional expression have been linked to better psychological adjustment and higher quality of life. The purpose of this study was to determine the efficacy of guided imagery to enhance approach coping, emotional expressiveness, and psychological well-being of women with breast cancer.

Fifty-two women with Stage I and Stage II breast cancer agreed to participate in a study to examine the effectiveness of complementary therapy to enhance coping. The women were randomly assigned to one of two groups: (a) a guided imagery group with relaxation music or (b) a relaxation music only group. Forty women completed the study in which they were requested to listen to a tape every day for one month.
Multivariate analysis of covariance was used to analyze the results. There was no significance difference between the groups on the hypotheses tested; therefore, the two groups were equal. Although unable to conclude that guided imagery or relaxation increased approach coping or emotional expression, it was found that depression, anxiety, and overall psychological distress were decreased for women with breast cancer that used a guided imagery or relaxation tape on a daily basis. This study also provided support for the concept that women with fighting spirit (i.e., approach coping) process their emotions, are more emotionally expressive, have less psychological distress, and do not feel helpless and hopeless. Confirmative evidence was found that women with breast cancer who feel helpless and hopeless (i.e., avoidance coping) also experience depression, anxiousness, fatalism, anxious preoccupation, use denial, and, generally, suffer greater psychological distress. Women with breast cancer who used the interventions of guided imagery and relaxation enjoyed the experience, found it helpful, would recommend it to others, and the majority of the women perceived that it helped them to relax.
CHAPTER 1
INTRODUCTION

Overview

Breast cancer is the most common form of cancer in women (American Cancer Society, 2002). The diagnosis of breast cancer, the course of the disease and the ongoing series of stress life events may result in an adjustment disorder (Razavi & Stiefel, 1999). Anxiety and depression are common, along with possible feelings of an inability to cope, loss of control, guilt, fear, anger, low self-esteem, and repression (Blanchard & Harper, 1996; Glanz & Lerman, 1992; Razavi & Stiefel, 1999). Coping styles have been linked with depression, anxiety, and mortality (Greer, 1991; Greer, Morris, Pettingale & Haybittle, 1990; Watson et al., 1991). Women with breast cancer who suppress their emotions have a fatalistic attitude toward cancer (Watson et al., 1991) and those who are able to express their emotions are more likely to have higher quality of life (Stanton, Danoff-Burg et al., 2000) and better psychological adjustment (Goodwin et al., 2001).

Psycho-oncology is the provision of psychological treatment to improve the quality of life of patients with cancer (Greer, 1999). In the past ten years, studies have emerged that have demonstrated the effectiveness of psychological interventions such as supportive-expressive group therapy (Classen et al., 2001; Goodwin et al., 2001; Richardson et al., 1997), cognitive-behavioral therapy (Allen et al., 2002; Antoni et al., 2001; Edelman, Lemon, Bell, & Kidman, 1999; Marchioro et al., 1996), psycho-education (Helgeson, Cohen, Schultz, & Yasko, 1999), guided imagery (Kolbaca & Fox,
1999; Richardson et al., 1997) and a variety of mixed therapeutic interventions in one program (Cunningham et al., 1998; Fukui et al., 2000; Hosaka, Sugiyama, Tokuda, Ohuyama, 2000; Simpson, Carlson, Trew, 2001; Walker et al., 1999) in enhancing coping and psychological adjustment of breast cancer patients. In many of the mixed therapeutic intervention programs, guided imagery was part of the treatment package.

Spiegel (2001) states that “curing cancer may not be a question of mind over matter, but mind does matter” (p. 1768). “What goes on in a person’s head—the thoughts and emotions—can have a dramatic effect on the onset of diseases, the course of many, and the management of nearly all” (Sobel, 1995, p. 237). Meichenbaum (1978) theorizes that the therapeutic use of imagery-based therapies provides mental rehearsal and use of suggestions to produce various adaptive coping responses and reduces or replaces maladaptive responses. This study examined the effectiveness of a therapeutic intervention utilizing directive guided imagery to enhance coping, expression of emotion, and psychological well-being for stage I and stage II breast cancer patients.

**Scope of the Problem**

The National Cancer Institute (2001) estimates that one out of eight women will develop breast cancer during her lifetime. More than 180,000 women are diagnosed with breast cancer each year (National Cancer Institute, 2002) and the incidence of breast cancer has been rising for the last two decades with much of the increase due to enhanced screening by physical examination and mammography (National Cancer Institute, 1996). In the United States, the age-adjusted incidence of invasive breast cancer reveals that white, Hawaiian, and black women have the highest rates . . . [while] the lowest rates occur among Korean, American Indian, and Vietnamese women. The incidence rate for white non-Hispanic women is four times as high as that for the lowest group (Korean women). (National Cancer Institute, 1996)
The diagnosis of breast cancer and the course of the illness can have devastating effects on the psychological well-being of a woman. Individuals may be challenged to cope with surgery, chemotherapy and/or radiation therapy, pain, severe side effects, worry of the spread of cancer or reoccurrence, changes in bodily functions and appearance, uncertainty about the future, financial decisions, reactions of family and friends, and existential issues such as the meaning of life and death (Carver et al., 1993; Fawzy, Fawzy, Arndt, & Psanau, 1995; Greer, 1999; Spiegel & Moore, 1997). "Patients with early diagnosis of cancer with good prognosis, whether or not they objectively have 'little or nothing to worry about,' still experience psychological distress; some may even be in a state of crisis" (Fawzy et al., 1990, p. 720). Hughes and Vinlkur et al. (as cited in Spiegel & Moore, 1997) indicated that "as many as 80% of breast cancer patients report significant distress during initial treatment" (p. 1179-1180). Mood disturbance has been found to be at its greatest immediately after diagnosis and seems to diminish significantly post surgery (Carver et al., 1993; Heim, Valach, & Schaffner, 1997). Recent research has indicated that the chemotherapy, metastasis, and terminal stages of the breast cancer disease process reflect low levels of psychosocial adaptation (Heim et al., 1997). Women with higher stages of breast cancer have been found to experience greater depression and anxiety (Schnoll, Harlow, Stolbach, & Brandt, 1998) indicating the need for increased coping skills and assistance.

A woman's age at the onset of breast cancer has been linked to more distress for younger women (Ferrero, Barreto, & Toledo, 1994; Stanton & Snider, 1993), whereas Schnoll et al. (1998) and Cooper and Faragher (1993) found that older women are at increased risk of psychological maladjustment. Cooper and Faragher (1993) stated that "age is intrinsic to the processes linking stress, personality and coping mechanisms" (p.
and is seen as a predictor of psychosocial distress. Schnoll et al. (1998) noted that age is not a predictor of psychological adjustment but linked indirectly through the mediation of coping.

“A diagnosis of breast cancer and its subsequent treatments, represent a stressor-stimulus which triggers an appraisal process and a coping response which, together determine the emotional outcomes of the experience” (Schnoll et al., 1998, p. 70). Lazarus’ (1993) model of coping indicates that the psychological impact of a stressor, breast cancer in this case, is influenced by the characteristics of the individual experiencing the stressor and the characteristics of the stressor. These coping responses change over time with some coping strategies stable and consistent over time and others fluctuating. In a review of the impact of psychosocial interventions on women with breast cancer, Glanz and Lerman (1992) found that coping responses were significantly related to psychological adjustment with one-half of the variance in psychological adjustment attributed to coping style. The authors also noted that prospective, cross-sectional, and retrospective studies have all demonstrated that the negative sequelae of breast cancer (i.e., anxiety and depression) are significantly reduced when patients receive adequate emotional support.

Women with breast cancer have been shown to control their emotions more than women who have benign breast disease or are healthy (Watson et al., 1991). Women who are able to process and express their emotions have been shown to have fewer related medical problems, enhanced physical health and vigor, decreased psychological distress, and increased quality of life (Goodwin et al., 2001; Stanton, Danoff-Burg et al., 2000). Several studies have linked low levels of emotional expressiveness to poorer survival, a fatalistic view toward cancer, and psychological morbidity (Bleiker, van der Ploeg,
Hendriks, & Ader, 1996; Reynolds et al., 2000; Servaes, Vingerhoets, Vreugdenhil, Keuning, & Broekhuijsen, 1999). One recent study was unable to find significance between emotional suppression and reduced survival rates (Watson, Haviland, Greer, Davidson, & Bliss, 1999). Reynolds et al. (2000) indicated that the expression of emotion was positively associated with survival and there were no differences between African Americans and Caucasians and for patients with early or advanced stages of breast cancer.

Cooper and Faragher (1993) found in a large study of women who were being screened for breast cancer that “it was how the individual perceived the impact of the life events occurring to her, rather than their number or actual nature, which remained as a predictor of clinical diagnosis” of psychological distress (p. 661). Some studies have found increased risk of relapse, more physical side effects of chemotherapy, and reduced length of survival related to poor coping and psychological maladjustment (Shapiro et al., 1997; Watson et al., 1999). Researchers seem to indicate that for some women with breast cancer poor coping, anxiety and depression occur during the course of the disease due to having cancer and some suspect that these factors may affect the development of breast cancer. No one is sure whether either or both may be occurring, or perhaps, it is a recursive influence of the disease, the use of coping strategies, and the presence anxiety and/or depression.

Research has not been able to determine whether the lack of coping skills, psychological adjustment or emotional expressiveness enhance the risk of breast cancer or whether the breast cancer affects the ability to cope, which thereby affects psychological adjustment and emotional expressiveness. It appears that when a woman is initially diagnosed with breast cancer, she will very likely be faced with a life threatening
experience and all of the challenges that accompany this stressful situation. Counselors are in an optimal position to identify a woman’s psychological reaction, determine her coping style, and offer interventions which may be useful in improving the client’s quality of life and enhancing client utilization of treatment regimens (Fawzy et al., 1990).

**Theoretical Framework and Rationale**

**Coping**

“Coping is a stabilizing factor that can help individuals maintain psychological adaptation during stressful periods” (Holahan, Moos, & Schaefer, 1996, p. 25). Holahan and colleagues and Lazarus (1993) describe coping as a combination of personality attributes like optimism or pessimism, adaptability to stressors in changing contexts, response-ability to the various individual’s challenges inherent in the evolving stages of the disease, the repertoire of cognitive appraisal of the situation, and the use of coping strategies such as denial or information seeking. The timely use of specific coping responses serves a mediating role in the stress process and enhances the health and psychological well-being of an individual (Holahan et al., 1996)

“Coping consists of cognitive and behavioral efforts to manage psychological stress” (Lazarus, 1993, p. 237). The coping process can be adaptive or nonadaptive, successful or unsuccessful, consolidated and fluid or unstable. Lazarus states:

Consolidated means that the person has achieved a stable way of coping or defending under a variety of circumstances: most coping processes, including defenses, are probably the result of a fluid, contextually sensitive struggle to appraise what is happening in a way that is responsive to the realities of a situation yet is also hopeful or even optimistic about how things are going. (p. 237-238)

Possibly this is what is happening over time during the course of dealing with breast cancer. At the initial diagnosis, there is a period of psychological distress which seems to lessen for most people over time; as a woman discovers how to cope effectively
with the stress of the challenges confronting her, she is better able to meet the demands of her illness.

The theory of coping as a process emphasizes two major functions of coping, problem-focus and emotion-focus. Problem-focused coping deals with the problem causing the distress. Problem-focused strategies “attempt to solve, reconceptualize, or minimize the effects of a stressful situation” (Parker & Endler, 1996, p. 9); the individual takes action, such as seeking information about cancer. Emotion-focused coping attempts to change the way the stressor is attended to (e.g., vigilance or avoidance) or change the meaning of what is happening (e.g., denial or positive reappraisal) (Lavery & Clarke, 1996; Lazarus, 1993). “Emotion-focused . . . strategies . . . involve self-preoccupation, fantasy, or other conscious activities related to affect regulation” (Parker & Endler, 1996, p. 9). Lazarus (1993) notes that there is evidence that when nothing can be done to change a problem, problem-focused coping can generate considerable distress for individuals when they fail; therefore emotion-focused strategies are the best coping choice.

Holahan et al. (1996) combined the focus of coping (i.e., emotion-focused or problem-focused) with the method of coping (i.e., cognitive or behavioral response). Holahan and colleagues developed an “integrated conceptualization of coping [focusing on] the individual’s orientation of toward a stressor” (p. 28). In this theory, coping is referred to as either approach (engagement) or avoidance (disengagement) (Livneh, 2000). Livneh indicates that approach coping refers to the individual’s efforts to engage a stressor such as seeking information, confrontation, having a fighting spirit, expressing feelings, having a sense humor, and using positive reappraisal. Holahan et al. (1996) note that individuals who use approach coping generally “adapt better to life stressors and
experience fewer psychological symptoms” (p. 28). In contrast, Livneh states that avoidance coping refers to the individual’s efforts to get away from a stressful event; examples of this type of response would be denial, wishful thinking, fatalism, hopelessness, and problem avoidance. “Avoidance coping is [usually] associated with psychological distress” (Holahan et al., p. 29). Livneh acknowledges that two other strategies that do not fall in either category are religion and acceptance.

The use of cognitive appraisal and appropriate coping responses enhances the health and well-being of an individual (Holahan et al., 1996). Individuals use a variety of coping responses in stressful situations (Lazarus, 1993). Some of these strategies will be adaptive and others will be maladaptive. The health and well-being of each individual is dependent on the strategy adopted (Lazarus, 1993).

**Guided Imagery**

Prior to therapy, individuals often express “a sense of helplessness” (Meichenbaum, 1978, p. 389). Meichenbaum (1978) stated that there are three phases of a cognitive theory of behavior change that assist individuals to overcome this sense of lack of control. In the initial phase, the person begins to be self aware of his or her thoughts, feelings, physiological reactions, and/or interpersonal behaviors. In other words, the individual begins to pay attention. During the second phase the person notices maladaptive behaviors and he or she generates new adaptive coping thoughts and behaviors. Finally, new behaviors are actually produced as the result of imaging new ways of responding. “Imagery-based therapy procedures influence the behavioral change process at each of these phases, with some imagery techniques focusing a bit more on one phase than another” (Meichenbaum, p. 387).
Meichenbaum (1978) proposed that three psychological processes explain why imagery based therapies contribute to behavior change. The psychological processes include individuals developing a sense of control because of the practice of monitoring and rehearsing image, individuals altering their internal dialogue and changing the meaning of maladaptive behavior, and individuals mentally rehearsing alternative behaviors expanding their repertoire of adaptive coping skills. "The sense of control, altered meaning, and mental rehearsal influence what behaviors the client will attend to, what he says to himself or images when he notices instances of his maladaptive behaviors, what adaptive behaviors he emits, and finally, his evaluations of the consequences of trying the new behaviors" (Meichenbaum, p. 392). Guided imagery constitutes a therapeutic intervention that stimulates the mental rehearsal of adaptive coping skills essential to behavior change.

For the purpose of this study, guided imagery is described as a directed, deliberate and purposeful elicitation of positive sensory images in an individual's imagination (Naparstek, 1994). Directive imagery "selects images that are aimed at a specific purpose" (Berenson, 1988, p. 168). The body responds to these "images [that] are primarily mental reproductions of the sensual world" (Shlain, 1998, p. 4) as if the event is really happening. The body does not distinguish between external and internal events; it responds as if the imaginary event is real (Naparstek; Zahourek, 1988). Epstein (1986) states that the imagery experience is so concrete that the senses respond as if it were an actual happening. Through this "inner process involving neural activity within the brain associated with memory, perception and thinking, images arise from both internal and external stimuli . . . [that] stimulate physiological and behavioral responses" (Zahourek,
1988, p. 54). Eller (1999) notes that imagery may include suggestions for psychological well-being.

Berenson (1988) states that the most common emotional response to cancer is depression and “feelings of helplessness and hopelessness usually experienced by cancer patients at some point or points during the course of their disease” (p. 169). Hopelessness, depression, lack of emotional expression, and lack of control are particularly evident in women with breast cancer (Blanchard & Harper, 1996; Glanz & Lerman, 1992; Goodwin et al., 2001; Razavi & Stiefel, 1999; Stanton, Danoff-Burg et al., 2000; Watson et al., 1991). Guided imagery procedures can generate feelings of self-control and diminish feelings of helplessness by enhancing coping skills in cancer patients (Berenson, 1988; Eller, 1999).

**Emotional Expressiveness**

A functionalist theory of emotion states emotions and their expression are adaptive. “Functionalism in emotion theory is concerned not with evolutionary survival value but rather with the link between emotion and what a person is *trying to do*” (Campos, Mumme, Kermoian, & Campos, 1994, p. 285). In order to understand an individual’s emotions, both the person and the context must be examined. “Emotion can be succinctly defined from a functionalist perspective as the attempt by the person to establish, maintain, change or terminate the relation between the person and the environment on matters of significance to the person” (Campos et al., p. 285). Functionalist theory “conceptualizes feelings as facets congruent in time and function with behavioral attempts by the person to affect the environment” (Campos et al., 1994, p. 293). A person experiences pleasure when an individual attains progress toward a goal, receives social cues that are positive, or remembers events that are favorable. A person
experiences feelings of unpleasantness when he or she notes that there is an impediment toward a goal, receives negative social cues, experiences pain, or has unfavorable memories. One of the ways that feelings are generated is an “intrinsic conscious attribute of appraisal that involves an assessment of what one can do when faced with an event” (Campos et al., p. 293).

Emotional regulation is the management of emotions. For the functionalist, an individual will regulate emotions in order to foster one’s goals. Campos and associates note:

Emotional regulation involves selecting responses acceptable to the social group to which one belongs because emotions take place in a social context . . . [and] the most obvious way in which emotions are regulated is by their inhibition. In the face of powerful forces, one can hold completely in check one’s tendency to act on an object or a person. (p. 297-298)

Many women with breast cancer tend to suppress their emotions (Bleiker et al., 1996). Servaes et al. (1999) note that many of the respondents in their study stated they did not want to indicate their distress to the individuals around them. These women with breast cancer did not want to appear weak or become a burden. Functionalist theory would suggest that this may be why some of these women inhibit their emotions.

There is also the functionalist view that emotions are related to goals. Women who express their emotions may be able to facilitate the process of “distinguishing what [they] can and cannot control, . . . channel energy toward obtainable goals and . . . generate alternate pathways for bolstering control” (Stanton, Danoff-Burg et al., 2000, p. 881). “Emotions can call one’s attention to relevant goals and concerns, prompt goal-directed action, and serve communication aims” (Stanton, Danoff-Burg et al., 2000, p. 877). Women with breast cancer who are not expressing their emotions may feel
defeated, see no way to take action to benefit themselves and, therefore, suffer from depression or anxiety.

**Need for the Study**

"Greer has been rightly credited with helping to move mind-body-cancer research to a new level of rigor, insight, and integrity" (Oreher, 2000). His first study began in the early 1970's with 57 breast cancer patients with follow-ups at 5, 10, and 15 years. He developed the Mental Adjustment to Cancer (MAC) instrument to determine individual's psychological response to cancer. In his early studies Greer identified the use of coping responses such as fighting spirit, helplessness/hopelessness, denial, and stoic acceptance by women with breast cancer. Since that time, there have been numerous studies that have investigated the coping responses of women with breast cancer and their corresponding psychological well-being (Chen et al., 1996; Cooper & Faragher, 1993; Friedman et al., 1990; Greer et al., 1990; Jarrett, Ramirez, Richards, & Weinman, 1992; Lavery & Clarke, 1996; Shapiro et al., 1997; Watson et al., 1991; Watson et al., 1999).

Women were found to use both approach and avoidance coping styles. Some of the specific approach coping strategies that were associated with psychological well-being were having a fighting spirit (Classen, Koopman, Angell & Spiegel, 1996; Friedman et al., 1990; Greer, 1991; Greer et al., 1990; Schnoll et al., 1998; Watson et al., 1991), being confrontive (Chen et al., 1996; Shapiro et al., 1997), seeking social support (Shapiro et al., 1997), using positive reappraisal (Chen et al., 1996), being optimistic (Carver et al., 1993; Shapiro et al., 1997; Stanton & Snider, 1993), and taking behavioral action (Lavery & Clarke, 1996). Only a few studies referenced approach strategies that had a negative impact on psychological well-being; these included the use of anger, being negative emotionally (Heim et al., 1997) and seeking greater social support (Lavery &
Clarke, 1996). Avoidance coping strategies (Carver et al., 1993; Friedman et al., 1990; Stanton & Snider, 1993) and experiences such as feeling hopeless and helpless and having persistent anxiety or pessimism (Greer, 1991; Lavery & Clarke, 1996; Schnoll et al., 1998) were associated with poorer psychological adjustment. Denial, an avoidance strategy, was found to be an adaptive strategy related to psychological well-being in some studies (Friedman et al., 1990; Greer, 1991) and maladaptive in others (Carver et al., 1993; Heim et al., 1997).

Research in the last 10 years has moved to include prospective, longitudinal, and cross-sectional studies in order to focus on various stages of disease and treatment (Carver et al., 1993; Heim et al., 1997; Schnoll et al., 1998; Stanton & Snider, 1993). Results indicated that psychological distress of Stage I and II breast cancer patients was greatest at the beginning of the awareness of the disease and after diagnosis with women exhibiting many coping skills at this time (Carver et al., 1993). Heim and associates (1997) found that women who have later stage breast cancer used denial and diverting throughout the course of the illness and they also had lower psychological distress, but denial did not help during chemotherapy and diverting was unsuccessful during rehabilitation. Schnoll et al. (1998) discovered that women who are older and have advanced breast cancer exhibit less fighting spirit, more hopelessness, helplessness, fatalism, depression, anxiety, and anxious pre-occupation than younger women with early breast cancer. Schnoll and colleagues stated that:

[the] stage of disease and age were not directly associated with measures of psychological adjustment . . . but were indirectly linked through the mediation of coping style . . . Women with a lower disease stage reported using more adaptive coping styles (i.e., fighting spirit) and less maladaptive coping styles (e.g., hopelessness/helplessness, fatalism) compared to women with a more advanced disease stage. (p. 74)
Watson and associates (1991) describes the “Type C behaviour pattern, with suppression of anger a predominant feature” (p. 51) of cancer patients. Studies in this area have taken two paths: does emotional expression cause cancer or does cancer inhibit emotional expressiveness? Lilja, Smith, Malmstrom, and Salford (1998) indicated that cancer patient studies have demonstrated an association between emotional inhibition, including suppression and repression of aggression and anger, and an increased incidence of cancer diagnosis. Recent research by Bleiker et al., (1996) suggests that it is not a personality trait such as being unable to express emotions but a reaction to having breast cancer. Women are willing to express and talk about their emotions with others, but they are choosing not to appear weak (Servaes, et al., 1999). Most studies have shown that women who do express their emotions have decreased psychological distress (Stanton, Danoff-Burg et al., 2000; Watson et al., 1991). Recently Watson et al. (1999) found that emotional suppression was not related to psychological adjustment or survival, while Goodwin et al. (2001) found increased emotional expressiveness was related to improved psychological adjustment but not to survival.

