The purpose of this study was to explore the relations between the coping processes of young adult daughters of mothers with breast cancer and the daughters’ self-reported stress response symptoms. Specifically, four coping processes were examined in this study: seeking social support, planful problem solving, escape avoidance, and distancing. Thirty-two daughters participated. One-tailed Pearson correlations were used to assess the link between coping processes, measured by the Ways of Coping Questionnaire (WOC), and stress response symptoms, measured by the Impact of Event Scale (IES). Results revealed that planful problem solving, escape avoidance, and distancing coping were positively correlated with stress response symptoms, indicating increased levels of stress symptoms. The majority of daughters in this sample (71.9%) scored above the cutoff point on the IES, indicating need for further assessment and support.

INDEX WORDS: Daughter’s coping, Breast cancer, Stress response symptoms, Stress and Coping Theory, Impact of Event Scale, Ways of Coping Questionnaire
THE COPING PROCESSES OF YOUNG ADULT DAUGHTERS OF WOMEN WITH
BREAST CANCER

by

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THE COPING PROCESSES OF YOUNG ADULT DAUGHTERS OF WOMEN WITH BREAST CANCER

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Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Review of Literature</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Stress and Coping Theory</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Stressors Associated with a Mother’s Breast Cancer</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Psychological Stress Responses</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Coping Processes</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Hypotheses</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>Method</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Recruitment Procedures</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Participants</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Measures</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Data Analysis</td>
<td>33</td>
</tr>
<tr>
<td>4</td>
<td>Results</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Demographic Descriptive Statistics</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Breast Cancer Descriptive Statistics</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>The Ways of Coping Questionnaire and the Impact of Event Scale</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Descriptive Statistics</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Testing of Hypotheses</td>
<td>40</td>
</tr>
</tbody>
</table>
Chapter 1

Introduction

Breast cancer is the most common form of cancer among women behind skin cancers and is the second leading cause of cancer deaths, following lung cancer, among women in the United States (American Cancer Society, 2010). The American Cancer Society estimated that there were 192,370 new invasive breast cancer diagnoses in 2009. In addition, 40,170 breast cancer related deaths were reported for 2009. It is further estimated that there are at least 2.5 million breast cancer survivors currently living in the United States (American Cancer Society, 2010).

Over the past few decades, researchers have recognized breast cancer as a familial disease (Baider, Goldzweig, Ever-Hadani, & Peretz, 2008; Cohen & Pollack, 2005; Grandstaff, 1976; Lewis, 1996; Lewis & Hammond, 1996; Lichtman et al., 1985; Northouse, 1992, 1995; Rait & Lederberg, 1989; Raveis & Pretter, 2005). In other words, it is a disease that not only impacts the patients, but also influences each family member. Due to invasive treatments and procedures, high costs, and uncertain outcomes, a breast cancer diagnosis can constitute a unique stressor within the family and can generate many harmful consequences for spouses and children (Cohen & Pollack, 2005; Compas et al., 1994; Leedham & Meyerowitz, 1999; Lewis, Hammond, & Woods, 1993).

Most research concerning familial coping and adjustment to breast cancer has been targeted at the responses of the patients’ spouses and young children or adolescents (e.g., Edwards et al., 2008; Lewis & Darby, 2003; Lewis & Hammond, 1992, 1996; Lewis et al., 1993; Lewis, Woods, Hough, & Bensley, 1989; Lichtman, Taylor, & Wood, 1987; Walsh, Manuel,
Avis, 2005). Little attention, however, has been paid to the role of coping among women, including daughters, who have experienced breast cancer in their families (Kim, Valdimarsdottir, & Bovbjerg, 2003). Particularly, there is a gap in research that is focused on the responses of young adult daughters of mothers with breast cancer; however, few studies have targeted this population (e.g., Cohen & Pollack, 2005; Raveis & Pretter, 2005; Wellisch, Gritz, Schain, Wang, & Siau, 1991, 1992; Wellisch, Schain, Gritz, & Wang, 1996).

Despite the lack of research concerning young adult daughters, breast cancer statistics show that there is a large number of young adult children who have mothers facing this type of cancer. For example, of the 192,370 cases of breast cancer in 2009, 173,730 (approximately 90%) of the women were above the age of 45 years (American Cancer Society, 2010). These women above the age of 45 are more likely to have young adult children than they are to have younger children. Due to the high numbers of young adult children with mothers with breast cancer, further exploration of the adjustment and impact young adult daughters face in response to their mothers’ cancer is warranted.

Researchers who have examined the impact of breast cancer on young adult children have documented that they, similar to children and adolescents, do encounter anxiety and depression as a result of their parents’ cancer (Compas et al., 1994; Compas, Worsham, Ey, & Howell, 1996). The young adult daughters are particularly vulnerable to manifest anxiety and/or depression, because they have a high risk of developing breast cancer as a result of their mothers’ breast cancer (Cohen & Pollack, 2005). Furthermore, daughters of women with breast cancer are twice as likely to develop breast cancer than women who do not have a family history of the disease (Wellisch et al., 1991).
In addition to their high hereditary risk of breast cancer, young adult daughters can also face distress as they often provide their parents with the necessary social and emotional support to help improve their quality of life and coping throughout the cancer treatments (Cohen & Pollack, 2005; Mosher & Danoff-Burg, 2005). Young adult daughters also typically serve as the primary caregiver for their ill parent, and this role shift can elicit much distress in daughters as they respond to caregiving demands (Ferrell, Ferrell, Rhiner, & Grant, 1991). In response to the risk of developing cancer and shifting role demands, daughters of women with breast cancer have been found to be the family members most at risk for psychological and psychosocial problems following the mothers’ diagnosis and throughout the illness and treatment course (Brown et al., 2007; Compas et al., 1994; Leedham & Meyerowitz, 1999).

Due to the hereditary factor of breast cancer and the daughters’ possible new caregiving demands, it is important to examine the effects of mothers’ breast cancer on young adult daughters. Despite the growing research of the familial effects of breast cancer, there remains a gap in research concerning the responses of the young adult daughters whose mothers have breast cancer (Raveis & Pretter, 2005). Therefore, the purpose of this study is to explore the coping processes of young adult daughters and how these coping processes relate to their self-reported stress in response to their mothers’ breast cancer.
Chapter 2

Review of Literature

The following is a review of the existing research on daughters’ experiences throughout and following their mothers’ diagnoses and treatments of breast cancer. Since the research specifically targeted to daughters’ responses to their mothers’ breast cancer is limited, broader studies have been included which were focused on the stressors and coping responses of both sons and daughters, of all ages, to their mothers’ breast cancer. Information regarding the coping responses of women with first degree relatives (e.g., mother, sister, or daughter) with breast or ovarian cancer is also included in this review. Therefore, the review will examine (a) the Stress and Coping Theory as it provides the framework for the literature, (b) the stressors associated with mothers’ breast cancer, (c) the psychological stress responses to a family history of breast or ovarian cancer, and (d) the coping processes women utilize in reaction to their familial history of breast or ovarian cancer.

Stress and Coping Theory

The internal processes daughters experience throughout the course of their mothers’ breast cancer can be understood through the concepts of the Stress and Coping Theory. This theory is focused on the mechanisms people utilize to cope with a crisis and related stressors. The development of this theory is largely attributed to the work of Lazarus and Folkman (1984) who contended “stress can be viewed as a struggle between opposing forces, that is, as demands that are always in some measure countered by coping resources and processes” (p. 253). Stress and coping are counteracting, universal processes that individuals must continually balance.
Even though the concept of stress has existed for centuries, it has only recently been conceptualized, defined, and explored scientifically (Lazarus & Folkman, 1984). There are two definitions of stress recognized in the literature: stimulus and response (Lazarus & Folkman, 1984). Stimulus definitions consist of stressful events that occur in the environment (e.g., natural disaster, disease, or financial debt) and do not account for a person’s individual reactions to these events. The response definition, however, refers to the state of stress individuals display when facing such events or circumstances. By merging these two definitions, researchers have concluded that although stress is natural and inevitable, people experience and react to stress differently (Lazarus & Folkman, 1984). For instance, individuals utilize “complex cognitive, behavioral, emotional, and biological processes” to guide their responses to a particular stressor (Compas, 2006, p. 229). These responses to stress are mediated by two different processes: coping and appraising (Lazarus & Folkman, 1984).

Within this theory, coping is one of the two processes that mediate the psychological stress present between individuals and their environment. Coping is defined as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). In order to manage these demands, people utilize several coping processes, which are either emotion-focused or problem-focused. Emotion-focused coping consists of internal processes or defense mechanisms people use to lessen the impact of stress (Compas, 2006; Folkman & Moskowitz, 2004). These processes may consist of avoidance, withdrawal, positive comparisons, or minimizing. Problem-focused coping, however, is targeted at defining the problem, evaluating alternatives to the problem, and acting on alternative solutions (Lazarus & Folkman, 1984). In other words, people using problem-focused coping are trying to manage the
stressors and cause of the stressors (Folkman & Moskowitz, 2004). Individuals coping with stressful encounters typically utilize both classifications of coping processes (Lazarus & Folkman, 1984). Even though studies have found people who use problem-focused coping typically report less distress than those practicing emotion-focused coping, the adaptive qualities of the coping processes need to be examined within the context of the stressful event (Folkman & Moskowitz, 2004).

Cognitive appraisals, the second mediating process to stress, is an “evaluative process that determines why and to what extent a particular transaction or series of transactions between the person and the environment is stressful” (Lazarus & Folkman, 1984, p. 19). Even though stressful events occur, the event is only viewed as stressful through individuals’ internal processes of appraisals. These appraisals are based on personal judgments and past experiences and direct how people view and react to certain situations. When an event occurs, individuals make an immediate, instinctive appraisal in response to their emotions regarding the event (Arnold, 1960). These immediate appraisals, however, may change as individuals continue to reflect on the meaning of the stressful event (Lazarus & Folkman, 1984).

The concepts of stress and coping provide insights into the processes occurring as daughters learn to adapt to their mothers’ breast cancer. Stress and coping theorists may assume daughters will practice certain emotion-focused and problem-focused strategies that will guide their coping processes in response to their mothers’ diagnosis. Theorists may particularly postulate daughters’ appraisals of the seriousness of the cancer diagnosis would directly influence how they react to the cancer and whether they perceive the event as stressful.
Stressors Associated with a Mother’s Breast Cancer

Breast cancer related stressors often have a direct impact on young adult daughters. The following information illustrates the experiences daughters face throughout their mothers’ diagnosis and course of treatment. Three salient stressors that daughters face are discussed in this review including (a) the nature and severity of the diagnosis and treatment, (b) the heritability of breast cancer, and (c) the role changes between the mother and daughter.

The nature and severity of the diagnosis and treatment. The severity of mothers’ breast cancer has been found to directly and indirectly influence the adjustment and distress of their children, especially their daughters. The severity of the disease encompasses the stage of the cancer, the side effects of treatment, and the mother’s prognosis.

Brown and colleagues (2007) specifically examined the adjustment of children of mothers with breast cancer in comparison with children of healthy mothers. The inclusion criteria for the experimental group consisted of women at least one month post diagnosis who had at least one child living in the home who was 8 years or older. The experimental sample included 40 mothers with breast cancer (mean age = 45.9 years, $SD = 6.3$) and their children (21 daughters, 19 sons). The children in the experimental sample were between the ages of 8 and 19 years with an average age of 14.4 years ($SD = 3.0$). The researchers also included a control sample, which matched the experimental group on age of mother, age of child, gender of child, and socioeconomic status of the family.

The adjustment of the children of mothers with breast cancer was compared to the adjustment of children of healthy mothers (Brown et al., 2007). The researchers assessed adjustment by using measures for (a) anxiety, Multidimensional Anxiety Scale for Children (March, Parker, Sullivan, Stallings, & Conners, 1997); (b) depression, Children’s Depression
Inventory (Saylor, Finch, Spirito, & Bennett, 1984); (c) psychopathology, Child Behavior Checklist (Achenbach, 1991); and (d) posttraumatic stress disorder, Child Posttraumatic Stress Symptom Scale (Foa, Johnson, Feeny, & Treadwell, 2001). Brown et al. (2007) further examined the correlations between the illness severity of the mothers’ cancer, maternal stressors and resources, maternal adjustment, maternal posttraumatic stress, and the children’s adjustment. Illness severity was conceptualized by medical variables including the type of treatment, length of time since diagnosis, and the mothers’ prognoses. Brown et al. (2007) reported a significant positive correlation between daughters’ and sons’ psychopathology and the severity of side effects associated with the mothers’ breast cancer (.44, \( p < .05 \)). In other words, the more severe the mothers’ side effects, the more psychopathology the children displayed. Interestingly, the time since the mothers’ diagnosis did not influence the children’s adjustment.

In addition, daughters of mothers with breast cancer indicated more symptoms of depression (\( M = 49.8, SD = 15.20 \)) than did the sons (\( M = 39.8, SD = 13.4 \)) (Brown et al., 2007). Furthermore, daughters in the experimental group displayed greater depressive symptoms (\( M = 49.8 \)) than did daughters in the control group (\( M = 42.8, SD = 8.5 \)). These findings show that daughters of mothers with breast cancer were at greater risk for adjustment difficulties than were sons of mothers with breast cancer and the daughters and sons of mothers without breast cancer (Brown et al., 2007).

Even though Brown et al.’s (2007) study provided valuable information on the adjustment of young children to their mothers’ breast cancer, Cohen and Pollack (2005) specifically examined the effects of maternal breast cancer on adult daughters. The sample consisted of 80 mothers and 80 daughters. The daughters ranged in age from 20 to 45 years with a mean age of 31.7 years (\( SD = 7.7 \)), and the mean age of the mothers was 61.4 years (\( SD = 8.9 \)).
Thirty-nine mothers had a primary and localized breast cancer, and 41 mothers had advanced, recurrent, or metastatic breast cancer. Each mother was diagnosed one year prior to joining the study. The researchers also compared the distress of daughters of mothers with breast cancer to a control group of 47 women with mothers without breast cancer. The control group was matched on age and education to the experimental group of daughters.

