AN EXAMINATION OF THE RELATIONS AMONGST POWER, UNCERTAINTY
SELF-TRANSCENDENCE, AND QUALITY OF LIFE IN
BREAST CANCER SURVIVORS

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CHAPTER I
THE PROBLEM

Introduction

A diagnosis of breast cancer delivers a devastating blow to a woman and introduces
the possibility of dramatic consequences. A woman may envision the possibility of a loss
of day-to-day life as she knows it, disfigurement, disenfranchisement, and death. Yet,
even with these profound problems, some women with breast cancer have had positive
experiences. Breast cancer survivors have expressed a sense of increasing complexity,
growth, and change which may enhance their quality of life (Coward & Kahn, 2004;
Higher quality of life in persons experiencing other life threatening illness has also been
reported (Belec, 1992; Hicks, Larson, & Ferrans, 1992; Morris, Suissa, Sherwood,
Wright, & Greer, 1986; Wingate, 1995).

The factors associated with higher quality of life in women survivors of breast cancer
need to be identified so women with lower quality of life can be helped. Researchers have
indicated that quality of life may be related to psychological adjustment, degrees of
uncertainty, and pain control (Bloom, 1982; Dirksen, 2000; Ferrell, Wisdom, Wenzl, &
Brown, 1989; Padilla, Mishel, & Grant, 1992). While not quality of life studies, other
researchers have contributed to an understanding of psychosocial adjustment and social
support for women diagnosed with breast cancer and their partners (Budin, 1998; Hack &
However, factors that may explain growth, change, and higher than expected quality of
life in persons living with life threatening illness have only begun to be studied (Coward, 1998, 2003; Dow et al., 1999; Mosher, Danoff-Burg, & Brunker, 2006; Taylor, 2000; Tomich, Helgeson, & Vache, 2005). Rogers, in her Science of Unitary Human Beings (SUHB) (1970, 1992) which is concerned with the nature and process of change, suggests that power, uncertainty, and self-transcendence may be linked to quality of life in breast cancer survivors.

From a Rogerian perspective, power is the capacity to knowingly participate in change (Barrett, 1983, 1986, 1998). The capacity of breast cancer survivors to knowingly participate in changes may be related to differences in their quality of life. Specific dimensions of power such as awareness, choices, changes, and freedom to act with intention have been related to quality of life in other samples (Belec, 1992; Bertero & Ek, 1993; Ersek, Ferrell, Dow, & Melancon, 1997; Ragsdale, Kotarba, & Morrow, 1992; Ragsdale & Morrow, 1990). Variations in knowing participation, e.g., freely choosing treatment options, have been described in the literature on women with breast cancer (Bilodeau & Degner, 1996; Ferrans, 1994; Hailey, Lavine, & Hogan, 1988; Luker, Beaver, Leinster, & Owens, 1996; Moch, 1995; Winer, 1994). Positive correlations between Barrett's view of power and well-being have been found (Leksell, Johansson, Wibell, & Wikblad, 2001; McNiff, 1995; Morris, 1991; Rizzo, 1990). However, there are no published studies of power and quality of life nor are there studies of power in breast cancer survivors.

Women survivors of breast cancer experience uncertainty about what will happen in relation to diagnosis, treatment, the possibility of recurrence, and changes in their day-to-day lives (Colyer, 1996; Gil et al., 2004; Hilton, 1989; Mishel, 1988). Issues of uncertainty related to fear of recurrence have been described in breast cancer survivors (Gil et al., Grant, Padilla, & Greimel, 1996; Leigh, 1997; Nelson, 1996). The need for
further research has been substantiated by conflicting views regarding the influence of uncertainty. Some researchers report inverse relations between uncertainty and quality of life (Crigger, 1996; Padilla et al., 1992) while others suggest a potentially growthful influence (Mishel, 1990a; Nelson, 1996).


The variables of power, uncertainty, and self-transcendence may be related to quality of life (Coward, 1994, 1995, 2003; McNiff, 1995; Padilla et al., 1992; Sammarco, 2003). Yet, these variables have not been studied in relation to each other or within a Rogerian science perspective.

The Problem
What are the relations amongst power, uncertainty, self-transcendence, and quality of life in breast cancer survivors?

Definitions
Breast Cancer Survivor is a woman with a primary diagnosis of breast cancer who is currently in the intermediate stage of survival, i.e., having completed initial treatment for
primary breast cancer, being within five years since the time of diagnosis, and currently free of disease (Mullan, 1985). Initial treatment may include surgery, such as lumpectomy, wide excision, or mastectomy with or without reconstruction and post surgical adjuvant therapy including chemotherapy, radiotherapy, or a combination. Breast cancer survivorship was ascertained by self-report during the researcher contact and to response items on the Demographic Data Form.

Power is the “capacity to participate knowingly in the nature of change characterizing the continuous patterning of the human and environmental fields. The observable measurable pattern manifestations of power are awareness, choices, freedom to act intentionally, and involvement in creating change” (Barrett & Caroselli, 1998, p. 17). Power was measured using the Power as Knowing Participation in Change Tool, Version II (PKPCT) (Barrett, 1998).

Quality of Life is “a person’s sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her” (Ferrans, 1990b, p. 15). Quality of life was measured using the Quality of Life Index-Cancer Version (QLI-CV) (Ferrans, 1990b; Ferrans & Powers, 1985).

Self-transcendence is a human potential resource characterized by a profound awareness of one’s wholeness while having an awareness of fluctuations in one’s human-environmental field pattern manifested by looking inward, reaching out toward others, and an ever-changing experience of time where past, present, and future are one (Reed, 1991a, 1997, 1998; Personal Communication, July 7, 2000) as measured by the Self-Transcendence Scale (STS) (Reed, 1987b).

Uncertainty is “a judgment about an event or situation when it cannot be adequately structured or categorized because sufficient cues are lacking” (Mishel, 1981, p. 258).
Uncertainty was measured using the Mishel Uncertainty in Illness Scale-Community Form (MUIS-C) (Mishel, 1990c).

**Delimitations**

Only female survivors of breast cancer were included as the incidence of breast cancer in men is rare (< 1% of all male cancers) (Engelking & Kalinowski, 1995). Women with bilateral, metastatic cancer, or recurrent breast cancer were excluded as the demands of treatment and advanced disease may be different (Coward, 1991; Ellerhorst-Ryan & Goeldner, 1992; Mock et al., 2005; Weitzner, Meyers, Stuebing, & Saleeba, 1997). Participants had completed initial treatment for breast cancer and were less than 5 years since diagnosis as issues in long-term survival may be different (Dow et al., 1999; Ferrell, Grant, Funk, Otis-Green, & Garcia, 1997; Kissane et al., 1997; Whelan et al., 1997).

Individuals self-reporting mental illness, such as major depressive disorder, bipolar disorder, and or psychotic disorders like schizophrenia, or debilitating physical illness were excluded as the experience of living with psychiatric or debilitating physical illness may be different (Massie & Holland, 1989, 1991; Payne, Sullivan, & Massie, 1996; Pelusi, 1997). As required for Barrett’s PKPCT, all participants were able to read and write English and had a minimum of a high school education or the equivalent. Data regarding delimiting factors were elicited during the researcher contact and by items on the Demographic Data Form.

**Theoretical Rationale**

(1981, 1990a), and Reed (1991a, 1997) served as the theoretical basis for this study. This theoretical perspective linked power, uncertainty, self-transcendence, and quality of life.

The foundation of Rogers' SUHB (1970, 1992) is found in the axiom that a human being is a unique, irreducible energy field integral with the environmental energy field. Rogers formulated principles of homeodynamics and related postulates that serve as a way to view pattern manifestations of women who are survivors of breast cancer.

There are three principles of homeodynamics. The principle of resonancy describes change as low to high frequency wave patterns; the principle of helicy describes human and environmental field pattern change as innovative, unpredictable, and increasingly diverse; the principle of integrality describes the mutuality of human field and environmental field process (Rogers, 1992). Together the principles of homeodynamics describe the continuous nature of change in field pattern.

Four postulates of importance to the SUHB are energy field, openness, pattern, and pandimensionality. Energy field is the “fundamental unit of the living and non-living” (Rogers, 1992, p. 29). A field is continuously open which supports the infinite and integral nature of the person and environment. The uniqueness of a continuously open energy field is pattern; it is the “distinguishing characteristic of an energy field perceived as a single wave pattern” (Rogers, 1990, p. 7; 1992). Pandimensionality is a non-linear reality that is without spatial or temporal attributes and facilitates the view of the whole (Phillips, 1994; Rogers, 1992). Rogerian scholars have described pandimensionality as that which goes beyond the five senses (Rush, 1996) and the physical domain (Smith, 1992). Reed (1997) described pandimensionality in relation to the nature of one’s awareness of personal wholeness where human beings look inward, reach outward, and integrate past, present, and future.
Rogers (1992) stated that manifestations of human field patterning, which emerge out of the human-environment field mutual process, are observable and reveal one’s pattern. Since her introduction of the SUHB, Rogers (1970) asserted that individuals participate knowingly in human field patterning. Within this perspective, each woman touched by a diagnosis of breast cancer participates in the unique patterning of her life. Power, uncertainty, self-transcendence, and quality of life may be viewed as manifestations of this patterning process (Barrett, 1983; Phillips, 1995; Reed, 1997).

Quality of life has been previously described as a pattern manifestation (Phillips, 1995). In his discussion about quality of life, Phillips urged researchers to “accept that quality of life is integral with and a manifestation of life” (p. 100). The focus on the individual and the inferred unitary nature of quality of life described in Ferrans’ conceptual model enriches a Rogerian unitary perspective of human beings. The literature on quality of life (Flanagan, 1978; Gill & Feinstein, 1994; Priestman & Baum, 1976) consistently identified the importance of the individual’s perspective of quality of life. Quality of life depends on the unique experience of life for each person and encompasses four domains: health and functioning, psychological/spiritual, socioeconomic, and family (Ferrans, 1996). In her conceptual and empirical work, Ferrans described the four domains as overlapping and stated that they represent a higher order concept which is identified as quality of life (Ferrans, 1994, 1996; Ferrans & Powers, 1992).

In her theory of power, Barrett (1983; Barrett, Caroselli, Smith, & Smith, 1997; Caroselli & Barrett, 1998) conceptualized power as knowing participation and operationalized it by awareness, choices, freedom to act intentionally, and involvement in creating change. Power is a way human beings engage in mutual process with their environment to actualize some potentials for change (Barrett, 1990). Researchers suggested that persons with cancer express a desire to know about and be aware of their
cancer and their choices (Bilodeau & Degner, 1996; Ferrell et al., 1997b; Ragsdale et al., 1992; Thewes, Butow, Girgis, & Pendlebury, 2004). Women with breast cancer have been described as increasingly involved in making choices about their treatment options and survivorship issues (Cimprich et al., 2005; Gee, 1992; Hack, Degner, Watson, & Sinha, 2006; Moch, 1995; Winer, 1994). Women cancer survivors conveyed a sense of change when asked about their experiences and quality of life (Carter, 1993; Ersek et al., 1997; Ferrans, 1994). Barrett's view of power is inherent in making choices, acting intentionally, being involved in creating change, and participating fully in life as described in the oncology quality of life literature (Bertero & Ek, 1993; Faden & LePlege, 1992; Ferrell et al., 1989; Hack et al., 2006; Moch, 1995).

Although there have been no published studies that examined the relations between power and quality of life, several studies have examined conceptualizations such as life satisfaction and well-being. McNiff (1995) reported an association between power and life satisfaction in a sample of adults with long term care needs. Likewise, Rizzo (1990) reported an association between power and life satisfaction in her sample of adults over age 65. Morris (1991) found an association among well-being and awareness, choices, freedom to act intentionally, and involvement in creating change in older adults. These researchers' findings signified that power is a continuous theme in life experiences (Caroselli & Barrett, 1998).

The life experiences of breast cancer survivors as described by qualitative researchers (Ferrans, 1994; Moch, 1995; Thewes et al., 2004) included issues surrounding change and uncertainty. Rogers (1990) theorized that change is unpredictable and increasingly diverse. In her theory of uncertainty in illness, Mishel (1981, 1990a) described unpredictability as an indicator of uncertainty. Mishel (1988) asserted that uncertainty exists when at least one of eight dimensions is present; unpredictability is one of the eight.
dimensions. Mishel (1990a) discussed growth, change, and constant and continual uncertainty. Uncertainty has been described as a process of fluctuation and change, where the view of uncertainty as a completely negative experience is changed. Mishel asserted that uncertainty can promote a positive force in a person's life.

While Padilla et al. (1992) found an inverse association between uncertainty and quality of life in 100 women with gynecological cancers, they concluded that uncertainty in illness alone was not sufficient to predict quality of life. In a study of quality of life in long-term cancer survivors, including breast cancer survivors, the researchers reported concerns associated with uncertainty about the future (Ferrell, Dow, Leigh, Ly, & Gulasekaram, 1995; Gil et al, 2004). Leigh (1997) and Grant et al. (1996) described the person in the intermediate stage of survival as being primarily concerned with uncertainty and other quality of life issues. In qualitative studies, women with breast cancer expressed a sense of uncertainty (Moch, 1995; Nelson, 1996; Pelusi, 1997; Thewes et al., 2004). Nelson explored living with uncertainty in women with breast cancer and reported five themes, which included transitions (learning new ways of being in the world), reflections of self in the world, and understanding (putting uncertainty into life's perspectives). Mishel (1990a) theorized that one's living with uncertainty may give way to an evolution from old ways of being.