It appears that psychological distress and emotional suppression are manifested at the time of the diagnosis of breast cancer and many women are using a variety of coping strategies to deal with this stressful situation. The “experience [of breast cancer] is worse for some women than others . . . and differences in personality and coping play a role in the success with which patients adapt to the experience” (Carver et al., 1993, p. 376). Studies have shown that psychological well-being is enhanced when patients receive emotional and functional support (Schnoll et al., 1998). Glanz and Lerman (1992) indicate that studies reveal that most women use a variety of coping responses and their coping strategies change over time. What is not clear is how counselors can assist women
during this intensely, stressful time in their lives and which interventions work best with what populations (Razavi & Steifel, 1999).

Although ten years ago few studies had been conducted to examine the effects of specific therapeutic interventions to enhance the psychological well-being for women with breast cancer (Glanz & Lerman, 1992; Razavi & Stiefel, 1999; van der Pompe, Antoni, Visser, & Garssen, 1996), it appears the trend is changing (Anderson, 2002). Studies have been conducted to determine the efficacy of relaxation training (Larsson & Starrin, 1992); variations of cognitive therapy (Allen et al., 2002; Antoni et al., 2001; Edleman et al., 1999; Marchiaoro et al., 1996; Simpson et al., 2001); psycho-educational programs (Helgeson et al., 1999); expressive-supportive groups (Classen et al., 2001; Cunningham et al., 1998; Goodwin et al., 2001; Spiegel et al., 1999); combinations of therapeutic techniques (Fukui et al., 2000, Hosaka et al., 2000; Walker et al., 1999), and guided imagery (Kolbaca & Fox, 1999; Richardson et al., 1997) with varying results.

Relaxation, hypnosis and guided imagery have been used in combination with each other or in the context of group therapy or psycho-education in a few studies. The treatment groups have had better psychological well-being than control groups (Goodwin et al., 2001; Hosaka et al., 2000; Spiegel, Bloom, Kraemer, & Gottheil, 1989) or experienced significant increases in coping skills such as emotional expression (Walker et al., 1999) and sought more social support from others (Richardson et al., 1997). One study has sought to evaluate a single therapeutic intervention’s effectiveness. Kolbaca and Fox (1999) developed a guided imagery to specifically enhance comfort for women with breast cancer who were receiving radiation therapy; significant increases occurred for the treatment group.
Studies on different types of cancer patients, other than breast cancer, provide evidence that the use of guided imagery within a therapeutic program is effective for reducing depression and anxiety (Fawzy et al., 1990; Lerman et al., 1990), decreasing psychological distress (Baider Uziely, & DeNour, 1994), and enhancing positive coping skills (Syrjala, Donaldson, Davis, Kippes, & Carr, 1995). There were conflicting results from a study using guided imagery in a therapeutic modality with cancer patients that indicated that depression and coping skills were not affected (Burish, Snyder, & Jenkins, 1991). None of these studies looked at guided imagery as the main therapeutic intervention.

Women who face the life threatening illness of breast cancer must utilize coping strategies to minimize the stress of the situation and, therefore, facilitate psychological well-being. There is a need to rigorously investigate therapeutic interventions that are clearly specified and theoretically based in the area of cancer research (Anderson, 2002; Razavi & Stiefel, 1999; van der Pompe et al., 1996) and to implement interventions that address the needs of cancer patients in a cost effective manner (Sobel, 1995). Many women with breast cancer have difficulty expressing their emotions (Watson, 1990) and research has shown that expression of emotion is related to less psychological distress and better physical functioning (Goodwin et al., 2001; Stanton, Danoff-Burg et al., 2000). Guided imagery exercises were developed to promote the adoption of specific adaptive and emotional coping responses to strengthen approach coping, assist women in expressing emotions that they have been unable to identify or express in the past and enhance psychological well-being. The purpose of this study was to assess the efficacy of guided imagery as a useful strategy for female breast cancer patients to use to expand effective adaptive responses and create new ways of coping.
Research Problem

Most of the research in the area of how breast cancer patients cope, their emotional expressiveness, and psychological well-being in response to having breast cancer has addressed what is happening during the course of the disease and after the process of dealing with the disease and its treatment. There have been few studies to determine the effect of treatment interventions on coping, psychological well-being, and emotional expressiveness. Often, studies combine a number of therapeutic interventions, such as relaxation, group support, and guided imagery instead of trying to isolate a specific intervention. Greer (1999) noted that inducing the coping response of fighting spirit has not been studied. This study focused on a guided imagery intervention designed to impact coping by enhancing approach coping strategies and emotional expression and decreasing hopelessness, helplessness, and fatalism. In addition, since coping is thought to facilitate psychological well-being (Holahan et al., 1996), it was hoped that depression and anxiety would decrease.

The purpose of this study was to determine the effectiveness of an innovative, directive, purposeful guided imagery program designed specifically to impact approach and emotional coping and psychological well-being for Stage I or II breast cancer patients.

Research Hypotheses

Research Hypothesis One

There is no significant difference in approach coping (i.e., fighting spirit) and avoidance coping (i.e., helplessness/hopelessness, anxious preoccupation, denial/avoidance, and fatalism), as measured by the Mental Adjustment to Cancer Scale, between stage I or stage II breast cancer patients who receive a program consisting of directive guided imagery and relaxation music and those who receive relaxation music.
**Research Hypothesis Two**

There is no significant difference in emotional expression and emotional processing as measured by the Emotional Approach Coping Scale between stage I or stage II breast cancer patients who receive a program consisting of directive guided imagery and relaxation music and those who receive relaxation music.

**Research Hypothesis Three**

There is no significant difference in the psychological well-being (i.e., depression, anxiety, and total mood score), as measured by the Profile of Mood States, between stage I or stage II breast cancer patients who receive a program consisting of directive guided imagery and relaxation music and those who receive relaxation music.

**Glossary of Terms**

*Approach coping* is an individual’s efforts to engage with a stressful event; examples are seeking information, confrontation, having a fighting spirit, expressing feelings, having a sense of humor, and using positive reappraisal.

*Avoidance coping* is an individual’s efforts to get away from a stressful event; examples would be denial, wishful thinking, fatalism, hopelessness, and problem avoidance.

*Coping* is a stabilizing factor that indicates how well individuals maintain psychosocial adaptation during stressful periods; it encompasses cognitive and behavioral efforts to reduce or eliminate stressful conditions and associated emotional distress as measured by the Mental Adjustment to Cancer Scale.

*Emotion-focused coping* is coping that attempts to change the way that a stressor is attended to (i.e., vigilance or avoidance) or change the meaning of what is happening (i.e., denial or positive appraisal); emotion-focused coping activities try to regulate affect...
*Emotional expressiveness* is the action of actively processing and expressing emotions as measured by the Emotional Approach Coping Scale.

*Guided imagery* is the directed, deliberate and purposeful elicitation of positive sensory images in an individual’s imagination.

*Problem-focused coping* is coping that attempts to deal with the problem causing the distress (i.e., take action or seek information); problem-focused coping activities try to solve, reconceptualize or minimize the effects of a stressful situation.

*Psychological well-being* is the absence of the psychological phenomenon of depression and anxiety as measured by the Profile of Mood States.
CHAPTER 2
REVIEW OF THE LITERATURE

The purpose of this chapter is to discuss the literature related to the psychological well being, coping, and emotional expression of women with breast cancer and studies that have focused on using guided imagery with breast cancer patients. A summary of conclusions as related to the review of the guided imagery research and suggestions for research complete the chapter.

Guided imagery is typically used in conjunction with other counseling interventions such as relaxation training, support groups, individual counseling, and educational support. There is no single definition of guided imagery and, therefore, many types of guided imagery exist. Guided imagery may be an elaborate 20 minute directed exercise that incorporates music, progressive relaxation, sensory images and suggestions or as simple as looking at pictures and imagining what you see. To further complicate this picture, many authors use the concepts of self-hypnosis, hypnosis and guided imagery interchangeably. For the purpose of this review, studies were included that examined interventions that used guided imagery or self-hypnosis and/or required the individual to produce mental images. The use of guided imagery could be used in conjunction with other therapies since few studies exist with guided imagery as the only intervention. A review of the literature to determine guided imagery outcome studies to be used in this paper was conducted by searching the databases: PsycINFO, MedLine and CAM on PubMed. References and review articles were used to provide additional studies.
Psychological Well-Being

Psychological well-being refers to the amount of emotional distress that occurs for a patient during the course of the cancer experience (Tope, Ahles, & Silberfarb, 1998). “Cancer and its treatments are stressful life events [that produce] an acute stress reaction or a significant life change . . . that may result in an adjustment disorder” (Razavi & Stiefel, 1999, p. 347). Depression and anxiety may also occur for individuals with cancer (Tope et al., 1998). Razali and Stiefel (1999) report that 85% of cancer patients who are experiencing a psychiatric condition state that depression or anxiety was the principal symptom. Payne, Hoffman, Theodoulou, Dosik and Massie (1999) found that 33% were in need of psychiatric intervention for depression or anxiety.

Complicating the task of identifying psychological distress is that the symptoms and treatment effects of cancer such as “reduced energy and libido, appetite change, sleep disturbance and social withdrawal” (Walker & Eremin, 1996, p. 77) are also indicators of depression. Some physicians may see anxiety and depression as a “‘normal’ reaction to the diagnosis, treatment side effects, or prognosis” (Walker & Eremin, p. 77). Given these factors, depression and anxiety often go undiagnosed or untreated (Payne et al., 1999; Spiegel, 1996).

Anderson (1992) indicated that the needs of a cancer patient vary over the course of the illness. Psychological distress may begin for a woman at the time that a suspicious lump is found and she waits for a diagnosis. Mood disturbance is the greatest immediately after diagnosis and seems to diminish significantly post surgery (Carver et al., 1993; Heim et al., 1997). Women with breast cancer are challenged with surgery, chemotherapy and/or radiation, pain, side effects from treatment protocols, worry about
the spread of cancer or reoccurrence, changes in bodily functions and appearance, uncertainty of the future, financial concerns, and the possibility of death (Carver et al., 1993; Fawzy et al., 1995; Greer, 1999; Spiegel & Moore, 1997). Research has shown that chemotherapy, metastasis, and terminal stages of the course of breast cancer are often times of greatest psychological distress (Heim et al., 1997) and women with higher stages of breast cancer have greater anxiety and depression than those with lower stages (Schnoll et al., 1998).

Although cancer patients seem to improve in their psychological adjustment, many breast cancer patients suffer from psychological distress in the year after breast cancer (Schag et al., 1993). These patients have reported greater anxiety, more illness-related worries, reduced energy, and less ability to do physical activities. A significant number of breast cancer patients rate the fear of a reoccurrence of cancer as one of their greatest concerns (Fallowfield, Hall, Maguire & Baun, 1990; Sneeuw et al., 1992).

**Coping and the Psychological Well-Being of Breast Cancer Patients**

The "experience [of breast cancer] is worse for some women than others . . . and differences in personality and coping play a role in the success with which patients adapt to the experience" (Carver et al., 1993, p. 376). Research to discover how different individuals cope with the experience of cancer has been prolific over the last 20 years. Retrospective, cross-sectional, prospective studies, and studies that have focused on treatment time and stage of treatment have been conducted. Each of them have shown that psychological well-being is enhanced when patients receive emotional and functional support (Schnoll et al., 1998). The coping responses employed by breast cancer patients have been significantly associated with psychological adjustment with 50% of the variance in psychological adjustment accounted for by coping style (Glanz &
Lerman, 1992). Glanz and Lerman further indicate that studies reveal that most women use a variety of coping responses and their coping responses change over time.

In this section research relating to coping style and psychological well-being of individuals with breast cancer will be reviewed. The coping styles are grouped under the categories of approach and avoidance styles. Approach coping is an individual's effort to engage with a stressful event, whereas, avoidance coping is an individual's attempt to get away from or minimize the effects of a stressful event. Each coping style may be differentiated as either problem- or emotion-focused. Problem-focused coping attempts to deal with a stressful event that is causing the distress and solve, reconceptualize or minimize the effects of a stressful situation. Emotion-focused coping attempts regulate affect by changing the way one attends to the stressor (i.e., vigilance or avoidance) or changing the meaning of what is happening (i.e., positive reappraisal or denial).

**Emotion-Focused Approach Coping Style: Fighting Spirit**

Fighting spirit is an emotion focused strategy in which the individual focuses on "more optimistic thoughts that enable the person to deal actively with the stressor" (Friedman et al., 1990, p. 37). These individuals accept their diagnosis, may see the illness as a challenge and are determined to fight the cancer (Greer, 1991). Higher levels of fighting spirit are positively associated with lower levels of depression and anxiety (Schnoll et al., 1998; Watson et al., 1991), and lower overall mood disturbance (Classen et al., 1996). Positive relationships between higher health care orientation; vocational, domestic, sexual, extended family, social and psychological wellness; and higher levels of fighting spirit were reported in a replication study of women with metastatic breast cancer (Friedman et al., 1990). In a 15 year longitudinal study of women with non-metastatic breast cancer, fighting spirit was significantly related to more women being
alive and well (Greer, 1991; Greer et al., 1990). However, according to Greer (1999) there has not been a study focused on enhancing fighting spirit and assessing its effect on the duration of cancer patient survival.

**Emotion-Focused Approach Coping Style: Seeking Social Support**

Individuals may seek out social support from their family and friends during their crisis of cancer. This is an emotion-focused strategy (Chen et al., 1996). The majority of women with early stage breast cancer used this coping strategy most frequently (Jarrett et al., 1992). Seeking social support was positively related to less psychological and physical side effects from chemotherapy and the use of active coping and positive reframing during hospitalization and rehabilitation (in contrast to being confrontive) (Carver et al., 1993; Heim et al., 1997; Shapiro et al., 1997). Lavery and Clarke (1996) found that women who changed their social behavior thought they were less well adjusted as they were engaged in activities such as seeking out information and friends when this had not been their coping style in the past.

**Emotion-Focused Approach Coping Style: Optimism**

Optimism is an emotion focused coping skill. Individuals who use this strategy try to make the best out of a situation that they are trying to accept as real. Optimism is associated with active coping and planning (Carver et al., 1993). Optimism has been significantly related to less distress prior to biopsy in one study (Stanton & Snider, 1993) and at many stages of the breast cancer disease process in another (Carver et al., 1993). Shapiro and colleagues (1997) found that women who were optimistic while undergoing chemotherapy had significantly less psychological and physical side effects
Problem-Focused Approach Coping Style: Positive Reappraisal

Positive reappraisal is a problem focused strategy that involves cognitive restructuring or positive reframing (Chen et al., 1996; Carver et al., 1993). It is one of the coping strategies used most frequently by women with breast cancer (Jarrett et al., 1992). This strategy is related to significantly less psychological morbidity (Chen et al., 1996) and more active coping (Carver et al.).

Problem-Focused Approach Coping Style: Active Behavioral

Individuals who are behaviorally active are engaged in activities and focused on their problem. Lavery and Clarke (1996) found that women who sought information and used alternatives to traditional medical treatment, such as religion or acupuncture, rated that they had adjusted well to having breast cancer. These women felt that they had not caused their disease.

Mixed Approach Coping Style: Confrontiveness

Confrontiveness can be either a problem-focused or emotion-focused strategy (Chen et al., 1996). Individuals who are confrontive may express their thoughts and feelings, seek information, desire to be involved in treatment decisions, and demonstrate optimism (Shapiro et al., 1997). Cooper and Faragher (1993) found that the expression of anger was an appropriate coping skill and that women coming to a breast cancer screening clinic who were able to be angry were more unlikely to have a severe diagnosis. Confrontive coping skills were significantly related to less psychological and physical side effects in women receiving chemotherapy (Shapiro et al., 1997) and less psychological morbidity in women about to have biopsies at a breast cancer screening clinic (Chen et al., 1996). In a five year study of stages of illness the use of anger or having negative emotions was deemed an unfavorable coping strategy during
hospitalization and rehabilitation of breast cancer patients as these patients had poor psychosocial adjustment (Heim et al., 1997).

**Emotion-Focused Avoidance Coping Style: Denial**

Denial is an emotion focused strategy in which the individual may deny the diagnosis, deny or minimize its seriousness, avoid the word cancer or avoid thinking or talking about the disease (Greer, 1999). Greer et al. (1990), Greer (1991) and Heim and colleagues (1997) found in longitudinal studies of breast cancer patients that denial was seen as positive avoidance. Denial kept distress low at all levels except during chemotherapy in the Heim et al. study. Greer (1991) found that women who used denial or had a fighting spirit were more likely to alive and well at 15 years as compared to women who used other responses such as helplessness or anxious preoccupation. In contrast to these results, denial was seen as a negative coping skill and related to an increased risk of breast cancer for a group of women who were attending a breast cancer screening clinic (Cooper & Faragher, 1993). Women in this study had Stage I or Stage II cancer and were compared to a group of women who were diagnosed as normal or were receiving a general medical check-up. For a group of early stage (I and II) breast cancer patients who were private patients studied over one year, it was found that distress was related to denial at all of the measurements (Carver et al., 1993). In a replication study of breast cancer patients, denial was not associated with poorer adjustment (Friedman et al., 1990).

**Emotion-Focused Avoidance Coping Style: Fatalism**

Individuals who adopt a fatalistic attitude are engaging in an emotion focused strategy in which they have a resigned attitude. They do not seek additional information and think that there is nothing that they can do to change the course of their disease
(Greer, 1990). All of the studies that examined fatalism found that this strategy was related to poorer psychological well-being. It was linked to higher mortality rates in a longitudinal study (Greer, 1991), higher levels of depression and anxiety (Schnoll et al., 1998; Watson et al., 1991), and more physical and psychological side effects during chemotherapy (Shapiro et al., 1997).

**Emotion-Focused Avoidance Coping Style: Helplessness/Hopelessness**

People who suffer from helplessness and/or hopelessness feel like they are being engulfed by the diagnosis. Their life may be disrupted by the fear of dying and they find it difficult to think about anything else (Greer, 1991). As with fatalism, this emotion focused strategy is related to higher mortality rates (Greer, 1991), depression, and anxiety (Schnoll et al., 1997). This coping style is also related to greater anger, the tendency to try to control emotions, and emotional outbursts for women with all types of breast cancer (Lavery & Clarke, 1996; Watson et al., 1991). Watson and associates (1991) found a highly significant relationship between helplessness and fatalism \( (p < 0.0001) \) in a group of 359 women with early stage breast cancer. Lavery and Clarke (1996) found that “women who rated their adjustment to their diagnosis as being excellent had lower scores on helplessness and hopelessness” (p. 25). Ferrero and colleagues (1994) noted that the women in their study who indicated that they had high levels of helplessness/hopelessness at the time of diagnosis also had psychological distress but these levels returned to normal at four months. Schnoll et al. (1998) found women who were undergoing chemotherapy had higher levels of helplessness/hopelessness during the times that they were receiving chemotherapy.
Emotion-Focused Avoidance Coping Style: Anxious Preoccupation

Anxious preoccupation describes individuals who tend to be persistently anxious and pessimistic about their disease. They seek information and alternative cures but worry about every ache and pain with thoughts that the disease may be spreading or recurring (Greer, 1991). As with the other disengagement, emotion focused strategies in this section, anxious pre-occupation was related to higher morbidity, anxiety and depression in early stage and Stage IV breast cancer patients, all who were part of a convenience sample and many who had simple mastectomies and radiation therapy (Ferrero et al., 1994; Greer, 1991; Schnoll et al., 1998; Watson et al., 1991). Lavery and Clarke (1996), in contrast to the above studies, found that women with breast cancer who rated themselves as well adjusted, had higher levels of anxious preoccupation.

Other Avoidance Coping Styles

A number of studies measured avoidance coping using such constructs as cognitive avoidance (Friedman et al., 1990; Jarrett et al., 1992; Stanton & Snider, 1993), wishful thinking (Chen et al., 1996), diversionary thinking (Heim et al., 1997), and behavioral disengagement (Carver et al., 1993, Friedman et al., 1990). Avoidance coping was linked to higher levels of psychological distress at the time of diagnosis (Stanton & Snider, 1993), biopsy (Chen et al., 1996), and presurgery (Carver et al., 1993).

Studies that examined emotion-focused avoidance coping produced varied results. For example, Jarrett and associates (1992) found that wishful thinking was rarely used by women who had breast cancer, but cognitive avoidance was used often and it was deemed a positive coping strategy at six months after the diagnosis of breast cancer. Heim and colleagues (1997) found that diversionary thinking, directing attention to something besides the illness, enhanced well-being at all stages except during rehabilitation. [Rehabilitation was the time that followed chemotherapy and/or radiation]
in which women were over surgery and the adjunctive therapies, and hopefully, entering a time of when they were recovering from their disease and its associated treatments.] Friedman et al. (1990) found that avoidance coping, which was defined as actively avoiding the stress (i.e., cancer) was related to poorer domestic, sexual, social, and psychological adjustment.

**Coping to Enhance Psychological Well-Being**

Table 1 summarizes the literature reviewed by linking the stage of the course of illness with the coping strategies used and indicating whether psychological well-being in each stage was enhanced or diminished by the use of a particular coping strategy. Overall, approach (i.e., engagement) strategies seem to enhance psychological well-being and avoidance (i.e., disengagement) strategies are associated with poorer psychological adjustment.

Table 1 summarizes 11 studies that provided results related to the coping strategies and psychological well-being of women with breast cancer. Ten different instruments were used to measure coping styles and nine different instruments assessed psychological well-being. The names of the instruments that were used are listed in alphabetical order, with the names of the authors that used them in their research cited in parenthesis after the instrument.

The coping measures included The Bernese Coping Scale (Heim et al., 1997), Cancer Adjustment Survey, (Friedman et al., 1990), Cope (Carver, et al, 1993), Coping Strategies Inventory (Chen et al., 1996), Faith Courtauld Coping Schedule (Jarrett et al., 1992), Medical Coping Modes Questionnaire (Cooper & Faragher, 1993; Shapiro et al., 1997), Mental Adjustment to Cancer (Classen et al., 1996; Ferrero et al., 1994; Greer et al., 1991; Lavery & Clarke, 1996; Schnoll et al., 1998; Watson et al., 1991; Watson et al., 1999), Modified Ways of Coping (Jarrett et al., 1992; Reynolds et al., 2000), Moos
Table 1. Psychological well-being by coping strategy and course of illness reported in literature

<table>
<thead>
<tr>
<th>Course of Illness</th>
<th>Screening</th>
<th>Biopsy</th>
<th>Newly Dx</th>
<th>Pre-surgery</th>
<th>Hospital</th>
<th>Post-surgery</th>
<th>Convalescence</th>
<th>Chemo/Radiation</th>
<th>Rehab</th>
<th>Metastasis</th>
<th>6 month</th>
<th>1 year</th>
<th>Unknown</th>
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<td>Fighting Spirit</td>
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<td>&gt; (8)</td>
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<td>Social Support</td>
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<td>normal(10)</td>
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<td>&lt; (1)</td>
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<td>&lt; (5)</td>
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</table>

< indicates less psychological well-being associated with coping strategy

> indicates greater psychological well-being associated with coping strategy

Coping Scale (Friedman et al., 1990) and Ways of Coping (Stanton & Snider, 1993). The Mental Adjustment to Cancer was the most frequently used assessment to assess coping.