Cohen and Pollack (2005) investigated the relation between adult daughters’ psychological distress, the distress of their mothers, and the stage of the mothers’ cancer. Information on the stage of cancer and past treatment and surgeries were gathered from the medical charts. Results indicated daughters of mothers with advanced breast cancer commonly manifested higher levels of distress, measured by the Symptom Checklist Revised (Derogatis, Rickels, & Rock, 1976) and immunologic and hormonal tests, than did daughters of mothers in earlier stages of disease. Daughters with mothers with advanced stages of disease also reported greater amounts of caregiving tasks and were more likely to experience caregiving burdens, than were daughters of mothers with more localized disease (Cohen & Pollack, 2005).

**Heritability of breast cancer.** In addition to the severity of breast cancer, the heritability risk of breast cancer can also cause distress for daughters. Within a lifetime, women have a one in eight chance of developing breast cancer, but women with a family history of breast cancer have a greater chance of manifesting the illness (American Cancer Society, 2010). In addition, women who inherit the BRCA1 gene mutation have a 58-80% chance of being diagnosed with breast cancer in a lifetime, and those who have the BRCA2 gene mutation have a 30-85% chance of being diagnosed (King, Marks, & Mandell, 2003). Since women with such a history are more susceptible to inheriting the disease, they can fear and worry that developing breast cancer is inevitable. For example, daughters with a maternal history of breast cancer perceive a
significantly greater risk of developing breast cancer than do daughters without such histories (Wellisch et al., 1991).

By using a qualitative design, Raveis and Pretter (2005) examined daughters’ reactions to their perceived vulnerability of developing breast cancer and found that perceived risk can adversely affect daughters’ coping and wellbeing. Participants were between the ages of 21 and 62 years with an average age of 38.3 years. All participants reported providing significant assistance or support to their mothers during treatments. They were interviewed about the changes in their relationship with their mother, the events leading up to their role of being caregivers for their mother, and their reactions to their mothers’ treatments and illness. Daughters’ narratives in this study illustrated that their perceived personal risk of developing breast cancer created an emotional crisis as they realized their vulnerability. This idea is shown through the following report of one participant: “‘if it happened to [my mom] it could happen to me’” (Raveis & Pretter, 2005, p. 56).

In addition, participants recalled that they had not given much thought to their risk of breast cancer prior to their mothers’ diagnoses:

Before this I never thought about it; not my mother, nor my daughter, never. I used to have my annual check up, but never thought that in my family this will happens. There has never been anybody in my family with that illness, nobody…. This has been an experience that has opened my eyes. It makes you think, “my mother [has] that illness, I could have it too.” (Raveis & Pretter, 2005, p. 56)

The realization of personal vulnerability into a high risk group caused some daughters to worry about their future health and quality of life: “‘What would my life be like, knowing that I will
have this risk factor, and how would that affect me, and would it affect my ability to enjoy my health in my day-to-day life?” (Raveis & Pretter, 2005, p. 56).

The themes of worry and anxiety and the perception of being in a high-risk group in Raveis and Pretter’s (2005) study are also present in Spira and Kenemore’s (2000) qualitative review of the impact of maternal breast cancer on adolescent daughters. Spira and Kenemore (2000) included clinical descriptions from interviews with adolescent daughters between the ages of 12 and 19 years. The mothers of the participants ranged from newly diagnosed with breast cancer to completely finished with treatment. Following interviews with the daughters, Spira and Kenemore (2000) noticed many of the participants were concerned about becoming diagnosed with breast cancer, and this elevated concern caused somatic problems and high-risk behaviors. For example, one 17-year-old daughter reported experiencing disturbing thoughts throughout the day and started to develop pain under her arms and in her breast, which she feared was cancerous. In addition, a 15-year-old daughter became more delinquent and was accused of using drugs following her mother’s diagnosis. The daughter stated, “I am going to die of breast cancer-I will have a good time before that happens to me!” The above narratives illustrate the impact that daughters face as they perceive themselves in a high-risk group for developing breast cancer.

In addition to the literature examining daughters’ experiences with their mothers’ breast cancer, this review includes information from the literature focusing on women with a first degree relative with breast cancer. Lerman et al. (1993) assessed the variables affecting the breast cancer screening practices of women with a first degree relative diagnosed with breast cancer. In this study, a first degree relative (FDR) included a mother, sister, or daughter with breast cancer. One hundred-forty women ranging in age from 35-79 years ($M = 46$ years, $SD =$
9.3) comprised the study sample. Each participant had at least one FDR diagnosed with breast cancer, and 11% of the sample had 2 or more FDR’s with breast cancer.

The influences of the participants’ perceptions of susceptibility and breast cancer worries on their level of depression, breast cancer screening practices, and the psychological impact of the breast cancer diagnosis were examined (Lerman et al., 1993). Seventy-two percent of the participants perceived their risk of developing cancer to be greater than the “average woman.” In addition, 30% of the participants reported that worrying about the risk of getting breast cancer disturbed or interfered with their daily functioning. Women who reported having recurring worries of developing breast cancer were 2.5 times less likely to adhere to breast screening practices than were women without such worries, thus affecting their future health (Lerman et al., 1993).

Erblich, Bovbjerg and Vladimarsdottir (2000) also examined how women’s perceived risk of developing breast cancer impacted their distress. They recruited 57 women with a FDR with breast cancer. The average age of the participants was 42.4 years ($SD = 10.8$), and the average age of the participants at the time of their mothers’ diagnosis was 25.4 years ($SD = 13.2$). In order to determine the impact of perceived risk, the researchers used the Brief Symptom Inventory (BSI) (Derogatis & Spencer, 1993), particularly the Global Severity Index (GSI) of the BSI, to measure depressive symptoms and used the Impact of Event Scale (IES) (Horowitz, Wilner, & Alvarez, 1979) to determine intrusive thoughts and avoidance. The participants who perceived themselves as high risk for developing breast cancer had greater intrusive thoughts ($r = .33, p < .05$) and avoidance ($r = .28, p < .05$) as measured by the IES than did women who did not perceive themselves in a vulnerable category. In addition, there was a positive correlation between perceived risk and depression as measured by the GSI ($r = .41$). These positive
correlations indicated that daughters who perceived themselves at risk for breast cancer were also susceptible for experiencing greater stress and depressive symptoms.

**Role changes.** In addition to the severity of the breast cancer and the hereditary risk of breast cancer, role changes associated with a mother’s breast cancer diagnosis and treatment have also been found to cause stress for daughters. Related illness demands, such as treatment regimens of surgery, chemotherapy, radiation, and hormonal treatments, adversely influence the mother’s ability to maintain her role within the family. Due to treatments and their side effects (e.g., fatigue and nausea), the mother may not be physically able or present to perform family tasks (Leedham & Meyerowitz, 1999). When the mother is unable to fulfill her role, the family’s structure and function alter (Feldman & Broussard, 2006; Lewis et al., 1993; Visser, Huizinga, van der Graaf, Hoekstra, & Hoeskstra-Weebers, 2004; Walsh et al., 2005), and this family change constitutes a stressor for other family members (Rolland, 1994). Furthermore, “if an ill parent is incapable of fulfilling the roles that he or she previously filled, other family members may be required to adopt those roles” (Pederson & Revenson, 2005, p. 410). Role changes can especially affect the daughters as they tend to provide much support to their mothers during treatments.

Lewis and colleagues (1993) explored families’ functioning after the mothers’ diagnosis with breast cancer. Forty mothers with breast cancer, their male partners, and their young school-aged children (\(M = 9.28\) years, \(SD = 1.8\)) participated in this study. During a mother’s treatment, family routines were disrupted due to illness related demands, measured by the Demands of Illness Inventory (Haberman, Woods, & Packard, 1990). Illness related demands are events and thoughts individuals experience in response to the illness (Haberman et al., 1990). As the cancer treatments persisted, these illness related demands increased and piled up over time causing
greater family disruption and impaired coping ability and marital adjustment (Lewis et al., 1993). The elevated illness demands and marital problems negatively impinged on the mothers’ parenting ability, thus influencing the children’s adjustment and psychosocial functioning.

In an additional study, Lewis and Hammond (1996) explored adolescents’ functioning in response to their mothers’ breast cancer. The sample included 70 mothers with breast cancer, 70 partners, and their 70 adolescent children (44.3% sons, 55.7% daughters; $M = 16.3$ years, $SD = 2.1$). Illness demands were assessed by the Demands of Illness Inventory (Haberman et al. 1990), and adolescent self-esteem was measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Results indicated that greater illness demands caused more parenting problems and poorer parenting quality. Poor parenting quality was found to significantly affect the self-esteem of the adolescents. For example, the more the adolescents viewed their parents as attentive, the greater self-esteem they possessed. In addition, being an adolescent daughter of a mother with breast cancer predicted lower self-esteem than did being an adolescent son.

In addition to exploring young children and adolescents’ reactions to illness demands and role changes, the impact of illness demands specifically on the daughters of breast cancer patients has also been studied. In fact, illness demands seem to have a greater negative influence on daughters than sons because daughters often take on the role and family tasks of the mother (Lewis & Hammond, 1996; Lichtman et al., 1985; Spira & Kenemore, 2000). Daughters face a myriad of stressors as they balance caregiving, school, work, or family and social demands.

Cohen and Pollack (2005) examined the effects of illness demands and caregiving roles on adult daughters of women with breast cancer. The effects of caregiving burdens on daughters’ lives were measured by four scales that assessed (a) the frequency of meetings with their mothers; (b) amount of caregiving with washing, dressing, housework, etc.; (c) daughters’ stress
level regarding the care of their mother; and (d) the degree of disruption in the daughters’ lives. Results showed that daughters of women with advanced stages of breast cancer faced more caregiving burdens and were more involved in the care of their mothers than were daughters of mothers with less advanced stages of breast cancer.

Furthermore, approximately 70% of the participants reported some amount of disruption in their daily lives as a result of caring for their mothers during cancer treatments, and approximately 22% reported major disruption. This reported disruption and caregiving responsibilities in turn increased the daughters’ psychological distress, which was measured by the Symptom Check List (Derogatis et al., 1976) and immunologic and hormonal tests. Raveis and Pretter (2005) also found similar results in their qualitative analysis of adult daughters of mothers with breast cancer. The daughters in Raveis and Pretter’s (2005) study reported their involvement with their mothers’ care exacerbated their distress.

According to the above research, daughters may face a myriad of stressors associated with their mothers’ diagnosis of breast cancer. Not only are these daughters placed at high risk for developing breast cancer, but the severity of their mothers’ disease and changing role demands can also elicit much stress. Researchers have examined and continue to examine how these stressors may or may not affect the daughters’ psychological wellbeing.

**Psychological Stress Responses**

As daughters encounter the stressors associated with their mothers’ breast cancer, they may experience psychological distress. In the cancer literature, psychological distress has been conceptualized by a variety of measures. Researchers have measured distress by examining posttraumatic stress responses, intrusion and avoidance responses, depression, and anxiety. Most studies assessing the psychological impact of familial cancer on women have been focused on
women with a FDR with breast or ovarian cancers (e.g., Baider, Ever-Hadani, & De-Nour, 1999; Erblich et al., 2000; Kash, Holland, Halper, & Miller, 1992) and specifically on daughters with a maternal history of breast cancer (e.g., Boyer et al., 2002; Wellisch et al., 1991, 1992; Wellisch et al., 1996).

Several researchers have found women with FDRs with breast cancer display greater distress, anxiety, and depression compared to women without such histories (Baider et al., 1999; Kash et al., 1992; Valdimarsdottir et al., 1995). In a longitudinal study of 217 women \((M = 44\) years) with one or more FDRs with breast cancer (mother, sister, or daughter), Kash and others (1992) assessed the participants’ perception of their personal risk of breast cancer and how their beliefs impacted their breast cancer screening practices and psychological distress. The participants were self-referred women to a cancer prevention center and the majority of participants were white, middle to upper class, well-educated women. The BSI (Derogatis & Spencer, 1993) was used to assess the distress level of the participants. Twenty-seven percent of the participants in this study scored higher than the cutoff point of the normative range on the BSI indicating the need for psychological counseling (Kash et al., 1992). This high percentage shows almost a third of the participants in this sample experienced great amounts of distress following the diagnosis of their family member.

Baider et al. (1999) also examined the psychological impact of a family history of breast cancer on women. The researchers recruited 230 women from a one-day educational program about breast cancer. The participants were divided into three groups: (a) women with a mother who had breast cancer \((n = 176, \text{ mean age } = 37.8\) years), (b) women with a sister who had breast cancer \((n = 34, \text{ mean age } = 49.4\) years), and (c) women who had both a mother and sister who had breast cancer \((n = 20, \text{ mean age } = 50\) years). On average, the family member with cancer
was seven years post diagnosis. The BSI (Derogatis & Spencer, 1993), as well as the IES (Horowitz et al., 1979) was used to measure distress. Researchers reported that 52.6% of participants scored over the cut off point of the BSI showing psychological distress in the range of psychopathology. Furthermore, the respondents who reported the highest scores on the BSI were from the group including women who had both a mother and sister with cancer.

In addition, some researchers (Lerman et al., 1993; Lindberg & Wellisch, 2003) have found that FDRs of women with breast cancer report similar responses of distress comparable to recently diagnosed breast cancer patients (Cordova et al., 1995; Green et al., 1998). Lindberg and Wellisch (2003) recruited 73 women from a clinic for women at high risk for manifesting breast cancer. Women met study requirements if they had a mother or sister with breast cancer and had never personally been diagnosed with cancer. The mean age of the participants was 43 years, and the study sample was well educated and primarily Caucasian (79.5%). Approximately one-third (28.8%) of the sample scored above a 16 on the Center for Epidemiological Studies Depressions Scale (CES-D) (Radloff, 1977), which represents the cutoff point indicating clinically significant depressive symptoms. Furthermore, 45.5% scored above the cutoff point of the state measure of the State-Trait Anxiety Inventory (STAI) (Speilberger, 1983), and 51.9% scored above the clinical cutoff point for the STAI trait measure, indicating significant symptoms of anxiety.