New ways of being in the world are included in Reed's (1991a) theory of self-transcendence. Reed posited that the journey toward self-transcendence is manifested by new ways of being in the world and the process may be accelerated by perceived end of life experiences. Self-transcendence, as conceptualized by Reed (1991a, 1996, 1997), is derived from assumptions associated with Rogers' key postulate of pandimensionality. In the current study, self-transcendence is viewed as a human potential and a manifestation of unitary patterning.
Self-transcendence is concerned with an awareness of fluctuations in the human-environment field pattern and personal wholeness that goes beyond the constricted views of oneself and the world and integrating new life experiences by transcending older ways of thinking and being (Reed 1991a, 1996, 1997, Personal Communication, July 7, 2000). Self-transcendence is a potential that can be actualized (Reed, 1996). Researchers have described characteristics of self-transcendence in women with advanced breast cancer and men and women with AIDS (Coward, 1990, 1994, 1995) and survivors of breast cancer (Carpenter, Brockopp, & Andrykowski, 1999; Ferrans, 1994; Ferrell et al., 1997b; Pelusi, 1997; Wyman & Gaydos, 2005). The work of these researchers provided preliminary support for Reed’s hypothesis that self-transcendence is positively associated with well-being. Empirically, Coward (1991, 1996) found an association between self-transcendence and well-being in women with advanced breast cancer and concluded that there is support for Reed’s theory of self-transcendence in persons with an increased awareness of personal mortality.

Thus, breast cancer survivors are faced with an increased awareness of their personal mortality (Carpenter et al., 1999; Jensen, Back-Pettersson, & Segesten, 2000; Massie & Holland, 1991; Nelson, 1996). They have the inherent capacity to knowingly participate in change (Barrett, 1986, 1990), where change is unpredictable (Rogers, 1990). Women survivors of breast cancer perceive unpredictable change and experience uncertainty (Moch, 1995; Nelson, 1996; Wear, 1993). Living with uncertainty may require new ways of being in the world (Coward, 1990; Mishel, 1990a; Nelson, 1996; Wyman & Gaydos, 2005) and self-transcendence within the context of the survivor of breast cancer may be associated with quality of life. Thus, in the face of uncertainty within the context of surviving breast cancer, a woman with the inherent capacity to knowingly participate in change may transcend to new ways of being in the world. Pandimensional awareness of
one's self and the world characterize a new way of being which may be associated with quality of life. Based on the theoretical rationale for the current study, a Conceptual-Theoretical-Empirical structure (CTE) was built (see Appendix A) and a preliminary model illustrating the theoretically based ideas was created (see Appendix B).

Research Questions

1. What are the relations amongst power, uncertainty, self-transcendence, and quality of life in breast cancer survivors?
2. Do power and uncertainty contribute to an explanation of the variance in quality of life in breast cancer survivors?
3. Do power and uncertainty contribute in an interactive way to the explanation of the variance in quality of life in breast cancer survivors?
4. Do power and uncertainty contribute to an explanation of the variance in self-transcendence in breast cancer survivors?
5. Do power and uncertainty contribute in an interactive way to the explanation of the variance in self-transcendence in breast cancer survivors?

Need for the Study

The significance of this study was based in three domains: the importance of breast cancer as a women's health issue, the need to explore constructs from new perspectives which are theoretically based, and the importance of contributing to the growing body of knowledge on factors related to quality of life which are of interest to health care professionals, particularly oncology nurses.

The American Cancer Society's annual report of cancer statistics has continued to support the importance of breast cancer as a women's health issue. Breast cancer was
expected to continue as the most common cancer diagnosed in women (American Cancer Society, 2000; Jemal et al., 2006; Landis, Murray, Bolden, & Wingo, 1998). The estimated number of new cases of breast cancer in women continued to rise from 183,000 in 2000 to 212,920 in 2006 (American Cancer Society; Jemal et al.). Mortality estimates began to decline in 1994 and have essentially remained stable since 2000 with an estimated 41,000 deaths in the year 2000 and the same number in 2006 (American Cancer Society; Jemal et al.; Parker, Tong, Bolden, & Wingo, 1997). Decreases in mortality estimates since 1994 were attributed to early detection and improved treatments (Budin, 1998; Gil et al., 2004).

Despite the advances, changes in the life experience of women with breast cancer are still profound (Avis, Crawford, & Manuel, 2003; Budin, 1998; Kissane et al., 1997; Spagnola et al., 2003). Women survivors of breast cancer make up an ever-increasing number, almost ¼, of the more than ten million cancer survivors in the United States (Grant et al., 1996; National Cancer Institute, 2005). Studies of breast cancer survivors include acute stage survivors (diagnosis and treatment period), long-term survivors (meet criteria for cure), or survivors from a mix of stages. Kessler (2002) found quality of life differences for those closer to the time of diagnosis than for those diagnosed 10 or more years previously. In view of the growing numbers of breast cancer survivors, differences in quality of life along the trajectory of survivorship, the paucity of studies specific to intermediate stage survivors, and the concern about the profound influence living through breast cancer can bring, it was important to expand our understanding of quality of life for intermediate stage survivors of breast cancer and the factors related to it (Cimprich et al., 2005; Gill & Feinstein, 1994; Kessler, 2002; Phillips, 1995; Tomich et al., 2005).

One possible way of gaining a better understanding was to explore quality of life from a new perspective. Rogers (1986) suggested examining events from different
perspectives to raise new questions and suggest new explanations. Experts recommend the use of theoretical frameworks to examine quality of life and possible related factors (Ashing-Giwa & Kagawa-Singer, 2006; King & Hinds, 1998, 2003; Vallerand, Breckenridge, & Hodgson, 1998). The SUHB and Ferrans’ conceptual model of quality of life offered perspectives which acknowledge the unique values of the individual and which recognized the unitary nature of quality of life. Rogers’ (1992, 1994) science identified unitary human beings and the world in which they live as the phenomena of interest to nurses. Sherman (1997) suggested that concepts selected for research guided by the SUHB should be clearly relevant to the phenomena of concern. It is clear that quality of life is a concept of concern to human beings. While Parse (1994, 1996) has addressed quality of life from her theory of human becoming, a theory that evolved from Rogerian science, there have been no published studies that explore quality of life directly from the perspective of Rogers’ science.

The literature in breast cancer contained references to change, one’s awareness, the desire of women to exercise choice, and to act with intention (Ferrans, 1994; Moch, 1995; Nelson, 1996; Pelusi, 1997; Winer, 1994). These characteristics were described in Barrett’s theory of power. Yet, Barrett’s conceptualization of power has not been studied in relation to quality of life for breast cancer survivors. Although Mishel’s theory of uncertainty has been used to study persons with cancer, the results of these studies have been inconsistent (McCormick, 2002). In qualitative studies (Moch, 1995, Nelson, 1996) and women’s personal and literary accounts of their experience with breast cancer (Demarco, Picard, & Agretelis, 2004; Gee, 1992; Wear, 1993), issues of uncertainty and change to a new way of being in the world weave through the literature.

Self-transcendence as a new way of being in the world has been studied in women treated for breast cancer and those with advanced breast cancer (Coward, 1991, 1996,
2003; Coward & Kahn, 2005). The examination of self-transcendence in women with breast cancer in other circumstances was needed, such as those in the intermediate stage of survival. This study examined self-transcendence and other pattern manifestations in relation to quality of life through the perspective of Rogers’ science, Ferrans’ conceptual model, and the nursing theories of Barrett, Mishel, and Reed. Prior to the current study, there were no nursing studies that integrate these theories and Ferrans’ conceptual model within the context of Rogers’ science to study breast cancer survivors.

Finally, it is clear that the need for knowledge related to quality of life is supported in the literature. Nationally, quality of life for breast cancer survivors has been identified as a priority in Healthy People 2010 (U. S. Department of Health and Human Services, 2001). The National Institute of Nursing Research (2005) identified quality of life as a research area of importance. Holland (1992) identified quality of life as a major focus of interest in the emerging field of psychooncology. Journals have emerged which have a major focus on quality of life research, for example, Psycho-Oncology, Quality of Life Research, and the Journal of Psychosocial Oncology. Quality of life is an outcome variable measured in many clinical trials (Cella & Tulsky, 1990). Quality of life research is of particular interest to oncology nurses (King, 2006; Stenstrup, 1996). The Oncology Nursing Society has continued to identify quality of life within the top three research priorities (Berger et al., 2005; Stetz, Haberman, Holcombe, & Jones, 1995). The Oncology Nursing Society convened a State-of-the-Knowledge conference on quality of life in 1995 and continues to recognize the importance of quality of life for those surviving cancer (King, 2006; King & Hinds, 2003; King et al., 1997). Recommendations from these sources included addressing theoretical frameworks and additional concepts that may contribute to an understanding of quality of life. Nurses caring for women surviving through breast cancer need to be aware of factors associated with quality of life.
so appropriate assessments and interventions can be studied and initiated. The current study contributes to the body of knowledge on quality of life by examining the human field pattern manifestations of power, uncertainty, and self-transcendence for breast cancer survivors from a nursing theoretical perspective, thereby adding to nursing science and enhancing an understanding of quality of life for breast cancer survivors.
CHAPTER II
THE RELATED LITERATURE

Quality of Life

Quality of life has been studied with increasing frequency and sophistication for more than four decades. The foundational studies were done by social scientists. In large population-based studies, quality of life was conceptualized as the value satisfaction of living (Cantril, 1965), satisfaction of needs (Campbell, Converse, & Rogers, 1976), and privately known and privately evaluated aspects of life (Andrews & Withey, 1976). Flanagan (1978) operationally defined quality of life as the satisfaction with subjectively important aspects of life. Likewise, George and Bearon’s (1980) work focused on aspects of life that were important to the individual.

The conceptualizations of quality of life posited by these social scientists continue to be used and modified by other quality of life researchers (Anderson & Burckhardt, 1999). Taxonomies of published definitions have been formulated (Farquhar, 1995; Ferrans, 1990a) and conceptual analyses have been conducted (Cooley, 1998; Haas, 1999; Kleinpell, 1991; Meeberg, 1993; Oleson, 1990). In health care research, modified definitions of quality of life have included: “the degree of satisfaction with present life circumstances perceived by the person” (Young & Longman, 1983, p. 220), “patients’ appraisal of and satisfaction with their current level of functioning compared to what they perceive to be possible” (Cella & Tulsky, 1990, pp. 30-31), and “a personal statement of the positivity or negativity of attributes that characterize life” (Padilla, Ferrell, Grant, & Rhiner, 1990, p. 108).
While some nurse theorists (Leininger, 1994; Parse, 1994; Peplau, 1994) have put forth conceptualizations of quality of life, Rogers did not conceptually define quality of life. Parse (1992) derived her theory of human becoming from Rogers SUHB. Parse (1994) conceptually defined quality of life within the perspective of the theory of human becoming as “the incarnation of lived experiences is the indivisible human’s view on living moment to moment as the changing patterns of shifting perspectives weave the fabric of life through the human-universe interconnectedness” (p. 17). While the influence of Rogers’ science is evident in this definition, it is also clear that it is specific to Parse’s human becoming theory.

Any understanding of quality of life from a Rogerian perspective must be consistent with the axioms, key postulates, and principles of homeodynamics of the SUHB. The unitary and unique nature of human beings has been axiomatic to the SUHB since its introduction (Rogers, 1970, 1992). Unitary human beings are “specified to be irreducible wholes” (Rogers, 1992, p. 29). The postulates of particular importance to this study are pattern and pandimensionality. Rogers (1992) stated pattern is the distinguishing characteristic of the human field. The human field pattern is unique and pandimensional, meaning that it is a nonlinear domain without spatial or temporal attributes. Pattern is an abstraction and can only be observed through its manifestations. Phillips (1995) asserted that researchers should “accept that quality of life is integral with and a manifestation of life” (p. 100). The principles of homeodynamics, resonancy, helicy, and integrality, describe the continuous nature of human field pattern change and pattern manifestations are continuously changing (Rogers, 1990). As such, quality of life, as a pattern manifestation, would be expected to function in accordance with the principles of homeodynamics (Phillips, 1995; Reed, 1997; Rogers).
In her seminal work on the SUHB, Rogers (1970) suggested that it is only through viewing human beings in their unitary wholeness that explanations of pattern manifestations emerge. Rogers cautioned that only seeing life’s experiences through a negative lens denies the unitary nature of human beings and obscures their actualization of potentials for change. Rogers noted that remaining open to the positive is essential to enhancing our understanding. A view that is based in the unique, unitary, pandimensional wholeness of human beings can inform our understanding of quality of life.