The psychological well-being measures were the Brief Symptom Inventory (Schnoll et al., 1998), Emotional State Scale (Heim et al., 1997), General Health Questionnaire (Chen et al., 1996), Hospital Anxiety and Depression Scale (Watson et al., 1991; Watson et al., 1999), Profile of Mood States (Carver et al., 1993; Classen et al., 1996; Stanton & Snider, 1993), Psychological Adjustment to Illness Scale (Friedman et al., 1990), Rotterdam Symptom Checklist (Shapiro et al., 1997), Social Adaptation Scale (Heim et al., 1997), Subscale of Breast Cancer Quality of Life (Ferrero et al., 1994), and women’s self report of their perceived adjustment to breast cancer (Lavery & Clarke, 1996) were used. The Profile of Mood States was the most frequently used assessment for psychological well-being.

It is likely that the variety of instruments contributed to some confusion over the significance of study results. By comparing Livneh’s (2000) definitions and the instruments themselves, I was able to place study results into meaningful categories. A construct may be operationally defined by a number of different items; therefore, the outcomes of different instruments may vary if the items chosen are used to define more than one construct or the items that create a factor on one instrument are different from the items that define the same factor on another instrument. Consider the definitions of wishful thinking and diversionary thinking. Jarrett and associates (1992) used the Ways of Coping scale and placed statements that began with I wish or I hope in the category of wishful thinking and also included turning to work or a substitute activity as indications of wishful thinking. Heim and colleagues (1997) used the Bernese Coping Modes in which diversionary thinking was classified as directing thought or actions away from the
illness to something else as a diversion, developing one’s creativity or travel, and using wish fulfillment. There does not appear to be much difference between these two concepts, yet diversionary thinking and wishful thinking are classified as two different concepts.

Another example is found in Greer’s (1991) Mental Adjustment to Cancer. The items that define anxious preoccupation were originally included in the helplessness/hopelessness factor. It was not until the instrument was given a number of times and factor analysis was completed that the author noted that two factors were being measured instead of the one intended.

Often there are differing opinions as to which thoughts and behaviors define a construct. Consider the concept of denial as operationalized in the Bernese Coping Modes instrument. Heim and associates (1997) linked strategies that deny or minimize the illness with actively avoiding medical action, not admitting ones feelings and self-control. Alternatively, Carver and colleagues (1993) used the Cope and reduced all the items to three per scale and chose the items that they thought were most clearly represented denial. Watson and associates (1991, 1999) used yet a third instrument, Mental Adjustment to Cancer, in which denial was measured by a single item which states “I don’t really believe I had cancer.” Clearly, there is confusion as to which items constitute a concept and confounding within a concept, as illustrated by the denial construct.

Table 1 reflects 12 different passages marking the course of a breast cancer patient’s illness that were reflected in the studies reviewed. These markers are not clear cut and, for a few of the studies, the time of the assessment is unknown. Some passages overlap such as post surgery (Carver et al. 1993) and convalescence (Heim et al., 1997)
or biopsy (Chen et al., 1996; Stanton & Snider, 1993) and newly diagnosed (Ferrero et al., 1994; Heim et al., 1997; Watson et al., 1991).

When researchers began studying coping and psychological well-being of breast cancer patients, either one point in time or no point in time was specified. During biopsy, but before the diagnosis of breast cancer, the approach coping strategy of optimism was linked with psychological well-being and the avoidance strategy of wishful thinking was associated with poor psychological well-being (Chen et al., 1996). Watson and colleagues (1991) found in a study of newly diagnosed breast cancer patients a fighting spirit was associated with greater psychological functioning, whereas women who were fatalistic, hopeless/helpless, and anxiously pre-occupied exhibited poorer psychological functioning. Schnoll and associates (1998) found similarly, that during chemotherapy or radiation a fighting spirit was associated with psychological well-being while fatalism, helplessness/hopelessness, and anxious preoccupation was associated with poor psychological well-being.

Shapiro and colleagues (1997) examined the coping strategies of women three times during a weekly course of chemotherapy; the women who used the approach coping strategy of confrontation had significantly better psychological and physical functioning during the chemotherapy than the women who used avoidance coping. Classen and associates (1996) examined a group of women with metastatic breast cancer and found that fighting spirit was associated with better psychological adjustment but discovered no relationships between denial, avoidance, or fatalism and psychological adjustment. The last two studies that looked at one point in time did not specify a stage in the course of illness. Friedman and colleagues (1990) found that having a fighting spirit was related to less psychological distress and avoidance coping was related to poorer
psychological adjustment. Lavery and Clarke (1996) had women rate their adjustment to a breast cancer diagnosis and found that "women who rated their adjustment as being excellent had lower scores on helplessness/hopelessness and were more anxiously preoccupied with their illness" (p. 25) and were behaviorally active by seeking information and finding complementary therapies to assist them during their healing.

Recently, studies have been conducted examining women's responses between several distinct points in time (Carver et al., 1993; Stanton & Snider, 1993) or across the entire course of the disease (Heim et al., 1997), rather than at one time, such as prebiopsy or during chemotherapy. The results from some of these studies provided insight into the fact that for some women with breast cancer there was a significant shift in psychological functioning from presurgery to postsurgery. Stanton and Snider's (1993) research focused on women who were having breast cancer screening and two groups emerged, those women who received a diagnosis of breast cancer and those who did not have breast cancer. Women who used the approach coping style of optimism had greater psychological well-being than women who were not optimistic at the time of prebiopsy. Women in the study who used cognitive avoidance as their primary coping strategy at prebiopsy had more psychological distress when they received a diagnosis of cancer than women who sought social support, used less cognitive avoidance, and expressed more vigor. The study indicated that prior to surgery, women who had breast cancer experienced low psychological well-being but after surgery there were significant increases toward better psychological adjustment but they did feel less vigor and more fatigue. After surgery, the women with breast cancer who were distressed shifted to normal levels and there were no differences in psychological distress between the women who had received a diagnosis of cancer and those who did not have cancer.
Carver and associates (1993) studied women with Stage I and II breast cancer at five different points over the period of 1 year. They found that psychological distress was not extreme at any point during the year and that many “coping reactions were more prominent early in the crisis than later” (p. 378), namely during the presurgery and postsurgery stages. Women were engaged in approach coping activities such as acceptance, active coping, planning, using social support, and positive reframing during these two phases with little use of the avoidance strategies of denial and restraint. Positive psychological well-being was associated with the approach strategies of acceptance and optimism at all of the times and positive reframing at all points except at 1-year mark. Psychological distress was related to denial and disengagement at all points during the study.

Ferrero and associates (1994) researched women with Stage I, II and III nonmetastatic breast cancer at the time of diagnosis or within one month of diagnosis, at 3 months and 6 months later. Fighting spirit was related to significant psychological well-being and fatalism, helplessness/hopelessness, and anxious preoccupation was related less psychological well-being at all points except that fatalism was normal at the 6-month period. Denial was not related to psychological well-being at the time of diagnosis or 3 months later; but at 6 months, denial was related to better psychological well-being.

Heim and colleagues (1997) included all stages of breast cancer with all of the women having total mastectomies. The data was obtained at a number of different points during the course of the illness for 5 years. Eight different points were specified beginning with the detection of the problem and diagnosis and continuing until dying. Five points (hospitalization, convalescence, chemotherapy, rehabilitation, and metastasis)
were used for data analysis. The approach strategy of using social support was the coping strategy of choice with the avoidance strategies of diverting in the middle and denial in the least preferred strategies. Over the course of the illness, coping strategies were used most frequently during hospitalization, chemotherapy, and rehabilitation. No specific coping skills were used during convalescence which was the time after hospitalization and at metastasis. The approach strategy of social support was linked to better psychological well-being at diagnosis, hospitalization, chemotherapy, and rehabilitation but confrontiveness, another approach mechanism, was linked to less psychological well-being at the time of hospitalization and rehabilitation. Denial, an avoidance strategy, was related to better psychological well-being over the course of the illness except during chemotherapy. The concept by Heim et al. (1997) of negative emotional coping (which included fatalism, rumination, rebelling, anger, social withdrawal, and self-accusation) was classified as an avoidance strategy and was found to be linked with greater psychological well-being except at the time of rehabilitation.

The stage of breast cancer of the participants researched in the studies reviewed varied. There were studies that investigated coping prior to knowing if there was breast cancer (Chen et al., 1996; Stanton & Snider, 1993). Others grouped all early stage breast cancer patients together without specifying the exact stage (Jarrett et al., 1992; Watson et al., 1991). Some studies focused on one stage such as Stage II (Shapiro et al., 1997) or two stages such as Stage I and Stage II (Carver et al., 1993; Schnoll et al., 1998). Metastatic breast cancer patients (Classen et al. 1996) or nonmetastatic breast cancer within three stages (Ferrero et al., 1994) were studied while some studies included all stages (Heim et al., 1997). Finally, Friedman and colleagues (1990) did not indicate the stage of breast cancer. While analysis did not often center on the stage of breast cancer,
Schnoll and associates (1998) found that women with lower stages of the disease used more adaptive coping skills while women who had Stage IV breast cancer had less fighting spirit, more anxious preoccupation, hopelessness/helplessness, fatalism, depression, and anxiety. Jarrett and colleagues (1992) reported that women who had breast cancer that was in remission used adaptive coping responses and avoided dysfunctional thoughts and behaviors.

Age was a variable noted in some of the research as a construct of possible interest. Cooper and Faragher (1993) indicated that age was a predictor of cancer and psychosocial distress. Miller, Manne, Taylor, Keate, and Dougherty (1996) and Stanton and Snider (1993) reported that younger age was significantly related to lower psychological functioning, lower optimism, and greater use of avoidance strategies. As women aged they were more likely to get cancer, have fewer sources of support, less ambition, and were more relaxed. Stanton and Snider’s (1993) study indicated that older women were less tense and less angry than younger women. In contrast to these results, Schnoll and associates (1998) found that older women with Stage IV breast cancer were more fatalistic, had greater hopelessness/helplessness, anxious preoccupation, depression, anxiet, and less fighting spirit than younger women with Stage I cancer.

Greer (1991) conducted a long term study following patients over 15 years and found that passive women who are helpless and hopeless have a poorer outcome over the course of a lifetime but women who had a fighting spirit lived longer than those who did not. Greer (1991) stated that psychological response was not related to stage of illness or clinical stage of the disease but to the type of coping response that the women used. Schnoll and colleagues (1998) proposed that it was not age or the stage of the disease that
affected psychological well-being as it seemed that women with breast cancer who are encouraged to engage in approach coping strategies such as being an active participant, problem solving, and having a fighting spirit have enhanced psychological well-being and women who use avoidance strategies have reduced psychological well-being. Most of the results, with the notable exception of the study by Heim and colleagues (1997), from the review of literature reflected in Table 1 supported the concept that approach coping strategies enhanced psychological well-being and avoidance coping strategies minimized psychological well-being.

**Emotional Expressiveness**

Early research in the area of cancer indicated that an individual who had cancer may have had what is termed a Type C personality (Morris, 1980; Watson, Pettingale, Greer, 1984) and these individuals were thought to be more likely to develop cancer. “A cancer-prone personality type [is] characterized by abnormal inhibition of emotions and inability to express anger” (Watson et al., 1999, p. 1331). Bleiker et al. (1996), in a recent study investigating the relationship between personality type and the likelihood of developing cancer, found there was no support for the hypothesis that personality traits can differentiate between groups of women with and without breast cancer.

Rather than personality type, Bleiker et al., (1996), found that having a first-degree family member with breast cancer and having no children was significantly related to an increased risk of breast cancer. Although statistically significant, a weak association between a high score on the anti-emotionality scale was related to the development of breast cancer.

In order to understand the inhibited emotional expression that many breast cancer patients exhibit, a study comparing breast cancer patients and healthy women was
conducted (Servaes et al., 1999). The breast cancer patients were significantly more ambivalent over emotional expression, and showed more restraint and anxiety than the healthy control group. There was no difference between the two groups as to the willingness to talk with others about their emotions and expressing their emotions.

Servaes and associates stated that

The image of the breast cancer patient that emerged from the study was that of a person who has conflicting feelings in regard to expressing emotions, is reserved and anxious, is self effacing, and represses aggression and impulsiveness. These findings suggest that cancer patients’ inhibited behavior is a reaction to the disease rather than a reflection of a personality characteristic predisposing an individual to (breast) cancer. (p. 23)

Women with early stage breast cancer who have a tendency to control their anger were more likely to manifest helplessness, anxiety, depression, and a fatalistic attitude (Watson, 1990). The benefits of being able to cope through emotional expression for early stage breast cancer patients included fewer medical visits, enhanced physical health and vigor, and decreased distress (Goodwin et al., 2001). In a study of women with metastatic cancer attending weekly supportive-expressive group therapy, the women attending the group had significant improvement in their psychological well-being and reported less pain (Goodwin et al., 2001). Those women who were more distressed benefitted more than those who were less distressed. Conflicting results were found by Watson et al. (1999) that indicated that there was no relationship between emotional expression or suppression with psychological adjustment or survival for 578 women with early-stage breast cancer.

Stanton, Danoff-Burg et al. (2000) studied women with Stage I and II breast cancer who had received their diagnosis of cancer approximately 7 weeks prior to introduction to the study. The Cope, Profiles of Mood States and the Emotional
Approach Coping scales were used as assessments at the time of entry into the study and three months later. Women who coped by expressing their emotions had enhanced psychological well-being as compared to those women low in emotional expression.

**Guided Imagery as a Treatment Intervention**

There have been few studies that have investigated the effects of therapeutic interventions to enhance psychological well-being (Razavi & Stiefel, 1999). As noted earlier, researchers who have studied the use of guided imagery as a therapeutic technique have usually used it in combination with other interventions. In this section of the review, the studies that have utilized guided imagery or self-hypnosis to enhance the physical and psychological well-being of breast cancer patients will be described. The studies presented are organized from the most methodologically rigorous to the least rigorous while taking into account the way guided imagery was used as a treatment.

In a study of the effect of guided imagery on comfort for stage I and stage II breast cancer patients about to enter radiation therapy, women were randomly assigned to an experimental group (N = 26) or control group with no treatment (N = 27) (Kolbaca & Fox, 1999). The intervention consisted of a 20 minute guided imagery tape, which was designed by the researcher to enhance “social, environmental and psychospiritual comfort” (p. 68). The women were asked to listen to the tape at least once a day throughout their radiation treatment and for three weeks after the treatments were finished. Anxiety was considered a control variable and was measured for both groups prior to the intervention and radiation therapy by the State Anxiety Inventory (SAI). The dependent variable was comfort and it was measured by the Radiation Therapy Comfort Questionnaire (RTCQ) prior to the treatment and radiation (Time 1), three weeks after
radiation started (Time 2) and three weeks after the completion of radiation therapy (Time 3). Results indicated that the two groups were similar on all demographic variables, preintervention anxiety, and comfort. There were significant differences between the groups and across time with a significantly linear increase in comfort expressed by the treatment group (P < .05). The effect size was highest at Time 2 (0.55) indicating that the most meaningful difference between the two groups occurred three weeks into radiation treatment. Qualitative data indicated that the women enjoyed their tapes, shared them with their families, and mentally recalled the words and music several times a day and thought “the audiotape reframed the radiation treatments so that the women began to view them as helpful rather than fearful” (p. 70).

In what seems to be one of the earliest studies of guided imagery, 139 women with stage I and stage II breast cancer in an outpatient radiotherapy department were randomly assigned to an experimental group (N = 47) receiving relaxation therapy, an experimental group (N = 44) receiving relaxation therapy and guided imagery, and a control group of no treatment except for medical care for breast cancer (N = 48) (Bridge, Benson, Pietroni, & Priest, 1982). The relaxation therapy group received instructions for progressive relaxation focusing on individual muscle groups and the relaxation therapy plus imagery used the progressive muscle relaxation and instructions on how to imagine a peaceful scene of their own choice to enhance the relaxation. Both groups were given a tape of the instructions and asked to practice 15 minutes a day. The dependent variables were the Profile of Mood States (POMS) and the Leeds general scale in order to assess depression and anxiety. Instruments were given pre and post treatment. Results indicated that, initially, all the groups were similar for depression and anxiety on the POMS and
Leeds. After the interventions, relaxation alone significantly affected the total mood state in a positive manner and the women who used relaxation and imagery together were more relaxed than those using relaxation alone as measured by the POMS. There were no significant differences in the Leeds. The researchers examined the data to determine the effect of age and found that, for women who were 55 and older, tension, depression, and total mood state on the POMS were significantly reduced. Again, there were no differences on the Leeds when the sample was divided by age. The authors noted that “not only had overall mood state improved most in the relaxation plus imagery group, followed by the relaxation group, but also that the overall mood state of the women in the untreated group had become worse” (Bridge et al., p. 421).

Richardson et al. (1997) randomly assigned 47 women with breast cancer, excluding stage IV, to a control group consisting of standard care (N = 15), which was standard medical care for breast cancer, six weekly group support sessions (N = 16), or guided imagery groups (N = 16). Two master’s level social workers facilitated the support groups that were nonstructured and intended to decrease stress and feelings of isolation and enhance self esteem through sessions focused on topics such as explorations of feelings and impact of significant relationships. A master’s level social worker and a hypnotherapist led the six sessions of the imagery groups that consisted of teaching relaxation and imagery, setting goals, and finding purpose in life, coping, asking for help, and staying well. The women received three audiotapes and were encouraged to practice 20 minutes each for two times a day. The first tape was a general relaxation tape and given during the first week. The second tape was given at week two and focused on imagery to enhance the body’s natural healing abilities and stimulate immune functioning. During the third, private session, the hypnotherapist tailored a tape for each
woman’s specific needs. Measurements included The Functional Assessment of Cancer Treatment–Breast (FACT-B) to measure quality of life; Profile of Mood States–Brief (POMS-B) to assess emotional well-being and stress; Ways of Coping with Cancer (WOC-CA) that measures type and frequency of coping strategies; and Duke-UNC Functional Social Support Questionnaire (DUFSS) to assess functional social support. The women’s perceived quality of the imagery was measured with the Image CA. The immune system was measured by analyzing changes in NK cytotoxicity, cytokines and beta endorphins. Measurements were taken pre- and postintervention. Results indicated that there were no significant differences in immune functioning. Coping skills increased overall for the support (P < .01) and imagery (P < .07) when compared to the control group. Women in both the treatment groups sought significantly more support from others as a coping strategy. Women in the support group reported significantly greater acceptance of death but there was no improvement in mood states among the groups in overall mood, depression, confusion, fatigue, tension or quality of life. Both the treatment groups reported greater meaning in life. The authors report that there was a “trend—though not significant—for benefits of imagery over support with increased quality of life and decreased stress” (p. 68).

Spiegel and colleagues (1983, 1989) conducted a widely known and referenced study in the cancer literature with 86 women with metastatic breast cancer that were referred by their oncologists. The women were randomly assigned to one of two treatment groups (n=50) or a control group of no treatment except standard medical care for breast cancer (n=36). The intervention consisted of weekly group sessions with a duration of 90 minutes for 1 year that were led by a psychiatrist or social worker and one counselor who had breast cancer in remission. The group sessions for both treatment
groups were supportive and involved sharing feelings about fears and concerns. The sessions in one of the treatment groups ended with a self-hypnosis exercise that lasted 5 to 10 minutes and involved using images that "conveyed physical relaxation, such as floating in a lake or in the air, along with specific suggestions to alter pain perception while making the affected body part feel warm, cool, tingling, or light" (Spiegel & Moore, 1997, p. 1184). Instructions were given for use of the imagery outside the group. Measurements included the Pain Rating Scale (PRS) and the POMS. Due to the severity of the cancer, individual regression analysis was used for the women in treatment (N=34) and the control group (N=24) who completed at least two administrations of the instruments. The women in the treatment groups experienced significantly lower pain sensation and suffering. The group that had the self-hypnosis had significantly lower pain sensation than the other treatment group. The treatment groups also experienced significantly lowered mood disturbance, with significantly lower anxiety, depression, and fatigue. Although only three of the patients from the study were alive at the 10-year follow-up, the survival time of the women in the treatment groups was significantly higher. The mean survival time for the intervention group was 36.6 months and 18.9 months for the control group.

Walker et al. (1999) randomly assigned ninety six women with newly diagnosed large or locally advanced breast cancer to either a control group (N = 48), which consisted of standard care or a treatment group (N = 48). The intervention consisted of patients being taught progressive muscle relaxation, cue relaxation, and were given an audio-cassette with instructions for relaxation training. They were also given “10 colored cartoons to help them visualize their host defenses destroying cancer cells” (p. 264).
The women were to practice daily and keep a journal of frequency of practice, difficulties encountered, and imagery vividness. Measurements were obtained with the L scale of the Eysenck Personality Questionnaire–Revised (EPQ) and the Courtauld Emotional Control Scale (CECS) to assess coping. The Rotterdam Symptom Checklist (RSCL) was used to measure psychological and physical symptoms and Mood Rating Scale (MRS) was used to assess mood. Quality of life was measured by the Global Self-rated Quality of Life (GQOL). In order to determine if any patients had a psychiatric disorder, a consultant clinical psychologist or senior trainee in psychiatry administered the Structured Clinical Interview for Diagnosis DSM-III (SCID). Clinically significant anxiety and depression were assessed with the Hospital Anxiety and Depression Scale (HADS). Instruments were administered prior to chemotherapy treatment one and six.

The treatment group had significantly reduced emotional suppression and unhappiness. There was no significance in social conformity as measured by EPQ, although there was change in the predicted direction for the treatment group. Women in the treatment group had significantly higher quality of life. The women in the control group deteriorated significantly over the course of chemotherapy, whereas the treatment group improved. The treatment group also had significant scores in relaxation, easy goingness, and total mood score. There was no significant difference between the groups before or after chemotherapy in the areas of anxiety and depression.