Similar findings of Lindberg and Wellisch (2003) are present in Lerman’s (1993) research of 140 women who had at least one FDR with breast cancer. The participants ranged in age from 17 to 79 years with a mean age of 46 years. In addition, 91% of the respondents were Caucasian, 89% of subjects had one affected FDR, and the remaining participants had either 2 or 3 FDRs with breast cancer. Assessing post-traumatic responses to the family members’ breast cancer diagnosis, the researchers used the Intrusion subscale of the IES (Horowitz et al., 1979). The
participants’ scores on the Intrusion subscale were comparable to clinic populations receiving treatment for traumatic stress syndromes. Furthermore, 56% of participants reported having frequent “waves of feelings” about the cancer diagnosis, and 53% reported “thinking about breast cancer when [they] didn’t want to.” These intrusive thoughts caused 22% of these respondents to have trouble falling asleep, and 30% of these women reported that their worries and thoughts interfered with their daily lives. Furthermore, younger women, 29 years or younger, in this sample reported significantly higher levels of distress than did women above the age of 29 years (Lerman et al., 1993).

In addition to women with FDRs with breast cancer, daughters of women with breast cancer have been found to particularly face difficulty when adapting to the mothers’ diagnosis (Boyer et al., 2002; Visser et al., 2004). For example, Boyer and colleagues (2002) found daughters of women with breast cancer are vulnerable for posttraumatic stress disorder (PTSD) type reactions following their mothers’ diagnosis and treatment. Information on distress, measured by the PTSD Reaction Index (Pynoos et al., 1987), was gathered from 133 women with breast cancer and 64 of their daughters. The time since the diagnosis was between 11 and 69 months, and the mean age of the daughters at the time of the study was 40 years. Results indicated that 5% of the daughters scored high on the PTSD Reaction Index indicating a severe range of PTSD, and 13% of the daughters scored in the moderate range of PTSD. Furthermore, 85% of the daughters met criteria for at least two of the three PTSD clusters. The results also indicated a greater percentage of daughters (5%) reported severe posttraumatic symptoms than their mothers reported (3.6%).

Based on the above literature, daughters of mothers’ with breast cancer represent a vulnerable population. Daughters can experience high levels of depressive symptoms and may
warrant additional support and/or counseling. Not only are the daughters’ stress responses and depressive symptoms influenced by the stressors associated with their mothers’ breast cancer, but are also impacted by the coping processes daughters utilize as they face their mothers’ cancer.

Coping Processes

The literature examining the coping processes of daughters of mothers with breast cancer is somewhat limited (e.g., Raveis & Pretter, 2005; Wellisch et al., 1991, 1992). In order to provide greater depth of information, broader studies including the coping processes of mothers, sisters and daughters with a family history of breast or ovarian cancer have been integrated in this review. As women manage the stressors associated with a family history of cancer they utilize both problem-focused and emotion-focused coping. The following review describes the coping processes women use and the impact these processes have on their anxiety or distress when facing the health issues of their mothers or first degree relatives with breast or ovarian cancer.

In a quantitative, cross-sectional analysis, Geirdal and Dahl (2007) compared the coping strategies of 174 women ($M = 40.5$ years) with a family history of breast or ovarian cancer who had the absence of demonstrated mutations (ADM) with the coping strategies of 68 healthy women ($M = 42.0$ years) with BRCA1 carrier status. The relation between coping, as measured by the Coping Orientation to Problems Experienced Scale (COPE) (Carver, Scheier, & Weintraub, 1989) and anxiety, measured by the Hospital Anxiety and Depression Scale (HADS) (Bjelland, Dahl, Haug, & Neckelmann, 2002), was investigated. The authors found that the coping processes used by the participants influenced their level of anxiety (Geirdal & Dahl, 2007). For example, the most frequently used strategies of acceptance and positive
reinterpretation and growth were both significantly related to the reduced prevalence of anxiety disorders. In addition, the less frequently used emotion-focused strategies of mental disengagement and focus on venting emotions were associated with an increased prevalence of anxiety disorders. Geirdal and Dahl (2007) suggested the use of avoidance coping was linked to increased prevalence of anxiety disorders, and active coping or problem-focused coping seemed to buffer the impact of a family history of cancer on anxiety.

Turner-Cobb, Bloor, Whittemore, West, and Spiegel (2006) further explored the relation between coping and the psychological distress of 45 women, ages 19 to 61 years ($M = 38.8$ years), with a family history of breast or ovarian cancer. Participants included women with a sister, mother, or daughter with breast or ovarian cancer. The moderating effects of disengagement coping and seeking social support on the psychological wellbeing of the participants were specifically evaluated in this cross-sectional study. Positive social support had a significant relation with the participants’ level of distress measured by the STAI (Speilberger, 1983), the Profile of Mood States (POMS) (McNair, Lorr, & Droppleman, 1971), and the Perceived Stress Scale (PSS) (Cohen, Kamrack, & Mermelstein, 1983). Social support also acted as a buffering agent of distress. Similar to the findings of Geirdal and Dahl (2007), Turner-Cobb et al. (2006) found disengagement forms of coping (behavioral, mental, and alcohol-drug disengagement), measured by the COPE (Carver et al., 1989), were predictive of high levels of distress. Furthermore, within this group of participants, daughters of women with breast cancer tended to report greater distress than did mothers or sisters with a family member with breast or ovarian cancer.

In addition, Kim and colleagues (2003) compared the coping processes of women with a FDR with breast cancer ($n = 47$) to the coping processes of women without such a history ($n =$
The mean age of the participants was 43 years, and the average time since the family members’ diagnosis of breast cancer was 23 years. The relation between the participants’ coping processes, as measured by the Ways of Coping Questionnaire (WOC) (Folkman & Lazarus, 1985), and their self reported distress, measured by the IES (Horowitz et al., 1979) was examined.

Kim et al. (2003) reported participants with a family history of breast cancer used passive coping more frequently than did women without such a history. Within the group of those with a family history of breast cancer, there was a significant relation between passive coping and distress and negative affect. In other words, those who practiced passive coping experienced greater distress and negative affect than did those who did not practice these coping processes. Active coping, however, did not have a significant relation with decreased distress, but did have a significant relation with an increase in positive affect. These findings suggest that passive coping can influence the degree to which women with a family history of breast cancer experience intrusive thoughts and avoidant behaviors and can harm their positive affect.

In addition to exploring the coping of women with a FDR with breast or ovarian cancer, few studies have examined the coping processes of daughters with a maternal history of breast cancer (e.g., Raveis & Pretter, 2005; Wellisch et al., 1991, 1992). In a cross-sectional, qualitative study of 50 daughters ages 21 to 62 years, Raveis and Pretter (2005) explored daughters’ reactions to their mothers’ breast cancer. From the daughters’ self-reported responses, several common coping themes emerged which described both emotion-focused and problem-focused coping. Emotion-focused themes included denial, withdrawal, and escape-avoidance; problem-focused themes included seeking social support and problem solving.
For example, daughters described their disbelief or denial of their mothers’ diagnosis. One participant explained, “even though the doctors are saying all of this…you kind of don’t believe it” (Raveis & Pretter, 2005, p. 53). Another respondent similarly reported, “‘this cannot be my life. But I won’t-I don’t believe this’” (p. 53). One daughter described her withdrawal from and avoidance of others:

In the beginning, when it just happened, I couldn’t deal with it. I didn’t want to talk to anyone, I just wanted to lay in my bed. Like people would come to my house, I would just close them out. (p. 53)

The problem focused strategy of seeking social support is illustrated in the following participant’s recollection: “‘I just started trying to call anybody who I knew who had a wife, a mother, or somebody, to just try to find out as much as I could, to try to help [my mother]’” (p. 53). Even though the authors did not examine the direct impact of coping strategies on the anxiety or distress of the participants, the narratives within this study provided insights into the coping mechanisms daughters’ may utilize.

In addition, Wellisch and colleagues in a study series compared the psychological functioning of daughters of mothers with breast cancer with daughters without a maternal history of breast cancer (1991) and explored the influences of the daughters’ characteristics on their psychological adaptation to their mothers’ breast cancer (1992). In both studies, participants’ coping was examined by the WOC (Folkman & Lazarus, 1985). The 60 participants ranged from 18 to 65 years; 30 of the women’s mothers were still living at the time of the study, and 30 of the women’s mothers were deceased. Within this population, seeking social support and problem-focused coping were the most commonly used processes and accounted for 34.2% of the
variance (Wellisch et al., 1991). Avoidant strategies and rumination were used at lower frequencies (Wellisch et al., 1991).

Even though Wellisch and colleagues (1991, 1992) did not directly examine the relation between coping strategies and psychological distress responses, they did notice trends in their results. For example, in the 1992 study, the researchers concluded that those respondents who practiced problem-focused coping made steps toward reducing anxiety and gaining increased control over their lives and health by taking an active approach to their mothers’ cancer. They further reported women who were not resolving their feelings or positively coping with their mothers’ illness seemed to believe that their mothers’ cancer had altered their life course and felt related anxiety (Wellisch et al., 1992).

**Hypotheses**

Based on the above review of literature, women with a family history of breast cancer can represent a vulnerable population. Particularly, daughters of mothers with breast cancer seem to be the family member most at risk as they tend to display high levels of distress and depressive symptoms. Researchers included in this literature review examined the relations between coping processes of women with a family history of breast or ovarian cancer and their psychological wellbeing, but few researchers have examined the link between coping and psychological stress of young adult daughters with mothers with breast cancer. The present study was therefore designed to further the current research on daughters,’ specifically young adult daughters,’ coping processes as they face their mothers’ breast cancer. The purpose of this study was to explore the relations between the coping processes of young adult daughters, measured by the Ways of Coping Questionnaire, and daughters’ self-reported stress response symptoms,
measured by the Impact of Event Scale. Specifically, the study was aimed to examine the following hypotheses:

1. The coping process of seeking social support will have a negative relation with participants’ stress response symptoms.

2. The coping process of planful problem solving will have a negative relation with participants’ stress response symptoms.

3. The coping process of distancing will have a positive relation with participants’ stress response symptoms.

4. The coping process of escape-avoidance will have a positive relation with participants’ stress response symptoms.
Chapter 3

Method

The following chapter contains information concerning the methodology of this study. This section includes (a) an explanation of the recruitment procedures, (b) descriptions of the participants, (c) descriptions of the measures, (d) and information regarding data analysis for the study.

Recruitment Procedures

Participants were recruited over a twelve month period via several means. The present study was announced in both undergraduate and graduate classes at The University of Georgia (UGA) (e.g., CHFD 5130/7130, CHFD 4810, EDEC 7200). Students who were interested were given questionnaire packets or were referred to the URL for the online format of the questionnaire. Study information was also filtered through students by word of mouth. Interested students who fit the study criteria either completed the online questionnaire or were given a paper copy of the survey from the class professor. Furthermore, questionnaire packets with addressed, stamped envelopes and flyers were placed at The Breast Health Clinic at The Kirklin Clinic at The University of Alabama-Birmingham Hospital (see Appendix A for study flyer). If interested, clinic patients were able to take the surveys home for their daughters to complete and mail to the researcher. Study flyers were also circulated through one of the Loran Smith breast cancer support group meetings at Athens Regional Medical Center. The study information was also sent to the Loran Smith support group listserv.
In addition, several online means to recruit participants were also used. The University of Georgia Research Services made the online questionnaire available. The study information (see Appendix B for information email) and URL were sent to several UGA listservs including the Child and Family Development Majors/Minors listservs, the PreK-2nd grade emphasis undergraduate joint program class of 2009 and 2010 listservs, and the Master of Arts in Teaching students in joint CFD-ECE program and faculty listservs.

Another online means of recruitment included study postings on forums and professional association discussion boards and community listservs. Prior to postings, approval was obtained from IRB and the site managers and/or administrators. For approximately 12 months, the study was placed on the following websites: http://psych.hanover.edu, www.facebook.com, and Project Promote Pink. Study information and the URL were also sent to approximately six community listservs including undergraduate sorority chapters at Auburn University, local churches, camp volunteer groups, and city school employee listservs. The informative email was also distributed by a snowball effect. The researcher sent the study information to colleagues, friends, and family members, and they then were asked to forward the study link to their co-workers, peers, family, and friends.

The study flyers, questionnaire packet, and information email notified the potential participants that the study was completely voluntary and their responses would remain confidential. The potential participants were given the option of completing the questionnaire online or in hardcopy format. Participants who wanted to use a hardcopy version printed the online version to complete and then mailed the completed questionnaire packet to the researcher in an envelope with no return address. Participants gave consent by completing and submitting the questionnaire (see Appendix C for hardcopy of consent letter). Before proceeding with the
questionnaire, those completing the online format read the consent letter and clicked the “I AGREE” icon that permitted them to continue (see Appendix D for online consent letter).

**Participants**

The eligibility requirements for the study included young adult females, between the ages of 18 and 30 years, who had a mother who had been diagnosed with breast cancer within the previous two years, was currently undergoing treatment, and had not had a recurrence of breast cancer. Additionally, the participant or other immediate family members other than the mother (e.g., father, sibling, child) must had never been diagnosed with any type of serious illness (e.g., cancer, diabetes, congenital heart defect).

There was a total of 103 responses to the survey. Of the total responses, 32 participants (31%) fit the study criteria and completed surveys. Eight of the 32 participants (25%) completed paper copies of the questionnaire, and the remaining 24 participants completed the survey online. Within the 103 total respondents, 11 participants completed questionnaires, but did not fit the study criteria: one participant was too young at the time of her mother’s diagnosis; one participant had a father diagnosed with heart disease; and nine participants had a mother who was diagnosed with breast cancer over two years ago. Furthermore, 17 of the respondents had empty data sets, and 43 of the respondents only had a few items answered on the questionnaire and were therefore not included in the study.

**Measures**

Each participant was asked to complete a questionnaire packet (see Appendix E). The questionnaire included demographic and breast cancer items as well as self-report measures of coping processes and psychological stress responses. Each section of the questionnaire is described below.
**Demographic items.** Participants were asked to respond to eight demographic items. These items included the participants’ (a) current age, (b) ethnicity, (c) religious background, (d) highest level of education, (e) current occupation, (f) income, (g) marital status, and (h) number of children.

**Breast cancer items.** Data regarding the mothers’ breast cancer were also gathered. Eight items were focused on the stage of the breast cancer, when the mother was diagnosed, and types of treatments that the mother had experienced. For example, participants were prompted to recall what types of treatments their mothers encountered and the mothers’ cancer related symptoms or side effects of treatment.