In the absence of a Rogerian conceptualization of quality of life, consistencies between Rogers’ SUHB and features of Ferrans’ (1990a, 1996) conceptual model of quality of life provided a preliminary link from which a Rogerian perspective of quality of life could emerge. Consistencies are noted in the philosophical underpinnings that address the view of human beings and their world as unique and whole. Ferrans’ model (1990a, 1996) was predicated on the basis that each person is unique with different values and life experiences. Using the work of Campbell et al. (1976), Ferrans (1996) stated that, “the essence of quality of life lies in the experience of life” (p. 295) and that the person is the only proper judge of quality of life. The literature supported the importance of individuals’ subjective perspectives of quality of life (Cella & Tulsky, 1990; Gill & Feinstein, 1994; Gotay & Muraoka, 1998; King, 2006; King et al., 1997; Osoba, 1991; Parse, 1994; Priestman & Baum, 1976; Schipper, Clinch, & Powell, 1991).

Rather than use any particular nursing model or theory to formulate her quality of life model, Ferrans (1990a, 1996; Ferrans & Powers, 1985) used clinical experience, the literature, and quantitative and qualitative approaches. Using these sources, she identified elements or manifestations of quality of life, e.g., one’s own health, usefulness to others, satisfaction with one’s self, peace of mind, standards of living, emotional support from others, family happiness, and relation with spouse. These elements were categorized in
four interrelated domains of quality of life, i.e., health and functioning, psychological/spiritual, socioeconomic, and family. While the combination of domains is unique to Ferrans' model, the generally accepted dimensions of quality of life, i.e., physical, psychological, social, and spiritual domains (Aaronson, 1990; King et al., 1997; Mast, 1995a; Osoba, 1991; Varricchio, 2006) were present. Both the theoretical and research literature on Ferrans' model suggested that the elements together manifest unitary quality of life (Ferrans, 1990a, 1990b, 1994, 1996; Ferrans & Powers, 1992).

The external validity of Ferrans' model has been supported by consistency with the literature regarding the domains of quality of life and the evidence of a close match to the quality of life model developed by Ferrell and colleagues (Ferrans, 1996; King et al., 1997). While there is a similar model (Ferrell et al., 1995), Ferrans' model was chosen for the current study because of the theoretical and empirical evidence of the unitary nature of quality of life and the consistency between the conceptual and operational definitions of quality of life, which uniquely focus on both satisfaction and importance for the individual.

Ferrans' quality of life model has been used in persons with cancer, other life-threatening illness, and survivors of breast cancer (Belec, 1992; Ferrans, 1990b, 1994; Hughes, 1993; Lee, 1997; Rustoen, Moum, Wiklund, & Hanestad, 1999; Rustoen, Wiklund, Hanestad, & Moum, 1998; Weitzner et al., 1997). Researchers have used other quality of life models to investigate quality of life in cancer and survivorship (Conde, et al., 2005; Courtens, Stevens, Crebolder, & Philipsen, 1996; Ersek et al., 1997; Ferrell et al., 1995; Helgeson & Tomich, 2005). Despite differences in conceptual and operational definitions of quality of life in these models, trends were found in the research findings. One such trend was reports of higher than expected quality of life for
individuals surviving cancer (Belec, 1992; Courten et al., 1996; Sammarco, 2003; Wingate, 1995; Young & Longman, 1983).

In a small sample \((n = 24)\) of adults one to three years after bone marrow transplantation (BMT) for hematologic cancers, a total mean quality of life score of 21.6 (range 13.1 to 27.7 out of a possible 30) using Ferrans' QLI-CV, for which adequate reliability and validity have been reported, was found and interpreted as moderately high (Belec, 1992). Yet, in QLI-CV subscale scores and on semi-structured interviews, Belec found lingering concerns, e.g., persistent health problems, a lack of energy, difficulty in getting jobs, and setbacks related to reaching personal goals. Using the same instrument, Rustoen et al. (1999) examined quality of life for persons with cancer \((n = 131, 76\% \text{ of whom were women, 37\% were breast cancer survivors})\) and found a mean total score of 21.5 despite similar concerns to those found in Belec's sample. Sammarco (2003) found mean QLI-CV scores \((M = 23.13, SD = 4.77)\) for older (>50 years old) breast cancer survivors \((n = 103)\) but no information about stage of survivorship was provided.

Other researchers have reported similar findings in different populations. Wingate (1995) found higher than expected quality of life (mean total on Ferrans' QLI-Cardiac III scores of 21.6) for women \((n = 96)\) post myocardial infarction (MI). The vast range in months (2 to 240) since MI posed a limitation to this study. Young and Longman (1983) found higher than expected quality of life despite physical disability or disfigurement in a small sample \((n = 23)\) of persons with melanoma. Likewise, Courten et al. (1996) noted a positive global quality of life despite dysfunction and symptoms in their longitudinal (1 year) study of a small sample \((n = 51)\) of predominately women \((31 \text{ out of } 51)\) with various cancers (highest percent of which had breast cancer). In a larger study comparing breast cancer survivors \((n = 267)\) and healthy women \((n = 187)\), Helgeson and Tomich (2005) found that women survivors of breast cancer without recurrence, despite more
physical symptoms, had no differences on the other quality of life indicators than healthy women. Using the Medical Outcomes Study Short Form as the quality of life measure, Brazilian researchers reported that quality of life was good for a small number \((n = 75)\) of breast cancer survivors aged 45-65 who completed treatment and were not taking hormonal therapy for at least 6 months (Conde et al., 2005). Study limitations such as small sample sizes and widely heterogeneous samples make generalizations impossible.

Likewise, researchers using similar versions of Ferrell and colleagues Quality of Life instrument (QOL-Breast Cancer [QOL-BC] version, QOL-Cancer Survivor [QOL-CS] version, QOL-Bone Marrow Transplant [QOL-BMT] version), for which adequate reliability and validity are reported, found total quality of life scores greater than 6.5 on a scale of 0 to 10 in samples of breast cancer survivors (Ferrell et al., 1995; Ferrell, Grant, Funk, Garcia, Otis-Green, & Schaffner, 1996; Ferrell et al., 1997a, 1997b, 1998a, 1998b; Whedon, Sterans, & Mills, 1995). Long term cancer survivors \((n = 687)\), 43% of whom were breast cancer survivors, were asked to complete the QOL-CS (mean score of 6.51) and Cella’s Functional Assessment of Cancer Therapy – General (FACT-G) (mean score of 3.19 out of a possible 4) as measures of quality of life. Ferrell et al. (1995) found better than expected quality of life on both measures. Ferrell et al. (1996) reported a total mean score of 6.53 (out of a possible 10) on the QOL-BC for a small sample \((n = 21)\) of breast cancer survivors (a mean of 34 months since diagnosis).

Similarly, Ferrell et al. (1998b) found a total mean score of 6.64 on the QOL-BC for 298 breast cancer survivors a mean of 107 months since diagnosis. Quality of life for a small sample \((n = 29)\) of long-term survivors of autologous bone marrow transplant (55% were women and 24% were breast cancer survivors) was measured using the QOL-BMT (Whedon et al., 1995). These researchers reported a high total mean score of 8.17 (out of 10). Limitations in studies of survivors include small sample size (Whedon et al.) and
widely heterogeneous samples, e.g., individuals ranging from 2 to 32 years post diagnosis (Ferrans, 1994), women who have completed treatment and women continuing to receive treatment (Ferrell et al., 1998b), women in early and advanced stages of cancer, and women surviving primary cancer and those with multiple cancer diagnoses (Ferrell et al., 1995). The findings reported by these researchers in samples of persons with cancer, post myocardial infarction, and survivors of breast and other cancers provide the basis for identifying the trend toward higher than expected quality of life (Belec, 1992; Courtens et al., 1996; Ferrans, 1994; Ferrell et al., 1995; Ferrell et al., 1997a, 1998b; Whedon et al., 1995; Wingate, 1995; Young & Longman, 1983).

While more traditional perspectives were used to discuss findings, Belec (1992) and others (Courtens et al., 1996; Ersek et al., 1997) suggested that the unexpectedly high quality of life might be explained by the fact that participants reported a new perspective on life where they were living in a more conscious way and life itself had new meaning and value. Belec suggested that while satisfaction with some areas of life decreased, other areas had taken on greater importance and satisfaction resulting in enhanced overall quality of life. Despite tentative explanations, unanswered questions remain.

The second trend of interest is the approach of reporting on negative and positive aspects of quality of life for women survivors of breast and other cancers (Dow et al., 1999; Ersek et al., 1997; Ferrans, 1994; Ferrell et al., 1996; Wyatt & Friedman, 1996). Ersek et al. (1997) examined quality of life using the QOL-CS and three open-ended questions about the meaning of quality of life, the impact of cancer and how quality of life had changed, and about a meaningful experience related to cancer and quality of life. Negative and positive aspects of quality of life for women survivors of gynecological cancers ($n = 130$) were reported. The negative aspects included physical problems, family stress about the cancer diagnosis, and uncertainty. Included with the positive aspects
associated with quality of life were changes that involved being more appreciative of life, living in the moment, participating more fully in life, making decisions and choices, and a sense of changing priorities with quality of life.

In an unusually large qualitative sample \((n = 687)\) of which the largest group (43%) were breast cancer survivors, Dow et al. (1999) examined the meaning of quality of life for long-term cancer survivors (mean of 80 months since diagnosis) using written responses to open-ended questions similar to those used by Ersek et al. (1997). Dow’s team synthesized 11 overarching themes that incorporated the negative and positive aspects of quality of life. The themes dealing with the negative aspects included managing the physical symptoms associated with disease or treatment that lingered and persisted long-term and facing multiple losses. Positive themes included seeking a sense of wholeness after a life-changing experience, the meaning of quality of life is having life that is unique to the individual’s experience, and a contrast between focus on the moment and a focus on the future.

Using her conceptual model as the framework, Ferrans (1994) examined quality of life for 61 breast cancer survivors from a qualitative approach using written responses to a broadly stated question. She found negative aspects in all the domains of quality of life and positive aspects in most of the domains (all except economics). The negative aspects included fear of recurrence and inability to plan for the future and positive aspects included a change toward healthy habits, change in values and priorities, receiving help from others and helping others. Ferrans’ findings for breast cancer survivors were similar to those of other researchers.

Wyatt, Kurtz, and Liken (1993) explored quality of life for 11 long-term survivors (mean of 10 years) of breast cancer using a focus group technique and found that while women were concerned about the uncertainty of recurrence and other unresolved issues,
they expressed positive changes in life perspective and in relationships with others. In a subsequent study of long-term (mean of 8 years) survivors of female cancers (58% were breast cancer survivors), Wyatt and Friedman (1996) examined quality of life in 188 women using a new instrument, the Long Term Quality of Life (LTQL). Similar to the Wyatt et al. study, they found negative aspects, e.g., fear of recurrence. Positive aspects included increased appreciation of life and a sense that they could help others.

Exploring the negative and positive aspects of quality of life led researchers to novel conclusions. Ersek’s (1997) team concluded that survivorship is a multifaceted experience with women being able to find positive, yet realistic, meaning in their experiences. Likewise, Dow et al. (1999) concluded that quality of life is multifaceted and dynamic for the cancer survivor and suggested further exploration of wholeness in association with quality of life. Ferrans (1994) concluded that despite concerns in all domains breast cancer survivors were getting on with life and most were even thriving. Still more dramatically, Wyatt and Friedman (1996) concluded that breast cancer survivors had not returned to normal but had emerged as new women.

While not quality of life studies, researchers have explored the experience of women survivors of breast cancer and reported similar findings and conclusions (Carter, 1993; Moch, 1990, 1995; Pelusi, 1997; Taylor, 2000; Thibodeau & MacRae, 1997). Using in-depth interviews of 45 women free of recurrence for a minimum of three years, Thibodeau and MacRae found ten themes, e.g., giving advice and life changes, which were synthesized into three paradigm cases entitled, busy and engaged, helping others with cancer, and deniers. Likewise, Moch’s themes emerged from data concerning breast cancer survivorship shared by 20 women (4 to 18 months since diagnosis) and included getting information and making choices, changing relatedness, and new perspective about life. In another qualitative study, survivors of breast cancer (n = 13) shared their stories of
well-being and described strong faith, optimism, and purpose in life (Justice, 1998). Justice reported that women “found ways to experience being part of something larger than the self, which gave them an identity beyond the physical” (p. 67).

Pelusi (1997) investigated the lived experience of surviving breast cancer for eight women (an average of 7.6 years since completion of therapy) using in-depth interviews. The themes included a future of uncertainty and self-transcendence. Similarly, Carter (1993) explored the lived experience of breast cancer survivors ($n = 25$) using in-depth interviews. Her analysis uncovered a process of “going through” which included the phases of confronting mortality, reprioritizing, and moving on. The idea that survivorship is a process beginning at diagnosis and extending to living through cancer with a focus on quality of life has been described by others (Leigh, 1997; Mullan, 1985, National Coalition for Cancer Survivors, 1999). Carter sees the process of “going through” as a dynamic movement through phases that are sometimes simultaneous. Like Ferrans (1994) and others (Jensen et al., 2000; Taylor, 2000; Wyatt & Friedman, 1996), Carter’s participants described emergent experiences of becoming new women.