Hosaka and colleagues (2000) conducted a study of 47 breast cancer patients who were assigned to treatment groups that met for five 90-minute sessions, but there was no control group and assignment was not randomized. All of the patients had received a mastectomy, mastectomy with reconstruction or a lumpectomy. Thirty percent had nodal metastasis and 15% received chemotherapy. The sessions consisted of psychoeducation,
problem solving, psychological support, relaxation training, and guided imagery. The treatment was based on the program developed by Fawzy et al. (1990). The guided imagery component consisted of imagining the immune cells fighting the cancer cells and the cancer cells being weakened and destroyed. The POMS was used to assess psychological distress and the Dealing with Illness (DWI) evaluated coping attitudes toward illness. The analysis consisted of comparing the scores among the pre-, postinterventions and 6 months after the completion of the intervention. Student's t-test was used. Depression, lack of vigor, anxiety, and total mood disturbance were significantly lower at the 6 month interval than the preintervention scores. The results of the DWI were not available in the article.

Conclusion

Specific coping skills were significantly enhanced in two of the guided imagery studies presented: women used less emotional suppression (Walker et al., 1997) and sought more support from others (Richardson et al., 1997). The women who used less emotional suppression also had less unhappiness, higher quality of life, greater relaxation and easy goingness, and a better total mood. The women who sought more social support from others had greater meaning in life but did not indicate better quality of life or total mood. Neither of these two groups had any improvement in depression, anxiety or tension.

Lower depression, anxiety, total mood disturbance, lack of vigor or fatigue were found in the women who received treatment that included guided imagery (Bridge et al., 1982; Hosaka et al., 2000; Spiegel & Bloom, 1983; Spiegel et al., 1989). Spiegel and associates (1989) noted that the women in the treatment groups had a significantly longer survival rate but there is no reference to the self-hypnosis group as compared to the other
treatment group. This study was looking at group support as the major intervention. A recent replication of the Spiegel & Bloom (1983) and Spiegel et al. (1989) study indicated that support groups did not have a significant effect on survival of metastatic breast cancer patients (Goodwin et al., 2001). It is interesting that pain and suffering were significantly lower for the self-hypnosis group as compared to the treatment and control group (Spiegel & Bloom, 1983).

The reasons for the difference in the studies between depression indicators and anxiety indicators may be due to the timing of the intervention or the course of the illness when the study was conducted. Carver and associates (1993) and Stanton, Danoff-Burg and colleagues (2000) noted that psychological distress was most prevalent at the beginning of the course of dealing with cancer, just after diagnosis. In the Richardson and associate (1997) study, the women began the intervention after they had completed treatment for breast cancer. Spiegel & Bloom (1983) and Hosaka and colleagues (2000) obtained their final measurements at 1 year and 6 months, respectively, after the initial treatment. These results of the changes in depression and anxiety are consistent with the findings that women, after initial adjustment, maintained their psychological well-being over the course of time (Carver et al., 1993; Stanton, Danoff-Burg et al., 2000).

Kolbaca and Fox (1999) reported significant increases in comfort for women receiving guided imagery intervention. In this study guided imagery was the primary intervention (i.e., was not used in conjunction with other therapies, such as group support or progressive relaxation). The guided imagery was specifically developed to address comfort and the women in the treatment group responded to the imagery. This study also used some qualitative methods to determine how the women felt about the treatment intervention.
Several of the studies used groups as the modality in which the guided imagery was delivered (Hosaka et al., 2000; Richardson et al., 1997; Spiegel & Moore, 1983). Spiegel and colleagues (1989) attributed their finding that women with metastatic breast cancer lived twice as long to the fact that they were in support groups. It is not possible to determine which intervention has the most significant impact on treatment outcomes in these studies. Is it the psychoeducation, the support from other group members or staff, the guided imagery, or the relaxation exercises?

It is noteworthy that four of the five studies cited used randomized assignment to treatment or control groups. These studies stand out as it has been reported that it is difficult to recruit women to participate in complementary or alternative medicine trials (Richardson, Post-White, Singletary, & Justice, 1998). Another problem these studies seemed to have confronted is the fact that they had corresponding numbers of women in the control groups as the treatment groups. It may have been assumed due to the usual severity of distress that accompanies a diagnosis of breast cancer that women would have declined to be in a standard care/control group.

Only a few studies of specific intervention strategies for psychosocial interventions are available (Glanz & Lerman, 1992). As can be seen in this review, five studies were available on the use of guided imagery with breast cancer patients and only one specifically addressed guided imagery as the therapeutic intervention. Studies on different types of cancer patients provide evidence that the use of guided imagery within a therapeutic program is effective for reducing depression and anxiety (Fawzy et al., 1990; Lerman et al., 1990), decreasing psychological distress (Baider et al., 1994), and enhancing positive coping skills (Syrjala et al., 1995). There are also conflicting results from studies using guided imagery in a therapeutic modality with cancer patients that
state that depression and coping skills are not affected (Burish et al., 1991). None of these studies looked at guided imagery as the main therapeutic intervention. Future research may want to look at trying to isolate a specific intervention in the hope of clarifying what interventions positively affect change in the individual cancer patient.

A diagnosis of cancer and its treatment elicits all of a woman’s personal strengths and weaknesses. These may be personality traits (such as self-confidence, optimism or lack of self-esteem), cognitive resources, environmental resources (such as a close family or work relationships), and stressors (such as finances or another chronic illness) (Holahan et al. 1996). The woman uses her cognitive resources to appraise the situation (i.e., cancer) and adopt coping strategies. As seen earlier, these coping strategies may have an impact on the course of her disease, her general health, and well-being. Approach coping and engagement strategies usually engender a positive course and enhance psychological well-being. Avoidance coping and disengagement strategies tend to decrease psychological well-being.

Guided imagery may be able to influence a women’s cognitive appraisal of a situation, enhance approach coping skills, and decrease avoidance coping strategies. As indicated in the Kolbaca and Fox (2000) study, specific guided imagery was focused on engendering comfort and comfort was significantly increased for these women. This is congruent with Meichenbaum’s (1978) theory that by rehearsing various responses and reactions, coping skills can be increased and that maladaptive responses can be changed through this cognitive activity. Guided imagery may be able to engender approach coping responses such as a fighting spirit, information seeking, and emotional expression which have been shown to produce a more favorable outcome in breast cancer patients.
Schnoll et al. (1998) indicate that the impact of cancer is influenced by the characteristics of the individual and the characteristics of the stressor (cancer). This corresponds with the theoretical basis of coping stated by Lazarus (1993) and Holahan et al. (1996). Anderson (1992) stated

Learning about a stressor, confronting it with positive cognitive states, active behavioral strategies, and eventually, reduced emotional distress may provide realistic appraisals of current or impending stresses of the disease or treatment process and enhance one’s sense of self efficacy or feelings of control early in the adjustment process. (p. 562)

Guided imagery, as a directive and behavioral approach (Berenson, 1988; Fawzy et al., 1995; Post-White, 1998) may be a therapeutic intervention that a counselor may use to facilitate this process. “Curing cancer may not be a question of mind over matter, but mind does matter” (Spiegel, 2001, p. 1768).
CHAPTER 3
METHODOLOGY

Statement of Purpose

Although a number of studies have investigated the efficacy of therapeutic interventions to enhance the psychological well-being for women with breast cancer, there exists the need to develop research studies that rigorously investigate theoretically based interventions in the area of cancer research (Anderson, 2002). Approach coping (Chen et al., 1996; Classen et al., 1996; Greer, 1991; Greer et al., 1990; Friedman et al. 1990; Lavery & Clarke, 1996; Schnoll et al., 1998; Shapiro et al., 1997; Stanton & Snider, 1993; Watson et al., 1991) and emotional expressiveness (Stanton, Danoff-Burg et al., 2000; Goodwin et al., 2001; Watson et al. 1991) have been shown to have an impact on the psychological well-being of breast cancer patients and yet there have been few studies that have focused on a specific intervention to enhance these coping strategies. The purpose of this study was to determine the effectiveness of an innovative therapeutic intervention consisting of directive guided imagery aimed at enhancing coping, emotional expressiveness, and psychological well-being in women who are recently diagnosed with early stage breast cancer.

This chapter contains the delineation of the methodology used in the collection and analysis of the data for this study. Included are descriptions of the population, sample, sampling procedures, hypotheses and variables, type of research study and design, instrumentation, treatment procedures, data collection and analysis, and limitations.
Population

The population of interest consisted of women who had been recently diagnosed with Stage I or Stage II breast cancer. Recently diagnosed women in this study were defined as having a diagnosis of breast cancer within the last twelve months before being referred to the study. The sample was drawn from recently diagnosed breast cancer patients who reside in North Central Florida. North Central Florida is defined as the geographical area encompassing Alachua, Bradford, Columbia, Marion, Citrus, Putnam, Madison, Taylor, Dixie, Union, Gilchrist, Suwannee, Hamilton, Lafayette and Levy Counties. Included within these 15 counties are small and medium sized cities and rural areas. The geographical area of Alachua County, for example, is fairly evenly distributed between Gainesville, a city of 110,000, which includes 46,500 University of Florida students, and the more rural areas of the county that surround the city. Alachua County has 218,800 residents with 51% women. The next largest city is Ocala which has a population of nearly 50,000 surrounded by the rural Marion County area in which another 200,000 individuals live (United States Census, 2001). The other counties are mainly rural areas with small cities.

The statistics for Florida (American Cancer Society, 2002) indicate that incidence rates for invasive breast cancer and mortality rates are slightly lower than the national average. The rates reflect the number per 100,000 women. Florida’s invasive breast cancer is 110 and mortality is 23.2. The rate in the United States is 118.1 for invasive breast cancer and 24.2 for mortality. This may be due to the fact that Florida has higher rates of mammography and clinical breast exams than other states in the United States (American Cancer Society, 2002).
Sample and Sampling Procedures

Permission was received from the University of Florida Institutional Review Board for this research. A total sample of 40 women participated in this study. To be included, the woman must have been diagnosed with Stage I or Stage II breast cancer within twelve months of entering the study. Participation was voluntary.

The participants were selected from the University of Florida Shands Teaching Hospital, private physicians’ offices, the Acorn Clinic, and the American Cancer Society programs in Gainesville, Florida. A flier (Appendix A) was given to all of the sites and sent to the appropriately identified women. The four Gainesville physicians practiced medicine in the areas of gynecology/obstetrics, oncology, general practice medicine, and a specialized practice focusing only on women with breast cancer.

Research has indicated that 30% to 50% of eligible women who have breast cancer will participate in complementary/alternative medicine trials (Richardson et al., 1998). Given this low accrual rate, it was determined that every woman who met the inclusion criteria would be notified of the study and asked to participate. Women were told that the purpose of the study was to examine how using a complementary therapy affects the way women cope during the process of having breast cancer. When a woman agreed to participate, she was randomly placed in the experimental or control group.

Hypotheses

As women developed or enhanced their approach coping skills and were able to express their emotions, it was believed that their psychological well-being would improve. Guided imagery, based on cognitive theory, assists the individual in becoming self-aware of maladaptive behaviors, generates new coping thoughts and behaviors, and new behaviors are produced by imaging new ways of responding (Meichenbaum, 1978).
Guided imagery may be a therapeutic intervention that allows women with breast cancer the experience of mentally rehearsing adaptive coping skills that affect behavior change and therefore, enhance psychological well-being.

H₁: There is no significant difference in approach coping (i.e., fighting spirit) and avoidance coping (i.e., helplessness/hopelessness, anxious preoccupation, denial/avoidance, and fatalism), as measured by the Mental Adjustment to Cancer Scale, between stage I or II breast cancer patients who receive a directive guided imagery program and those who listened to relaxation music.

H₂: There is no significant difference in emotional expression and emotional processing as measured by the Emotional Approach Coping Scale between stage I or II breast cancer patients who receive a directive guided imagery program and those who listen to relaxation music.

H₃: There is no significant difference in the psychological well-being (i.e., depression, anxiety, and total mood score), as measured by the Profile of Mood States–Short Form, between stage I or II breast cancer patients who receive a directive guided imagery program and those who listen to relaxation music.

Delineation of Relevant Variables

Independent Variable

The independent variable for this study was the guided imagery program. The guided imagery script included specific suggestions for relaxation, healing, increased approach coping strategies, and emotional expressiveness (Appendix B). The approach coping strategies were based on the theoretical constructs of approach coping and, specifically, approach emotion focused coping (Holahan et al., 1996). Approach coping refers to an individual directing efforts to cope, confrontation, having a fighting spirit,
having a sense of humor, using positive reappraisal, and expressing feelings. Approach emotion focused coping strategies focus on processing and expressing emotions (Stanton, Kirk, Cameron, & Danoff-Burg, 2000). The music that was played in the background is Imagery Music # 1(Meditation) (Kohn, 1999). This music was used for the control group as their relaxation music.

**Dependent Variables**

The dependent variables in this study were approach coping, emotional expressiveness, and psychological well-being. Coping was assessed by the Mental Adjustment to Cancer Scale (MAC). Emotional expressiveness and processing were assessed by the Emotional Approach Coping Scales (EACS). Psychological well-being was assessed by the Profile of Moods State (POMS).

**Design**

The design for this study was a pretest-posttest control group design. It is an experimental design with random assignment to either a treatment or control group. Two individuals who are counselors were involved in conducting this study. Both of the individuals are female doctoral students working on their dissertations at the University of Florida. They are currently in the mental health counseling track. One has a Masters of Health Science degree in Rehabilitation Counseling and a Specialist in Education degree in Research and Evaluation. The other woman has a Masters of Arts degree in Counselor Education. They each have approximately 15 years of experience in the mental health field. Two individuals were used in order to decrease experimenter effect.

After a potential participant was identified, the name of the participant was given to the primary investigator of the project and it was determined whether this participant would be assigned to the treatment or control group. The participant was contacted by
one of the counselors, informed about the study and asked if they would consent to participate. The participants were told that they would be participating in a study that was examining the effects of complementary therapy on the coping process of breast cancer patients. They were told that they would be randomly assigned to either the guided imagery or relaxation group. A letter introducing the study (Appendix C) and two envelopes were sent to the individuals who agreed to participate. A letter explaining the contents and instructions for the contents of envelope one (Appendix D) was attached to the outside of the envelope. The first envelope contained two copies of the informed consent (Appendix E), a copy of POMS, and a demographic questionnaire (Appendix F). After completing the contents of envelope one and placing them in a pre-paid return addressed envelope to the study investigator, the participant was instructed to open the second envelope. A letter (Appendix G) explaining the content of the second envelope was attached to the front of the envelope. The second envelope contained written and taped instructions for using the tapes for the experimental group or guided imagery group (Appendix H) and the control group or the relaxation music only group (Appendix I), a study tape of the guided imagery tape or the relaxation music tape, and a journal. The journal was used to keep a record of the days and times the participants listened to the tapes.

The treatment group received the treatment protocol consisting of the guided imagery tape and the control group received a tape of the background music that was used on the guided imagery tape. The study counselors contacted the participants during the next week in order to give any additional explanations of the study, encourage the daily use of the tapes, and answer any questions related to the experience.
The participants listened to the tape for four weeks. During each week one of the
two counselors contacted the participant by phone to promote compliance with the
protocol. During the last week the participants were sent a final envelope with
instructions (Appendix J). The envelope contained a letter thanking the participants
(Appendix K), the POMS, the MAC with the embedded EACS, an Exit Interview for the
guided imagery group (Appendix L) or for the music alone group (Appendix M), and a
prepaid postage, return addressed envelope. They were asked to fill out the instruments,
the Exit Interview, and return them with the journal to the study investigator.

Instrumentation

A demographic questionnaire, the Mental Adjustment to Cancer, the Emotional
Approach Coping Scale, the Profile of Mood States, and an exit interview were used to
assess participants. The initial prestudy instruments took approximately 15 minutes to
complete. The poststudy instruments took approximately one-half hour to complete.

Demographic Questionnaire

The demographic questionnaire was used to obtain information about the woman
with breast cancer. This information included age, address, ethnicity, level of education,
working outside the home full-time or part-time, type and stage of breast cancer, referral
source to study, any previous experience with guided imagery, treatment received for
breast cancer, and an open ended question asking if there is anything the participant
thinks is important for the investigator to know about her.

Mental Adjustment to Cancer (MAC)

The independent variable, approach coping, was assessed by the MAC (Watson,
Greer, & Bliss, 1989). The MAC was designed to assess mental adjustment to cancer and
has been used in numerous studies to measure the coping skills of women with breast
There are 40 items in the revised edition of the MAC and it measures four factors: Fighting Spirit/Helplessness, Anxious Preoccupation, Fatalism, and Denial/Avoidance. Items for the factor of Fighting Spirit/Helplessness attend to the approach coping skills such as being positive, keeping a sense of humor, not giving up, counting blessings, fighting the illness, having plans for the future, and staying busy. High scores in the other factors of Anxious Preoccupation, Fatalism, and Denial/Avoidance would indicate avoidance coping. These items revolve around avoidance coping behaviors such as, worrying, not planning ahead, feeling nothing can make a difference, and not believing that one has cancer.

The development sample for the original 58 item MAC scale consisted of 235 patients from Kings College Hospital (N = 135) and The Royal Marsden Hospital (N = 100). “The data were entered into a principal components analysis using an orthogonal rotation procedure” (Watson et al., 1989, p. 7) and the authors retained items that loaded at the 1% level using the Burt-Banks test. Eigen values above .30 were obtained for the retained items and four factors were delineated. These four factors consisted of 22 items for the factor of Fighting Spirit/Helplessness; 9 items for Anxious Preoccupation; 8 items for Fatalism; and one item for Denial/Avoidance. The Fighting Spirit/Helplessness items yielded a “bi-polar dimension with ‘fighting spirit’ responses loading positively and ‘helplessness’ responses loading negatively” (Watson et al., 1988, p. 205-206).

The final 40-item version of the MAC was administered to a new sample of 400 cancer patients at the Royal Marsden Hospital, all of whom had an estimated prognosis
of living for more than a year. The largest diagnostic group from this normative sample was breast cancer (N = 179). Separate means and standard deviations are available for this group of breast cancer patients. The mean for Fighting Spirit minus Helplessness is 42.5. The mean for Anxious Preoccupation is 21.9 and 17.9 for Fatalism.

Validity of the MAC consisted of comparing patients’ and spouses’ ratings of adjustment to cancer. Pearson’s product correlation coefficients were found to be highly significant for four of the subscales except avoidance which consisted of one item (Watson et al., 1988).

Watson and associates (1988) found significant alpha correlations for internal consistency of the sub-scale totals and the items which were: Fighting Spirit (r = 0.84), Anxious Preoccupation (r = 0.65), Fatalism (r = 0.65), and Helplessness (r = 0.79). Test-retest reliability was determined with a random sample of 34 patients who completed the questionnaire on two occasions with an average of 24 days between administrations. All of the five sub-scales were significantly correlated.

Osborne, Elsworth, Kissane, Burke and Hopper (1999) conducted a study of the use of the MAC with 632 breast cancer patients to determine the internal structure, construct validity, utility, and the concurrent validity of the MAC. Factor analysis revealed six sub-scales. Factor one included 16 items from the Helpless/Hopelessness, Anxious Preoccupation, and Fatalism scales. Factor two consisted of 10 of the original 16 Fighting Spirit items. The remaining four factors were small and contained a mix of items from the original four sub-scales and tended to be bipolar.

This new data set failed to provide a replication of ... the original factor structure ... [but] the alpha reliability estimates of the original Watson et al. (1988) study remained remarkably constant, supporting, particularly, the internal consistency of the Fighting Spirit and Helpless/Hopelessness scales ... The original scales were therefore investigated in more detail [with factor analysis]. (Osborne et al., 1999, p. 1339)
The authors confirmed construct validity for the Helpless/Hopelessness scale but suggested improvements for the other scales. Instead of Fighting Spirit, two scales were developed with five items for Fighting Spirit-Minimizing the Illness and nine items for Fighting Spirit-Positive Orientation to the Illness. Five items constituted a homogeneous construct of Angst rather than Anxious Preoccupation. Two Fatalism subscales occurred, one which was Fatalism with four items and the other Loss of Control with 4 items. Seven items were dropped.

Intercorrelations of the revised sub-scales were conducted to determine validity (Osborne et al., 1999). The scales that were not alike were Loss of Control, Angst, and Helpless/Hopelessness with correlations \( \geq 0.50 \) and Fighting Spirit–Positive Orientation to Illness was negatively correlated to these scales with correlations \( \geq 0.28 \). Fighting Spirit–Minimizing the Illness was moderately correlated with Fighting Spirit–Positive Orientation to Illness \( (r = 0.34) \) and with Fatalism \( (r = 0.29) \). Fatalism was correlated with Loss of Control and Helpless/Hopelessness \( (r \geq .21) \) but not Fighting Spirit–Positive Orientation to Illness or Angst. Correlations between the revised MAC and Hospital Anxiety and Depression Scale (HADS) and the Medical Coping Modes Questionnaire (MCMQ) demonstrated good concurrent validity (Osborne et al.). The authors note that the Helpless/Hopelessness scale remained a good scale, but the “constructs of Loss of Control, Fatalism, and Fighting Spirit–Minimizing the Illness now seem well defined, but the number of items in each scale is small . . . [which] lead[s] to poorer reliability estimates” (Osborne et al., p. 1344). Osborne et al. also indicate that Angst and Fighting Spirit–Positive Orientation to Illness did not replicate well and more work is needed to develop concurrent and predictive validity.
The MAC was given to 866 Swedish cancer patients to determine its psychometric properties (Nordin, Berglund, Terje, & Glimelius, 1999). Cronbach’s $\alpha$ coefficients for internal consistency reliability were comparable with those obtained by Watson and associates (1988). The correlation coefficients were only slightly lower. The following set of scores indicates the original correlation coefficients from Watson et al. (1988) and the present sample, respectively, for each of the scales: Fighting Spirit ($\alpha = 0.84$ and $\alpha = 0.81$), Helpless/Hopeless ($\alpha = 0.79$ and $\alpha = 0.78$), Anxious Preoccupation ($\alpha = 0.65$ and $\alpha = 0.62$), and Fatalism ($\alpha = 0.65$ and $\alpha = 0.61$). There was no score available for Avoidance. The sample was randomly split into two groups for cross-validation and a factor analysis was performed. The exploratory factor analysis yielded four factors and was cross validated by the second subgroup. The new factors were Hopeless, Positive, Anxious, and Avoidant. Inter-correlations of these factors yielded correlations that were similar or lower than correlations for the original MAC, indicating that the new factors were less interdependent. The authors opted to use the original MAC in their research since the reliability of the original MAC was satisfactory for their Swedish sample.