Eleven items comprised the breast cancer symptoms portion of the questionnaire. For 10 of these items, the participants were asked to rate the extent their mothers experienced the side effects: (1) *not at all*, (2) *a little*, (3) *somewhat*, (4) *quite a bit*, and (5) *very much*. If the participant did not know the stage of the cancer or the treatments and symptoms their mothers experienced they could click or circle the *I don’t know* category. Listed symptoms encompassed hot flashes, mood swings, nausea, vomiting, diarrhea, general aches and pains, weight gain, weight loss, loss of energy, and hair loss. For the last symptom item participants were asked to describe side effects their mothers may have experienced in addition to the listed symptoms.

**Ways of Coping Questionnaire.** In this study, coping was measured by using the Revised Ways of Coping Checklist also known as the Ways of Coping Questionnaire (WOC) (Folkman & Lazarus, 1985). This theoretically derived checklist has allowed researchers to explore the relation between coping and stress and adaptational outcomes (Folkman & Lazarus, 1985). Because individuals’ coping changes over time in response to various stressors or the same stressor, this instrument was developed to assess coping processes, not coping styles. In
order to be able to assess coping styles, Folkman and Lazarus (1988) suggested that a researcher would need to “assess an individual’s coping processes in a range of stressful encounters, then evaluate consistencies in those processes across encounters” (p. 1). Thus for the present study, the WOC was used to assess the coping processes daughters utilized specifically in response to their mothers’ breast cancer.

The WOC is a 66-item questionnaire containing the thoughts and actions people use to handle the demands of a specific stressful situation. Respondents are asked to indicate on a 4-point Likert scale how frequently they use each thought and action when managing a certain stressful situation (0 = does not apply or not used, 1 = used somewhat, 2 = used quite a bit, and 3 = used a great deal). Within the scale there are eight coping subcategories: confrontive coping (6 items), distancing (6 items), self-controlling (7 items), seeking social support (6 items), accepting responsibility (4 items), escape-avoidance (8 items), planful problem solving (6 items), and positive reappraisals (7 items) (Folkman & Lazarus, 1985). Sample items include, “I tried to analyze the problem in order to understand it;” “I hoped for a miracle;” and “I slept more than usual.” The greater the score within each subcategory the more often the participant used the particular coping process.

Folkman and Lazarus (1988) suggested the WOC should be adjusted to the specific context and purpose of each study. Due to the instability in factor structure of the scale, some researchers have performed factor analyses on the WOC for their own samples (Kim et al., 2003). Thus, in this study only four of the eight coping processes were examined: planful problem solving, seeking social support, distancing, and escape-avoidance (see Appendix F for items on each subscale). These four subscales were chosen for several reasons: (a) the four subscales represented two problem-focused coping processes and two emotion-focused coping
processes (Folkman & Lazarus, 1985), (b) the four subscales were found to have adequate factor loadings (see Appendix G) in previous studies (e.g., Folkman & Lazarus, 1988; Kim et al., 2003), (c) these four coping processes were represented in the breast cancer literature (e.g., Geirdal & Dahl, 2007; Kim et al., 2003; Raveis & Pretter, 2005; Turner-Cobb et al., 2006; Wellisch et al., 1991), and (d) the thesis committee for this study suggested that the survey be shortened from the eight coping subscales previously selected. The study questionnaire included the items encompassing each of the four subscales, a total of 26 items, as well as nine other items which Folkman and Lazarus (1985) did not designate to a certain coping subscale. In the present study, the nine additional items were calculated in the total coping score of the participants, but were not used in the coping subcategory calculations. Therefore, the WOC section of the study questionnaire included 35 items.

The face, construct, and discriminant validities of the WOC have been confirmed. The face validity of the instrument has been established because the strategies included in the WOC came from individuals who reported using them while handling a stressful situation (Folkman & Lazarus, 1988). The consistent, relative associations of the WOC subscales with measures of anxiety and depression have verified its construct validity (Vitaliano, Russo, Carr, Maiuro, & Becker, 1985). For example, Vitaliano and colleagues (1985) found a significant correlation between the problem-focused subscale and depression ($r = .62, p < .001$). Furthermore, when controlling for the type of stress, researchers have not found significant relations between the scales and demographic factors such as age and gender (Folkman & Lazarus, 1980; McCrae, 1982; Vitaliano et al., 1985).

The reliability of the WOC has also been substantiated. In a study assessing the coping processes of 75 married couples, Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen
(1986) reported the following alphas for each subscale: confrontive coping $\alpha = .70$, distancing $\alpha = .61$, self-controlling $\alpha = .70$, seeking social support $\alpha = .76$, accepting responsibility $\alpha = .66$, escape-avoidance $\alpha = .72$, planful problem-solving $\alpha = .68$, and positive reappraisal $\alpha = .79$. Furthermore, in a study concerning the psychometric properties of the WOC, Lundqvist and Ahlstrom (2006) reported a Cronbach alpha of .86 for the entire scale and the following alphas for the eight subscales: confrontive coping = .64, distancing = .68, self-controlling = .59, seeking social support = .73, accepting responsibility = .71, escape-avoidance = .64, planful problem solving = .73, and positive reappraisal = .76. Kim et al. (2003) further reported satisfactory internal consistency for the passive ($\alpha = .80$) and active coping ($\alpha = .79$) subscales. Acceptable internal consistency for the WOC was also present in the current study: total scale $\alpha = .86$, seeking social support $\alpha = .77$, distancing $\alpha = .75$, and escape avoidance $\alpha = .79$. The only subscale that did not have adequate reliability was planful problem solving, $\alpha = .41$.

**Impact of Event Scale.** The Impact of Event Scale (IES) (Horowitz et al., 1979) was used to examine individuals’ psychological responses to a specific stressor. The measure was developed to classify psychological responses into two different sets: intrusion and avoidance. Intrusion refers to responses such as repetitive behavior, nightmares, and unbidden thoughts. Avoidance responses include those of emotional numbness and denial. The statements on the questionnaire were developed from frequent statements made by individuals who had recently experienced a stressful life event.

The instrument includes 15 statements (7 intrusion items and 8 avoidance items). Respondents indicate how frequently they have experienced each statement in reaction to a particular stressful life event: *not at all* = 0, *rarely* = 1, *sometimes* = 3, and *often* = 5. Scores range from 0-75 for the entire scale, 0-35 for the intrusion subscale, and 0-40 for the avoidance subscale.
subscale. Higher scores indicate greater frequency of intrusive thoughts and avoidance (Horowitz et al., 1979). Example items include “I thought about it when I didn’t mean to;” “I tried to remove it from memory;” and “I had waves of strong feelings about it” (see Appendix H for items on subscales). For the purposes of this study, the stressful life event was the diagnosis of the mothers’ breast cancer, and participants were asked to select their responses in regard to that event.

The face and convergent validity have been substantiated for the IES within the breast cancer literature (Thewes et al., 2001). The face validity of the IES has been confirmed by women at increased risk of breast cancer who reported that this scale was a relevant measure of stress responses of women affected by a history of familial breast cancer (Thewes et al., 2001). In this same study, the convergent validity was also confirmed. The IES was significantly correlated with the State component of the State-Trait Inventory ($r = .44$) and with health-related attitudes and concerns as measured by the Whitely Index ($r = .54$) (Thewes et al., 2001).

Discriminant validity for the IES has also been established. In four different studies (Lloyd, Watson, & Waites, 1996; McCaul, Branstetter, O'Donnel, Jacobson, & Quinlan, 1998; Valdimarsdottir et al., 1995; Zakowski et al., 1997), women with a family history of breast cancer reported significantly higher levels of intrusion and avoidance as measured by the IES than women with no family history of breast cancer (Thewes et al., 2001). Bryant and Harvey (1996) further found that the IES was able to show differentiations between individuals who have been diagnosed with posttraumatic stress disorder from those who have not received this diagnosis. These findings indicate that the IES is able to distinguish the stress responses between different groups.
The reliability of the measure has been reported (Horowitz, 1982; Thewes, Meiser, & Hickie, 2001; Zakowski et al., 1997). Through the initial substantiation of the IES on stress clinic outpatients and medical students, Horowitz and colleagues (1979) established the internal consistency of the total scale with an alpha of .86. The Cronbach’s alpha of the intrusion subscale was reported as .78, and the alpha of the avoidance subscale was reported as .82. A correlation of .42 (p > 0.0002) between the two subscales has been confirmed, which indicates that the two subscales are moderately associated and both reflect the construct of general distress. Horowitz et al. (1979) also reported the test-retest reliability of the total scale to be .87, .89 for the intrusion subscale, and .79 for the avoidance subscale.

The reliability has been further demonstrated in studies involving women at high risk of hereditary breast cancer (Thewes et al., 2001; Zakowski et al., 1997). In their study of 217 women, Zakowski and colleagues (1997) reported a strong internal consistency for the entire scale (α = .91) and test-retest reliability over a 4-8 week period (total scale, r = .87; intrusion, r = .89; and avoidance, r = .79). Satisfactory internal consistency alpha coefficients (.88 for intrusion, .84 for avoidance, and .91 for the total scale) were further confirmed in a study of 480 women at increased risk of inheriting breast cancer (Thewes et al., 2001). This same study yielded test-retest reliability coefficients of .75 for intrusion, .78 for avoidance, and .80 for the total IES. In addition, the reliability of the IES was validated in the present study: total scale α = .85, intrusion subscale α = .73, and avoidant subscale α = .87.

Data Analysis

In order to examine the four hypotheses, several analyses were run. Means, standard deviations, and frequencies were run on the demographic variables and breast cancer variables. In addition, means and standard deviations were computed for the coping processes and stress
response symptoms. Pearson correlations were used to examine the relations between coping and participants’ psychological stress response symptoms. In order to examine each of the four hypotheses, Pearson correlation coefficients were computed between the scores of the coping processes outlined by the WOC and the total scores of the IES, as well as the two subscales of the IES.
Chapter 4

Results

Results of the study are presented in this chapter. The results are divided into four sections: (a) demographic descriptive statistics, (b) breast cancer descriptive statistics, (c) the Ways of Coping and the Impact of Event Scale total scores and descriptive statistics, and (d) the outcomes of each hypothesis.

Demographic Descriptive Statistics

The 32 participants ranged in age from 18 to 30 years ($M = 24.06$, $SD = 3.698$). At the time of their mothers’ diagnosis of breast cancer, the participants ranged in age from 16 to 30 years ($M = 23$, $SD = 3.663$). The majority of the participants were Caucasian (90.6%), one participant was African-American, one participant was Hispanic/Latino, and one participant was of Middle Eastern/Arabian descent (see Table 1 for demographic items). The educational level of the participants varied: (a) 3.1% of participants had not graduated high school, (b) 9.4% of participants had completed high school or received their GED, (c) 3.1% of participants attended technical or vocational school, (d) 25% of participants had completed some college, (e) 34.4% had received bachelor degrees, and (f) 25% had completed a master’s degree. Seventy-five percent of the participants were single, 18.8% were married, and 6.3% had live in partners. Seven of the participants (21.9%) had children.

Breast Cancer Descriptive Statistics

The participants were asked to answer items concerning their mothers’ stage of breast cancer, their mothers’ treatments, and their mothers’ experienced side effects of their cancer and
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<td>6.3%</td>
<td>2</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>75.0%</td>
<td>24</td>
</tr>
<tr>
<td>Married</td>
<td>18.8%</td>
<td>6</td>
</tr>
<tr>
<td>Live in partner</td>
<td>6.3%</td>
<td>2</td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>21.9%</td>
<td>7</td>
</tr>
<tr>
<td>No</td>
<td>78.1%</td>
<td>25</td>
</tr>
</tbody>
</table>
treatments. Per the participants’ reports, 28.1% of the mothers had Stage I breast cancer, 15.6%
had Stage II, 12.5% had Stage III, and 9.4% had Stage IV. Eleven of the participants (34.4%)
indicated that they did not know the stage of their mothers’ breast cancer.

The types of surgeries the daughters reported their mothers received during their
treatments are recorded below in Table 2. The majority of the daughters reported that their
mothers received a lumpectomy (56.3%) and an axillary node dissection (59.4%), but fewer
participants reported that their mothers received a single mastectomy (34.4%), double
mastectomy (15.6%), or breast reconstruction (34.4%).

Table 2
The Frequency of Surgeries Mothers Experienced (N = 32)

<table>
<thead>
<tr>
<th>Type of Surgery</th>
<th>Yes</th>
<th>No</th>
<th>Daughter Did Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Lumpectomy/Partial Mastectomy</td>
<td>18</td>
<td>56.3</td>
<td>11</td>
</tr>
<tr>
<td>Axillary Node Dissection</td>
<td>19</td>
<td>59.4</td>
<td>10</td>
</tr>
<tr>
<td>Single Mastectomy</td>
<td>11</td>
<td>34.4</td>
<td>17</td>
</tr>
<tr>
<td>Double Mastectomy</td>
<td>5</td>
<td>15.6</td>
<td>24</td>
</tr>
<tr>
<td>Breast Reconstruction</td>
<td>11</td>
<td>34.4</td>
<td>14</td>
</tr>
</tbody>
</table>

In addition to the mothers’ surgeries, the participants also reported the types of adjunct
treatments the mothers received. The majority of the mothers received chemotherapy (75%) and
radiation (71.9%) (see Table 3). Four of the participants (12.5%) stated their mothers received
other forms of treatment, but they did not specify the types of treatments.

Furthermore, the frequencies of the daughters’ perceptions of the extent to which their
mothers experienced symptoms or side effects during treatment are recorded below in Table 4.
The majority of the mothers (62.5%) experienced very much hair loss and over half (56.3%)
experienced very much loss of energy. In addition, few daughters reported that their mothers had experienced great amounts of nausea, vomiting, diarrhea, weight loss, or weight gain.