Quality of life researchers have found that cancer survivors seek a sense of wholeness after a life-changing experience (Dow et al., 1999). Furthermore, breast cancer survivors describe a sense of positive change associated with the experience of cancer and their quality of life (Ferrans, 1994; Ferrell et al., 1995; Ganz, Rowland, Desmond, Meyerowitz, & Wyatt, 1998). Similarly, Taylor (2000) reported that recent (2 years since diagnosis) breast cancer survivors ($n = 24$) attributed positive meaning and significance to their breast cancer experience and suggested that the survivors experienced growth and expansion of their human potential.

Such studies as these remind one of Rogers’ SUHB where an optimistic view of life’s potentials gives rise to the ideas that human beings have the capacity for conscious
awareness of themselves and their world, to exercise choice, to be free, and to participate knowingly in change (Barrett & Caroselli, 1998; Phillips, 1994; Rogers, 1970, 1994). Rogers (1970, 1992) also addressed uncertainty in the nature of change and stated that change is unpredictable. As noted in the reported research, women surviving breast cancer experience uncertainty, make choices and decisions, and participate in life (Gee, 1992; Moch, 1990, 1995; Nelson, 1996, Winer, 1994).

Despite uncertainty and reports of lingering problems, some women experience a sense of changing priorities, experience time differently, and describe finding new ways of being in the world (Carter, 1993; Dow et al., 1999; Ferrans, 1994; Pelusi, 1997; Wyatt et al., 1993). Quality of life "is not bound to a single time or place" (Mast, 1995a, p. 958). From a Rogerian perspective, these descriptions speak to the pandimensional nature of quality of life. Researchers have been challenged to interpret findings of unexpectedly high quality of life in breast cancer survivors in all stages of survivorship despite lingering concerns (Ferrans, 1990b; Ferrell et al., 1995; Ferrell et al., 1996). Rogers (1970) proposed that "distinctive properties of human beings come into view only as the parts lose their identity" (p. 41). The SUHB provides a perspective that accepts the unitary, pandimensional, homeodynamic nature of human beings. Within this perspective, knowing participation in change and uncertainty have meaning. The experience of reaching inward, outward toward others, and a changed experience of time, which characterize the pandimensional experience of self-transcendence, speaks to the capacity of human beings for growing complexity and change. Together, Rogers' SUHB and the literature suggest human pattern manifestations such as power, uncertainty, and self-transcendence may be associated with quality of life in breast cancer survivors.
Power

Power is simultaneously inviting and intimidating. It is most probably these characteristics that explain the fascination with power that human beings have demonstrated for many centuries. The literature provides evidence of the interest in power in the fields of business, economics, philosophy, politics, psychology, and sociology (Burns, 1978; Dahl, 1968; Foucault, 1980; Gailbraith, 1983; Machiavelli, 1518/1977; Nietzsche, 1883/1968; Weber, 1947). The word origin of power has been traced to the Latin, posse, meaning to be able, ability (Partridge, 1983) and The American Heritage Dictionary (1983) identified its derivation from the French word, poeir, meaning to be able. Power has been characterized as a strength or force that can be exerted over some other person or thing (The American Heritage Dictionary; Weber, 1947). Power may be viewed as an inherent individual capacity or as a right of authority given to an individual by external forces.

From a historical perspective, Machiavelli (1518/1977) wrote of the behaviors of the perceived powerful of his time and suggested the ways to hold on to power. Hobbes (1651/1962) viewed power as original or instrumental, both of which referred to power over others. From his philosophic perspective, Hobbes defined power as a person's “present means to obtain some future apparent good” (p. 72). Likewise, Smith (1988), a political analyst, defined power as “the ability to make something happen or to keep it from happening” (p. xxi). Using similar perspectives, power has been related to authority (Weber, 1947), coercion (Olsen, 1970), commodity (Gailbraith, 1983), and control (Rotter, 1982). In keeping with these meanings, sources of power (French & Raven, 1959), categories of power (Boulding, 1989), and essentials of power (Burns, 1978) have been identified. Often described as a poststructuralist, Foucault (1980) viewed power differently. He described power using the metaphors of a chain or a net to convey the
deep interrelations of power where individuals are “the vehicles of power, not its points of application” (p. 98).

Not unlike the Greeks, existentialists ascribed to an ontological perspective, seeing power as an aspect of the being of each person. Coming from this perspective, May (1972) described five types of power, most of which spoke to a more traditional view (exploitive, manipulative, and competitive). May’s nutrient power (power on behalf of another) and integrative power (power with another) suggest a beneficence and collaboration. Carl Rogers (1977) wrote of personal power which he linked to increasing awareness, freedom to choose, and change. C. Rogers (1980) contrasted his “new paradigm for power” (p. 200) with the paradigm over or power to control. His new paradigm was described as power shared and individuals are seen as being empowered.

Power (Hawks, 1991; Heineken, 1985), powerlessness (Kubsch & Wichowski, 1997; Walding, 1991), and empowerment (Ellis-Stoll & Popkess-Vawter, 1998; Gilbert, 1995; Ryles, 1999) have been examined in the discipline of nursing. Hawks examined the concept of power using King’s theory of goal attainment and dichotomized power using two different categories, i.e., power over and power to. Heineken studied the perceptions of different groups of nurses in management positions regarding acceptable and unacceptable uses of power and found no statistically significant group differences. The premise that there are acceptable and unacceptable uses of power suggests the view that power is either good or evil. Kubsch and Wichowski examined perceived powerlessness and power resources. Powerlessness was defined as “the perception that one’s own actions will not significantly affect an outcome; a perceived lack of control over a current situation or immediate happening” (p. 7). Likewise, Walding viewed powerlessness from a control and cause and effect perspective in her theoretical analysis of the relations among pain, anxiety, and powerlessness in surgical patients. Three recent concept
analyses of empowerment performed by Ellis-Stoll and Popkess-Vawter, Gilbert, and Ryles discussed the issues of power, control, avoidance of oppression, and the influence of some external force. These views of power found in the nursing literature are all characterized by more traditional views of power.

In contrast, Barrett (1983, 1986) reconceptualized the existentialist view of power within Rogerian science and offered a new product, a new view of power as knowing participation in change. The principle of helicy (concerned with the nature of change) and Rogers’ view that humans can knowingly participate in change were theoretically linked by Barrett. She described four measurable power manifestations, i.e., awareness, choices, freedom to act intentionally, and involvement in creating change. Power is defined as the capacity to participate knowingly in the nature of change characterizing the continuous patterning of the human and environmental fields (Barrett, 1983, 1986). In this view, liberating one through empowerment or the giving away of power is not consistent (Barrett et al., 1997) with Rogers’ science. Rather, Barrett’s view of power “recognizes reality as a mutual process of people and their environments” (Barrett et al., p. 34), and it is through this mutual process that people’s access to their own power may be enhanced. Unlike the more traditional perspectives, power is seen as neither good nor evil, but rather as a natural potential which is manifested in varying forms and intensity. From Barrett’s perspective, power is viewed as a “theme in the continuous flow of life experiences whereby some potentials for unitary change are actualized” (Caroselli & Barrett, 1998, p. 9).

In her foundational study, Barrett (1983) examined the relations of human field motion and power in a national sample of 625 adult men and women. She developed the Power as Knowing Participation in Change Tool (PKPCT) as a measure of power (Barrett, 1983) for the study. Barrett supported her hypothesis that human field motion (a
measure of unitary human development) and power (a measure of knowing participation) were positively associated. Furthermore, her work contributed to the support of Rogerian science and the power theory. The usefulness of Barrett’s theory of power is supported by a review of the Barrettian power literature (Caroselli & Barrett, 1998), which reported 22 studies using the power theory or the power tool (PKPCT). Subsequently, other researchers throughout the world (too many to cite here) have published reports of studies based on Barrett’s theory or using her tool indicating the ongoing pertinence of her work (Hurley, 2005; Kim, 2001; Lewandowski, 2004; Lunney, Parker, Fiore, Cavendish, & Pulcini, 2004; Mahoney, 2001; Salerno, 2002; Wall, 1999, 2000; Wright, 2000, 2004).

While there are no published studies examining power in women survivors of breast cancer or of power and quality of life, researchers have used Barrett’s power theory and instrument to study women (Caroselli, 1995; Dzurec, Hoover, & Fields, 2002; Malinski, 1997; Rush, 1996), persons managing chronic illness (Smith, 1993), polio survivors (Smith, 1995), persons with lung cancer (Wall, 1999), and in relation to life satisfaction (McNiff, 1995; Rizzo, 1990) and well-being (Morris, 1991). These researchers’ findings provide some insights for consideration in the current study of power, uncertainty, self-transcendence, and quality of life in women survivors of breast cancer.

One insight is the potential variations of power in men and women. While power within the Rogerian perspective has been proposed as gender free (Barrett et al., 1997), Wall (1999) uncovered a small but statistically significant relation between power and gender in a sample \( n = 104 \) of men (53.8%) and women (46.2%) with lung cancer. Across time, the mean power scores ranged from 283 to 288 for men and from 263 to 268 for women out of a possible 336. She concluded that these preliminary findings illustrated the patterning of power in men with heightened capacity for knowing participation in change. Although Wall reported a statistically significant, \( t(102) = 3.33, \)
\[ p = .001, \] difference between men and women on smoking history (more men than women), this demographic variable was not discussed in light of the power and gender findings.

Evidence of heightened capacity for knowing participation in change has been illustrated in samples of women. Relatively high power (means ranging from 262 to 289 out of a possible 336) in female staff nurses (Trangenstein, 1988), female nurse executives (Caroselli, 1995), and female sober alcoholics (Rush, 1996) has been reported. These researchers reached similar conclusions in that the patterns of the intensity and forms of power observed in these samples of women illustrated that power as knowing participation in change is a continuous theme in the life of women (Caroselli, 1995; Rush, 1996; Malinski, 1997).

Malinski (1997) found variations in power intensity patterns when she examined power in depressed \((n = 200)\) and non-depressed \((n = 200)\) women. As hypothesized, depressed women \((n = 200)\) had less power than those without \((n = 200)\) depression. Similarly, Dzurec et al. (2002) found a moderate, negative statistically significant correlation between depression and power \((r = -.53, p = .01)\) in a small sample of women with \((n = 20)\) and without \((n = 20)\) symptoms of fatigue. The researchers found that those reporting symptoms of fatigue had significantly more depression and lower power.

Variation in the forms of power was illustrated in a qualitative study of men and women participants who did \((n = 15)\) and did not \((n = 18)\) participate in a cardiovascular rehabilitation program (A. Smith, 1993). While the themes from both groups were different, the themes that emerged from both groups illustrated the power manifestations described in Barrett's theory. Six themes for the program participants were identified as consistent with the power theory, e.g., external and internal guides for action facilitate change, structure/environment influences behavior changes, fears and concerns inhibit change.
and facilitate knowing participation in change. The six consistent themes from the non-participants included participating with health care professionals in care decisions, getting to know how to meet cardiac care needs, and making changes along a continuum of action. These findings suggested that while the rhythms and patterns of the forms of power may have been different, power as knowing participation in change was present for both groups.

Power in a group of polio survivors is of particular interest to the current study. D. Smith (1992, 1995) found no statistically significant differences in power for a group of polio survivors \( n = 172 \) as compared with a group of individuals who had not \( n = 80 \) experienced polio. Like A. Smith (1993), D. Smith's finding indicated that power was present for both groups but the pattern was different between groups. The differing pattern in polio survivors was illustrated by the statistically significant association between power and spirituality in the group of polio survivors. This finding suggested that power was associated with actualizing a potential for change, which in this case was spirituality. Rush (1996) found that power for female alcoholics was associated with spirituality and concluded that the participants were actualizing their spiritual potential. These findings and conclusions suggested possible associations between power and other potentials for change, for example, self-transcendence.

D. Smith's (1995) polio survivors shared additional comments which, as she described, "typically credited the experience of polio with building character and developing the habit of hard work, increasing their awareness and insights, contributing to their spiritual growth and religiosity, and teaching them appreciation for the love and support of others" (p. 136). The nature of these comments and the actualization of some potentials for change were similar to those of women survivors of breast cancer (Dow et al., 1999; Ferrans, 1994; Lee, 1997; Nelson, 1996).
Cancer survivors have described life as a changing experience from which they had emerged as better persons (Dow et al., 1999; Ferrans, 1994). In a qualitative study of ovarian cancer survivors \((n = 130)\), Ersek et al. (1997) found categories such as participating in life, making decisions, and having choices. Likewise, breast cancer survivors have shared their experiences characterized by awareness of self-changes, and active participation in healthcare planning (Wyatt et al., 1993). Other researchers have described breast cancer survivors' awareness of mortality and freedom to make choices that embrace life (Coward, 1991; Ferrell et al., 1997a, 1997b; Jensen et al., 2000).

In her seminal work, M. E. Rogers (1970) asserted that human beings make choices and that active participation in field patterning occurs with awareness of self and environment. In a follow-up study to Samarel, Fawcett, Davis, and Ryan (1998) and using Rogers' SUHB, Kelly, Sullivan, Fawcett, and Samarel (2004) compared the perceptions of a small sample of women \((n = 18)\) with early stage breast cancer regarding an experimental therapeutic touch nursing intervention vs. a control intervention and found no differences based on intervention related to expressed feelings of calmness, relaxation, security, comfort, and a sense of awareness. While not a study of power, Kelly et al. addressed a power manifestation, awareness, in breast cancer survivors. Despite the absence of studies regarding power in breast cancer survivors, the literature suggested that in the continuous flow of their quality of life, women manifest their capacity for knowing participation while actualizing some potentials for change.