Nordin and colleagues (1999) indicated that the MAC should not be used as a measure of coping due to the fact that Lazarus (1993) stated that when conducting research, the concepts of demand, appraisal, coping, and outcome should be separated. Since the MAC contains components of mental adjustment to a threat (i.e., cancer), both coping and outcome are measured in one instrument. The MAC was chosen for this study because it focuses on the disease of cancer, measures constructs that have been stated to be approach or avoidance coping mechanisms (Livneh, 2000), and has been used in
numerous studies of breast cancer patients (Classen et al., 1996; Friedman et al., 1990; Greer, 1991; Greer et al., 1990; Schnoll et al., 1998; Watson et al., 1991).

The MAC scale is self-administered and takes about 10 to 15 minutes to complete. Responses are in a likert format ranging from "Definitely does not to apply to me" (1) to "Definitely applies to me" (4). There are five subscales of scores that are obtained: fighting spirit, helpless/hopeless, anxious preoccupation, fatalism, and avoidance. The score for the factor of fighting spirit/helplessness is obtained by subtracting the total of the helpless/hopeless subscale from the fighting spirit subscale.

Profile of Mood States (POMS)

The independent variable of psychological well-being was assessed by the Profile of Mood States which is a measure of psychological distress. McNair, Lorr, and Droppleman (1971) developed the POMS which has 65 adjectives that the respondents indicate on a 5-point likert scale if the item describes them in the "past week including today" or for brief periods such as "right now." Scores yield a Total Mood Disturbance and six subscales: Fatigue-Inertia, Vigor-Activity, Tension-Anxiety, Depression-Dejection, Anger-Hostility, and Confusion-Bewilderment. The POMS is self-administered and can be completed in 3 to 5 minutes (McNair et al.).

McNair and associates (1971) conducted six independent factor analytic studies to develop and validate the POMS. The "six mood factors [were] identified, measured reliably, and replicated in VA male psychiatric outpatients, in male college students, and in male and female outpatients at a private teaching institution" (p. 3). A correlation of .30 or higher between the item and the factor was considered significant and the "items that correlated significantly with a factor in several studies were considered as the more dependable estimation of the factor" (p. 3).
The participants that were part of the normative samples from the private teaching institution were used to determine reliability and validity. Internal consistency was determined by using the Kuder-Richardson reliability coefficient and all of the “individual items within the six mood scales measure the same factor at near .90 or above” (McNair et al., 1971, p. 7). For test-retest reliability, 600 participants were given the POMS at intake and again prior to therapy. The first 100 participants of this group were given the POMS a third time which was six weeks after intake. The reliability estimates for the group that took the test at intake and pretreatment had scores ranging from .65 for Vigor to .74 for depression. The reliability estimates at six weeks ranged from .43 to .53. McNair et al. stated that the first scores were lower due to the fact that seeking and finding professional counseling may be associated with a change in emotional state and the scores after six weeks of psychiatric treatment may reflect the influence of the treatment.

“The POMS scales have considerable face validity” (Eichman, 1971, p. 651) and concurrent validity was shown with correlations between the POMS and similar types of instruments such as the Hopkins Symptom Distress Scale (HSDS) and the Beck Depression Inventory (BDI). The correlations between the factors of the POMS and the HSDS range between -.30 and .77 for anxiety and -.42 and .86 for depression. McNair and colleagues (1971) noted that the highest correlations are between Tension-Anxiety (POMS) and Anxiety –Distress (HSDS), which are .77 for males and .74 for females, and between Depression-Dejection (POMS) and Depression-Distress (HSDS), which are .86 for males and .83 for females. The correlation between the POMS Depression-Dejection factor and the BDI was .61. All of the correlations noted for this section on concurrent validity were significant at $p < .01$. 
Eichman (1971) endorsed the use of the POMS for research with normal participants who had a high school education. He noted that the “standardization and development of the POMS [was] superior” (p. 1018) and that it appeared to be “reliable and sensitive to change” (p. 1018). The POMS has been used in a number of studies with breast cancer patients to determine their psychological distress (Carver et al., 1993; Classen, et al, 1996; Goodwin et al., 2001; Hosaka et al., 2000; Stanton & Snider, 1993).

**Emotional Approach Coping Scale (EACS)**

The Emotional Approach Coping Scale will be used to assess approach emotional coping. Stanton, Kirk, Cameron and Danoff-Burg (2000) indicated that the three areas of interest in evaluating emotional coping are emotional identification, emotional processing, and emotional expression. The EACS assesses emotional processing and expression and has been used in a number of studies of individuals with breast cancer (Stanton & Danoff-Burg, 2002; Stanton, Danoff-Burg et al., 2000; Stanton, Kirk, et al., 2000).

Scale construction consisted of generating items in the three emotional coping domains: emotional identification, emotional processing, and emotional expression. 33 items were developed and individuals were asked to respond to the items in a four point likert scale format from 1 = “I usually don’t do this at all” to 4 = “I usually do this a lot”. Forty eight items from the COPE (Carver, Scheirer, & Weintraub, 1989), a reliable and valid inventory of coping strategies, and 13 items from other unpublished emotion-focused coping scales were included in the assessment for a total of 94 items. The assessment and the Emotional Expressiveness Questionnaire (EEQ) was given to 400 undergraduate students who were given credit for their participation in an introductory psychology class. “Factor analysis with promax rotation” (Stanton, Kirk et al., 2000,
(p. 1153) was used to identify 9 factors. The first factor identified was emotional processing and the second factor was emotional expression. Emotional identification loaded on the emotional processing factor. Stanton, Kirk and associates (2000) selected four items from Emotional Processing and Emotional Expression based on high factor loadings and lack of redundancy to represent these constructs. The internal consistencies (Cronbach Alpha) for emotional processing and emotional expression are $r = 0.72$ and $r = 0.82$, respectively. Test–retest reliability correlation coefficients were 0.73 for emotional processing and 0.72 for emotional expression. Correlations between Emotional Processing and Emotional Expression scales and the EEQ were significant at $p < .005$.

Due to the fact that the first study was self-report, Stanton, Kirk and colleagues conducted a second study with a new sample of 149 undergraduates. Each student completed a COPE (Carver et al., 1989) instrument with the emotional approach coping items embedded. They also complete one for each of their parents. The parents completed one for themselves and for each student. “Internal consistencies for self-reported coping through emotional processing ($\alpha = .88$ for students, .90 for mothers, .80 for fathers) and expression ($\alpha = .92$ for students, .91 for mothers, .90 for fathers) were high” (Stanton, Kirk et al., 2000, p. 1156).

The authors of the EACS use the 16 item scale when emotional approach coping is of central interest. When emotional approach coping is not the primary variable of interest, Stanton, Kirk and associates (2000) use the eight item scale. Stanton, Kirk and colleagues (2000) usually embed the EACS in another coping scale, such as the COPE. For the purpose of this study, the eight item EACS was embedded in the MAC.
Data Analysis

Mancova (Multivariate Analysis of Covariance) was used to determine if there was a significant difference between the treatment and control in order to evaluate the effect of the guided imagery protocol on coping, emotional expression, and psychological well-being. The covariate was the total mood score on the pre POMS in order to remove any systematic individual differences and ensure that the two groups are similar on psychological distress. The omnibus hypothesis will be tested at $\alpha = .05$.

Clinical significance was determined by summarizing the results of the appropriate exit interview questions. The questions that were included were: 1. Did you enjoy doing the relaxation/guided imagery tape? 2. Did you think it was helpful? 3. What was the most important thing that happened to you as a result of using the relaxation/guided imagery tape? 4. Would you recommend relaxation/guided imagery to someone else who had a health problem?

Methodological Limitations

"Mortality, lost cases, and cases on which only partial data are available, are troublesome to handle" (Campbell & Stanley, 1963). This “can produce subtle sample biases” (Campbell & Stanley, p. 15). Due to the fact that the women in this sample have cancer, there were times when their illness impacted their ability to complete the treatment protocol or the instruments. This may be a problem since the size of the sample was small and the lack of data may impact the results to a greater degree.

A threat to external generalization with this design was the interaction of the pretest and the treatment. Both the treatment and the control groups were receiving the pretest but the problem lies in the fact that the population that these results are generalized to is not receiving a pretest. It is thought that the use of a pretest may have a
sensitizing effect on the samples and therefore, affects the treatment effect. One method to correct the phenomena would be to have a design without a pretest but it was deemed necessary to have the POMS as a pretest to ensure the similarity of the experimental and control group.

The interaction of selection and the treatment was another threat to external generalization. It was especially relevant to this study due to the fact that it has been demonstrated that it has been difficult to recruit women with breast cancer for complementary/alternative medicine (CAM) intervention studies (Richardson et al., 1998). Richardson et al. (1998) indicate that “users [of CAM] tend to be younger (30 to 50 years of age), Caucasian, more affluent, better educated, and living in the Western or Northwestern regions of the country” (p. 190) which limits the generalizability of the study.

Hawthorne effect may have affected the results of the study due to the weekly phone calls, although both groups received them. Also, the participants in the control group may have improved due to the fact that they were told they were participating in a study which was looking at the effects of complementary therapy (i.e., relaxation) on the coping process of breast cancer patients.
CHAPTER 4
RESULTS OF THE STUDY

Summary and Chapter Overview

The purpose of this study was to assess through empirical investigation if guided imagery can enhance approach coping, emotional expression, and psychological well-being. Descriptive data was obtained about the participants in the study. Multivariate analysis of covariance was applied to analyze the data relevant to the three hypotheses of the study. Clinical significance was determined by determining a summary of the responses to the four questions: 1. Did you enjoy doing the relaxation/guided imagery tape? 2. Did you think it was helpful? 3. What was the most important thing that happened to you as a result of using the relaxation/guided imagery tape? 4. Would you recommend relaxation/guided imagery to someone else who had a health problem?

This chapter will present the method of data collection and participant completion of the study, descriptive data, results of the hypotheses tests, results of clinical significance, and a summary.

Data Collection and Attrition

Data was collected from July, 2003 through February, 2004. Fliers were given to physicians who specialize in breast cancer, oncology, radiology and surgery, and appropriate social workers and counselors. These individuals referred qualified participants to the study. Fliers were posted in Shands Teaching Hospital and clinic areas and parking lots adjacent to Shands Teaching Hospital in Gainesville, Florida. Table Two describes the referral sources for the women who participated in the study. The majority
of the women in the study were referred by private physicians (35%) or Shands Teaching Hospital (45%). Three of the women who were listed as other were referred by women in the study.

Women contacted the primary investigator of the study, and she told them the details of the study. If the women chose to participate, she assigned them randomly to the experimental group (guided imagery and relaxation music in the background) or the control group (relaxation music only). The women were mailed their study packets and received one phone call a week from a randomly assigned counselor to encourage participation and completion of the study.

Fifty-two women volunteered to participate with 40 women completing the study. The reasons for dropping out of the study were too sick to complete the study, higher stage of cancer revealed during the study, too busy to participate in the study, and one person indicated that after getting the materials, she was not interested in the study.

Twenty-one women were in the guided imagery group and 19 women were in the relaxation music only group.

Table 2. Referral sources

<table>
<thead>
<tr>
<th>Referral Sources</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Physician</td>
<td>14 (35%)</td>
</tr>
<tr>
<td>American Cancer Society</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>Shands Teaching Hospital</td>
<td>18 (44%)</td>
</tr>
<tr>
<td>Others</td>
<td>5 (13%)</td>
</tr>
</tbody>
</table>

Descriptive Data Analyses

Descriptive statistics on the demographic variables of the women who participated in this study is provided in Table 3. Thirty-eight of the women were Caucasian and two were Latin American. Over half of the women had a high school education with 22 completing high school, two with associate degrees, nine with a
bachelor's degree, five with a master's degree or above, and two with vocational/technical education.

Table 3. Descriptive data for race and educational level

<table>
<thead>
<tr>
<th>Factor</th>
<th>Level</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>Caucasian</td>
<td>38 (95%)</td>
</tr>
<tr>
<td></td>
<td>Latin American</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>Educational Attainment</td>
<td>High School Diploma</td>
<td>22 (55%)</td>
</tr>
<tr>
<td></td>
<td>Associate Degree</td>
<td>2 (5%)</td>
</tr>
<tr>
<td></td>
<td>Bachelor Degree</td>
<td>9 (22%)</td>
</tr>
<tr>
<td></td>
<td>Master Degree Above</td>
<td>5 (13%)</td>
</tr>
<tr>
<td></td>
<td>Vocational/Technical</td>
<td>2 (5%)</td>
</tr>
</tbody>
</table>

Data on the age of the two groups is presented in Table 4. The mean for age was 57.5 with a standard deviation of 9.3 for relaxation group. The mean for age was 49.1 with a standard deviation of 8.1 for the guided imagery group. The result of a t-test between the two groups indicates that a statistically significant difference exists between the relaxation and guided imagery groups, because $t(38) = 3.04$ does exceed $t_{95/2,38} = 2.04$. Thus, the guided imagery group was significantly younger than the relaxation group.

Table 4. Age by groups

<table>
<thead>
<tr>
<th>Age</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relaxation</td>
<td>57.5</td>
<td>9.3</td>
<td>19</td>
</tr>
<tr>
<td>Guided Imagery</td>
<td>49.1</td>
<td>8.1</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>53.0</td>
<td>9.5</td>
<td>40</td>
</tr>
</tbody>
</table>

Table 5 presents descriptive data relevant to the participant's breast cancer. Sixteen women had Stage I breast cancer and 24 women had Stage II. Since many of the women had experienced more than one type of treatment for their breast cancer, there are more than 40 treatments indicated in Table 5. Some participants left this blank. Most of the women indicated that they had a lumpectomy (20%), mastectomy (25%), or surgery (27%). Approximately half indicated that they had chemotherapy (48%) and/or radiation (45%). Six women were taking some type of ongoing medication, such as tamoxifen.
Table 5. Descriptive statistics of patient information

<table>
<thead>
<tr>
<th>Stage of Breast Cancer</th>
<th>Stage I</th>
<th>Stage II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16 (40%)</td>
<td>24 (60%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment for breast cancer *</th>
<th>8 (20%)</th>
<th>10 (25%)</th>
<th>19 (48%)</th>
<th>18 (45%)</th>
<th>11 (27%)</th>
<th>6 (15%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumpectomy</td>
<td>Mastectomy</td>
<td>Radiation</td>
<td>Surgery</td>
<td>Ongoing Rx, ie: tamoxifen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. * Multiple responses

In order to understand the relationships among the dependent variables a series of Pearson product moment correlations coefficients were computed. Table 6 provides a matrix of these correlations. The dependent variables were from the Profile of Mood States (POMS), the Mental Adjustment to Cancer (MAC) and the Emotional Approach Coping Scale (EACS). Twenty seven of the 55 correlations were significant (11 at .05 level, 16 at .01 level). Of the significant correlations, the magnitude of the correlations ranged from mid range to high (i.e., .32 to .88). The relationships were in the expected directions.

The pre-POMS total score was correlated with post-POMS, depression, anxiety, and helplessness/hopelessness, and inversely correlated with fighting spirit, emotional expressiveness, and emotional processing. The post-POMS total score was correlated with pre-POMS total score, depression, anxiety, helplessness/hopelessness, anxious preoccupation, and fatalism and inversely correlated with fighting spirit. Depression was correlated with pre- and post-POMS total score, anxiety, helplessness/hopelessness, anxious preoccupation, and fatalism. Anxiety was correlated with post-POMS total score, depression, helplessness/hopelessness, and anxious preoccupation. Fighting spirit was correlated with emotional expressiveness and emotional processing and inversely...
Table 6. Bivariate Correlations of Research Variables for Breast Cancer Patients

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>10</th>
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<td>-0.40*</td>
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<td>0.43**</td>
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<td>0.03</td>
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<td>5</td>
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<td>-0.52**</td>
<td>0.02</td>
<td>-0.11</td>
<td>-0.23</td>
<td>0.68**</td>
<td>0.59**</td>
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</tr>
<tr>
<td>6</td>
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<td>0.43**</td>
<td>0.36*</td>
<td>-0.51**</td>
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<tr>
<td>10</td>
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<td>0.73**</td>
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</tr>
</tbody>
</table>

Note. * P < .05; ** P < .01

Variable names: 1 = POMS Pretotal; 2 = POMS Posttotal; 3 = POMS Depression; 4 = POMS Anxiety; 5 = MAC Fighting Sprit;
6 = MAC Helpless/ Hopelessness; 7 = MAC Anxious Preoccupation; 8 = MAC Denial; 9 = MAC Fatalism; 10 = EACS Emotional Expression; 11 = EACS Emotional Processing
correlated with pre- and post POMS total score and helplessness/hopelessness. Helplessness/hopelessness was correlated with pre-POMS total score, post-POMS total Score, depression, anxiety, anxious preoccupation, denial, and fatalism, and inversely correlated with fighting spirit, emotional expressiveness, and emotional processing. Anxious preoccupation was correlated with helplessness/hopelessness, and fatalism Denial was correlated with helplessness/hopelessness. Fatalism was correlated with post-POMS total score, depression, helplessness/hopelessness, and anxious preoccupation. Emotional expressiveness was correlated with fighting spirit and emotional processing and inversely correlated with pre-POMS total mood score, and helplessness/hopelessness. Emotional processing was correlated with fighting spirit, and emotional expressiveness, and inversely correlated with pre-POMS total mood score.

**Results of Hypotheses Tests**

The analysis of data for this study was accomplished through the use of the Statistical Program for Social Sciences (SPSS). A multivariate analysis of covariance (MANCOVA) was used to determine if there are statistically significant differences between the guided imagery and relaxation groups for the dependent variables of MAC anxious preoccupation, MAC fighting spirit, MAC helplessness/hopelessness, MAC fatalism, MAC denial, EACS emotional processing, EACS emotional expression, POMS depression/dejection, POMS tension/anxiety, and POMS total mood score.

For purposes of determining levels of statistical significance, the type I error rate of .05 was established. A decision to accept or reject the specific null hypothesis was based on this predetermined attained significance level. Source data are rounded off to the nearest ten-thousandth.
Hypothesis One

$H_{01}$: There is no significant difference in approach coping (i.e., fighting spirit) and avoidance coping (i.e., helplessness/hopelessness, anxious preoccupation, denial/avoidance, and fatalism), as measured by the Mental Adjustment to Cancer Scale, between stage I or stage II breast cancer patients who receive a program consisting of directive guided imagery and relaxation music and those who receive relaxation music.

The null hypothesis stated that there would be no difference in fighting spirit, helplessness/hopelessness, anxious preoccupation, denial/avoidance, and fatalism coping strategies used by the women in the relaxation and guided imagery groups. The null hypothesis was tested using MANCOVA with the pre-test POMS total mood score as the covariate. The means and standard deviations are presented in Table 7.

Table 7. Means and standard deviations for mental adjustment to cancer scale: Anxious Preoccupation, Fighting Spirit, Helplessness/Hopelessness, Fatalism, Denial

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Group</th>
<th>Mean</th>
<th>Std. D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious Preoccupation</td>
<td>Guided Imagery</td>
<td>23.71</td>
<td>2.94</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>23.53</td>
<td>2.06</td>
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<tr>
<td>Fighting Spirit</td>
<td>Guided Imagery</td>
<td>50.24</td>
<td>5.34</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>51.21</td>
<td>5.31</td>
</tr>
<tr>
<td>Helplessness/Hopelessness</td>
<td>Guided Imagery</td>
<td>10.00</td>
<td>3.32</td>
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<tr>
<td></td>
<td>Relaxation</td>
<td>8.84</td>
<td>2.32</td>
</tr>
<tr>
<td>Fatalism</td>
<td>Guided Imagery</td>
<td>16.67</td>
<td>4.14</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>17.37</td>
<td>4.23</td>
</tr>
<tr>
<td>Denial</td>
<td>Guided Imagery</td>
<td>1.52</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>1.47</td>
<td>0.77</td>
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</tbody>
</table>

Table 8 shows the results of the multivariate test statistics (Pillais' Trace, Wilks' Lamda, Hotelling's Trace, and Roy's Largest Root) for the MANCOVA. Hotelling's T-Square is the most common, traditional test in which there are two groups formed by the independent variables and is comparable to the groups in this study. The hypothesis and error degrees of freedom for the multivariate statistics are 5 and 33. These multivariate
statistics are converted to F values for covariate variable (i.e., total mood disturbance), which is 2.47. There is no significant relationship between covariate and dependent variables were observed \([F(5, 33) = 2.470, p = .052]\). This means there is no statistically significant effect of covariate on MAC. The multivariate statistics are converted to F values for groups (i.e., independent variable), which is 0.476. Since the F ratio for this hypothesis is very small \([F(5, 33) = 0.476, p = .792]\), the null hypothesis is not rejected and, therefore, there is no statistically significant differences between relaxation and guided imagery group on MAC scale in the population from which the sample was drawn.

Table 8. Summary table for the results of MANCOVA for MAC by groups

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>F</th>
<th>Hyp df</th>
<th>Error df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Pillai's Trace</td>
<td>0.989</td>
<td>598.495</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Wilks' Lambda</td>
<td>0.011</td>
<td>598.495</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Hotelling's Trace</td>
<td>90.681</td>
<td>598.495</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Roy's Largest Root</td>
<td>90.681</td>
<td>598.495</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Covariate</td>
<td>Pillai's Trace</td>
<td>0.272</td>
<td>2.47</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Wilks' Lambda</td>
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<tr>
<td></td>
<td>Hotelling's Trace</td>
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<td>33</td>
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<tr>
<td></td>
<td>Roy's Largest Root</td>
<td>0.374</td>
<td>2.47</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Groups</td>
<td>Pillai's Trace</td>
<td>0.067</td>
<td>0.476</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Wilks' Lambda</td>
<td>0.933</td>
<td>0.476</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Hotelling's Trace</td>
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<td>0.476</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Roy's Largest Root</td>
<td>0.072</td>
<td>0.476</td>
<td>5</td>
<td>33</td>
</tr>
</tbody>
</table>

Hypothesis Two

H\(_{02}\): There is no significant difference in emotional expression and emotional processing as measured by the Emotional Approach Coping Scale between stage I or stage II breast cancer patients who receive a program consisting of directive guided imagery and relaxation music and those who receive relaxation music.

The null hypothesis stated that there would be no difference in emotional expression and emotional processing coping strategies used by the women in the
relaxation and guided imagery groups. The null hypothesis was tested using MANCOVA with the pre-test POMS total mood score as the covariate. The means and standard deviations are presented in Table 9.