Table 3
The Frequency of Treatments Mothers Experienced (N = 32)

<table>
<thead>
<tr>
<th>Type of Treatment</th>
<th>Yes</th>
<th>No</th>
<th>Daughter Did Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>24</td>
<td>75.0</td>
<td>7</td>
</tr>
<tr>
<td>Radiation Therapy</td>
<td>23</td>
<td>71.9</td>
<td>5</td>
</tr>
<tr>
<td>Hormone Therapy</td>
<td>9</td>
<td>28.1</td>
<td>11</td>
</tr>
<tr>
<td>Other Treatments</td>
<td>4</td>
<td>12.5</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 4
The Extent of Side Effects and Symptoms Mothers Experienced (N = 32)

<table>
<thead>
<tr>
<th>Symptom/Side Effect</th>
<th>Not at All</th>
<th>A little</th>
<th>Somewhat</th>
<th>Quite a Bit</th>
<th>Very Much</th>
<th>Daughter Did Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Flashes</td>
<td>9.4%</td>
<td>21.9%</td>
<td>21.9%</td>
<td>9.4%</td>
<td>18.8%</td>
<td>18.8%</td>
</tr>
<tr>
<td>Mood Swings</td>
<td>18.8%</td>
<td>21.9%</td>
<td>25.0%</td>
<td>12.5%</td>
<td>18.8%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Nausea</td>
<td>18.8%</td>
<td>15.6%</td>
<td>28.1%</td>
<td>28.1%</td>
<td>9.4%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Vomiting</td>
<td>37.5%</td>
<td>25.0%</td>
<td>12.5%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>28.1%</td>
<td>9.4%</td>
<td>9.4%</td>
<td>15.6%</td>
<td>3.1%</td>
<td>34.4%</td>
</tr>
<tr>
<td>General Aches and Pain</td>
<td>3.1%</td>
<td>3.1%</td>
<td>15.6%</td>
<td>31.1%</td>
<td>40.6%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Weight Gain</td>
<td>56.3%</td>
<td>3.1%</td>
<td>25.0%</td>
<td>3.1%</td>
<td>3.1%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Weight Loss</td>
<td>46.9%</td>
<td>15.6%</td>
<td>12.5%</td>
<td>12.5%</td>
<td>3.1%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Loss of Energy</td>
<td>3.1%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>28.1%</td>
<td>56.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hair Loss</td>
<td>18.8%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>3.1%</td>
<td>62.5%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Participants were also asked to list any other symptoms or problems that their mothers experienced throughout their treatments. Twelve participants listed additional symptoms and the listed symptoms included three common themes: fatigue, depression/anxiety, and redness and blistering of skin. Other side effects included lymphedema, seizures, and bone pain. One participant stated that her mother experienced “constant fatigue, couldn’t even get out of bed,”
and another participant stated that her mother’s “anxiety level was much higher; [her mother] was prescribed medicine for it.”

The Ways of Coping Questionnaire and the Impact of Event Scale Descriptive Statistics

The means, standard deviations, and ranges of the total scores of the Ways of Coping Questionnaire and each of the four subscales are listed below in Table 5. Seeking social support coping ($M = 7.38$) was used more frequently than the others, and planful problem solving ($M = 4.94$) was the least implemented coping process. The two most commonly used coping items participants reported were “I looked for the silver lining, so to speak; I tried to look on the bright side of things” ($M = 1.97$), and “I just concentrated on what I had to do next – the next step” ($M = 1.94$). Ironically, one of these items was on the distancing subscale and one item on the planful problem solving scale, which two coping processes participants reported using less often (see Table 5). In addition, the two least commonly reported coping items were on the planful problem solving subscale and the escape avoidance subscale: “I changed something so things would turn out all right” ($M = 0.19$), and “I refused to believe that it had happened” ($M = 0.25$).

<table>
<thead>
<tr>
<th>Coping Process</th>
<th>M (SD)</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ways of Coping Total Score</td>
<td>36.69 (12.69)</td>
<td>11</td>
<td>62</td>
</tr>
<tr>
<td>Seeking Social Support</td>
<td>7.38 (3.35)</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Planful Problem Solving</td>
<td>4.94 (2.45)</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Distancing</td>
<td>5.00 (3.32)</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Escape-Avoidance</td>
<td>6.81 (4.25)</td>
<td>0</td>
<td>17</td>
</tr>
</tbody>
</table>

In addition, the means, standard deviations, and ranges of the total scores of the Impact of Event Scale and its’ two subscales are highlighted in Table 6. Participants in this study reported having more intrusive thoughts ($M = 17.72$) than they reported having avoidant tendencies ($M =
Horowitz (1982) classified the total scores of the IES in ranges that indicate low (< 8.5), medium (8.6 to 19.0), or high (> 19.0) levels of clinical concern. The mean score of the IES for the current sample was 30.69, which score shows that this sample on average displayed high levels of stress responses and may need further assessment or clinical assistance. Moreover, 71.9% (n = 22) of the participants had IES total scores that were above the cutoff point of 19, indicating a high clinical concern. Ten of the participants (28.1%) had scores within the range that implied moderate levels of stress. The participants most commonly reported experiencing the following thoughts, all of which are included on the intrusion subscale: “I thought about my mother’s breast cancer when I didn’t mean to” (M = 3.75); “I had waves of strong feelings about it” (M = 3.5); and “Other things kept making me think about it” (M = 2.59). The three least frequently reported behaviors or thoughts were included on the avoidance subscale: “I stayed away from reminders of it” (M = 0.81); “I tried to remove it from memory” (M = 1.29); and “I tried not to talk about it” (M = 1.38).

Table 6
Descriptive Statistics of the Impact of Events Scale (N = 32)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>M (SD)</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>IES Total Score</td>
<td>30.69 (12.95)</td>
<td>10</td>
<td>51</td>
</tr>
<tr>
<td>Intrusion</td>
<td>17.72 (7.10)</td>
<td>7</td>
<td>35</td>
</tr>
<tr>
<td>Avoidant</td>
<td>12.97 (8.50)</td>
<td>0</td>
<td>29</td>
</tr>
</tbody>
</table>

Testing of Hypotheses

Hypothesis One. The coping strategy of seeking social support was hypothesized to have a negative relation with the participants’ reported stress response symptoms, as measured by the IES. Seeking social support was the most frequently used coping strategy (see Table 5) and had a weak negative correlation (r = -.040) with stress response symptoms (IES total), but this
correlation was not significant \((p = .415)\). Correlations between seeking social support and both of the subscales of the IES, intrusion and avoidant, were also computed. These correlations were in the predicted direction (intrusion \(r = -.035\), avoidant \(r = -.031\)), but were not significant (intrusion \(p = .425\), avoidant \(p = .432\)) (see Table 7).

Table 7

<table>
<thead>
<tr>
<th>Coping Strategy</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. WOC Total</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Seeking Social Support</td>
<td>.415**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Planful Problem Solving</td>
<td></td>
<td>.070</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Distancing</td>
<td>.629***</td>
<td>-.136</td>
<td>.333*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Escape-Avoidance</td>
<td>.805***</td>
<td>.213</td>
<td>.454**</td>
<td>.443**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. IES Total</td>
<td>.718***</td>
<td>-.040</td>
<td>.498**</td>
<td>.566***</td>
<td>.802***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Intrusion Subscale</td>
<td>.470**</td>
<td>-.035</td>
<td>.374*</td>
<td>.197</td>
<td>.690***</td>
<td>.794***</td>
<td></td>
</tr>
<tr>
<td>8. Avoidant Subscale</td>
<td>.702***</td>
<td>-.031</td>
<td>.447**</td>
<td>.699***</td>
<td>.645***</td>
<td>.861***</td>
<td>.375*</td>
</tr>
</tbody>
</table>

*\(p < .05\)

**\(p < .01\)

***\(p = .000\)

**Hypothesis Two.** It was hypothesized that planful problem solving would have a negative relation with the participants’ reported stress response symptoms. This hypothesis was not supported in the present study. Planful problem solving had a significant, positive correlation with the stress response symptoms (IES total) \((r = .498, p = .002)\), as well as with the intrusion subscale \((r = .374, p = .018)\) and avoidant subscale \((r = .447, p = .005)\) (see Table 7). Therefore, the more often the daughters used planful problem solving as a coping strategy, the more stress response symptoms they reported.

**Hypothesis Three.** Distancing was hypothesized to have a positive relation with the participants’ reported total stress response symptoms (IES total). This hypothesis was confirmed \((r = .566, p = .000)\). Distancing also had a significant correlation with the avoidant subscale \((r = \)
.699, \( p = .000 \)), but did not have a significant correlation with the intrusion subscale (\( r = .197, p = .140 \)) (see Table 7).

**Hypothesis Four.** It was hypothesized that escape-avoidance coping would have a positive correlation with stress response symptoms (IES total). This hypothesis was confirmed and the correlation was significant (\( r = .802, p = .000 \)). There were also significant, positive correlations between escape-avoidance coping and the intrusion subscale (\( r = .690, p = .000 \)) and the avoidant subscale (\( r = .645, p = .000 \)) (see Table 7).
Chapter 5

Discussion

The purpose of this study was to explore how various coping processes relate to the reported stress response symptoms of daughters as they cope with their mothers’ breast cancer. The associations between the coping processes of seeking social support, planful problem solving, distancing, and escape-avoidance and the daughters’ stress response symptoms are discussed below. The limitations of the present study, implications, and future directions for research are also reported in this chapter.

Hypothesis One

Seeking social support was hypothesized to have a negative relation with the reported stress response symptoms of the participants. Therefore, the more often daughters utilized social support, the fewer stress responses they encountered during their mothers’ breast cancer diagnosis and treatment. Results from this study showed that there was a very small insignificant negative correlation between seeking social support and stress responses.

Within the breast cancer literature it is inconclusive if seeking social support is related to the decrease of distress and anxiety of daughters. Similar to the results of this study, Kim et al. (2003) reported that active coping styles, including seeking social support, did not have a significant relation with a decrease of stress response symptoms. However, Turner-Cobb and colleagues (2006) found that seeking positive social support had a significant negative correlation with distress and served as a moderator of distress.
This discrepancy in the literature can be attributed to the variation of coping scales that have been used to measure the same construct of seeking social support. The present study and Kim et al. (2003) used the Ways of Coping Questionnaire (WOC). Turner-Cobb et al. (2006), however, used the Coping Orientation to Problems Experienced Scale (COPE) (Carver et al., 1989), the Yale Social Support Index (Seeman & Berkman, 1998), and the Single-Item Measure of Social Support (SIMSS) (Blake & McKay, 1986). The WOC is intended to measure the extent to which participants used various coping processes in response to stressful events, and only six of the 66 items are focused on seeking social support (Folkman & Lazarus, 1985). The items on the Yale Social Support Index are targeted to assess social networks in regards to the number of contacts, the quality of support, and the participants’ satisfaction of their received support (Seeman & Berkman, 1998). In addition, the SIMSS assesses practical support participants’ received by asking how many people they consider they can count on for help in times of difficulty (Blake & McKay, 1986).

Social support is intended to be described in regards to the size of a person’s social network and the quality of support a person receives from their network (Folkman & Lazarus, 1985). The items on the WOC, however, do not differentiate between positive or negative social support. Authors of the WOC defined seeking social support as the “efforts to seek information support, tangible support, and emotional support” (Folkman & Lazarus, 1988, p. 7). Therefore, the social support daughters reported in the present study may have been negative relationships, thus causing more distress. Researchers have found that negative or aversive support and network support are not significant moderators of distress (Turner-Cobb et al., 2006).

Even though social support can buffer the harmful psychological, psychosocial, and physical impacts of stressful events (e.g., Brown et al., 2007; Lakey & Cohen, 2000; Lepore,
2001; Lewis, et al., 1993), there are several problems present in the social support literature. Namely, researchers have yet to provide a consistent conceptualization and operationalization of social support (Lakey & Cohen, 2000; Sarason, Levine, Basham, & Sarason, 1983; Thoits, 1982). It is difficult to define social support because it is a multidimensional concept. For example, researchers can measure social support by assessing the amount of support, the quality of support, the types of support, and the source of support (Thoits, 1982). As mentioned above, there are numerous social support instruments that are used in the literature and each of these instruments measure social support differently and have varying definitions of social support. Perhaps interviews and qualitative work could also provide needed insights into what constitutes social support for young individuals with mothers with breast cancer.

In addition, the outlets for seeking social support have changed throughout the last few decades. Recently young adults and teenagers have been using the Internet as a way of finding support networks (e.g., facebook, myspace, blogging, and chat rooms) (Ellison, Steinfield, & Lampe, 2007; Pfeil, Arjan, & Zaphiris, 2009). Due to this increase in online support networks, researchers have recently worked to determine if online support networks are beneficial and provide means of coping. In a study of 33,959 freshman students in Taiwan, Huang (2006) found that the young adults who relied and were dependent on online chatting presented weaker signs of identity and intimacy development, and therefore had trouble building strong, trusting relationships. Moreover, those who use blogging tend to display more symptoms of depression and anxiety and are less content with their friend closeness and face-to-face friends than those who do not blog (Baker & Moore, 2008). This change in the means of seeking social support may account for the weak correlation between coping and the stress response symptoms of the present sample. Daughters who may have relied on online networks may not have found
adequate support. In addition, the seeking social support scale of the WOC may not be able to tap into social support through online networking.

**Hypothesis Two**

Planful problem solving had a significant positive correlation with the daughters’ stress responses. The more often daughters used planful problem solving as a coping strategy, the greater stress response symptoms they reported. In addition, the participants reported using this strategy less frequently than they did the other three strategies.

This finding is not consistent with previous research on coping of daughters with breast cancer. Wellisch et al. (1991, 1992) found that problem-focused coping, including planful problem solving, was used more frequently than emotion-focused coping. Wellisch and colleagues (1991, 1992) also concluded that those who actively sought control of the stressful situation, by problem solving and planning, encountered less anxiety or distress. Differences between study samples may account for disparate findings. In contrast to the present study, Wellisch et al. (1991, 1992) placed no limit on how many years the participants’ mothers were post diagnosis, and 50% of the mothers were deceased. In addition, the participants were much older ($M = 42.4$ years) than the current sample ($M = 24.06$ years). Because the participants in Wellisch’s study series were on average 18 years older than those in the current sample, the respondents in Wellisch’s studies may acquired more positive problem solving strategies. These differences in the samples may account for some of the variance in the results.

The positive correlation between planful problem solving and the daughters’ stress response symptoms could be attributed to several factors. First, problem focused strategies have been found to be used more frequently when the stressful encounters are perceived as changeable, and one can take control of the situation (Lazarus & Folkman, 1984). Moreover, in
situations that are appraised as unchangeable, like a cancer diagnosis, problem-focused strategies are used less often. In this study, the participants’ mothers were two years or less post-diagnosis with breast cancer. Because the breast cancer diagnosis was relatively recent, within the last two years, daughters may not have found the resources yet to help them problem solve when stressors appeared due to their mothers’ treatments and side effects.