Quality of life has not been studied in association with power but power has been studied in relation to well-being (measured by a Cantril Ladder or Index of Well-being) and life satisfaction (measured by a Cantril Ladder) (McNiff, 1995; Morris, 1991; Rizzo, 1990). McNiff, in a study of adults with and without long-term care needs \((n = 136)\), found statistically significant relations between power and life satisfaction \((r = .60,\)
Similarly, Rizzo’s hypothesis of a positive relation between power and life satisfaction in adults over 65 years old \((n = 84)\) was supported \((r = .38, p = < .001)\). In a small sample \((n = 61)\) of adults residing in the community \((n = 31)\) and nursing homes \((n = 30)\), Morris found statistical significance \((p = < .01)\) for the positive relation between well-being and the four power manifestations (awareness, \(r = .37\); choices, \(r = .40\); freedom to act intentionally, \(r = .44\); and involvement in creating change, \(r = .33\)). These findings indicated that well-being and life satisfaction were positively associated with power. In-as-much as a person’s well-being that stems from life satisfaction has been used to define quality of life, it is not inconceivable that power may be related to quality of life.

Uncertainty

The ubiquitous nature of uncertainty was illustrated with Frankl’s (1984) observation that “with the end of uncertainty there came the uncertainty of the end” (p. 79). In business and economics, the advantages of allowing for uncertainties when making business plans have long been described (Hey, 1979; Katona, 1980; Motlagh, 1976; Smiley, 1979). Likewise, the quantum theory in physics posits unpredictability in the nature of all combinations (Bohm, 1980; Montagna, 1980). While these views characterize uncertainty as a given to be expected and viewed as a window to limitless possibilities, others take the stance that uncertainty is the most important negative aspect to life (Hougland & Shepard, 1980; Parsons, 1980) or identify it as the greatest single stressor (Koocher, 1985).

In health and related fields, uncertainty in illness has been examined for almost four decades. Davis (1960) explicated the differences between clinical and functional uncertainty. The works of McIntosh (1974, 1976) and Wiener (1975) addressed the
psychological impact of uncertainty in those living with acute and chronic illnesses. Mishel (1981, 1988, 1990a) proposed a theory of uncertainty in illness and began a process of instrument development. Theory derivation (Walker & Avant, 2005) processes provided the foundation for Mishel's original theory which was derived from several cognitive appraisal theorists (Lazarus, 1966, 1974; Lazarus & Launier, 1978; Moos, 1977) and subsequently the inclusion of chaos theory (Pool, 1989). While Selder (1989) proposed a theory of life transition to explain uncertainty and Hilton (1994) developed an instrument to measure uncertainty, it is Mishel's theory and/or instruments that have been predominate in the study of uncertainty in nursing (Mast, 1995b; Mishel, 1997; Neville, 2003).

In an effort to explain ongoing uncertainty, Mishel (1990a) reconceptualized her earlier theory. While the reconceptualization maintained the existing theoretical statements and linkages, Mishel put forth an expanded view that included the concepts of growth and self-organization. Mishel posited that in the face of continuing uncertainty, a change to new perspectives on life could be experienced. Furthermore, Mishel suggested that a process among person and environment would be the context in which the change to new perspectives on life would occur and that these changes would be characterized by an increasing complexity. She contrasted a view of uncertainty as undesirable to a view of uncertainty as a natural and inherent part of reality. Mishel stated, “the nature of uncertainty has to be accepted as the natural rhythm of life” (p. 260).

In Mishel's (1981, 1988, 1990a) theory, uncertainty is thought to exist if one of eight indicators of uncertainty is present. One of these essential indicators of uncertainty (Mishel, 1981, 1988) is unpredictability, which is an important concept within Rogers' science. In view of Mishel's (1990a, 1999) ideas about her reconceptualized theory, one is reminded of Rogers' (1992) principles of homeodynamics, namely, the principle of
helicy which addresses continuous, unpredictable, increasing diversity of human and environmental field pattern, the principle of integrality which addresses the continuous mutual human and environmental field process, and the principle of resonancy which addresses change being characterized by rhythm and pattern.

Although an unlikely pair, both Rogers and Mishel spoke of the nature of change as characterized by unpredictability, increasing complexity, the relation of human and environment, and of the rhythm and pattern of life. Mishel (1990a) stated, “this new view of uncertainty as a natural phenomenon is a new view of the world in which instability and fluctuation are natural and increase the person’s range of possibilities” (p. 261). These similarities form a bridge connecting Rogers’ ideas and Mishel’s expanded view of uncertainty. In Mishel’s reconceptualization, she posited that uncertainty is associated with a range of possibilities. In the current study, the possibilities or pattern manifestations to be studied in association with the continuing uncertainty for breast cancer survivors were self-transcendence and quality of life.

As a natural rhythm of life, one would expect to see uncertainty present in varying intensity and forms in a variety of samples. In a sample of 177 healthy perimenopausal and menopausal women (Lemarie & Lenz, 1995), mean uncertainty scores (63.37 of a possible 140), as measured by the MUIS-CF, were at the levels of or higher than the means (41 to 63) previously found for samples of persons with illnesses (Mishel, 1990b). Further support for this observation were found with a sample of men and women survivors of life-threatening arrhythmias with mean scores on the MUIS-CF of 49 for persons (n = 41) receiving implanted cardioverter defibrillator treatment and 51 for persons (n = 36) receiving pharmacologic treatment (Carroll, Hamilton, & McGovern, 1999). These findings suggested that uncertainty was present as an ongoing rhythm in health, illness, and survivorship.
Researchers exploring uncertainty in a variety of samples (Bertero, Eriksson, & Ek, 1997; Gil et al., 2004; Hughes, 1993; Redeker, 1990) supported the ongoing nature of uncertainty and suggest varying pattern manifestations of uncertainty. Redeker examined uncertainty for persons following coronary artery bypass surgery and found a statistically significant change ($F, 2,127 = 8.42, p < .01$) in uncertainty as measured by the ambiguity and complexity factors of the MUIS two-factor version between the first and sixth week following surgery. In addition, Redeker found that complexity had a statistically significant increase and ambiguity had a non-significant decrease over time for her participants.

Likewise, Mast (1998a) found uncertainty for women ($n = 109$), a mean of three years after completion of treatment for breast cancer, were characterized by greater pattern manifestations of unpredictability than ambiguity. Hughes (1993) found a small but significant, $F (1,51) = 4.51, p < .05$, decrease in uncertainty for a small sample of women ($n = 52$) prior to and eight weeks post-treatment for breast cancer. Bertero et al. (1997) uncovered different pattern manifestations of uncertainty as it related to the participants’ quality of life. While those participants with acute leukemia ($n = 8$) were described as living with lingering uncertainty, Bertero et al. stated, “those adults with chronic leukemia also have a feeling of uncertainty, but it is a different form of uncertainty as there is no immediate life-threatening feeling” (p. 6).

Other researchers have explored the association of uncertainty and quality of life (Carroll et al., 1999; Padilla et al., 1992; Sammarco, 1998, 2003). A statistically significant inverse relationship ($r = -.37, p = .013$) between quality of life (QLI-Cardiac III version) and uncertainty (MUIS – CF) was found in a sample of survivors ($n = 107$) of life threatening arrhythmias (Carroll et al., 1999). Similarly, in both of Sammarco’s studies (1998, 2003) of 101 younger and 103 older women, significant negative
correlations ($r = -0.48, p = 0.000$) between uncertainty and quality of life were found. Both studies were limited by low (30%) return rates and no information about non-responders. Padilla et al. (1992) examined uncertainty for women ($n = 100$) with gynecological cancers, approximately six months since diagnosis, and reported uncertainty as moderate (MUIS four factor version) and statistically significant, negative correlations ($r = -0.38$ to $-0.48, p < 0.05$) between the total MUIS scores and each of the subscales of a quality of life measure. While some researchers have found inverse relationships (Carroll et al., 1999; Padilla et al., 1992; Sammarco, 1998, 2003), others have learned that uncertainty has a dialectical nature in relation to quality of life and may not be seen as solely a negative experience by survivors (Dow et al., 1999; Ferrans, 1994; Nelson, 1996).

Mishel (1990a, 1997) suggested that differences in human potentials might be associated with differences in the relation between uncertainty and quality of life as positive or negative. Ongoing uncertainty in survivors of breast and other cancers has been uncovered (Dow et al., 1999; Ferrans, 1994; Gil et al., 2004; Hilton, 1988, Pelusi, 1997; Nelson, 1996). A team of researchers sought to uncover triggers of uncertainty for 244 older women in the long-term breast cancer survivorship and concluded that uncertainty, triggered by fears of recurrence and concerns about symptom and treatment side effects, persisted long after the diagnosis and treatment of cancer for older African American and Caucasian women (Gil, et al.). Dow et al. (1999) found that cancer survivors ($n = 687$) experienced uncertainty about the future and associated their quality of life with a contrast between a focus on the moment, seizing every day, and a focus on the future. Likewise, Ferrans (1994) in her study of quality of life for breast cancer survivors found that “uncertainty is a part of life for the survivor of cancer” (p. 1649), and that respondents had experienced positive changes and were maintaining positive thoughts and attitudes.
In an effort to understand the experience of being uncertain, Hilton (1988) interviewed 16 women who had an average of four years since diagnosis with breast cancer. Hilton found that uncertainty “lies on a continuum” (p. 220) and is manifested in varying ways. Although not a study of uncertainty, Pelusi (1997) explored the lived experience of eight women survivors of breast cancer an average of 8 years since the completion of treatment and, like Hilton, found that facing uncertainty continued to be a theme for the participants. Pelusi identified a major theme, i.e., a future of uncertainty, in which planning for uncertainty was a subtheme. Nelson (1996) explored uncertainty from a phenomenological approach for nine women two to six years post-treatment for breast cancer. These women conveyed a changed pattern from an initial fear of dying associated with uncertainty to struggling to keep an optimistic view of their uncertain future. A theme that emerged in association with uncertainty for these survivors was that of learning new ways of being in the world. Nelson stated, “Many women [who] had not previously thought of a limited or uncertain future before developing breast cancer initiated a self-exploration and understanding that was foundational to learning new ways of being in the world” (p. 67). One human potential that is manifested in new ways of being in the world is self-transcendence.

Self-transcendence

Self-transcendence is of interest in many fields, i.e., psychology, religion, philosophy, ethics, as well as nursing (Creegan, 1953; Frank, 1995; Frankl, 1966; Kovacs, 1986; Maslow, 1971; Walsh, 1970). Transcendence has been viewed in terms of rising above or surpassing (The American Heritage Dictionary, 1983). While the concept of self-transcendence may be thought of as ethereal, the literature offers a view of self-transcendence as an element of human reality (Creegan; Frankl, 1969; Maslow; Reed,
1991a, 1991b; Sartre, 1956). Maslow outlined 35 meanings of transcendence and offered a condensed statement, "Transcendence refers to the very highest and most inclusive or holistic levels of human consciousness, behaving and relating, as ends rather than as means, to oneself, to significant others, to human beings in general, to other species, to nature and to the cosmos" (p. 279). Similarly, Frankl (1969) spoke of self-transcendence as a human phenomenon characterized by people's reaching out and attaining the world, "a world, that is, which is replete with other beings to encounter, and meanings to fulfill" (p. 31). Kovacs (1986) furthered the idea that human work, "human praxis" (p. 200), is rooted in and expands the human capacity for self-transcendence.

In the discipline of nursing, Sarter (1988) suggested that self-transcendence was an underlying theme in the philosophical foundation of nursing's metaparadigm. Nurse theorists have included transcendence in diverse ways within their theoretical models (Newman, 1995; Parse, 1992; Watson, 1988). For Watson, transcendence was important to knowing the special qualities of a human being. In Parse's theory, self-transcendence was a means to engage in new ways of becoming. Transcendence in Newman's theory of health as expanding consciousness is described as a process towards a higher level of consciousness. A conceptual analysis exploring self-transcendence simultaneously with spiritual perspective, hope, and acceptance has been performed (Haase, Britt, Coward, Leidy, & Penn, 1992). This team of authors reported the critical attributes of self-transcendence were reaching out beyond self-concern, stepping back from and moving beyond what is, and extending self-boundaries inwardly, outwardly, and temporally. Furthermore, Haase et al. found that self-transcendence was an outcome of each of the other concepts under study. Their findings were consistent with the attributes of self-transcendence described by Reed (1991a, 1997) and the association of spiritual

Reed (1991a, 1996, 1997) developed a nursing theory of self-transcendence using theories from nursing and other fields (Reed, 1983, 1991a), clinical experience (Coward & Reed, 1996), and empirical exploration (Reed, 1991b) and created an instrument to measure self-transcendence. Conceptualizing self-transcendence from a Rogerian perspective, Reed (1991a, 1997) defined self-transcendence as a profound awareness of fluctuating personal boundaries that are grounded in, yet reach beyond, the temporal and terrestrial. Subsequently, Reed viewed self-transcendence as a human potential resource that is characterized by a profound awareness of personal wholeness and fluctuations in the human-environment field pattern (Personal Communications, June 8 and July 7, 2000). Reed (1991a) identified manifestations of self-transcendence as a reaching inward to the self, reaching outward to others, and a sense of the relative present which integrates the past and future. There are two assumptions underlying Reed’s theory which were directly derived from Rogers’ SUHB. One assumption addressed an awareness of the integrality of self and world and the other one addressed pandimensional awareness. Rogers (1992) defined pandimensionality as a non-linear domain without spatial or temporal attributes. Reed described self-transcendence as a “homeodynamic imperative” (p. 193), i.e., a human potential that emerges in the ongoing rhythm of life and manifests the capacity to self-organize for well-being. Furthermore, Reed asserted that self-transcendence is integral to well-being for those confronting end-of-life issues.