Table 9. Means and standard deviations for emotional approach coping scale: Emotional Processing and Emotional Expression

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Group</th>
<th>Mean</th>
<th>Std. D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Processing</td>
<td>Guided Imagery</td>
<td>3.09</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>3.14</td>
<td>.50</td>
</tr>
<tr>
<td>Emotional Expression</td>
<td>Guided Imagery</td>
<td>2.99</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>3.14</td>
<td>.55</td>
</tr>
</tbody>
</table>

Table 10 shows the results of separate multivariate test statistics (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root) for the MANCOVA. Hotelling's T-Square is the most common, traditional test in which there are two groups formed by the independent variables, which represents the groups in this study. The hypothesis and error degrees of freedom for the multivariate statistics are 2 and 36. These multivariate statistics are converted to F values for covariate variable (i.e., total mood disturbance), which is 3.696. There was significant relationship between covariate and dependent variables \(F(2, 36) = 3.696, p = .035\). This means there is statistically significant effect of covariate on EACS. The multivariate statistics are converted to F values for groups (i.e., independent variable), which is 0.475. Since the F ratio for this hypothesis is very small \(F(2, 36) = 0.475, p = .626\), the null hypothesis is not rejected which indicates that there is no statistically significant differences between relaxation and guided imagery group on EACS scale in the population from which the sample was drawn.
Table 10. Summary table for the results of MANCOVA for EACS by groups

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>F</th>
<th>Hyp df</th>
<th>Error df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pillai's Trace</td>
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<td>449.429</td>
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<td>0</td>
</tr>
<tr>
<td>Wilks' Lambda</td>
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<td>449.429</td>
<td>2</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>24.968</td>
<td>449.429</td>
<td>2</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>24.968</td>
<td>449.429</td>
<td>2</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>Covariate</td>
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<td>Wilks' Lambda</td>
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<td>36</td>
<td>0.035</td>
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<td>3.696</td>
<td>2</td>
<td>36</td>
<td>0.035</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>0.205</td>
<td>3.696</td>
<td>2</td>
<td>36</td>
<td>0.035</td>
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<tr>
<td>Groups</td>
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</tr>
<tr>
<td>Wilks' Lambda</td>
<td>0.974</td>
<td>0.475</td>
<td>2</td>
<td>36</td>
<td>0.626</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>0.026</td>
<td>0.475</td>
<td>2</td>
<td>36</td>
<td>0.626</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>0.026</td>
<td>0.475</td>
<td>2</td>
<td>36</td>
<td>0.626</td>
</tr>
</tbody>
</table>

**Hypothesis Three**

H₀₃: There is no significant difference in the psychological well-being (i.e., depression, anxiety, and total mood score), as measured by the Profile of Mood States, between stage I or stage II breast cancer patients who receive a program consisting of directive guided imagery and relaxation music and those who receive relaxation music.

The null hypothesis stated that there would be no difference in POMS depression/dejection, POMS tension/anxiety, and posttest POMS total mood between the women in the relaxation and guided imagery groups. The null hypothesis was tested using MANCOVA with the pre-test POMS total mood score as the covariate. The means and standard deviations are presented in Table 11.

Table 11. Means and standard deviations for POMS: Depression, Anxiety, Total Mood Score

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Group</th>
<th>Mean</th>
<th>Std. D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression/Dejection</td>
<td>Guided Imagery</td>
<td>9.76</td>
<td>9.51</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>5.95</td>
<td>5.33</td>
</tr>
<tr>
<td>Tension/Anxiety</td>
<td>Guided Imagery</td>
<td>9.10</td>
<td>5.83</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>7.32</td>
<td>4.66</td>
</tr>
<tr>
<td>Total Mood Score</td>
<td>Guided Imagery</td>
<td>28.95</td>
<td>28.41</td>
</tr>
<tr>
<td></td>
<td>Relaxation</td>
<td>15.89</td>
<td>21.82</td>
</tr>
</tbody>
</table>
Table 12 shows the result of separate multivariate test statistics (Pillais' Trace, Wilks' Lamda, Hotelling's Trace, and Roy's Largest Root) for MANCOVA. Hotelling's T-Square is the most common, traditional test in which there are two groups formed by the independent variables, which represents the type of groups in this study. The hypothesis and error degrees of freedom for the multivariate statistics are 3 and 35. These multivariate statistics are converted to F values for covariate variable (i.e., total mood disturbance), which is 2.141. There was no significant relationship between covariate and dependent variables were observed \( F(3, 35) = 2.141, p = .113 \). This means there is no statistically significant effect of covariate on POMS. The multivariate statistics are converted to F values for groups (i.e., independent variable), which is 0.320. Since the F ratio for this hypothesis is very small \( F(3, 35) = 0.320, p = .811 \), the null hypothesis is not rejected which indicates that there is no statistically significant differences between relaxation and guided imagery group on POMS scale in the population from which the sample was drawn.

**Results of Clinical Significance**

In order to determine clinical significance, participants were asked to answer a number of questions on the exit interview to determine if they enjoyed the experience, found the experience helpful, would recommend the experience, and what was the most important thing that happened to the participants as a result of listening to the guided imagery or relaxation tape. Table 13 presents the results of the participants perceived enjoyment, helpfulness, and desire to recommend the guided imagery or relaxation tapes. All of the guided imagery participants found the tapes enjoyable and all except one person found the tapes helpful and would recommend the experience to others. Most of the relaxation
participants (95%) found the experience enjoyable and would recommend it to others and only two of the relaxation participants thought it was not helpful.

Table 12. Summary table for the results of MANCOVA for POMS by groups

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>F</th>
<th>Hyp df</th>
<th>Error df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai's Trace</td>
<td>0.629</td>
<td>19.742</td>
<td>3</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Wilks' Lambda</td>
<td>0.371</td>
<td>19.742</td>
<td>3</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>1.692</td>
<td>19.742</td>
<td>3</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>1.692</td>
<td>19.742</td>
<td>3</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Pillai's Trace</td>
<td>0.155</td>
<td>2.141</td>
<td>3</td>
<td>35</td>
<td>0.113</td>
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<tr>
<td>Wilks' Lambda</td>
<td>0.845</td>
<td>2.141</td>
<td>3</td>
<td>35</td>
<td>0.113</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>0.184</td>
<td>2.141</td>
<td>3</td>
<td>35</td>
<td>0.113</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>0.184</td>
<td>2.141</td>
<td>3</td>
<td>35</td>
<td>0.113</td>
</tr>
<tr>
<td>Pillai's Trace</td>
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<td>0.320</td>
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<td>35</td>
<td>0.811</td>
</tr>
<tr>
<td>Wilks' Lambda</td>
<td>0.973</td>
<td>0.320</td>
<td>3</td>
<td>35</td>
<td>0.811</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>0.027</td>
<td>0.320</td>
<td>3</td>
<td>35</td>
<td>0.811</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>0.027</td>
<td>0.320</td>
<td>3</td>
<td>35</td>
<td>0.811</td>
</tr>
</tbody>
</table>

Table 13. Participants' perceived enjoyment, helpfulness, and desire to recommend Guided Imagery and Relaxation Experience

<table>
<thead>
<tr>
<th>Items</th>
<th>Group</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoy Tapes</td>
<td>Guided Imagery</td>
<td>21 (100%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Relaxation</td>
<td></td>
<td>18 (95%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>Helpful</td>
<td>Guided Imagery</td>
<td>20 (95%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>Relaxation</td>
<td></td>
<td>17 (90%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Recommend</td>
<td>Guided Imagery</td>
<td>20 (95%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>Relaxation</td>
<td></td>
<td>18 (95%)</td>
<td>1 (5%)</td>
</tr>
</tbody>
</table>

The most important result of listening to the guided imagery and relaxation for both of the groups was relaxation with 81% of the guided imagery group and 68% of the relaxation group stating that they felt more relaxed. Two of the guided imagery participants specifically noted that it reduced their anxiety. The other important results for the guided imagery and relaxation groups that were mentioned were better sleep, special time for self, dealing with feelings, peace, and strengthening of self. Table 14 presents the number of participants and percentages for each of the results.

Since there was no significant differences between the guided imagery and relaxation groups for the hypotheses, a series of t-tests were obtained to determine if there had been a significant treatment effect for the participants that may explain their responses to the clinical
significance questions. Table 15 presents the means and standard deviations for the depression/dejection, tension/anxiety, and total mood score of the POMS. Table 16 displays the t-tests for the pre- and postmeasurements on these scales.

| Table 14. Most important result of listening to guided imagery and relaxation |
|----------------------------------|-----------------|--------|
| Result                           | Group            | N     |
| Relaxation                       | Guided Imagery   | 17 (81%) |
|                                  | Relaxation       | 13 (68%) |
| Sleep                            | Guided Imagery   | 4 (19%) |
|                                  | Relaxation       | 5 (26%) |
| Time for Self                    | Guided Imagery   | 3 (14%) |
|                                  | Relaxation       | 7 (37%) |
| Feeling                          | Guided Imagery   | 3 (14%) |
|                                  | Relaxation       | 1 (5%)  |
| Peace                            | Guided Imagery   | 3 (14%) |
|                                  | Relaxation       | 3 (16%) |
| Ego Strength                     | Guided Imagery   | 1 (5%)  |
|                                  | Relaxation       | 2 (11%) |

| Table 15. Means and standard deviations for POMS pre and post |
|----------------------------------|--------|--------|
| Dependent Variables              | Group | Mean   | Std. D |
| Depression/Dejection             | Pre    | 11.62  | 10.62  |
|                                  | Post   | 7.95   | 7.95   |
| Tension/Anxiety                  | Pre    | 11.87  | 7.22   |
|                                  | Post   | 8.25   | 5.31   |
| Total Mood Score                 | Pre    | 38.20  | 33.43  |
|                                  | Post   | 22.75  | 26.02  |

| Table 16. T-Tests for POMS depression/dejection, tension/anxiety, and total mood score |
|----------------------------------|--------|--------|
| Variable                         | df     | t-score| p     |
| Depression/Dejection             | 39     | -2.284 | 0.028 |
| Tension/Anxiety                  | 39     | -3.112 | 0.003 |
| Total Mood Score                 | 39     | -2.976 | 0.005 |

Depression/anxiety \( t=(39)=-2.284, p=.028 \), tension/anxiety \( t(39)=-3.112, p=.003 \), the total mood score \( t(39)=-2.976, p=.005 \) were all significant. There was a significant decrease in depression/dejection, tension/anxiety, and total mood score on the POMS from the pretest to the posttest.

**Summary**

The purpose of this study was to assess through empirical investigation if guided imagery can enhance approach coping, emotional expression, and psychological well-being.
Two groups were compared, the experimental group used a guided imagery tape and the control group used the background relaxation music that was used on the guided imagery tape. An analysis using MANCOVA indicated that there were no significant differences between the groups in approach coping, emotional expression or psychological well-being. There was a significance difference between the groups in age, with the relaxation group being significantly older than the guided imagery group. Correlations for the dependent variables were in the expected directions. The majority of the women enjoyed the experience, found the experience helpful and would recommend guided imagery or relaxation to others. The most important thing that happened to most of the women was that they were more relaxed. T-tests indicated that both of the groups, guided imagery and relaxation, had significantly lower depression/dejection, tension/anxiety and overall mood score at the end of the study than in the beginning which signifies a significant treatment effect.
CHAPTER 5
DISCUSSION

This study examined the effectiveness of a therapeutic intervention utilizing
directive guided imagery to enhance coping, expression of emotion, and psychological
well-being for stage I and stage II breast cancer patients. There were two groups: an
experimental group that received a guided imagery tape (music and verbal suggestions)
designed to enhance coping, expression of emotion, and psychological well-being and a
control group that also received a music only tape. The participants in both groups played
the tape for one month, received phone calls weekly from a counselor and noted times of
use in a journal. Descriptive statistics, MANCOVA, and t-tests were used to analyze the
data. A discussion of the results of this study, theoretical implications, research
implications, practice implications, future recommendations for research, limitations of
the study, and a conclusion will be presented in this chapter.

Discussion of Results

The first null hypothesis stated that there would be no difference in fighting spirit,
helplessness/hopelessness, anxious preoccupation, denial/avoidance, and fatalism coping
strategies used by the women in the relaxation and guided imagery groups as measured
by the Mental Adjustment to Cancer (MAC) scale. The results of the MANCOVA
indicated that there was no difference between the two groups; in other words both
groups were equal. Women in the study with fighting spirit had lower overall mood
disturbance at pre and post study points and lower levels of depression and anxiety at the
end of the study, which confirms the results of past research (Classen et al., 1996; Schnoll et al., 1998; Watson et al., 1991). This study confirmed the findings of Schnoll and associates (1998) in that helplessness/hopelessness was significantly related to depression and anxiety. Women who felt helpless and hopeless also had higher overall mood disturbance at the beginning of the study, and at the end of the study they had higher overall mood disturbance, anxious preoccupation, denial, and fatalism. Watson and colleagues (1991) had found a highly significant relationship between helplessness and fatalism. Women who had anxious preoccupation had greater mood distress at the end of the study and also felt depressed, anxious, helpless, and hopeless which confirms the results of earlier studies in this area (Ferrero et al., 1994; Greer, 1991; Schnoll et al., 1998; Watson et al., 1991).

Results for the coping strategy of denial are mixed in the relevant research, with some studies noting that denial is a type of positive avoidance (Greer, 1991; Greer et al., 1990; and Heim et al., 1997) and some finding that denial is not related to poorer psychological adjustment (Friedman et al., 1990.) In this study denial was not associated with significant psychological distress but women who used denial as a coping strategy also felt significantly helpless and hopeless. Studies that have examined fatalism (Greer, 1991; Schnoll et al., 1998; Watson et al., 1991) have found it consistently related to poorer psychological distress. This was not true at the pretest measurement, but women who felt fatalistic had higher overall total mood distress, depression, and were more helpless and hopeless at the end of the study. It appears that approach coping (i.e., fighting spirit) is related to greater emotional expression and higher levels of psychological well-being, where as avoidance coping (i.e., helplessness/hopeless) is related to less emotional expression and lower levels of psychological well-being.
Fighting spirit is a coping strategy in which the individual focuses on “more optimistic thoughts that enable the person to deal actively with the stressor” (Friedman et al., 1990, p. 37). Women with fighting spirit accept their diagnosis, may see the illness as a challenge, and are determined to fight the cancer (Greer, 1991). These women seek information, get involved with their practitioners, and try to find ways to “fight” their illness. It seems that one of the reasons that the guided imagery and relaxation groups may be equal in coping is that women who self select to be in a study that is using complementary therapy may already possess fighting spirit. They are trying a new way of dealing with their cancer. Since only 30% to 50% of the eligible women who have breast cancer participate in complementary medicine trials, (Richardson et al., 1998), the act of responding to the invitation to participate in a study of this type may exemplify fighting of spirit.

The second null hypothesis stated that there would be no difference in the emotional expression coping strategy used by the women in the relaxation and guided imagery groups as measured by the Emotional Approach Coping Scale (EACS). The results of the MANCOVA indicated that there was no difference between the two groups. The women in both of the groups were equal in taking the time and allowing themselves to express their emotions and tried to acknowledge and understand their feelings. The participants of this study were compared to the normative sample of breast cancer patients for the EACS. The means for the guided imagery group (M=3.07) and relaxation group (M=3.14) for emotional processing is greater than the normative sample mean for women of 2.85. The same is true of the emotional expression. The guided imagery group (M=2.98) and the relaxation group (M=3.14) are greater than the mean for the normative sample for women of 2.79. Although it is not clear if the two groups improved due to the
intervention, both groups are acknowledging and trying to understand their emotions and expressing their emotions more than the normative sample for the EACS. Consistent with other research, women who were able to process and express their emotions had less psychological distress (Goodwin et al., 2001) at the end of the study. It is not surprising that women who were able to express and process their emotions possessed a fighting spirit.

There was a statistical significance between the covariate, pre-POMS total mood score, and the EACS. Both emotional processing and emotional expression were inversely related to the pre total mood score, indicating that women who scored high on emotional processing and expression had significantly lower psychological distress at the beginning of the study. It makes sense that if they were able to acknowledge their feelings and share them with others, they would not be experiencing as much distress as individuals who were keeping their feelings to themselves or denying that they were distressed.

The third null hypothesis stated that there would be no difference in Profile of Mood States (POMS) depression/dejection, POMS tension/anxiety, and posttest POMS total mood between the women in the relaxation and guided imagery groups. Again, MANCOVA indicated that the two groups were equal. Before the study began, women who were experiencing psychological distress were significantly more likely to be depressed and feel hopeless. Women who had less psychological distress were more likely to have a fighting spirit and process and express their feelings. After the treatment, women who were experiencing greater mood disturbance were also depressed, anxious, helpless, fatalistic, and anxiously preoccupied. Women with less mood disturbance had a fighting spirit. Women in both groups had significantly lower depression, anxiety, and
total mood disturbance at the end of the study, indicating that there was a treatment effect for psychological well-being. This current study replicates the results of the studies that focused on guided imagery and/or relaxation as the therapeutic intervention to reduce psychological distress (Bridge et al., 1982; Hosaka et al., 2000; Spiegel et al., 1983; Walker et al., 1999).

When I began this study, my goal was to determine the effectiveness of guided imagery to enhance coping, emotional expression, and psychological well-being. Although there were no significant differences between the two groups, I was surprised to find that there had been a treatment effect in which psychological well-being was enhanced for both the guided imagery and relaxation groups. I am unable to determine if coping and emotional expression were enhanced. Both groups noted that relaxation was one the most important things that happened to them as a result of participating in the study. Also, the majority of the women found the guided imagery and relaxation experiences helpful, enjoyable, and would recommend it to others. What happened?

One issue may be that relaxation and guided imagery are too similar as therapeutic interventions so that the relaxation group itself constituted an impactful intervention, not a control. O’Toole (2002) describes guided imagery as a “technique that involves tapping into the imagination to communicate with the subconscious to help the body and mind heal. She states that “imagery [can] help cancer patients ease pain, distract themselves from worries, and achieve relaxation and a sense of peace and harmony” (p. 197). Guided imagery is viewed as an important part of relaxation techniques and relaxation is suggested during guided imagery (Robbins & Floyd, 2002). Benson (1996), well known for his work on the relaxation response, states that the ongoing practice of relaxation can help to quiet the mind and help the individual into a
phenomena he calls "remembered wellness" (p. 27). He indicates that during the practice of relaxation using visualizations are helpful when eliciting the relaxation response. It appears that the purpose and mechanisms of guided imagery and relaxation are intertwined. I had thought that if I kept both of the groups equal (i.e., same phone calls each week, same journal to log daily use of tape, same music on each tape) except for the guided imagery narrative then guided imagery would be the only difference between the groups. I did not count on "relaxation . . . as a technique, a tool to be used during stressful or anxiety-provoking situations" (Shapiro, 2002, p. 45) to be so effective. Relaxation training has become an intervention used to treat depression (Schneider, 2002) and anxiety (Sharf, 2000) and guided imagery has been shown to reduce depression and anxiety (Spiegel et al., 1983; Hosaka et al., 2000) specifically for women with breast cancer. It seems that relaxation and guided imagery may produce similar benefits.

We often think that individuals must be trained in relaxation in some manner. This appears not to be true. The simple invitation to become a member of a study and the suggestion of daily sessions using a tape with music that may help you to relax may be enough to elicit change which is an example of the "Hawthorne effect" (Cook & Campbell, 1979). Delbanco (1993) describes the mind/body relationship in regard to relaxation becoming "very real medicine" (p. 12) because it becomes a suggestion; the individual expects (i.e., mind thinks) to get better (i.e., body relaxes). It was interesting that several of the women in the relaxation group asked if there were subliminal messages in the relaxation music. They believed something was happening to them and wondered if the subliminal messages were the intervention.

The guided imagery and relaxation groups were equal on all of the hypotheses. This may be due to the fact that the daily "session of mind-body techniques such as . . .
deep relaxation and guided imagery . . . helped them relax and recover a connection to their physical selves” (Angen, Simpson, MacRae, & Hundleby, 2004, p. 29). Perhaps participants in this current study had similar reactions by using guided imagery and relaxation as the participants in a recent study investigating a residential psychosocial support group (Angen et al., 2004). The participants in the Angen study referred to the use of relaxation and guided imagery as “an ‘antidote’ to the anxiety of tests, treatments, and awaiting tests results” (Angen et al., p. 29). Individuals in the residential psychosocial group study (Angen et al.) and women in this current study described how they played back images, music or phrases in their minds when in a medical context; they said they had a tool that they could use when they wanted something to go to, and they have continued to use the techniques that they have learned.

The women in the relaxation group were significantly older than the women in the guided imagery group and some studies suggest that age may influence coping. Cooper and Faragher (1993) suggested that older women are more relaxed. They tend to have fewer stressful events, may be retired and the need to be engaged in a high energy lifestyle diminishes. Miller and associates (1996) reported that younger women have more psychological distress, less optimism, and use more avoidance coping strategies. Since some would think that age could influence coping of the two groups, and since the relaxation group was significantly lower, age was entered as a covariate in the MANCOVA analysis. The two groups were still equal; no significant difference was evident. When the ages of the guided imagery group (M= 49.1) and relaxation group (M=57.5) are considered, one wonders if the age of the women’s children makes a difference; it may be that the predictor of difference between the two groups is whether or not the children of the women are established in their adult lives and no longer
dependent. Women who are 49 are much more likely to have teenage children or children in college than women who are 57. It would be natural for a mother to be more anxious and depressed if she was not sure about her children’s future.

The women in both of the groups found the guided imagery and relaxation helpful, enjoyable and would recommend the use of their respective tapes to others. The women in the study wrote me personal notes about their experiences, thank you cards for conducting the study and for allowing them to participate, and many asked to meet me so they could share their healing processes with me. Some of the women just wrote the times each day in their journals that they listened to the tapes, but others wrote at great length to express their experiences during the month of listening to the tape. A few of the women referred their friends to the study as something of value for them to try as a complement to their traditional medical treatment. Many of the women reported continuing to use the tapes after completion in the treatment phase of the study and many of the women in both of the groups played the tapes more than once a day.

**Theoretical Implications**

Lazarus (1993) indicates that coping is a process of cognitive and behavioral efforts to manage psychological stress. Although, we do not know if specific coping strategies were enhanced, we do know that psychological distress was lowered for both the guided imagery and relaxation groups which is in concordance. Choosing to become a part of this study by the participants became the exercising of a problem focused coping strategy by attempting to solve or minimize the effects of a stressful situation (i.e., cancer). These women were engaging in approach coping behavior, or in other words, using their fighting spirits. Women with higher levels of fighting spirit had less total psychological distress, processed and expressed their emotions, and were not helpless
and hopeless. The women who felt helpless and hopeless had higher levels of total psychological distress, depression, anxiety, anxious preoccupation, denial, and fatalism and lower levels of fighting spirit and emotional expression and processing. Women who had a fighting spirit used less avoidance coping strategies, expressed their emotions, and had less psychological distress. These results were consistent with other studies of women with breast cancer in the area of coping (Classen et al., 1996; Ferrero et al., 1994; Friedman et al., 1990; Lavery & Clarke, 1996; Schnoll et al., 1998; Watson et al., 1991).