Secondly, there was a moderate degree of positive correlation between planful problem solving and the emotion-focused coping strategies of distancing and escape-avoidance (see Table 7). This similarity among subscales might explain the result of the positive correlation between planful problem solving and the daughters’ stress responses. In addition, planful problem solving had a very weak, insignificant positive correlation with the active coping strategy of social support. For the present study, these intercorrelations illustrate that the items comprising planful problem solving were scored more similarly to those found on the distancing and escape-avoidance subscales than those found on the seeking social support scale. Therefore, it seems as though the planful problem solving subscale may have been measuring similar constructs to distancing and escape-avoidance, emotion-focused strategies that usually are associated with more distress and less adaptation.

Thirdly, as participants tried to use more problem focused strategies while coping with their mothers’ breast cancer, they may have encountered greater stress as they realized they had little or no control over their mothers’ diagnosis, treatment, or prognosis. Loss of control is a common theme when individuals face chronic illness, and the sense of not having control can result in a sense of powerlessness (Miller, 1983). Also, the items on the planful problem solving subscale may not have been an accurate assessment of the daughters attempts to problem solve. A few of the items were not appropriate for this sample. For example, the item “I drew on my
past experiences; I was in a similar position before,” may not have been a suitable indicator of the participants’ problem solving, because this sample had never had a close family member diagnosed with a serious, chronic illness. Similarly, daughters may have had negative reactions to the item “I knew what had to be done, so I doubled my efforts to make things work,” because they may not have known what steps they could take to help their mothers during treatment. Moreover, the daughters may have been unsuccessful in trying to solve problems associated with their mothers’ diagnosis, therefore encountering more distress. Also, due to the relatively young age (range = 18-30 years, M = 24.06 years) of the present sample, the participants may not have had the maturity or cognitive skills to successfully apply problem-solving techniques as they coped with their mothers’ illness.

**Hypothesis Three**

The coping process of distancing had a significant, positive correlation with the participants’ self-reported stress response symptoms, therefore confirming the hypothesis. The more often the participants employed distancing as a coping mechanism, the greater amounts of stress they encountered. This finding is congruent with the results of other studies that looked at the buffering affect of coping strategies on women as they coped with a family history of breast or ovarian cancers (e.g., Geirdal & Dahl, 2008; Kim et al., 2003; Turner-Cobb et al., 2006).

Kim et al. (2003) found that those with a first degree relative with breast cancer who practiced passive coping strategies, including distancing, reported higher levels of breast cancer related distress than those who practiced active coping strategies. Both the WOC and IES were used in Kim’s study, but the mean age of the sample (M = 43 years) was significantly greater than that in the current sample. Furthermore, by using different scales to assess coping strategies (COPE) and distress (STAI and PSS), Turner-Cobb et al. (2006) also found that disengagement
strategies were predictive of higher distress scores for women with a family history of breast cancer. Similar to Kim et al.’s (2003) sample, the participants in Turner-Cobb et al. (2006) were older, between 19 and 61 years (M = 38.8 years), than those in the current sample (M = 24.06 years).

Even though distancing was the second least common used coping strategy in this sample, it is interesting to note that many of the participants did not know how to answer some of the breast cancer treatment and side effect items on the questionnaire and therefore responded to the “I don’t know” category (see Tables 2, 3, and 4). For example, over 20% of the participants did not know if their mother had breast reconstruction. This lack of knowledge regarding their mothers’ treatments may have been a result of the daughters trying to distance themselves from the situation and their mother. If the daughters were actively coping and accepting their mothers’ diagnosis, one would have expected more awareness of the treatments their mothers experienced. In addition, many of the participants responded that their mother did not experience some of the more sensitive side effects of treatment like vomiting, diarrhea, weight gain, and weight loss (see Table 4). It is possible that the mothers did experience these side effects, but daughters may have distanced themselves from the situation and were unaware if their mothers actually encountered these side effects.

**Hypothesis Four**

There was a positive correlation between the coping process of escape-avoidance and the daughters’ stress responses. In other words, the more often the daughters practiced escape-avoidance coping the greater amounts of stress they faced following their mothers’ diagnosis. Past researchers (e.g., Geirdal & Dahl, 2007; Kim et al., 2003) who have studied women with a
family history of breast or ovarian cancer have also confirmed that individuals who practice escape-avoidance coping tend to report greater levels of distress or anxiety.

In addition, escape-avoidance coping was the second most commonly used strategy in this sample (see Table 5). The frequent use of this coping strategy within this sample is not congruent with past research. Several researchers have reported that individuals facing a breast cancer diagnosis in the family tend to use problem-focused or active coping (Geirdal & Dahl, 2007; Wellisch et al., 1991). It is unclear why the participants in the present study reported using escape-avoidance more frequently than they used the other coping processes. One conclusion may be that the participants in the present study had recently learned that their mother had breast cancer, and they were not ready to face the situation. Therefore, they avoided and removed themselves from the stressor of the breast cancer diagnosis. Because coping processes change over time as new stressors emerge (Lazarus & Folkman, 1984), if this study was targeted at daughters whose mothers were further post-diagnosis, the frequency that daughters utilized escape-avoidance may be less as they have learned how to actively cope with their mothers’ diagnosis and treatments. In addition, the samples in the Geirdal and Dahl (2007) and the Wellisch et al. (1991) studies did not have a time restriction on when the mother or first degree relative was diagnosed with cancer, the time since diagnosis was not reported in either study, and the samples in these two studies were older than the current sample.

Another reason that the participants frequently reported using escape-avoidance coping may be in response to their developmental stage. Erikson (1980) concluded that the psychosocial task of young adults is to establish intimacy with oneself and others. The well-being of young adults is enhanced through affectionate interactions with those around them (Sellers & Milton, 2007). Following the cancer diagnosis, the nature and closeness of the mother-daughter
relationship can be influenced and sometimes damaged (Brown et al, 2007; Leedman & Meyerowitz, 1999; Lewis & Hammond, 1996; Lichtman et al., 1985; Spira & Kenemore, 2000). This change in relationship can cause the daughter to withdraw or escape. For example, Lichtman et al. (1985) found that mothers with post-adolescent daughters who were having trouble adapting to their mothers’ breast cancer reported that their daughters tended to ignore the mother and avoid cancer related discussions. In addition, women with breast cancer have been found to face body image issues (Bertero & Chamberlain Wilmoth, 2007; Fobair et al., 2005; Sheppard & Ely, 2008), which can sometimes transcend to their daughter and cause them to escape and avoid breast cancer related topics (Spira & Kenemore, 2000). Daughters who have a negative image of themselves may avoid discussions about their mothers’ illness and wellbeing and may have trouble having intimate relationships with others, therefore feeling more isolated.

**Coping**

Valuable information was found in this study concerning the coping processes young adult daughters used when facing their mothers’ breast cancer diagnosis. Past research has been primarily focused on the coping processes of FDR’s with a family history of breast or ovarian cancer, and little attention has been given, however, to young adult daughters who have a mother with breast cancer. For example, Wellisch et al. (1991, 1992) examined the coping processes of daughters with a maternal history of breast cancer, but did not report how coping related to daughters’ self reported stress, anxiety, or depressive symptoms. Furthering Wellisch et al.’s work, Kim and others (2003) examined the relations between daughters’ passive coping and active coping processes and their stress response symptoms. The researchers, however, did not examine the impact of particular coping mechanisms or processes like distancing, avoidance, etc. The present study, however, was an extension of Kim et al.’s (2003) study and included more
detailed information on four specific coping processes of young adult daughters: seeking social support, planful problem solving, distancing, and escape-avoidance.

As previously discussed in this chapter, the coping processes daughters’ reported using in this study compare and contrast to other studies of women with a family history of breast or ovarian cancer. The results in this study are similar to those found in the literature concerning the coping processes of breast cancer patients. For example, in a study of 150 breast cancer patients in Thailand, Wonghongkul, Dechaprom, Phumivichuvate, and Losawatkul (2006) found the participants reported using seeking social support ($M = 0.1592$) and escape-avoidance ($M = 0.1364$) coping more frequently than the other coping processes, as measured by the WOC. By using the Ways of Coping-Cancer Version, Manuel and colleagues (2007) further assessed the coping processes of 220 younger women ($M = 42$ years) with breast cancer who were three years post diagnosis. “Looking for the silver lining, so to speak; tried to look at the bright side of things” was the most commonly used coping item reported by the participants, and this coping item was the most frequently reported item in the current study. In addition seeking social support was the most commonly reported coping process (Manuel et al., 2007). Comparable to the current sample, participants in Manuel et al.’s (2007) study also reported using detachment coping, also known as distancing, very infrequently compared to other coping processes.

Not only do the current findings compare and contrast with the breast cancer literature, but they also compare and contrast with the concepts of Lazarus and Folkman’s (1984) Stress and Coping Theory. For example, the review and results of this study illustrated daughters of women with breast cancer experience opposing forces between the demands of their mothers’ illness and their internal coping processes. In order to handle the stress of their mothers’ breast cancer, daughters in this sample utilized both emotion-focused and problem-focused coping.
Both problem-focused and emotion-focused processes are used when facing stressful encounters, but the proportions of the used processes vary depending on whether individuals appraise the stressful encounter as controllable or uncontrollable (Folkman & Lazarus, 1980).

In addition Lazarus and Folkman (1984) asserted individuals tend to use more problem-focused forms of coping when facing situations appraised as changeable, and emotion-focused coping is more often used when individuals face situations out of their control. Even though seeking social support, a problem-focused process, was the most commonly used coping processes in this sample, planful problem solving was used the least. The minimal use of planful problem solving in this sample coincides with the notion of Lazarus and Folkman. Daughters of mothers with breast cancer have been found to appraise themselves as having little or no control over their mothers’ illness and prognosis, therefore they may be more inclined to use more emotion-focused coping processes than problem-focused coping.

**Stress Response Symptoms**

Despite the coping efforts of the participants, the current sample reported high levels of stress in response to their mothers’ breast cancer. According to Horowitz’s (1982) ranges of scores, 71.9% of the current sample scored in the range indicating high levels of clinical concern. Other researchers who have examined women’s responses to a family history of breast or ovarian cancers have reported approximately one-third or greater of their sample reported high levels of distress indicating the need of further support or clinical help (Baider et al., 1999; Kash et al., 1992; Lerman et al., 1993; Lindberg & Wellisch, 2003). In contrast to these previous studies, this sample, however, reported greater distress.

This high percentage of participants facing distress may have been influenced by two factors: the young age of the sample and the newness of their mothers’ breast cancer diagnosis.
Previous research involving women with a history of maternal breast cancer has mainly been focused on FDR’s with a history of breast or ovarian cancer and targeted older populations of women (e.g., Baider et al., 1999; Kash et al., 1992; Lerman et al., 1993; Lindberg & Wellisch, 2003). For example, the average age of Kash et al.’s (1992) sample was 44 years, and the average age of Lerman et al.’s (1993) sample was 46 years. The average age of these two samples is approximately 20 years greater than the average age of the current sample. The young age and differing developmental tasks of the current sample may have accounted for the high levels of reported distress. Furthermore, in their sample of 140 women, Lerman et al. (1993) reported younger women, 29 years or younger, indicated significantly higher levels of distress than did women older then 29 years (Lerman et al., 1993).

The newness of the mothers’ breast cancer may have also been an influential factor in the daughters’ reported distress. A chronic illness within a family impacts the entire family system, and each family member must learn to cope with the illness and lifestyle changes. Rolland (1994) explained that individuals facing chronic illness within their family tend to encounter three illness phases: crisis phase, chronic or “long-haul” phase, and the terminal phase. Each one of these phases includes various developmental tasks for the family to accomplish (Rolland, 1994). The developmental tasks within the crisis stage include family coping, grieving the loss of a customary life prior to the illness, and learning to live with the ambiguities of the newness of the disease. Rolland (1994) also determined during the initial phase family members try to find some type of control over the situation and seek information in order to facilitate greater coping later in the illness course. Because the mothers’ diagnosis was fairly recent, a large percentage of the participants in this study may have been experiencing the developmental tasks of the crisis or acute phase. They may have been developing their new role
in the family system, seeking information, and finding outlets of control over the situation. Due to the acuteness of their mothers’ diagnosis, daughters facing these tasks accompanied with the crisis stage may have been experiencing greater distress than would daughters facing the tasks associated with the chronic phase, the second phase, of the illness course.

**Limitations**

Despite being able to sample a targeted population of daughters whose mothers were diagnosed with breast cancer, a number of limitations exist in this study. Because the current sample was very difficult to gather, the sample size was small and little diversity was seen. In addition, due to the convenience sampling, the findings may not be generalizeable to all daughters of mothers with breast cancer.

Limitations also exist due to the included measures. The factor loadings of the subscales of the Ways of Coping Questionnaire can vary across populations (Folkman & Lazarus, 1988). Perhaps with a larger sample it might be prudent to conduct a factor analysis on the WOC subscales to determine if the items had strong loadings for the intended subscale. Also, additional subscales of the WOC (Self-Controlling, Confrontive Coping, Accepting Responsibility, and Positive Reappraisal) were not included in this study. Adding these subscales may have provided further information on the coping processes of daughters and may have influenced the daughters’ stress response symptoms.

Furthermore, limitations are present in the study design. The cross-sectional design did not allow the results to show how daughters’ coping strategies change over time as they continue to cope with their mothers’ diagnosis. For example, daughters may use a particular coping process immediately following their mothers’ diagnosis, but may use different processes at various points further along in the treatment process or post-treatment. The correlations between
coping and stress responses may change over time following and throughout their mothers’
diagnosis and treatments, which was not accounted for in the present study.

In addition, the self-report design of the questionnaire presented limitations for this study.
For example, based on the daughters’ reports of their mothers’ illness and treatments it was
interesting to note that some participants seemed to lack information about their mothers’ illness.
For example, 21.9% of participants did not know if their mothers had breast reconstruction,
37.5% did not know if their mothers received hormonal treatment, and 18.8% did not know if
their mother experienced hot flashes as a side effect of treatment.