Empirical support for the importance of self-transcendence for those at the end of their life and those facing their own mortality related to potentially life threatening illness has been well documented (Chin-A-Loy & Fernsler, 1998; Coward, 1990, 1991, 1994, 1995, 1998, 2003; Diener, 2003; Mellors, Erlen, Coontz, & Lucke, 2001; Mellors, Riley,
& Erlen, 1997; Reed, 1991b; Young & Reed, 1995). Reed (1991b) reported high self-transcendence (total mean score of 49.5 out of a possible 60) in a sample ($n = 55$) of older adults aged 80 to 97. Similarly, high self-transcendence was found in a small sample of prostate cancer survivors ($n = 46$) (Chin-A-Loy & Fernsler, 1998) and women with advanced breast cancer ($n = 107$) (Coward, 1991) with mean item scores of 3.34 and 3.35 (out of a possible 4) respectively. Survivors of breast cancer have described an awareness of their own mortality and described aspects of self-transcendence such as looking inside oneself, reaching out to others, and having a changed sense of time (Carter, 1993; Coward, 1990; Luker et al., 1996; Moch, 1990; Pelusi, 1997).

Self-transcendence has been examined in relation to mental health (Reed, 1991b), emotional well-being (Coward, 1991, 1998), physical well-being (Coward, 1998), and quality of life (Mellors et al., 1997). All of these studies operationalized self-transcendence using Reed’s Self-Transcendence Scale (STS). In the only published study examining self-transcendence and quality of life, a statistically significant positive correlation ($r = .46, p < .01$) was found in a small sample ($n = 46$) of persons with HIV (Mellors et al.). Although not based in Rogers’ Science, other studies examined measures of well-being in association with Reed’s conceptualization of self-transcendence (Coward, 1991, 1996, 1998). Emotional well-being of women with advanced breast cancer ($n = 107$) was examined by Coward (1991) using a factor formed from two scales, i.e., the Affect Balance Scale (ABS) and Cognitive Well-Being Scale (CWB).

Interestingly, as described by Coward, the CWB asked about life satisfaction. The researcher found emotional well-being and self-transcendence to be strongly positively correlated ($r = .78, p < .05$).

In a pilot study looking at pre and post intervention self-transcendence in a small sample ($n = 16$) of newly diagnosed women with breast cancer, Coward (1998) measured
emotional well-being using three separate instruments, i.e., the ABS, CWB, and the Profile of Mood States (POMS). In this pilot, the researcher found statistical significance for the correlations \((r = .81, p < .00, r = .82, p < .00, r = -.46, p < .05\), respectively) among all three measures of emotional well-being and self-transcendence. While preliminary, these researchers’ findings associating self-transcendence with well-being, life satisfaction, and quality of life and Reed’s (1991a) proposition that self-transcendence is related to indicators of well-being provide support for linking self-transcendence and quality of life in the current study.

Exploratory studies of self-transcendence revealed possible associations with power as knowing participation in change (Coward, 1990, 1994, 1995). In a study of the lived experience of self-transcendence in men and women with AIDS \((n = 20)\), Coward (1994, 1995) asked participants to describe transcendent experiences. They spoke of their awareness of the possibility of their own death, taking an active role in their health care experiences, making choices regarding the end of their life, and about intentionally acting to speak out on issues related to AIDS (Coward, 1994). Similarly, Coward (1990) studied the lived experience of self-transcendence in women with advanced breast cancer \((n = 5)\) and found themes and subthemes, some of which described an awareness of the threat of death, creating change toward new meaning in life, and taking action to reach out to others. Associated with their self-transcending experiences, the participants in Coward’s (1990, 1994, 1995) studies described the power manifestations integral to Barrett’s theory of power as knowing participation in change.

Other researchers have reported similar findings in the experiences of breast cancer survivors (Carter, 1993; Moch, 1990, 1995; Pelusi, 1997). A theme of self-transcendence emerged in Pelusi’s study in which breast cancer survivors spoke of an awareness of self, making choices to reach out and help others. While no specific theme of self-
transcendence was identified, both Carter and Moch found an awareness of being mortal, choosing to accept help from others and reaching out to help others, and a changed experience of time. In these studies and those carried out by Coward, descriptors of self-transcendence and the power manifestations were noted and raised questions about the association between power and self-transcendence. Barrett et al. (1997) posited that people actualize selected potentials and participate in creating their reality by engaging the power manifestations. Reed (1997) asserted that self-transcendence “demands participation on the person’s part in order to maintain well-being” (p. 193). Despite the evidence in Coward’s and other researchers’ findings and the suggested theoretical links, self-transcendence has not been studied in relation to power.

Reed (1991a, 1997) viewed self-transcendence as a human potential and resource that emerges out of health experiences that confront the person with personal mortality. Furthermore, Reed (1991) invited research questions examining other contexts in which self-transcendence may be associated with well-being. Uncertainty has been theoretically and empirically linked with the experience of end-of-life, life-threatening, and chronic illnesses (Crigger, 1996; Hilton, 1988; Mishel, 1981, 1990a; Nelson, 1996; Selder, 1989). Continuing uncertainty has been uncovered in breast cancer survivors (Ferrans, 1994; Hughes, 1993; Mast, 1998a, 1998b; Pelusi, 1997). Reed (1997) described self-transcendence as emerging from the life process and Kovačs (1986) suggested that human work expands the human capacity for self-transcendence. Mishel (1990a) asserted that uncertainty is a part of the natural rhythm of life. Continuing uncertainty and awareness of mortality are viewed as examples of human work.

This idea is supported in Coward’s (1990) study of women with advanced breast cancer, as illustrated by the theme statement, “self-transcendence is a result of much effort” (p. 166). In her study of self-transcendence in persons with AIDS, Coward (1994,
1995) found that women associated the theme of experiencing uncertainty with their self-transcendence. Neill (2002) examined self-transcendence in women living with rheumatoid arthritis and reported that disorder and uncertainty provided opportunities for transformation through personal choices. Along with uncertainty, self-transcendence was a theme for Pelusi's (1997) breast cancer survivors. Given these empirical clues and theoretical statements, it is possible that uncertainty, as an experience in the life process that is human praxis, opens a pathway toward one's capacity to knowingly participate toward self-transcendence and that through the development of this human potential or resource one's quality of life is enhanced.

**Summary**

In summary, there are knowledge gaps related to the theoretical linkages and the cluster of pattern manifestations examined in the current study for breast cancer survivors. Most notably, there were no studies that linked the middle range theories and conceptual model of quality of life from the overarching perspective of Rogers' SUHB. Similarly, the relations amongst the cluster of pattern manifestations examined in the current study had not previously been examined. Power as knowing participation in change of breast cancer survivors has not been studied. Uncertainty has been examined in samples of cancer survivors for more than two decades; however, inconsistent findings suggest there is more to uncover about uncertainty and quality of life. Self-transcendence as a Rogerian concept has been examined in women at various stages of the survivorship experience; however, there is a paucity of data regarding the intermediate stage of survivorship and self-transcendence has not been examined in relation to the other pattern manifestations of interest in the current study. Much has been written about quality of life for breast cancer survivors but, again, little has been done from a unitary perspective or in...
relation to the other pattern manifestations. It is clear based on the theoretical rationale and review of the literature illustrating the possible linkages amongst the pattern manifestations of power, uncertainty, self-transcendence, and quality of life for breast cancer survivors that the current study addressed significant knowledge gaps.
CHAPTER III

THE METHOD

Research Design

A descriptive, correlational design was used to examine the relations amongst power, uncertainty, self-transcendence, and quality of life in breast cancer survivors. Participants were requested to complete a self-administered questionnaire containing four instruments. The instruments were Quality of Life Index - Cancer Version (QLI-CV) (Ferrans, 1990b; Ferrans & Powers, 1985), Power as Knowing Participation in Change Tool - Version II (PKPCT) (Barrett, 1998), Mishel Uncertainty in Illness Scale - Community Form (MUIS-C) (Mishel, 1990c), and the Self-transcendence Scale (STS) (Reed, 1987b). A Demographic Data Form developed by the investigator was included. The questionnaire was completed at the participants' convenience and returned via postal mail to the investigator. Data were analyzed for associations amongst the variables using correlations and a series of multiple regression analyses.

Sample

The sample consisted of breast cancer survivors in the intermediate stage of survivorship who completed their initial (surgery alone or surgery and some form of adjuvant therapy) treatment for breast cancer. A minimum sample of 100 was deemed adequate after considering calculations using Cohen's (1988) method of power analysis.
(based on a power of .80, an alpha of .05, and a medium effect size) and other suggestions regarding sample size for correlational and multiple regression analysis (Pedhazur & Schmelkin, 1991; Polit, 1996; Tabachnick & Fidell, 1996; Weinberg & Abramowitz, 2002).

Data Collection Procedures

After receiving approval from the University Committee on Activities Involving Human Subjects at New York University, the Institutional Review Board at the College of Staten Island/CUNY (where the investigator is employed), and other permissions required at data collection sites, participants were recruited from a variety of settings, e.g., ambulatory care settings, physician practices, cancer-related organizations, and adult communities in the New York-New Jersey area.

1. **Contacting Potential Sites:** The investigator sent letters introducing the investigator and the study to the contact person at each data collection site (see Appendix C). A follow-up phone call was made to answer any questions and satisfy any additional requirements.

2. **Introducing the Study to Site Personnel:** The investigator introduced the study to site personnel and distributed a brief description of the research protocol (see Appendix D) and recruitment flyers (see Appendix E), and responded to any questions.

3. **Recruiting Potential Participants:** The investigator used a recruitment flyer to advertise the invitation to participate in the study. After site approval, recruitment flyers were placed in public areas, distributed by the investigator at organizational functions and participating sites, printed in newsletters, and made available in appropriate health care
settings. The recruitment flyer contained the investigator's name, address, phone number, and email address. The flyer had a tear-off that had a place for the name, address, and telephone number of the potential participant. The tear-off was available for return to the investigator to learn more about the study. Women interested in learning more about the study contacted the investigator directly via phone, email, or by submitting the tear-off by mail or in person.

4. Contacting Potential Participants: The investigator explained the study to each potential participant who contacted the investigator. The description of the study for potential participants was used to describe the study (see Appendix F). The description covered the information found in the informed consent. The investigator answered any additional questions the woman may have had. If the woman expressed a desire to participate and no exclusion criteria were reported, the investigator provided a research packet to her.

5. Providing Participants with The Research Packet: The investigator provided a packet that contained a cover letter, two consent forms, a questionnaire, two stamped, self-addressed return envelopes, and an incentive. The cover letter addressed the benefits of participation to learning about the perceptions and experiences of women breast cancer survivors, the estimated time required to complete the questionnaire (60 minutes or less), and a description of the incentives (see Appendix G). The consent form explained the purpose of the study, the expected time requirement for completing the questionnaire, a statement of risks and benefits, a description of how confidentiality
was ensured, a statement about the voluntary nature of the participation, an assurance that refusal to participate or discontinuation of participation would not affect the care received from health care providers, a description of the incentives, and the investigator’s identification and contact information. The instructions included directions to return the signed consent in the separate envelope provided. The second consent form included in the research packet was intended for the participant’s records (see Appendix H). The questionnaire was a self administered, five-part booklet that included the Quality of Life Index-Cancer Version (QLI-CV) (see Appendix I), the Power as Knowing Participation in Change Tool, Version II (PKPCT-VII) (see Appendix J), the Uncertainty in Illness Scale-Community Form (MUIS-C) (see Appendix K), the Self-Transcendence Scale (STS) (see Appendix L), and a Demographic Data Form (see Appendix M). If participants wished to share additional comments, they were invited to do so at the end of the questionnaire (see Appendix N). The instruments were counterbalanced with the exception of the Demographic Data Form which was always last. The instructions requested that participants complete the questionnaire as soon as possible. Mailing instructions for the questionnaire were provided. The incentives included a magnet calendar containing the investigator’s contact information that was included in all research packets. Another form of incentive was explained in the cover letter and consent form. Participants who completed the study were invited to participate in a random drawing to
receive one of eight American Express gift certificates for $25. Participants who did not wish to participate in the drawing indicated their preference on the consent form. The investigator offered a brief study report entitled, *Investigator's Study Report to the Participants*. Participants who did not wish to receive the report indicated their preference on the consent form.