Many women with breast cancer tend to suppress their emotions (Bleiker et al., 1996). Servaes and associates (1999) noted that women with breast cancer do not want to appear weak or become a burden. This notion is in accordance with a functionalist theory of emotion, which indicates that women with breast cancer are in the position of selecting emotional responses that are acceptable to the group they are in (i.e., their family and friends). Therefore, women with breast cancer inhibit their emotions and experience more anxiety, depression, helplessness, and fatalism (Watson et al., 1991). Again, we do not know if these women experienced enhanced emotional expression and processing on the EACS but we do know that their mean scores were higher than the normative sample of women for the EACS which seems to indicate higher expression and processing. Women with higher levels of emotional expression and processing were women who had a fighting spirit. Women who were helpless or hopeless did not express or process their emotions, which was consistent with findings by Goodwin and colleagues (2001); but interestingly, they were not anxious or depressed, which is similar to the study by Watson and associates (1999), and did not cope by being anxiously preoccupied, denying, or fatalistic.
Guided imagery constituted a therapeutic intervention that stimulated mental rehearsal of coping skills that could produce behavior change. Meichenbaum (1978) indicated that a sense of control and mental rehearsal would influence behavior. It seems that the guided imagery and relaxation groups were able to have a sense of control and mental rehearsal due to the fact that each woman was able to choose when and how many times she would listen to the tape and the daily practice became a type of mental rehearsal. Some of the women played the tape more than once each day and a few played it whenever they felt anxious or could not sleep. They began to use the tape as a method of dealing with their stress or anxiety. It was noteworthy that a majority of the women in each of the groups felt that the tapes could actually make them feel more relaxed. These qualitative experiences are consistent with Kolbaca and Fox's (1999) study in which guided imagery significantly increased comfort but the women also reported the tapes were helpful, shared them with others, and mentally recalled the words and music during the day. Previous studies (Bridge et al., 1982; Spiegel et al., 1983; Walker et al., 1999; Hosaka et al., 2000) in which the participants used guided imagery, relaxation, or a combination of guided imagery and relaxation indicated a significant decrease in depression, anxiety, and psychological distress. These results are consistent with the experiences of the women in the guided imagery and relaxation groups of this current study.

I cannot help but wonder if self-efficacy is a theoretical concept that should be considered in the context of this study. Bandura (1977) describes self-efficacy as an individual’s perception as to how successful they can be in a situation, or in this case, how well the person is able to deal with a difficult situation (i.e., cancer). “The expectations of personal efficacy determine whether a coping behavior will be initiated,
how much effort will be expended, and how long it will be sustained in the face of obstacles” (p. 191). Perhaps the women who accepted the invitation to be in this study had higher self-efficacy than the women who declined. The women who chose to be in the study initiated their participation, initiated using the tapes each day, determined how many times a day they would use the tapes, and if they would complete the study. For some of the women, they have continued using the tapes after the close of the study. The women in both of the groups had the power to create change in their lives in their own hands. A woman in either group was able to create a relaxed feeling, decrease anxiety, promote sleep, create a sense of peace, or just take time out for herself.

**Research Implications**

The lack of significance for the hypotheses of this study indicates that the design of this study needs to be reworked to focus on the effectiveness of guided imagery. Since coping was of concern, specifically, enhancement of approach coping and emotional expression, a baseline assessment of coping prior to the introduction of the intervention may need to be gathered. Of course, instrumentation may become a problem if two assessments measuring approach coping and emotional expression can not found. Another solution may be to use a control group with no treatment at all, but since we are dealing with cancer patients, researchers and the Institutional Review Board are sensitive to cancer patients receiving all the assistance that they can receive. It may be best to use a time-delayed study. The women in the control group would wait four weeks before beginning the treatment, but all of the instruments would be completed prior to the their starting the intervention. This design may be able to indicate if guided imagery is an effective therapeutic intervention to enhance approach coping, emotional expression, and psychological well-being.
Since the results of this current study indicated that guided imagery and relaxation were equal, which is consistent with the study by Bridge and associates (1982), it may be helpful to have three groups with a pre- and posttest design. The three groups would consist of guided imagery, relaxation and a time delayed treatment group.

**Practice Implications**

As a counselor who works with individuals with cancer, it seems serendipitous that this study should provide two interventions, relaxation and guided imagery, that assist women with breast cancer to reduce their anxiety and depression and empower them at the same time. Every person we see is an individual and finding an appropriate psychosocial intervention that reflects their desires is important. One of the women in the guided imagery group wrote that she wished she could just listen to music and come up with her own images. A women in the relaxation group noted that she wished she had more direction. With two options, both women can have their needs met.

Individuals who receive a diagnosis of cancer enter a very stressful period of their lives. They may have to cope with surgery, chemotherapy and/or radiation, pain, severe side effects, worry of the spread of cancer, changes in bodily function and appearance, uncertainty about the future, financial decisions, reactions of family and friends, and existential themes such as the meaning of life and death. Many of the women in this study noted that they were glad that they could listen to the tape in the privacy of their own home whenever they wanted. They felt they were too sick to go anywhere, some were too tired to leave their homes, and others felt like they did not want to go to a support group and have to share their illness one more time. Many chose to play it during the night when they could not sleep or when they were in pain. The women were not instructed when to play the tape, just asked to play it once a day. Most played it once a
day; a few played it approximately every other day. Many chose to play it more frequently. These women had control over the use of their process.

Approximately 80% of women with breast cancer experience significant psychological distress during initial treatment (Hughes & Vinlkur et al. as cited in Spiegel and Moore, 1997) and a recent study indicated that 33% of the women with breast cancer were in need of psychiatric intervention for depression or anxiety (Payne et al., 1999). The results of this study give counselors the option of being able to offer an affordable method of treatment in the form of a 25 minute tape to decrease depression or anxiety. Of course, the counselor should determine if the depression or anxiety is so acute that the individual needs hospitalization or medication.

In the exit interview for this study, the participants were asked what their health care providers could do to help women with breast cancer. The women stated that they wished that their providers would offer counseling; explain the course of their illness, treatment options and treatment side effects, including depression and anxiety; recommend complementary therapy and resources, including guided imagery and relaxation; and listen to the women. One major area of interest was the interdisciplinary team approach. Several women noted that they wished that their oncologists, surgeons, nurses, radiologists, counselors, physical therapists, and financial counselors provided services as a team and in one location. The women wished that all of these people were coordinated by one person and could help the women manage and understand their care. Breast cancer continuity is a concept that is gaining interest for practitioners and consumers of service.
Future Recommendations for Research

The coping strategy of fighting spirit is a concept that seems to correlate with less psychological distress and individuals who feel helpless and/or hopeless have greater psychological distress. Future research may want to determine if guided imagery can enhance fighting spirit and reduce helplessness/hopelessness. The same is true for the concept of emotional expression; can guided imagery increase emotional expression?

Cancer is one of the areas that researchers have targeted to study complementary therapy. One area of interest for patients and clinicians is whether “imagery can affect a change in the course of the disease” (Stolbach, 2003, p. 17). Is imagery capable of enhancing immune function or increasing survival rates? Some people like the images of fighting their cancers; others want a kinder, softer image. Research would be valuable to determine what types of guided imagery work for different types of people.

Age has been a variable of interest in the past research in breast cancer. It may be valuable to research the age of the women’s children at the time they are diagnosed? Women are concerned about the welfare of their children. Younger women have been reported as having greater psychological distress and older women have been reported as being more relaxed. As stated previously, this may be a function of whether their children are self-sufficient at the time of diagnosis. Is the mother still emotionally and economically taking care of her children or are the children engaged in their adult lives?

A recent literature review (Stefano, Fricchione, Slingsby, & Benson, 2001) built on Benson’s (1996) concept that health is remembered wellness. This hypothesis suggests that “the placebo effect was a naturally-occurring reaction in the body, like the fight-flight response, but instead of preparing for battle or escape, it’s function was rejuvenation or restoration” (Taylor, 2003, p. 19). It is hypothesized that this placebo
effect can help the body heal, defend against infection and trauma, and help the body resist chronic conditions. Benson (1996) proposes that the intentional elicitation of the relaxation response can have the same effect as the placebo effect. This hypothesis may be a topic of investigation in the future.

While conducting this study, I found it difficult to obtain participants and became curious about the characteristics of individuals who are willing to participate in complementary therapy investigations. In a recent study of women with breast cancer conducted in Oregon (Henderson & Donatelle, 2004), it was found that the individuals who were younger, had higher educations (i.e., some college), and had private health insurance were more likely to use complementary therapy. What are the characteristics of those women? Do they have higher levels of self-efficacy? What are their coping strategies? Are they involved in spiritual practice? What are the support circles around them? An in-depth, qualitative study may answer some of these questions and provide information about how to screen for individuals who would naturally use complementary therapy and assist those who may need complementary therapy to help them feel and cope better.

Lastly, how do we get traditional medical providers involved in the process of using complementary therapy? In the same study mentioned above (Henderson & Donatelle, 2004), most of the women who used complementary therapy sought the therapy without the recommendation of their doctor. Only 23% of the women who used relaxation/meditation were recommended to do so by their doctor. The most frequently recommended complementary therapy by physicians was vitamins and nutrition. It is important that we continue to conduct research in the area of complementary therapy and it is just as vital that we publish the results of these studies. It is only by making the
information available to the individuals who need it, patients and practitioners, that we will be able to bridge the gap between research and practice.

Limitations

This study was a pretest, posttest study design. As a result the use of the pretest, POMS, may influence the results of the posttest POMS. Instrumentation becomes an issue when the same instrument is used as both the pretest and posttest. This is especially important to note in this study as there were significant differences between the pre- and posttest. And, yet, it should be noted that there was at least 4 weeks between the pre- and posttest and, often, a longer duration existed due to the course of the woman’s disease or treatment side effects.

Another limitation with pretest, posttest designs is maturation. Although one month may not seem to make a lot of difference in this study, one of the problems is that many of the women experienced additional stressful events during that month that could have affected the outcome of the study. Increased illness and side effects of treatment, family members becoming ill, financial problems, and spousal infidelity were all mentioned as occurrences that happened to these women during the course of the study.

Self-selection to the study is a limitation as the women who were in this study volunteered to be in the study. These were women who wanted to participate in a study that was using complementary therapy. This excluded the information from women who did not desire to be in the study. What is the difference between these two groups of women?

All of the measures in this study were self-report. Since I coded the data by hand, I would sometimes wonder how a woman could check one item and not check the
corresponding item in another part of the instrument? When I knew how sick a woman was feeling, I wondered how she could be marking all 3s and 4s on her coping scale? Did some of the women try to project a sense of doing well despite how she was really feeling?

A limitation may have been the choice of instruments, especially some of the factors on the MAC. I noticed that one or two items were consistently marked lower than the rest of the items for a specific factor, such as fatalism. When I checked the item, I would think that the particular item did not really seem to measure the same concept that the rest of the items for the factor did.

The majority of the women in this study were Caucasian. Obviously, this means that the results of this study can only be generalized to other Caucasian women. Studies that portray a more representative sample of the ethnicity in the United States need to be conducted. Additionally, research results from this study can only be generalized to women with Stage I and Stage II breast cancer. Since Stage III and Stage IV breast cancer have different treatment protocols and issues, it would be necessary to conduct a study that focuses on their disease stages and specific needs.

Conclusions

Although unable to conclude that guided imagery or relaxation increased approach coping or emotional expression, it was found that depression, anxiety, and overall psychological distress were decreased for women with breast cancer that used a guided imagery or relaxation tape on a daily basis. This study also provided support for the concept that women with fighting spirit (i.e., used approach coping) process their emotions, are more emotionally expressive, have less psychological distress and do not feel helpless and hopeless. Confirmative evidence was found that women with breast
cancer who feel helpless and hopeless (i.e., used avoidance coping) also experience depression, anxiousness, fatalism, anxious preoccupation, use denial and, generally, suffer greater psychological distress. Women with breast cancer who used the interventions of guided imagery and relaxation enjoyed the experience, found it helpful, would recommend it to others, and the majority of the women perceived that it helped them to relax.

A current conversation has begun in the last couple of years related to the concept of “fighting cancer.” Cunningham (2003) notes that “cancer is a process, not a thing. How can it fight back?” (p. 8). And yet, others (Stolbach, 2003) refer to the fact that many “patients with cancer see the disease and its treatment as a battle, a struggle, or a fight” (p. 17). Early studies indicated that women with early stage breast cancer who had a fighting spirit lived significantly longer and many had no recurrence; those women who felt helpless and hopeless did not survive as long (Greer, 1991); and, finally, women with metastatic breast cancer who received psychosocial treatment lived twice as long as women who were not in support groups (Spiegel, 1983). Recently, researchers were unable to replicate these results (Goodwin, 2001; Watson et al., 1999).

While conducting this study, a number of people asked me if I was going to follow the participants to determine if the treatment helped their survival. I understand that when an individual receives a diagnosis of cancer, some of their first thoughts are about how long do I have to live. I have come to believe that is our nature as human beings. We want to live as long as we can, but I also believe that we want to live as well as we can while we are alive. Cunningham (2003) says that “the diagnosis of any serious disease is likely to be seen, by most people, as entailing a struggle to maintain quality of life and to survive” (p. 8). He observes that people who work with people who have
serious diseases initially pursue the healing the body, soon, however, their healing work is “superseded by a search for integration, harmony, and ultimately acceptance of whatever happens to the body, while still doing all we can to aid in its recovery” (p. 8).

Recently, I was waiting in the lobby of one of the centers that referred participants to this study to see a patient. One of the physicians who referred participants came out of an examining room and told me she didn’t know what was on these tapes I was handing out to her patients but that they were helping them. She asked me to wait to talk to the woman who was coming out of the exam room. The woman had been in my study and had recently been told that her breast cancer had metastasized. She came out of the room, gave me a big hug and said she was so thankful for the guided imagery tape. She didn’t know how it was working and even though she was worse physically than she had been, she “felt” better than she had before she found out she had cancer. She listened to the tape every day and played it whenever she felt anxious or can’t sleep. She was thankful for something she could use anytime she needed it.

Isn’t it important to feel good while we are struggling with cancer? It seems that no matter the course of the disease, most of us want to feel better. The most significant event to come out of this study, for me, is the knowledge that I can offer my clients an affordable treatment intervention that may possibly help them to feel better while they are struggling with life and death. And . . . they can use it whenever they want to. These people can share it with their family and friends and they can feel better also. One woman in this study told about how her husband with Alzheimer’s became quieter and rested more peacefully whenever he heard her listening to the relaxation tape. She began playing it for him. Another woman spoke of the weight that was lifted when she listened to the guided imagery tape. Others who listened to the guided imagery tape wrote that
they looked forward to “tape time” or bed time when they would listen to the tape, that they thought it helped them heal faster, and gave them a sense of peace. As David Spiegel (2001) said, “Curing cancer may not be a question of mind over matter, but mind does matter” (p. 1768).
APPENDIX A
FLIER
Have you been diagnosed with Stage One or Stage Two Breast Cancer in the last 12 months?

We would like to ask you to be involved in a study in which researchers are looking at how complementary therapy helps women with breast cancer cope.

Participants in this study will receive complementary therapy which will consist of listening to a tape at least once a day for four weeks. The tape will last about 20 to 30 minutes and you will listen to it while you are sitting or laying down in a relaxing position. You will then note in a journal the number of times and the time of day that you listened to the tape. You will be asked to fill out some questionnaires at the beginning of the study and at the end. These questionnaires will take you about 30 minutes to complete. You will not need to travel anywhere—all of the study materials will be mailed to you and if you need a tape player, we will provide one. The purpose of this research is to see if using complementary therapy will help you feel relaxed and help you to cope better. The results from this research may help us to assist other women with breast cancer in their struggle to cope with this illness.

Interested?
Please contact Linda Goodwin, Ed. S.
100 SW 75th St., Suite 107, Gainesville, FL 32607 or Call (352) 215-5638 or e-mail: lgoodwin@ufl.edu
APPENDIX B
GUIDED IMAGERY SCRIPT

Get into a comfortable position . . . shift your weight and allow your body to be fully supported by your chair or bed. Try to keep your head, neck and spine as straight as you can. Close your eyes and place your hands on your body.

Now take a couple of deep, full cleansing breaths . . . inhaling as fully as you comfortably can . . . and feel the rhythm of your breathing.

And as you breathe in . . . see if you can send the energy of the breath to any part of your body that is sore or tense or tight . . . and release the discomfort with the exhale . . . so you can feel your breath going to all the tight, tense places, loosening and softening them . . . and then gathering up all the tension and exhaling it . . . so that more and more, you are feeling safe and comfortable, relaxed and peaceful, watching the cleansing action of the breath . . . with friendly but detached awareness.

And any thoughts that come to mind, those too can be sent out with the breath . . . released with the exhale . . . so that for just a moment, your mind is empty . . . for just a split second, it is free and clear space, and you are blessed with stillness.
And any emotions that you are feeling, those too are noted and acknowledged and sent out with your breath... so that your emotional self is still and quiet, like a lake with no ripples.

And now, picture a place where you feel safe and peaceful and happy... a place either real or imaginary... a place from your past... or somewhere you've always wanted to be. It doesn't matter... just so it's a place that feels good and safe and peaceful to you.

And allowing the place to become more real to you, in all its dimensions... use your imagination and look around you... take the place in with your eyes... enjoy the colors... the scenery... looking to your right... and to your left.

And feeling whatever you are sitting or standing on in your special outdoor place... maybe you're at the beach and you feel the sand... or you may be in a forest or meadow and feel the pine needles or grass... or possibly you are in a very comfortable lawn chair... or on a nice, warm rock in the sun.

And listening to the sounds of the place... perhaps you hear birds singing or leaves rustling... the sound of wind... or maybe crashing waves... just let your ears can become attuned to the wonderful sounds of this place that is so safe and peaceful to you.

You might feel a breeze blowing... crisp and dry... or balmy and wet... or the warmth of the sun on your face... Let your skin enjoy the wonderful presence of this place.
And smell its rich fragrance... whether it's the soft scent of flowers... or salt-sea air... sweet meadow grass... or a forest floor covered with pine needles.

And as you become more and more attuned to the safety and beauty of this place... feeling thankful and happy to be there... you begin to feel a tingling... a pleasant, energizing something in the air all around you... something that contains expectancy and excitement... a sense that something wonderful is just about to happen.

And you may even smile to yourself, because perhaps you haven't had that feeling in a while... but now you know with some certainty that this place holds magic.

And as that certainty settles around you... you notice the tingling is taking on a kind of glow... that the air is alive with vibrant energy.

From somewhere above you a cone of powerful light softly and steadily moves down, forming a vibrant tent of tingling energy all around you... surrounding and protecting you... I don't know what color your light is... maybe it is green blue or turquoise, red, aquamarine, cobalt blue, purple, yellow, apricot, or pure white... or perhaps it is a combinations of colors... but whatever it is, you know that it is a healing light that is especially for you... illuminating everything it touches with exquisite brightness... giving everything it shines on a fresh, new beauty.

The air around you intensifies, glows and dances with sparking energy... and with a sense of gentle wonder for such stunning beauty, you feel the tingling energy of the light
moving down into your body . . . softly entering your head and neck . . . your shoulders . . . just massaging and loosening all of your muscles . . . making you feel more comfortable and feeling more and more peaceful . . .

And you sense that the light is moving into your arms . . . your forearms . . . your hands . . . filling your hands to the tips of your fingers . . .

Gently penetrating down the spine . . . and down into your chest . . . filling your back and torso . . . penetrating into the layers of tissue, deeper and deeper . . . slowly and steadily moving into all of your muscles . . . your bones . . . every organ . . . into each and every cell . . . and paying special attention to your breast area and any areas around your breasts that need special healing . . . cleansing and clearing and healing.

Sending a warm, vibrating softness into the tightness of your abdominal region . . . gently massaging and opening . . . filling your body with the powerful reassuring softness and healing energy of the light.

And moving down into your thighs, and into your knees . . . down into your legs . . . filling your feet . . . all the way to the tips of your toes.

Just let yourself feel the vibrant, healing energy of the light, working its magic deep inside your body . . . moving with deliberate intelligence to all the places that are sore or tense or tight . . . again paying special attention to any area of your body that needs healing and comfort . . . feeling the healing energy in your body . . . feeling the spaces
open up as you breath into them . . . fully and deeply . . . sensing the beginnings of any opening and dissolving of any discomfort . . . the beginnings of any heaviness starting to lift.

And taking another deep breath . . . sensing that you are very comfortable and relaxed . . . you see your special outdoor surroundings . . . this is a place where you feel safe and at ease . . . Now . . . you can begin to conjure up for yourself a very special structure. It can be one designed by your imagination or possibly it is a structure that you have been to or seen before . . . you may wish to borrow the structure or modify it to your liking . . . You find yourself in this special building, a healing sanctuary . . . a place made of just the materials that delight you aesthetically. You see that the furnishings and art are there just for you . . . possibly you have windows that allow you to continue to see your special outdoor surroundings. The colors, textures, sounds, fragrances and furnishings are all perfectly chosen to create a sense of comfort and ease and to satisfy your deepest healing needs . . . And in this place, you have all the tools, equipment and resources you wish . . . whether they be creative arts supplies, yoga equipment, a massage table, music, books, journals, tapes . . . anything you desire in your special healing sanctuary . . . This is a place where you can gather your healing resources . . . consult your inner self for guidance and rest and retreat so you can replenish yourself. Now go ahead and enjoy being in your special inner healing sanctuary.

Pause for One Minute.
And taking another deep breath... you may now find yourself conjuring up a very special instrument—your comfort meter. I don’t know what it looks like—possibly a wall thermostat or gage of some sort... but you can go ahead and design as you wish right now. It has a range of comfort zones... ranging from discomfort, mild discomfort, comfort and utter comfort. And like a wall thermostat, you can use your comfort meter in two ways. First, you can look at the meter and see what your comfort level is right now... pause... and secondly, like a thermostat, you have a gauge or widget of some sort that you can adjust to bring you into the next greater level of comfort... go ahead now and take yourself into the next level of comfort...

And taking another deep breath... you find that you can build or find a special box or container in your special sanctuary... This is your concern or worry or fear box. I don’t know what it looks like or how large it is... or what materials it is made of... but it is specially constructed to hold any concerns, worries or fears that you have... that you do not need to attend to right now... After you design or find your special box or container... you can put those feelings inside the container... and find a place to store the box so you will know where these feelings are kept should you ever need to look into them further...

And taking another deep breath... feeling more relaxed and peaceful... You come to realize that you are not alone... that you are aware of a comforting presence all around you... and looking around, surprised but not surprised, you see that you are surrounded by gentle, loving beings, immediately recognizable as allies... smiling and nodding in
the remarkable light . . . making you feel comforted and loved with their protective presence.