With any sample, the participants’ self-report of their stress response symptoms may not
have been an accurate depiction of their actual stress. Because 60 respondents started the study
and left by not completing questions, leaving only 32 participants completing the survey, the
participants who completed the survey may have been biased to answer one way over the other.
Those who left the survey may have quit because answering questions relating to their mothers’
cancer may have been too difficult or upsetting for them. In addition, the 32 participants may
have perceived themselves as being able to cope with their mothers’ diagnosis or may have
believed that they were coping better than they actually were coping, or vice versa.

Due to the focused scope of the study, various moderating variables to the daughters’
coping and stress response symptoms were not reported. For example, neither the mothers’ stress
level nor their coping processes were examined. The wellbeing of the mothers may have
influenced the coping abilities and stress of the daughters. The frequency daughters visited their
mothers or provided care for their mothers was also not explored. In addition, in some studies the
mother-daughter relationship and closeness has been found to influence the wellbeing of their
children (e.g., Brown et al., 2007; Lewis & Hammond, 1996; Spira & Kenemore, 2000), but this relationship was not accounted for within this study sample.

**Implications**

The results of this study provide valuable information that could help support programs better serve young adult daughters as they cope with their mothers’ diagnosis and treatment. This study specifically provided information on the associations between coping processes and stress, and these results help highlight the gaps in support for daughters. It seems support during a mothers’ diagnosis should begin with the family and expand into the healthcare system and community.

As discussed earlier, when a mother is diagnosed with breast cancer the family routines and system change as each family member learns to cope with the diagnosis. Each family member develops his or her own personal coping processes and encounters different needs for support throughout the treatment course. Children have a need and desire for parents to openly and honestly communicate with them (Kristjanson, Chalmers, & Woodgate, 2004). In fact, children whose parents honestly communicate with them about the cancer, treatment, and side effects respond better than do children whose parents do not discuss it (Visser et al., 2004).

In this study, it seemed as though there was little communication between the mother (or father) and the daughter about the cancer, because so many daughters did not know how to respond to various breast cancer related items on the questionnaire. Education about their mothers’ cancer may help daughters find a sense of control in knowing what to expect and what their mothers will encounter through their treatment course. Healthcare providers need to encourage families to keep lines of communication open with their children.
As the “guardians of the information,” mothers tend to disclose information based on their own views of what and when information should be shared (Kristjanson et al., 2004). It would be useful if the clinic or hospital where the mother receives treatment would provide information that offers helpful tips for parents on how to communicate with their children about breast cancer. Furthermore, the clinic or hospital personnel are encouraged to develop and provide informational handouts or resources about the daughters’ coping processes and how mothers and fathers can support their children’s coping and adjustment. In addition, the healthcare personnel could provide support groups for mothers to discuss not only medical issues, but also issues or concerns within the family system.

In addition to providing information and support to mothers about how to support and communicate with their daughters, support services available directly for daughters would be helpful. Healthcare systems need to establish a systematic approach in providing family-centered or family-focused care. This systematic approach would push healthcare personnel to develop and facilitate assessment and re-assessments for all family members of the patient, especially the daughters as they are often seen as the most vulnerable. Reassessments at various time frames throughout the treatment course and at the family members’ request could be a useful service provided to families. These assessments would track the needs and adjustment of the daughters throughout the illness course, and in turn would help staff better provide individualized support.

As the results of the present study show, the majority of the daughters’ coping processes were associated with greater levels of stress. From these findings, it is apparent that daughters need help and support in developing adaptive, positive coping strategies. Support services focusing on strengthening the daughters’ adaptive coping processes and helping them move away from maladaptive coping may be a place to begin.
Even though the results of this study suggested that seeking social support was not associated with the decrease in stress response symptoms for this sample, other studies have shown that social support can act as a moderator for distress. Due to this discrepancy in results, it seems as though daughters in this sample may lack positive social networks. Therefore, it may be beneficial for the healthcare system to provide social support services including support groups for daughters that will help them better manage their social networks in the community. Due to online social networks, hospital personnel might consider developing online chat room or discussion boards that will allow daughters to talk to other daughters and seek answers from the medical staff.

Within these social support groups, the healthcare system could provide instruction to help daughters problem solve when breast cancer related stressors are exposed and to help them accept that many issues related to their mothers’ cancer are out of their control (i.e., the mother’s prognosis, side effects, and treatments). Even though the mothers’ prognoses and treatments are out of the daughters’ control, there may be ways in which daughters can find control by helping care for their mothers by taking them to appointments, relieving them of household tasks, or providing them emotional support.

Also, resources need to be provided by the family or healthcare system to help daughters accept and actively interpret the mothers’ diagnosis. Daughters in this study who used the maladaptive coping processes of escape-avoidance and distancing tended to report higher levels of stress response symptoms. Therefore, support services need to be developed that focus on providing strategies to help daughters avoid using escape-avoidance or distancing coping and use more active approaches to understand and process their mothers’ illness.
**Future Research**

There are several directions researchers could explore to enhance the literature involving daughters of breast cancer patients. First, there are several influential factors of coping and stress that this study did not account for including the closeness of the mother-daughter relationship, the geographic proximity between the mother and daughter, the frequency of mother-daughter visits, and the daughters’ level of caregiving for her mother. Even though breast cancer researchers have explored the influence of these factors on coping and stress (e.g., Brown et al, 2007; Leedman & Meyerowitz, 1999; Lewis & Hammond, 1996; Lichtman et al., 1985; Spira & Kenemore, 2000), they have not specifically examined how these factors may influence young adult daughters of breast cancer patients.

Secondly, a longitudinal study design would allow researchers to track how daughters’ coping processes develop over time. Following a diagnosis of a serious illness, patients and family members encounter different stages throughout the illness course (Rolland, 1994). At these various stages, new stressors may develop or individuals may rely on different coping processes. A longitudinal design would help researchers more accurately report what coping processes daughters utilize and at what stages of the illness course do they utilize them. Not only would a longitudinal study show how coping changes over time, but would also demonstrate how the daughters’ stress response symptoms develop throughout the diagnosis and treatment course.

Lastly, in addition to daughter self-reports, having other means to gather information would provide more accurate and detailed results. Interviews with the daughters’ family members and friends could further provide insights into the daughters’ coping and stress. For example, mothers could rate how they believed their daughters were coping and adapting.
Researchers could compare the responses of the daughters with the responses of their family members and friends. These interviews could also include accounts of the daughters’ behaviors and reactions in response to the cancer diagnosis and treatments. For greater accuracy on diagnoses and treatments it would be useful if researchers could obtain information on the mothers’ illness directly from the medical charts. These additional means of gathering information would provide more accurate details about the daughters’ coping behaviors and psychological stress responses, as well as the mothers’ cancer.

**Conclusion**

The purpose of this study was to explore the coping of young adult daughters, and how their coping processes related to their self-reported stress in response to their mothers’ breast cancer. Lazarus and Folkman’s (1984) Stress and Coping Theory was used as a framework to illustrate the relations between stress and the internal coping processes daughters used to handle stressors associated with their mothers’ breast cancer. The coping processes of planful problem solving, distancing, and escape-avoidance were related to higher levels of stress response symptoms within this sample. Therefore, these three coping processes were found to be disadvantageous for the participants, and overall, the sample reported high scores on the Impact of Event Scale. The results illustrated that daughters of mothers with breast cancer are a vulnerable population and may require support throughout their mothers’ treatment and diagnosis. Hospital personnel are encouraged to offer assessments, support, and coping resources to daughters as their mothers receive treatments. Further research concerning the coping processes of young adult daughters is necessary in order to provide information to clinicians to better support this at risk population. In addition, continued research in this area would help uncover additional moderating variables influencing daughters’ stress response symptoms.
References


II: Coping, cognitive appraisals, and psychological distress in children of cancer patients.

*Health Psychology, 15*, 167-175.


Appendices
Appendix A

Flyer

The Coping Processes of Young Adult Daughters of Women with Breast Cancer

Volunteers Needed for this Research Study

In order to help identify the coping strategies daughters use in response to their mother’s breast cancer, I invite your daughter(s) to participate in this research study. The opinions and thoughts they express in this survey will add greatly to the current information on how daughters cope with their mother’s breast cancer. The responses will also help support services meet the needs of daughters of women with breast cancer. Participants can also expect to gain knowledge from contributing to this research study and may learn more about their feelings related to their mother’s breast cancer.

Participants for this study should meet the following criteria:
• Only women who are between the ages of 18 and 30 years should participate in this study.
• Only women who have a mother who has been diagnosed with breast cancer in the past 2 years, is currently undergoing treatment, and has not had a recurrence of breast cancer should participate in the study.
• Only women who have never been personally diagnosed with cancer should participate in this study.
• Only women who have not had another immediate family member (father, sibling, or child) diagnosed with any type of serious illness (cancer, diabetes, congenital heart defect, etc.)

If you are interested in this study or you think your daughter(s) would be, I ask that you please take a survey packet from the front desk and clinic rooms for your daughter(s) to complete. The survey will take approximately 10 minutes. Once your daughter completes the survey, please have her mail the survey in the addressed, stamped envelope to the researcher. If your daughter would rather complete the survey online, please ask her to visit the following research site where she will find the survey: http://src.ibr.uga.edu/surveys/coping/intro.htm

Thank you for your consideration! This research project is under the supervision of Charlotte Wallinga, PhD. If you have questions please contact the researcher:

Bailey Partlow Chambers
The University of Georgia
Department of Child and Family Development
Family Science Center II, House D
Athens, GA 30602
205-454-0155
partlgb@uga.edu
Appendix B

Information Email

Hi,

I am a Masters student at the University of Georgia and am completing my thesis on “The Coping Processes of Young Adult Daughters of Women with Breast Cancer.” I am seeking women who fit the following description to complete the 10-minute survey:

- Women who are between the ages of 18 and 30 years.
- Women who have a mother who has been diagnosed with breast cancer in the past 2 years, is currently undergoing treatment, and has not had a recurrence of breast cancer.
- Women who have never been personally diagnosed with cancer.
- Women who have not had another immediate family member (father, sibling, or child) diagnosed with any type of serious illness (cancer, diabetes, congenital heart defect, etc.).

If you fit these qualifications, I urge you to complete the 10-minute survey. The following URL link will direct you to the online survey http://src.ibr.uga.edu/surveys/coping/intro.htm. I also ask that you forward this information to other individuals who may meet the qualifications.

Thank you for your consideration. Please contact me if you have questions or need further information.

Bailey Chambers
partlgb@uga.edu
Appendix C

Hardcopy Informed Consent Letter

My name is Bailey Chambers and I am a Masters student in the Department of Child and Family Development at The University of Georgia. In order to help identify the coping strategies daughters use in response to their mother’s breast cancer, I invite you to participate in this study entitled “The Coping Processes of Young Adult Daughters of Women with Breast Cancer.” My advisor for this project is Dr. Charlotte Wallinga (email: cwallinga@fcs.uga.edu, phone: 706-542-4899).

In order to understand how women cope with their mothers’ breast cancer, I will ask you to respond to some general questions about your mother’s breast cancer. I will ask you to give information about your mother’s treatment, surgeries, and side effects. You will also be asked to answer statements concerning coping strategies you may have used during your mother’s diagnosis and treatment. Finally, I will ask you to provide some demographic information about yourself (age, marital status, educational level, etc.). Some of these questions could possibly create rare or mild discomfort as the questions deal with sensitive issues involved with your mother’s breast cancer. If you feel uncomfortable, you can skip any questions that you do not wish to answer. You may also stop answering questions or discontinue participation at any time. The questionnaire will take about 10 minutes to complete.

You can expect to gain knowledge from participating in this research study. You will learn more about the research process and may learn more about your feelings related to your mother’s breast cancer. The opinions and thoughts you express in this survey will add greatly to the current information on how daughters cope with their mother’s breast cancer. Your responses will also help support services meet the needs of daughters of women with breast cancer.

As a participant in this study, you should read and understand the following statements:

Only women who are between the ages of **18 and 30 years** should participate in this study.

Only women who have a mother who has been diagnosed with breast cancer in the past **2 years**, is currently undergoing treatment, and has not had a recurrence of breast cancer should participate in the study.

Only women who have **never** been personally diagnosed with cancer should participate in this study.

Only women who have **not** had another immediate family member (father, sibling, or child) diagnosed with any type of serious illness (cancer, diabetes, congenital heart defect, etc.)

Your participation is completely voluntary. You may refuse to participate or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.
Your participation is confidential. No individually identifiable information about you, or provided by you during the research, will be shared with others without your written permission. Once I receive the surveys, standard confidentiality procedures will be used. All records from this study will be kept in a password-protected computer that only the researcher has access to. Once you complete the survey, mail the survey in the addressed, stamped envelope to the researcher and do not include a return address on the envelope. By filling it out by hand and sending it to the researcher, you are providing your consent to participate in the study. The researcher will answer any further questions now or during the course of the project and can be reached by telephone or email: 205-454-0155, partlgb@uga.edu.

Thank you for your consideration!

Bailey Chambers
The University of Georgia
Family Science Center II, House D
Athens, GA 30602

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.
Appendix D

Online Informed Consent Letter

My name is Bailey Chambers and I am a Masters student in the Department of Child and Family Development at The University of Georgia. In order to help identify the coping strategies daughters use in response to their mother’s breast cancer, I invite you to participate in this study entitled “The Coping Processes of Young Adult Daughters of Women with Breast Cancer.” My advisor for this project is Dr. Charlotte Wallinga (email: cwallinga@fcs.uga.edu, phone: 706-542-4899).

In order to understand how women cope with their mothers’ breast cancer, I will ask you to respond to some general questions about your mother’s breast cancer. I will ask you to give information about your mother’s treatment, surgeries, and side effects. You will also be asked to answer statements concerning coping strategies you may have used during your mother’s diagnosis and treatment. Finally, I will ask you to provide some demographic information about yourself (age, marital status, educational level, etc.). Some of these questions could possibly create rare or mild discomfort as the questions deal with sensitive issues involved with your mother’s breast cancer. If you feel uncomfortable, you can skip any questions that you do not wish to answer. You may also stop answering questions or discontinue participation at any time. The questionnaire will take about 10 minutes to complete.