6. **Following-up With Contacts:** Approximately eight days after the packet was sent, a reminder postcard was sent (see Appendix O). If no reply was received three weeks after the postcard mailing, a follow-up letter and replacement packet were sent to the potential participant via priority mail (see Appendix P). The follow-up contacts were used in an effort to maximize the return rate. This method was based on the procedures for conducting a mailed survey suggested by Salant and Dillman (1994).

In all contacts with potential participants and in the body of the introduction letter accompanying the research packet, the voluntary nature of the study and the confidentiality of the information provided were emphasized. Participants were made aware that the data would be kept for at least three years as explained in the consent form. Each participant was assigned a code number which was used on all data forms in lieu of names to ensure confidentiality. The investigator maintained a disk and hard copy file containing the participant names and matching code numbers. Only the investigator has had access to this file and it has been kept in a locked cabinet separate from the data.
Instruments

**Quality of Life Index - Cancer Version (QLI-CV)**

The QLI-CV (Ferrans, 1990b; Ferrans & Powers, 1985) is a 68 item self-administered instrument used to measure the quality of life of persons with cancer. The instrument is a two-part rating scale that measures satisfaction with 34 aspects of life and the importance of each to the individual. The 6-point Likert rating scale ranges from very dissatisfied to very satisfied and from very unimportant to very important. Based on the literature, Ferrans (1990b) modified the generic version of the Quality of Life Index (Ferrans & Powers, 1985) to create the QLI-CV. The modifications include three areas of importance to persons with cancer, i.e., physical discomfort or pain, control over one's own life, and influence of the government (Ferrans, 1990b).

The QLI-CV is a multidimensional quality of life measure based on a conceptual model identifying four domains, i.e., health and functioning, socioeconomic, psychological/spiritual, and family. The instrument is consistent with the definition of quality of life; for example, the instrument addresses the satisfaction and importance of each item (reflective of the aspects of life) to the respondent. The measure of the importance of each item to the individual is a unique feature of the QLI-CV.

The reliability of the QLI-CV is consistent with the generic and other disease specific versions (dialysis, multiple sclerosis, liver transplant, and well persons) ranging from .87 to .93 (Ferrans & Powers, 1985, 1992; Hicks et al., 1992; Stuifbergen, 1995). Measures of internal consistency reliability in samples of adults with cancer and women with breast cancer have been reported (Cronbach alpha >.93) (Arzouman, Dudas, Ferrans, & Holm, 1991; Ferrans, 1990a; Hughes, 1993; Kelman, 1998; Rustoen et al., 1998, 1999; Sammarco, 1998, 2003; Weitzner et al., 1997). Another measure of reliability, a 3 to 4
week test-retest correlation \((r = .78)\) supported the consistency of the QLI-CV in a sample of cancer patients (Rustoen et al., 1999).

Ferrans and Powers (1985) reported that content validity is supported by an extensive literature review and input by patients regarding areas related to their quality of life. Concurrent validity was supported by correlations \((r = .80)\) between the QLI-CV and a measure of life satisfaction (Ferrans, 1990b). Ferrans assessed the construct validity of the QLI-CV using the known groups technique. Groups of subjects with more or less pain, more or less depression, or who were coping better or worse with stress were examined for differences in the mean QLI-CV scores. In each group, statistically significant \((p = .002, .0001, \text{and} .0001 \text{respectively})\) mean differences were found using \(t\)-test \((3.11, df = 103; 4.66, df = 11; 4.18, df = 103 \text{respectively})\) (Ferrans, 1990b). Construct validity of the QLI-CV was supported.

Although factor analysis has not been reported for the QLI-CV, Ferrans and Powers (1992) performed factor analysis on the Dialysis Version in an adequate sample \((n = 349)\) of dialysis patients. An oblique method of rotation was used and the four-factor solution \((\text{eigenvalues} = 26.02 \text{to} 2.28)\) explained 91\% of the variance. The researchers described the loading criterion (.30) and criteria for assigning items to a factor when multiple loadings were present. The four factors were called health and functioning, psychological/spiritual, socioeconomic, and family. As might be expected due to items loading on more than one factor, correlations between factors demonstrated overlap. Ferrans and Powers concluded that the factors were not redundant and the intercorrelations suggested higher order factors.

The researchers performed factor analysis using the correlation matrix of the four factors. The factors loaded on one higher order factor (loadings were .70, .69, .85, and .48 respectively). Ferrans and Powers (1992) reported that correlations were obtained for
each item of the instrument and the higher order factor. The strongest correlation reported was .78 for both satisfaction with life and happiness in general. Ferrans and Powers concluded that the higher order factor represented quality of life.

The scoring of the QLI-CV is performed by a multistep procedure. Scores are calculated by weighting each satisfaction response with its paired importance response (Ferrans, 1990b, 1990c). Weighting is accomplished by centering the satisfaction response at zero (the midpoint) and multiplying the resulting satisfaction score with the paired importance score. The weighted items are summed. The sum is divided by the number of items answered. In order to eliminate negative scores, a constant (15) is added to produce the final score. The total quality of life score has a range of 0 to 30 with higher scores indicating higher quality of life. A copy of the QLI-CV and written permission to use the instrument are included in Appendix I.

**Power as Knowing Participation in Change Tool, Version II (PKPCT)**

Barrett's PKPCT (1998) is a self-administered, 52 item semantic differential scale designed to measure an individual's capacity to participate knowingly in change. The tool consisted of four subscales: awareness, choices, freedom to act intentionally, and involvement in creating change. There are 13, seven-point scales anchored by bipolar adjectives under each subscale. One scale in each subscale is known as a retest item used to identify respondent acquiescence and is not included in the score (Barrett & Caroselli, 1998).

The PKPCT, Version I contains contexts of myself, my family, and my occupation (Barrett, 1983, 1986). Barrett developed Version II, a modification of PKPCT, Version I, by eliminating the contexts based on the findings of the main study (n = 625) which indicated that power generalized across contexts. Barrett provides research-based
instructions for completion of the PKPCT, Version II (Barrett & Caroselli, 1998; Barrett, Farren, Kim, Larkin, & Mahoney, 2001). The tool is based in Rogers’ SUHB and Barrett’s theory of power. The four concepts (awareness, choices, freedom to act intentionally, and involvement in creating change) are indicators or power manifestations. The integral nature of awareness, choices, freedom to act intentionally, and involvement in creating change constitute power (Caroselli & Barrett, 1998).

Barrett (1983) reported the reliability of the PKPCT, Version I as variances of the factor scores for all four concepts-contexts merged into a single factor analysis. The variances ranged from .63 to .99 for the concepts. Cronbach alphas for the PKPCT, Version II have been reported for the total tool (ranging from .90 to .97) which supports the internal consistency reliability of the PKPCT (Caroselli, 1995; McNiff, 1995; Rapacz, 1991; Rizzo, 1990; Rush, 1996; Wright, 2000).

Content validity was assessed using a panel of judges to evaluate the concepts and bipolar adjective pairs for relevance to Rogers’ SUHB (Barrett, 1983, 1986; Barrett & Caroselli, 1998). Construct validity was tested using factor analysis of aggregated data from Barrett’s pilot and main studies (n = 892). Barrett reported factor loadings ranging from .56 to .70 on one factor (eigenvalue > 1.0). Barrett identified the one factor as unitary power. Using the PKPCT, Malinski (1997) was able to identify statistically significant differences (p < .05) between depressed and non-depressed women (n = 400) on power which provides support for the construct validity of the PKPCT.

Barrett and Caroselli (1998) reported that scoring can be done by either obtaining factor scores or summation scores. Both methods of scoring were used in this study. Total scores were obtained to answer the research questions. Factor scores were used in ancillary analyses. Each bipolar adjective scale is measured using a value of 1 to 7 with 4 indicating a neutral response. Retest items are not used in the PKPCT score. Reverse
scoring is performed on all appropriate scales. The PKPCT score is obtained by adding the score from each scale. A score for each subscale as well as a total PKPCT score can be obtained. Total scores range from 48 to 336 with higher scores meaning higher power. A copy of the tool and written permission to use the PKPCT are included in Appendix J.

Mishel Uncertainty in Illness Scale - Community Form (MUIS-C)

The MUIS-C (Mishel, 1990c) is a self-administered, 23 item five point (strongly disagree to strongly agree) Likert type scale designed to measure uncertainty perceived in illness. The MUIS-C is one of several versions of the MUIS (Mishel, 1990b) and is grounded in Mishel’s (1981, 1990a) theory of uncertainty in illness.

Mishel (1990b) does permit some limited substitution of terms used in the instrument. For example, items referring to “pain” can be changed to “symptom” or a specific symptom that is prevalent in the sample under study. No substitutions were made in the current study. Studies using the MUIS and MUIS-C included samples of women with breast and other cancers as well as menopausal women (Christman, 1990; Lemaire & Lenz, 1995; Mast, 1998a; Mishel, Padilla, Grant, & Sorenson, 1991; Mishel & Sorenson, 1991; Padilla et al., 1992; Sammarco, 1998, 2003).

The internal consistency reliability of the MUIS-C is similar to that of all other versions of the MUIS as demonstrated by alphas ranging from .76 to .94 (Mast, 1998a; Mishel, 1990b; Mishel et al., 1991; Stoeckle, 1993). The standardized alpha for all study cases using the MUIS-C (n = 396) was .92 (Mishel, 1990b). Coefficient alphas greater than .88 have been found in samples of persons with cancer, women in menopause, and women survivors of breast cancer (Hilton, 1989; Lemaire & Lenz, 1995; Mishel, 1990b).

Obtaining patient input at the time of item formulation and the use of a panel of judges to review the MUIS prior to research application were the techniques used by
Mishel (1981) to address content validity. Concurrent validity was supported by a statistically significant negative correlation \(r = -.56, p < .002\) between the MUIS and an alternate measure of uncertainty (The Comprehension Interview) in a small sample of cancer patients \(n = 26\) (Mishel, 1990b).

Construct validity of the MUIS has been supported by theoretically predicted associations between uncertainty and a measure of hospital stress \(r = .35, p < .001\) in a sample of medical patients \(n = 100\) (Mishel, 1981). Evidence of construct validity of the MUIS was reported by Mishel (1981, 1990b) based on discrimination among different samples (medical, surgical, and diagnostic) in the theoretically predicted directions. Factor analysis using aggregated data \(n = 396\) for the MUIS-C lead to a reduction of the items from 28 to 23 resulting in a unidimensional scale (the version being used in the current study). Lemaire and Lenz (1995) reported support for construct validity for the MUIS-C with statistically significant differences, \(F(2,166) = 3.98, p < .02\), in mean MUIS-C scores for a sample of menopausal women who did not have the information they needed \((M = 65.28)\) and those that did \((M = 58.37)\).

A total score is obtained on the MUIS-C by calculating the sum of all items. Scores range from 23 to 115 with higher scores indicating higher uncertainty (Mishel, 1990b). A copy of the scale and written permission to use the MUIS-C are included in Appendix K.

**Self-Transcendence Scale (STS)**

The STS (Reed, 1987b) is a self-administered, unidimensional, 15 item, 4-point Likert scale (from not at all to very much) designed to measure the capacity for self-transcendence. The theoretical basis for the instrument is Reed's theory of self-transcendence, a theory conceptualized within Rogerian science (Reed, 1991a). The STS was developed from the Developmental Resources of Later Adulthood scale (DRLA).
developed by Reed (1986b). The evolution from the DRLA to the STS is described as resolving redundancy issues in the original instrument, providing ease of administration, and allowing for an improved scaling technique (Reed, 1991b).

Internal consistency reliability is supported by Cronbach alphas ranging from .80 to .94 in samples of well persons, well elderly, persons with Human Immunodeficiency Virus (HIV), and women with advanced breast cancer (Coward, 1991, 1996, 1998; Mellors et al., 1997; Reed, 1991b). Content validity was addressed through a review of the literature, careful construction of the instrument, and refinement of the STS items (P. Reed, Personal Communication, March 9, 1998). Concurrent validity was estimated using the Crumbaugh and Maholick Purpose in Life Test ($r = .76$ to .82) in samples of well persons and women with breast cancer (Coward, 1996, 1998).

Support for construct validity emerged as groups scored on the STS in theoretically predicted directions (Coward, 1991; Reed, 1991b). Both Reed and Coward report statistically significant correlations among theoretically predicted variables and groups. For example, Coward found a statistically significant correlation between self-transcendence and emotional well being ($r = .78$, $p < .05$) in a sample of women with advanced breast cancer and Reed found a significant correlation ($r = .32$, $p < .01$) between self-transcendence and an inverse measure of mental health in a sample of oldest-old adults.

After reverse scoring item 15 of the STS, the respondent's scores for items 1 through 15 are added and the sum is divided by the number of items answered (P. Reed, Personal Communication, March 9, 1998). The final score has a possible range of 1 to 4. Higher scores indicate higher levels of self-transcendence. A copy of the STS and written permission from the author are included in Appendix L.
Demographic Data Form

The investigator constructed the Demographic Data Form (DDF) to elicit demographic information. Demographic data included age, marital status, racial/ethnic background, religious preference, level of education, employment status, income, items related to medical history, follow-up treatment, time from diagnosis and last treatment, volunteer status, and use of support groups and complementary modalities. The items included in the DDF were present as they were exclusion criteria (language, health related data such as time since diagnosis, completion of treatment, etc.), requirements of the instruments (age, education, language), supported in the theoretical rationale (volunteer status, use of support groups, use of complementary modalities), or based on the literature.