One of them softly approaches you . . . and with a wonderful, deep, wise, gentle and loving look, stares directly into your eyes and gently touches the center of your chest . . . with caring and love . . . sending comfort throughout your body . . . opening and softening any pain or tension . . . you feel this special healing energy spreading throughout your entire body . . . searching for those places that need comfort and healing . . . feeling those places relax and release.

And your special one says to you . . . I don’t know when this will happen, maybe it is happening now . . . or maybe you will begin this evening or tomorrow . . . and when you do . . . you will see that you are taking charge of your illness . . . asking questions . . . finding out as much information as you can . . . making plans for your future and seeing yourself doing the things that you love to do . . . now . . . and in the future . . . making time to be with family and friends . . . talking . . . laughing . . . living . . . having hope and sensing that you have special gifts and abilities . . . looking at your feelings and trying to understand them . . . knowing that your feelings are important and valid . . . and letting yourself express your feelings . . . freely and openly . . . when you need to . . . and knowing when to move on . . . talking to those important to you and keeping yourself vibrant and alive . . .

Continuing to breath deeply and easily . . . feeling a kind and gentle softness toward yourself . . . gratitude for your courage . . . taking deep satisfaction in your ability to be
present... focused... aware... and fully alive... able to touch your peaceful stillness... centered... grounded... safe and connected with your inner wisdom... your beauty... your special gifts and abilities... making room for possibility and growth... for living the truth of who you really are... fulfilling your purpose...

Breathing in to touch it... breathing out to let it move through you...

You see in the deep, gentle warmth of the eyes that look at you that it is understood that you have seen this... that you have had a sense of your own healing... And as your gentle band of allies smile and nod, your special one says to you, "remember, we are always here. It is you who come and go. Call for us anytime and we will come."

And gathering up a handful of the glowing, vibrating light, your ally places it in your heart for safekeeping... your own special supply, to use as needed.

And so feeling peaceful and easy, you watch as your band of allies begin to go back to where they came from, slowly, sending you feelings of love as they leave... until they have faded into the distance... and... now you watch as the sanctuary begins to disappear... slowing fading... and taking another breath... feeling very peaceful and relaxed... you watch as the light slowly begins to withdraw... returning to where ever it came from... until it is gone altogether... for now... knowing the light, the sanctuary with the comfort meter and concern box, and your allies are yours to call forth again, when ever you wish.
And taking a deep, full breath, feeling the widened spaces that are now opened, you once again see yourself in your safe and peaceful outdoor surroundings, feeling safe and easy . . . although perhaps the colors around you are brighter, the air more alive and fresh.

You might feel that something powerful has happened . . . that a major shift has occurred . . . and will continue to occur . . . with or without your conscious working on it.

And you see very clearly that you can call forth this place, the powerful, healing cone of light, the sanctuary with the special ones concern box and comfort meter whenever you wish to further the work that you have already done.

Pause

And so, feeling yourself sitting in your chair or lying down, breathing in and out, very rhythmically and easy . . . gently and with soft eyes, come back into the room whenever you are ready . . . knowing in a deep place that you have done important healing work . . . that you are better for this . . . and so you are.
APPENDIX C
INTRODUCTION TO STUDY LETTER

Dear ______________________,

Thank you for volunteering to be a part of our study. As was noted when you were initially contacted, this study will consist of a complementary therapy that you will do every day for one month. We hope that you find the time that you spend doing the daily exercise as relaxing, and that you will find that it is beneficial in many other ways also.

Enclosed you will find two envelopes. Please read the instructions on the outside of each envelope. Complete the items in envelope one first and mail it. Then, open the second envelope that contains your instructions, study tape and journal.

One of us will be contacting you each week to help remind you to do these exercises each day. If you have any problems you can contact Linda Goodwin at 352-215-5635 by phone or e-mail her at lgoodwin@ufl.edu.

Again, thank you again for being in our study.

Sincerely,

Linda Goodwin, Ed.S.
100 SW 75th Street
Gainesville, FL 32607
352-215-5638
lgoodwin@ufl.edu
APPENDIX D
FIRST ENVELOPE INSTRUCTIONS

OPEN THIS ENVELOPE FIRST

Please do the items in this envelope in the order listed below. Thank you.

CONTENTS OF ENVELOPE:

1. Informed Consent—two copies
2. Profile of Mood States
3. Demographic Questionnaire
4. Return addressed envelope to Linda Goodwin

Instructions:

1. Please read and sign the informed consents.

2. Please complete the questionnaire one and demographic questionnaire.

3. Place the one copy of the completed informed consent, questionnaire one and demographic questionnaire in the envelope addressed to Linda Goodwin.

4. Keep one copy of the informed consent for yourself.

5. Mail the envelope to Linda Goodwin.

6. Open Envelope labeled OPEN THIS ENVELOPE SECOND

THANK YOU.
Informed Consent to Participate in Research and Authorization for Collection, Use, and Disclosure of Protected Health Information

You are being asked to take part in a research study. This form provides you with information about the study and seeks your authorization for the collection, use and disclosure of your protected health information necessary for the study. The Principal Investigator (the person in charge of this research) or a representative of the Principal Investigator will also describe this study to you and answer all of your questions. Before you decide whether or not to take part, read the information below and ask questions about anything you do not understand. Your participation is entirely voluntary.

1. Name of Participant ("Study Subject")

2. Title of Research Study

   Assessment of Complementary Therapy Used by Women with Stage I and Stage II Breast Cancer

3. Principal Investigator and Telephone Number(s)

   Linda K. Goodwin, Ed.S.
   (352) 215-5638

4. Source of Funding or Other Material Support

   University of Florida only if there is no other support
5. **What is the purpose of this research study?**

You have been asked to participate in this study because you have Stage I or Stage II breast cancer, you are a female and you have received the diagnosis of breast cancer in the last twelve months. The purpose of this study is to study how the complementary therapies of guided imagery and relaxation affect the coping of women with early stage breast cancer.

6. **What will be done if you take part in this research study?**

Complementary therapy is an optional source of aide to you during your healing process. For this research you will participate in a six week study in which you will use a complementary therapy, either guided imagery or relaxation music. During the first week you will answer an interview, a questionnaire and sign an informed consent. During the next four weeks you will listen to a tape at least once a day. You will answer some questionnaires and an exit interview during the last week.

If you choose to participate in the study you will be randomly assigned to either a guided imagery group or a relaxation music group. You will listen to a tape for approximately 20 to 30 minutes a day while resting in a chair or bed. If you do not have a tape player you will be mailed one for your use. You will return it to the investigator when the study is over. You will note in a journal when you have done this each day. An investigator from the study will call you the first week to see if you got the package of materials and if you have any questions. The same investigator will call you once a week for the next four weeks to encourage you to listen to the tapes each day. At the end of the study, the investigator will call you to see if you have any questions and to encourage you to complete the last questionnaires.

At the end of the study, if one of the complementary therapies, either the guided imagery or the relaxation music, has been found to be more beneficial, the therapy will be offered to you if you did not receive it. You will be sent the tape and instructions on how to use it.

7. **What are the possible discomforts and risks?**

There are no known health risks or discomforts. You do not have to complete the questionnaires.

Throughout the study, the researchers will notify you of new information that may become available and might affect your decision to remain in the study.

If you wish to discuss the information above or any discomforts you may experience, you may ask questions now or call the Principal Investigator listed on the front page of this form.
8a. What are the possible benefits to you?

There is no direct benefit to you from answering the questionnaire. It is possible that by participating in the complementary therapy program, you may be able to cope more effectively with cancer and feel more relaxed.

8b. What are the possible benefits to others?

It is possible that by completing the complementary therapy program and answering the questionnaires that the information gained from this study will help other people understand the benefits of complementary therapy and how it affects people.

9. If you choose to take part in this research study, will it cost you anything?

There are not known financial risks involved in participating in this study. All of the mailing costs will be paid by the investigator. You will be sent pre-addressed, postage paid envelopes to mail the information and/or tape player back to the study investigator.

10. Will you receive compensation for taking part in this research study?

You will not receive compensation for participating in this study.

11. What if you are injured because of the study

If you experience an injury that is directly caused by this study, only professional consultative care that you receive at the University of Florida Health Science Center will be provided without charge. However, hospital expenses will have to be paid by you or your insurance provider. No other compensation is offered.

12. What other options or treatments are available if you do not want to be in this study?

You may choose to use complementary therapies in the usual way.

Participation in this study is entirely voluntary. You are free to refuse to be in this study, and your refusal will not influence current or future participation in studies or your medical care.
13a. Can you withdraw from this research study?

You are free to withdraw your consent and to stop participating in this research study at any time. If you do withdraw your consent, there will be no penalty, and you will not lose any benefits you are entitled to.

If you decide to withdraw your consent to participate in this research study for any reason, you should contact Linda Goodwin at (352) 215-5638.

If you have any questions regarding your rights as a research subject, you may phone the Institutional Review Board (IRB) office at (352) 846-1494.

13b. If you withdraw, can information about you still be used and/or collected?

If you withdraw, the information that we obtained about you will not be used as the information will be incomplete.

13c. Can the Principal Investigator withdraw you from this research study?

You may be withdrawn from the study without your consent for the following reasons:

1. If you do not have Stage I or Stage II breast cancer
2. If you were notified that you had breast cancer more than twelve months ago.

14. How will your privacy and the confidentiality of your protected health information be protected?

If you participate in this research, your protected health information will be collected, used, and disclosed under the terms specified in sections 15–23 below.

15. If you agree to participate in this research study, what protected health information about you may be collected, used and disclosed to others?

To determine your eligibility for the study and as part of your participation in the study, your protected health information that is obtained from you, from review of your past, current or future health records, from procedures such as physical examinations, x-rays, blood or urine tests or other procedures, from your response to any study treatments you receive, from your study visits and phone calls, and any other study related health information, may be collected, used and disclosed to others. More specifically, the following information may be collected, used, and disclosed to others:
Information as to what stage of breast cancer you have will be obtained from your physician or health record.

The date that you were notified of your diagnosis of breast cancer will be obtained from your primary physician or health record.

The information from the questionnaires and journals that you complete as part of the study will be used to determine the effectiveness of the complementary therapy. The results will be disclosed to others, but your name or any identifying information will not be disclosed.

16. **For what study-related purposes will your protected health information be collected, used and disclosed to others?**

Your protected health information may be collected, used and disclosed to others to find out your eligibility for, to carry out, and to evaluate the results of the research study. More specifically, your protected health information may be collected, used and disclosed for the following study-related purpose(s):

- to determine if you have Stage I or Stage II breast cancer and when you were diagnosed

- to determine how the use of complementary therapy affects the coping of women with Stage I and Stage II breast cancer

17. **Who will be authorized to collect, use and disclose to others your protected health information?**

Your protected health information may be collected, used, and disclosed to others by

- the study principal investigator Linda K. Goodwin
- other professionals at the University of Florida, Shands Hospital, or the Gainesville VA hospital that provide study-related treatment or procedures
- the University of Florida Institutional Review Board
- Other investigators involved in the study, namely Ana Puig

18. **Once collected or used, who may your protected health information be disclosed to?**

Your protected health information may be given to:

- US and foreign governmental agencies who are responsible for overseeing research, such as the Food and Drug Administration, the Department of Health and Human Services, and the Office of Human Research Protections
- Government agencies who are responsible for overseeing public health concerns such as the Centers for Disease Control and Federal, State and local health departments

19. If you agree to participate in this research, how long will your protected health information be collected, used and disclosed?

The data that is obtained from this study will be kept for 20 years.

20. Why are you being asked to authorize the collection, use and disclosure to others of your protected health information?

Under a new Federal Law, researchers cannot collect, use or disclose any of your protected health information for research unless you allow them to by signing this consent and authorization.

21. Are you required to sign this consent and authorization and allow the researchers to collect, use and disclose (give) to others of your protected health information?

No, and your refusal to sign will not affect your treatment, payment, enrollment, or eligibility for any benefits outside this research study. However, you cannot participate in this research unless you allow the collection, use and disclosure of your protected health information by signing this consent/authorization.

22. Can you review or copy your protected health information collected, used or disclosed under this authorization?

You have the right to review and copy your protected health information. However, you will not be allowed to do so until after the study is finished.

23. Is there a risk that your protected health information could be given to others beyond your authorization?

Yes. There is a risk that information received by authorized persons could be given to others beyond your authorization and not covered by the law.

24. Can you revoke (cancel) your authorization for collection, use and disclosure of your protected health information?

Yes. You can revoke your authorization at any time before, during or after your participation in the research. If you revoke, no new information will be collected about
you. However, information that was already collected may be still be used and
disclosed to others if the researchers have relied on it to complete and protect the
validity of the research. You can revoke by giving a written request with your signature
on it to the Principal Investigator.

25. How will the researcher(s) benefit from your being in this study?

In general, presenting research results helps the career of a scientist. Therefore, the
Principal Investigator may benefit if the results of this study are presented at scientific
meetings or in scientific journals.

26. Signatures

As a representative of this study, I have explained to the participant the purpose, the
procedures, the possible benefits, and the risks of this research study; the alternatives to
being in the study; and how the participant's protected health information will be
collected, used and disclosed:

Signature of Person Obtaining Consent and Authorization __________________________ Date

You have been informed about this study's purpose, procedures, possible benefits, and
risks; the alternatives to being in the study; and how your protected health information
will be collected, used and disclosed. You have received a copy of this Form. You
have been given the opportunity to ask questions before you sign, and you have been
told that you can ask other questions at any time.

You voluntarily agree to participate in this study. You hereby authorize the collection,
use and disclosure of your protected health information as described in sections 14-23
above. By signing this form, you are not waiving any of your legal rights.

Signature of Person Consenting and Authorizing __________________________ Date
APPENDIX F
DEMOGRAPHIC INFORMATION

Date: ____________________________  ID # ____________________________

Referral Source: ____________________________

Name: ____________________________  Age: ____________________________

Address: ____________________________

Ethnicity:  □  Caucasian  □  African American  □  Asian American
           □  Latin American  □  American Indian  □  Other

Highest Grade Completed: □  Did not complete High School  □  High School
           □  AA  □  BA  □  MA  □  PhD  □  Other_____________________

Are you working outside the home?  □  No  □  Yes,  Then □  Full time  □  Part time

Who referred you to this study?__________________________

Type of Breast Cancer: ____________________________

□  Stage One  □  Stage Two

When did you find out you had breast cancer? ____________________________

Have you ever had any experience with guided imagery or relaxation? □  yes  □  no
If yes, Why, what and when?

________________________________________________________________________

________________________________________________________________________

If yes, did you enjoy it?  □  yes  □  no
If yes, do you think it was helpful? □  yes  □  no

What treatment have you received for your breast cancer?__________________________
Is there anything that you think is important for the investigator of this study to know about you?

You can continue this question on the other side.
APPENDIX G
SECOND ENVELOPE INSTRUCTIONS

OPEN THIS ENVELOPE SECOND

Please do the items in this envelope in the order listed below. Thank you.

CONTENTS OF ENVELOPE:

1. Written Instructions for Tape
2. Journal
3. Tape with Instructions
4. Study Tape

5. Please read or listen to the instructions for your tape.
6. Listen to the study tape at least once daily.
7. Note in your journal the day and time that you listened to the tape.

THANK YOU.
This is guided imagery for women with breast cancer. It is not a substitute for traditional medicine but a complement to it. Before you start the tape find a comfortable place and sit or lay down. The program will start with music and will have suggestions for you to breathe deeply, clear your mind and calm your emotions. The story will ask you to go to an outdoor place that you find peaceful and relaxing. You will use your imagination and all of your senses to explore this special outdoor place. Next a light will appear and you will use this light to help your body relax and heal. Then, in your imagination, you will go to your healing sanctuary and use your comfort meter and concern/worry/fear box. Finally, a group of special beings will come to you and offer support and comfort. Gradually, all of these images will leave and you will come back into the room.

Don’t be concerned if your mind drifts or you seem to fall asleep. Just relax, listen to my voice and don’t try too hard. Even though it may seem like you drift off at times, you will still hear all of the suggestions even though you may think that you do not. Because you will have times of drifting off, DO NOT PLAY THIS TAPE WHILE DRIVING.

Some of the images may change or shift and some will be more meaningful for you than others. Let your mind edit it as it wants. Use what is useful to you and leave the rest. If you have a special image or phase that you really like, try to play it in your mind several times during the day, like while sitting at a red light, brushing your teeth or right before you go to sleep at night.

There may be times when you may become emotional while listening to the tape. This is normal and it may even be good for you. Just try and let the emotions wash through like a kind of rinsing.

Try to listen to the tape at least once a day. If you want to listen more, this is ok. Please note the day and time that you listen in your journal that is in this package so we can know how many times a day you listened.

So, just take this time to settle in, relax, let yourself listen and enjoy using your imagination.
APPENDIX I
INSTRUCTIONS FOR RELAXATION

This is relaxation music for women with breast cancer. It is not a substitute for traditional medicine but a complement to it. You may find yourself enjoying this program as it is very relaxing and there may be many benefits to your healing process as you include this in your daily activities.

Before you start the tape find a comfortable place and sit or lay down. Just play the tape and listen to it until the end, approximately 20 to 30 minutes.

Don’t be concerned if your mind drifts off or you seem to fall asleep. Just listen and don’t try very hard. Even though it may seem like you are drifting off at times, you will still be hearing the music. Because you will have times of drifting off, DO NOT PLAY THIS TAPE WHILE DRIVING.

Try to listen to the tape at least once a day. If you want to listen more, this is ok. Please note the day and time that you listen in your journal that is in this package so we can know how many times a day you listened.

So, just take this time to settle in, relax and let yourself listen.
APPENDIX J
FINAL QUESTIONNAIRES

Please do the items in this envelope in the order listed below. Thank you.

CONTENTS OF ENVELOPE:

1. Profile of Mood States
2. Complementary Therapy and Coping
3. Exit Interview
4. Return addressed envelope to Linda Goodwin

Instructions:

5. Please complete questionnaires one, two, and exit interview

6. Place the completed questionnaires, exit interview and journal in the envelope addressed to Linda Goodwin.

7. Mail the envelope to Linda Goodwin.

THANK YOU.
APPENDIX K
FINAL LETTER

Dear ___________________,

Enclosed is the last envelope that contains the final instructions, the last questionnaires, the exit interview and a return addressed envelope so that you can mail it to Linda Goodwin.

We hope that you have benefited from being a part of this study and that you may continue to use the tapes because you enjoyed the experience. We also hope that the findings of our study will help other women with breast cancer in their process of healing and coping with this disease.

Thank you for being a part of this study and helping us to help you and others like you. We wish you the best—in mind, body and spirit.

Sincerely,

Linda Goodwin, Ed.S.
100 SW 75th Street, Suite 207
Gainesville, FL 32607
352-215-5638
lgoodwin@ufl.edu
APPENDIX L
EXIT INTERVIEW—GUIDED IMAGERY

Participant Number________
Date: _______________

Did you enjoy doing the guided imagery? □ yes □ no

If yes, do you think it was helpful? □ yes □ no

What was the most important thing that happened to you as a result of using guided imagery?__________________________________________________________________________

Would you recommend guided imagery to someone else that had a health problem?
□ yes □ no

On the average, about how many times a day did you do the guided imagery?
□ 0 □ 1 □ 2 □ 3 □ 4 □ _______

Did you do any other types of complimentary therapy? □ yes □ no

If yes: □ other guided imagery □ counseling □ acupuncture □ vitamin therapy
□ herbal therapy □ massage therapy □ energy therapy □ other_____________________

What would you like to have had your health care providers do for you that they have not done?__________________________________________________________________________
Given what you have learned about yourself over the past month, what would you like to see health care providers asking or doing for women with breast cancer?

____________________________________________________________________________________

Is there anything that you would like the investigators of this study to know that we have not asked?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Do you have any suggestions to make the experience that you had with guided imagery better for someone else?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

May we contact you in the future for a follow-up to see how you are doing? □ yes □ no

____________________________________________________________________________________

Thank you for participating in our study!
APPENDIX M
EXIT INTERVIEW–RELAXATION

Participant Number: ______
Date: ______________

Did you enjoy doing the relaxation tape? □ yes □ no

If yes, do you think it was helpful? □ yes □ no

What was the most important thing that happened to you as a result of using relaxation tape?
____________________________________________________

____________________________________________________

Would you recommend relaxation to someone else that had a health problem?
□ yes □ no

On the average, about how many times a day did you do the relaxation tape?
□ 0 □ 1 □ 2 □ 3 □ 4 □ ______

Did you do any other types of complimentary therapy? □ yes □ no

If yes: □ guided imagery □ counseling □ acupuncture □ vitamin therapy
□ herbal therapy □ massage therapy □ energy therapy □ other ______________

What would you like to have had your health care providers do for you that they have not done?
____________________________________________________

____________________________________________________

Given what you have learned about yourself over the past month, what would you like to see health care providers asking or doing for women with breast cancer? ____________

____________________________________________________
Is there anything that you would like the investigators of this study to know that we have not asked?

__________________________________________________________

__________________________________________________________

__________________________________________________________

Do you have any suggestions to make the experience that you had with relaxation better for someone else?

__________________________________________________________

May we contact you in the future for a follow up to see how you are doing? □ yes  □ no

Thank you for participating in our study!
REFERENCES


BIOGRAPHICAL SKETCH

Linda K. Goodwin was raised in Tampa, Florida, and received her B.A. from the University of South Florida in sociology. While working at a variety of agencies in Gainesville, Florida, she obtained her master’s degree in rehabilitation counseling and her educational specialist degree in research and evaluation methodology from the University of Florida.

Linda married Charles and has lived the last 20 years on a farm with her family. During that time she spent the most important part of her life raising her sons, Caleb and Luke. When Luke and Caleb were juniors in high school, she and her husband attended a week-long workshop on guided imagery at Omega Institute. She became inspired and noted to the lecturer that she had forgotten how much counseling and intuition were a part of her life. She began volunteering in the Arts in Medicine program at Shands Teaching Hospital and saw immediate effects of her work. She became focused on trying to learn as much about guided imagery as she could in order to help patients deal with the challenges they faced while dealing with serious illnesses. One of her goals is to bridge the gap between medicine and counseling through her work with patients. As part of this goal, she entered the doctoral program, one of her lifelong dreams.

Linda plans on working as a private counselor, conducting research and publishing in the area of mind/body medicine. She loves her work. Her hobbies include quilting, watercolor, reading, and traveling to see her sons and the mountains often.
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Peter A. D. Sherrard, Chair
Associate Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

M. Harry Daniels
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Paul G. Schauble
Professor of Psychology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

David M. Miller
Professor of Educational Psychology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Carol Reed Ash
Kirbo Eminent Scholar of Nursing
This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

May 2004

Dean, College of Education

Dean, Graduate School