You can expect to gain knowledge from participating in this research study. You will learn more about the research process and may learn more about your feelings related to your mother’s breast cancer. The opinions and thoughts you express in this survey will add greatly to the current information on how daughters cope with their mother’s breast cancer. Your responses will also help support services meet the needs of daughters of women with breast cancer.

As a participant in this study, you should read and understand the following statements:

Only women who are between the ages of 18 and 30 years should participate in this study.

Only women who have a mother who has been diagnosed with breast cancer in the past 2 years, is currently undergoing treatment, and has not had a recurrence of breast cancer should participate in the study.

Only women who have never been personally diagnosed with cancer should participate in this study.

Only women who have not had another immediate family member (father, sibling, or child) diagnosed with any type of serious illness (cancer, diabetes, congenital heart defect, etc.)

Your participation is completely voluntary. You may refuse to participate or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.
Your participation is confidential. No individually identifiable information about you, or provided by you during the research, will be shared with others without your written permission. Please note that Internet communications are insecure and there is a limit to the confidentiality that can be guaranteed due to the technology itself. However, once I receive the surveys, standard confidentiality procedures will be used. All records from this study will be kept in a password-protected computer that only the researcher has access to. If you are not comfortable with the level of confidentiality provided by the Internet, please feel free to print out a copy of the survey, fill it out by hand, and mail it to me at the address given below, with no return address on the envelope. By filling it out by hand and sending it to the researcher, you are providing your consent to participate in the study. The researcher will answer any further questions now or during the course of the project and can be reached by telephone or email: 205-454-0155, partlgb@uga.edu.

Thank you for your consideration!

Bailey Chambers  
The University of Georgia  
Family Science Center II, House D  
Athens, GA 30602

Click on the “I agree” button below to indicate that you have read this form and understand the information above. By clicking on the “I agree” button, you are providing an online signature for your consent to participate in the study.

I AGREE

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.

Disclaimer: The contents and opinions expressed on this Web page do not necessarily reflect the views of nor are they endorsed by The University of Georgia or the University System of Georgia.
Appendix E

Questionnaire

Remember that all of your responses will be anonymous. Please respond to the questions below by typing your answers in the space provided or selecting the appropriate response.

Breast Cancer History

1. Has your mother been diagnosed with breast cancer in the past 2 years?
   - Yes
   - No

2. Has your mother had recurrent breast cancer?
   - Yes
   - No

3. When was your mother diagnosed with breast cancer?  ____ Month  ____ Year

4. How old were you when your mom was diagnosed with breast cancer? _____ Years

5. Have you been diagnosed with any form of cancer in your lifetime?
   - Yes
   - No

6. Has any other close family member besides your mother been diagnosed with a serious illness (i.e., cancer, heart disease, diabetes)?
   - Yes
   - No

   If yes, please list the family members’ relationship(s) to you (i.e., father, brother, grandparent, etc.) and their illness(es). _______________________________________________________

7. What stage of breast cancer was your mother diagnosed with?
   - Stage I
   - Stage II
   - Stage III
   - Stage IV
   - I don’t know

8. Since your mother’s diagnosis with breast cancer has she had any of the following?
   a. Lumpectomy or partial mastectomy  Yes  No  I don’t know
      (removal of a lump)
b. Axillary node dissection  
*removal of underarm lymph nodes*  
Yes  No  I don’t know

c. Single Mastectomy  
*complete removal of one breast*  
Yes  No  I don’t know

d. Double Mastectomy  
*complete removal of both breasts*  
Yes  No  I don’t know

e. Breast reconstruction  
Yes  No  I don’t know

f. Chemotherapy  
Yes  No  I don’t know

g. Radiation Therapy  
Yes  No  I don’t know

h. Hormone Therapy  
Yes  No  I don’t know

i. Other Treatment  
Please specify ____________________________________________________  
Yes  No  I don’t know

Breast Cancer Symptoms

How much of the following problems have you noticed your mom having or talking about during her treatment course for breast cancer?

<table>
<thead>
<tr>
<th>My mom has been bothered by….</th>
<th>Not at all</th>
<th>A little</th>
<th>Some what</th>
<th>Quite a bit</th>
<th>Very much</th>
<th>I don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hot flashes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. Mood swings</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. Nausea</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. Vomiting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. Diarrhea</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. General aches and pains</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. Weight gain</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. Weight loss</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. Loss of energy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
10. Hair loss

11. Please list any other symptoms you have noticed your mom having during her breast cancer treatment __________________________________________________________

Ways of Coping Questionnaire
(Folkman & Lazarus, 1985)

Read each statement carefully. Each statement includes thoughts and actions that people utilize to cope with a specific situation. Indicate, by writing 0, 1, 2, or 3, to what extent you used each item during your mother’s cancer treatment.

<table>
<thead>
<tr>
<th>Not Used</th>
<th>Used Somewhat</th>
<th>Used Quite a Bit</th>
<th>Used a great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

_____ 1. I Just concentrated on what I had to do next – the next step.
_____ 2. I turned to work or another activity to take my mind off things.
_____ 3. I talked to someone to find out more about the situation.
_____ 4. I hoped a miracle would happen.
_____ 5. I went along with fate; sometimes I just have bad luck.
_____ 6. I went on as if nothing had happened.
_____ 7. I looked for the silver lining, so to speak; tried to look on the bright side of things.
_____ 8. I slept more than usual.
_____ 9. I accepted sympathy and understanding from someone.
_____ 10. I told myself things that helped me to feel better.
_____ 11. I tried to forget the whole thing.
_____ 12. I got professional help.
_____ 13. I made a plan of action and followed it.
_____ 15. I tried to get away from it for a while by resting or taking a vacation.
16. I tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.

17. I changed something so things would turn out all right.

18. I avoided being with people in general.

19. I didn’t let it get to me; refused to think to much about it.

20. I asked a relative or friend I respected for advice.

21. I made light of the situation; refused to get too serious about it.

22. I talked to someone about how I was feeling.

23. I took it out on other people.

24. I drew on my past experiences; I was in a similar situation before.

25. I knew what had to be done, so I doubled my efforts to make things work.

26. I refused to believe that it had happened.

27. I came up with a couple of different solutions to the problem

28. I accepted the situation, since nothing could be done.

29. I wished that I could change what had happened or how I felt.

30. I daydreamed or imagined a better time or place than the one I was in.

31. I wished that the situation would go away or somehow be over with.

32. I had fantasies or wishes about how things might turn out.

33. I prepared myself for the worst.

34. I reminded myself how much worse things could be.

35. I jogged or exercised.
### Impact of Event Scale
(Horowitz et al., 1979)

Below is a list of comments made by people after experiencing stressful life events. Please select the appropriate response, indicating how frequently these thoughts or reactions occurred in response to your mother’s breast cancer.

<table>
<thead>
<tr>
<th>Comment</th>
<th>Not at All</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I thought about my mother’s breast cancer when I didn’t mean to.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>2. I avoided letting myself get upset when I thought about it or was reminded of it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3. I tried to remove it from memory.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4. I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>5. I had waves of strong feelings about it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>6. I had dreams about it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>7. I stayed away from reminders of it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>8. I felt as if it hadn’t happened or it wasn’t real.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>9. I tried not to talk about it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>10. Pictures of it popped into my mind.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>11. Other things kept making me think about it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>12. I was aware that I still had a lot of feelings about it, but I didn’t deal with them.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>13. I tried not to think about it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>14. Any reminder brought back feelings about it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>15. My feelings about it were kind of numb.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>
Background Information

1. What is your current age? _____ Years

2. How do you describe yourself? (Select the one that MOST applies)
   Caucasian (not of Hispanic origin)
   African-American (not of Hispanic origin)
   Hispanic or Latino
   Asian or Pacific Islander
   Middle Eastern/Arab
   Native American
   Other (Please specify) _____________________________

3. Among the options below, what best describes your religious beliefs? (Select the one that MOST applies)
   Atheism
   Agnosticism
   Buddhism
   Christianity
   Hinduism
   Muslim
   Scientology
   Other ________________________________

4. What is the highest level of education you have completed?
   Less than high school
   High school diploma or GED
   Technical or vocational school after High School Graduation
   Some college
   Associate degree
   Bachelor degree
   Masters degree
   Doctoral degree or professional degree (PhD, MD, DDS, JD, etc.)

5. What is your current occupation? (Select ALL that apply)
   Full time student (12 or more credit hours per semester)
   Part-time student (3 to 11 credit hours per semester)
   Fully employed 35 or more hours per week
   Part-time employed less than 35 hours per week
   Retired
   Unemployed or searching for work
   Other ________________________________

6. What is the approximate yearly income before taxes of your household?
   Less than $10,000
   $10,000 - $19,999
$20,000 - $39,999
$40,000 - $59,999
$60,000 - $74,999
$75,000 or above

7. What is your current marital status?
   Single
   Married
   Separated
   Divorced
   Widowed
   Live in partner

8. Do you have children?
   Yes
   No

   If yes, how many children do you have? ______
Appendix F

Subscales of the Ways of Coping Questionnaire
(Folkman & Lazarus, 1985)

**Planful Problem Solving**
I knew what had to be done, so I doubled my efforts to make things work.
I made a plan of action and followed it.
Just concentrated on what I had to do next – the next step.
Changed something so things would turn out all right.
Drew on my past experiences; I was in a similar position before.
Came up with a couple of different solutions to the problem.

**Distancing**
Made light of the situation; refused to get too serious about it.
Went on as if nothing had happened.
Didn’t let it get to me; refused to think about it too much.
Tried to forget the whole thing.
Looked for the silver lining, so to speak; tried to look on the bright side of things.
Went along with fate; sometimes I just have bad luck.

**Seeking Social Support**
Talked to someone to find out more about the situation.
Talked to someone who could do something concrete about the problem.
I asked a relative or friend I respected for advice.
Talked to someone about how I was feeling.
Accepted sympathy and understanding from someone.
I got professional help.

**Escape-Avoidance**
Wished the situation would go away or somehow be over with.
Hoped a miracle would happen.
Had fantasies or wishes about how things might turn out..
Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.
Avoided being with people in general.
Refused to believe that it had happened.
Took it out on other people.
Slept more than usual.
## Appendix G

**Factor Loadings of the Ways of Coping Questionnaire Subscale Items**

Below are the factor loadings of each item on their intended subscale as reported by Kim et al. (2003).

\(N = 116\)

<table>
<thead>
<tr>
<th>Coping Process</th>
<th>First-Order Factor Loadings</th>
<th>Second-Order Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passive</td>
<td>Active</td>
</tr>
</tbody>
</table>

### Factor 1- Planful Problem Solving

<table>
<thead>
<tr>
<th>Item</th>
<th>First-Order Factor Loadings</th>
<th>Second-Order Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I knew what had to be done, so I doubled my efforts to make things work.</td>
<td>0.73</td>
<td>N/A</td>
</tr>
<tr>
<td>I made a plan of action and followed it.</td>
<td>0.67</td>
<td>N/A</td>
</tr>
<tr>
<td>I changed something so things would turn out all right.</td>
<td>0.70</td>
<td>N/A</td>
</tr>
<tr>
<td>I drew on my past experiences; I was in a similar position before.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>I came up with a couple of different solutions to the problem.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Factor 2- Distancing

<table>
<thead>
<tr>
<th>Item</th>
<th>First-Order Factor Loadings</th>
<th>Second-Order Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I made light of the situation; refused to get too serious about it.</td>
<td>0.60</td>
<td>N/A</td>
</tr>
<tr>
<td>I went on as if nothing had happened.</td>
<td>0.59</td>
<td>N/A</td>
</tr>
<tr>
<td>I didn’t let it get to me; refused to think about it too much.</td>
<td>0.75</td>
<td>N/A</td>
</tr>
<tr>
<td>I tried to forget the whole thing.</td>
<td>0.70</td>
<td>N/A</td>
</tr>
<tr>
<td>I looked for the silver lining, so to speak; tried to look on the bright side of things.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>I went along with fate; sometimes I just have bad luck.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Factor 3- Seeking Social Support

<table>
<thead>
<tr>
<th>Item</th>
<th>First-Order Factor Loadings</th>
<th>Second-Order Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I talked to someone to find out more about the situation.</td>
<td>0.68</td>
<td>N/A</td>
</tr>
<tr>
<td>I talked to someone who could do something concrete about the problem.</td>
<td>0.56</td>
<td>N/A</td>
</tr>
<tr>
<td>I asked a relative or friend I respected for advice.</td>
<td>0.89</td>
<td>N/A</td>
</tr>
<tr>
<td>I talked to someone about how I was feeling.</td>
<td>0.77</td>
<td>N/A</td>
</tr>
<tr>
<td>I accepted sympathy and understanding from someone.</td>
<td>0.44</td>
<td>N/A</td>
</tr>
<tr>
<td>I got professional help.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Factor 4- Escape-Avoidance

<table>
<thead>
<tr>
<th>Item</th>
<th>First-Order Factor Loadings</th>
<th>Second-Order Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I wished the situation would go away or somehow be over with.</td>
<td>0.67</td>
<td>N/A</td>
</tr>
<tr>
<td>I hoped a miracle would happen.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
I had fantasies or wishes about how things might turn out.  .84
I tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.  .51
I avoided being with people in general.  .50
I refused to believe that it had happened.  N/A
I took it out on other people.  N/A
I slept more than usual.  N/A

<table>
<thead>
<tr>
<th>Factor 5</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I just concentrated on what I had to do next – the next step.</td>
<td>.71</td>
<td></td>
</tr>
</tbody>
</table>

Note: Kim et al (2003) did not list the factor loadings of the above items that have a factor loading labeled as N/A.
Appendix H

Subscales of the Impact of Event Scale
(Horowitz et al., 1979)

**Intrusion**
I thought about my it when I didn’t mean to.
I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind.
I had waves of strong feelings about it.
I had dreams about it.
Pictures about it popped into my mind.
Other things kept making me think about it.
Any reminder brought back feelings about it.

**Avoidance**
I avoided letting myself get upset when I thought about it or was reminded of it.
I tried to remove it from memory.
I stayed away from reminders of it.
I felt as if it hadn’t happened or it wasn’t real.
I tried not to talk about it.
I was aware that I still had a lot of feelings about it, but I didn’t want to deal with them.
I tried not to think about it.
My feelings about it were kind of numb.