Yost (2002) found that demographic (race/ethnicity, marital status, education, employment status), cancer and health related data (type of treatment, time since diagnosis, menopausal status, hormonal therapy use; symptoms etc.) and psychosocial data (uncertainty, fear of recurrence, support seeking coping, probability of being depressed) were associated with quality of life for women with a history of breast cancer. Other researchers have long reported similar demographic data for breast cancer survivors (Avis et al., 2004; Budin, 1998; Ferrans, 1990b, 1994; Ferrell et al., 1996, 1997; Hoskins, 1997). Based on Barrett (1983, 1986) and Barrett and Caroselli (1998), patterning the environment for well-being may take different forms, use of complementary modalities and use of support groups may be options. Likewise, Reed (1991b, 1996) described characteristics of self-transcendence that included behaviors such as looking inside, accepting help from others, reaching out to help others. Use of support groups and engaging in complementary modalities, and volunteer activities were thought to be reflective of these characteristics of self-transcendence and were included.
in the DDF. A copy of the DDF is included in Appendix M. As the DDF was always the last section in the counterbalanced questionnaire, the space for participants to share any additional comments followed this form (see Appendix N).

Data Analysis

Data analysis was performed using the Statistical Packages for the Social Sciences (SPSS) Version 10.0 for Windows. Prior to analyses, data entries were reviewed for accuracy and missing items. Histograms and other graphic tools to identify outliers and the shape of distributions were examined. Based on the findings of the distributions and/or presence of outliers, data transformation options were evaluated. Descriptive statistics including measures of central tendency were computed for all variables in the study and for appropriate demographic data. Cronbach alpha coefficients were computed for all instruments including subscale alphas where applicable. The .05 alpha level was used as the criterion for statistical significance in all analyses.

The first research question was analyzed using correlations to determine the associations among the variables and multiple regression to investigate the patterns of relations among the independent variables (power, uncertainty, and self-transcendence) and the dependent variable (quality of life). The patterns examined included estimates of the variance in quality of life explained by the independent variables. For the second research question, multiple regression analysis was used to determine the main effects of power and uncertainty (independent variables) and quality of life (dependent variable). The third research question was analyzed using multiple regression analyses to determine the presence and extent of any interaction effect between power and uncertainty in the explanation of variance in quality of life. Research question four was analyzed using multiple regression to estimate the contribution of power and uncertainty to the explained
variance in self-transcendence. The final, fifth, research question was analyzed using multiple regression to determine the presence and extent of an interaction effect between power and uncertainty in the explanation of variance in self-transcendence.

Ancillary analyses were conducted and included multiple regression analyses to examine additional patterns of relations suggested by theoretical linkages and the literature, correlations of subscales and factors on the pertinent measurement instruments, correlations, means, t-tests, and ANOVA and supplementary analytic techniques to explore relations of the demographic data and the main study variables.
CHAPTER IV
RESULTS

The aim of the researcher was to examine the relations amongst Power, Uncertainty, Self-Transcendence, and Quality of Life for breast cancer survivors. Recruitment flyers were used to inform survivors of the study. Participants completed a self-administered questionnaire containing the Power as Knowing Participation in Change Tool (PKPCT) (Barrett, 1998), Mishel's Uncertainty in Illness Scale-Community Form (MUIS-C) (Mishel, 1990c), Self-Transcendence Scale (STS) (Reed, 1987b), the Quality of Life Index-Cancer Version (QLI-CV) (Ferrans, 1990b; Ferrans & Powers, 1985), and a Demographic Data Form (DDF). All analyses were performed using the Statistical Packages for the Social Sciences (SPSS for Windows version 10) and the a priori level of significance was set at $p \leq .05$.

Preliminary Analysis

There was a 95% return rate for the study questionnaires. In all, 148 women contacted the investigator regarding the study. Of these, 118 women initially met the eligibility requirements and expressed interest in receiving research packets. Of the 118 women receiving packets, 112 returned signed consents and questionnaires (95%).

Regarding the questionnaires returned, eight were not included in the analysis because study delimitations were not met ($n = 3$) or excessive missing data ($n = 5$) were identified. The study delimitations that were not met were completion of treatment,
mental illness, or language (no difficulty reading or understanding English). One respondent reported that she was still under treatment. A second reported psychiatric problems and described long-standing problems with depression for which she was being treated for approximately ten years. The third respondent reported difficulty reading and understanding English.

Five of the eight questionnaires were deleted from analysis due to excessive missing data. That is, though missing data were expected, these five questionnaires had missing data points greater than 20% of items on the QLI-CV (Personal communication, C. E. Ferrans, August, 2001) or more than 10% on the other three instruments (Bryman & Cramer, 2001). Notably, entire sections of these questionnaires were missing. For example, two of these five questionnaires contained no responses on the two center pages of the booklet. The instruments located at this site (QLI-CV and MUIS-C) were different in both cases. Two of the five had no responses on entire instruments (MUIS-C and STS). The respondent omitting the MUIS-C wrote, “doesn’t apply to me” on that section. One of the five questionnaires had responses to only one factor of the PKPCT (Freedom to Act Intentionally). Thus, the results of preliminary analysis revealed a total of eight questionnaires that would not be further analyzed.

All of the 104 remaining participants were within the minimum education, language, time since diagnosis, and completion of treatment requirements. While all reported having no debilitating physical conditions or mental illness on investigator contact, some women reported other medical-surgical conditions (n = 36 or 35%) and experiences with psychiatric problems (n = 18 or 17%) on the Demographic Data Form (DDF). The medical surgical conditions included osteoporosis, asthma, and hypertension. The psychiatric problems included feelings of anxiety and depression. Thewes et al. (2004) identified psychosocial distress after diagnosis as a common issue for breast
cancer survivors. Other researchers have found that 15 to 51% of cancer survivors experience some level of distress along the survivorship trajectory with most finding a sense of psychological well-being at some point (Massie, 2004; Mor, Allen, & Malin, 1994; Schreier & Williams, 2004).

Independent sample t-tests revealed no statistically significant mean differences on any of the main study variables based on medical-surgical conditions or psychiatric problems. In an effort to adhere to women's self-reports and remain consistent with the theoretical perspective underpinning the study in terms of the unitary pattern of each person, and to maximize the validity of the study while minimizing cases being removed from the analysis, no other cases were removed from the analysis based on reported medical surgical conditions or psychiatric problems.

For the remaining 104 questionnaires, missing data were minimal on all four study instruments. Missing value codes were used to assess the extent and pattern of missing values. There was 4% missing data on the QLI-CV and, of this amount, 2% were on items for which missing values were expected (i.e., items about children, spousal relations, and job status). The missing data on the STS was less than 0.1% (1 missing data point). Because both instruments provide averaged scores and were below or well below the 5% missing data criterion suggested by Tabachnick and Fidell (2001), no further action was taken.

For the two summated instruments (PKPCT and MUIS-C), missing values were replaced using the series means (Tabachnick & Fidell, 2001). There were 0.2% of responses missing on the PKPCT that were present on different items across factors. The MUIS-C contained only one point of missing data (less than 0.1%). Again, missing values were well below the aforementioned criterion of 5%. Instrument reliability coefficients, histograms, and descriptive statistics were conducted before and after
estimation with the series mean (Polit & Hungler, 1999; Tabachnick & Fidell) and no differences were detected.

Description of the Sample

The final sample consisted of 104 women recruited primarily from cancer organizations and breast and/or cancer related groups (82%) (see Table 1). Nonhealth related sources included a county newspaper and a flyer display at a local laundromat. All women met the inclusion criteria related to stage of survival (see Table 2).

Table 1

Sample Recruitment Source Categories (N = 104)

<table>
<thead>
<tr>
<th>Source Category</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Organizations</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>Breast Cancer Groups</td>
<td>53</td>
<td>51</td>
</tr>
<tr>
<td>Breast or Cancer Related</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Professional/Private Practice Referrals</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>Non-Health Related Sources</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

They were diagnosed with breast cancer for the first time, had completed treatment, and were five or less years since diagnosis; therefore, they could be described as being in the intermediate stage of survivorship (see Table 2). Approximately half the sample reported completing treatment more than one and one-half years prior to participation (51%). The majority of women were diagnosed more than one and one-half years prior to participation (60%).

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Table 2

First Time Diagnosed with Breast Cancer, Completed Treatment, Time Since Diagnosis (N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Time Diagnosed with Breast Cancer</td>
<td>104</td>
<td>100</td>
</tr>
<tr>
<td>Completed Treatment</td>
<td>104</td>
<td>100</td>
</tr>
<tr>
<td>Within 1 – 12 months</td>
<td>44</td>
<td>42.3</td>
</tr>
<tr>
<td>13 – 18 months</td>
<td>7</td>
<td>6.7</td>
</tr>
<tr>
<td>19 – 24 months</td>
<td>25</td>
<td>24.0</td>
</tr>
<tr>
<td>25 – 60 months</td>
<td>28</td>
<td>26.9</td>
</tr>
<tr>
<td>Time Since Diagnosis (&lt; 5 Years)</td>
<td>104</td>
<td>100</td>
</tr>
<tr>
<td>1 – 12 months</td>
<td>27</td>
<td>26.0</td>
</tr>
<tr>
<td>13 – 18 months</td>
<td>15</td>
<td>14.4</td>
</tr>
<tr>
<td>19 – 24 months</td>
<td>11</td>
<td>10.6</td>
</tr>
<tr>
<td>25 – 60 months</td>
<td>51</td>
<td>49.0</td>
</tr>
</tbody>
</table>

Regarding education, 39% graduated high school and had some college. Of the college-educated participants, 26% had Associate or Baccalaureate degrees and 34% had graduate degrees. One participant reported post-high school technical training in the “Other” category. All participants reported having no difficulty reading or understanding English (see Table 3).

The mean age of the sample was 53 years (SD = 9.6) with a range of 28 to 81 years. The majority of the sample (74%) was between 41 and 60 years old. One participant did not respond to the item on age. The age of the sample is depicted by age category and percent in Figure 1.
Table 3
Education, Reading, and Language
(N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS Graduate/HS Equivalency</td>
<td>17</td>
<td>16.3</td>
</tr>
<tr>
<td>Some College</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>6</td>
<td>5.8</td>
</tr>
<tr>
<td>Baccalaureate Degree</td>
<td>21</td>
<td>20.2</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>29</td>
<td>27.9</td>
</tr>
<tr>
<td>Doctoral Degree</td>
<td>6</td>
<td>5.8</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Reading/Understanding English</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 1. Age of the Sample

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While all marital categories were reported, the majority (69%) of the sample was married (see Table 4). Similarly, all categories were chosen with regard to race/ethnicity and religious preferences. The sample was predominately Caucasian (92%), with only one participant choosing not to respond to this item on the DDF. The majority of the sample reported affiliation with a Christian (75%) religion (see Table 5).

Table 4

Martial Status
(N = 104)

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Never Married</td>
<td>10</td>
<td>9.6</td>
</tr>
<tr>
<td>Single-Living with Partner</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Married</td>
<td>72</td>
<td>69.2</td>
</tr>
<tr>
<td>Divorced</td>
<td>9</td>
<td>8.7</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>7</td>
<td>6.7</td>
</tr>
</tbody>
</table>

The majority of women (70%) reported they were employed part- or full-time, were self-employed, or owned their own business (see Table 6). Self-employment and business ownership were specified in the “other” category. Income centralized around $75,000 with approximately one half of the participants (51%) reporting household income of $75,000 or less and 48% had household incomes above $75,000 (see Table 6). One participant did not respond to the income item.
Table 5
Race/Ethnicity and Religious Preference
(N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>or Alaskan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>96</td>
<td>92.3</td>
</tr>
<tr>
<td>Latina</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Religious Preference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>46</td>
<td>44.2</td>
</tr>
<tr>
<td>Jewish</td>
<td>12</td>
<td>11.5</td>
</tr>
<tr>
<td>Protestant</td>
<td>32</td>
<td>30.8</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>12.5</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Most women (70%) in this study reported finding their breast lesions either by casual self-examination or routine mammogram. Only ten women (10%) reported finding a lesion by routine self-breast examination. The majority (59%) of the women in this study reported that someone else in their family had breast cancer and 71% indicated someone close to them (relative/friend/colleague) had undergone breast cancer treatment.
Table 6

Employment Status and Income
(N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>Homemaker</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>Part-time Employment</td>
<td>13</td>
<td>12.5</td>
</tr>
<tr>
<td>Full-time Employment</td>
<td>56</td>
<td>53.8</td>
</tr>
<tr>
<td>Employed on Leave</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>Retired</td>
<td>18</td>
<td>17.3</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Household Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $30,000</td>
<td>7</td>
<td>6.7</td>
</tr>
<tr>
<td>$30,001 - $50,000</td>
<td>14</td>
<td>13.5</td>
</tr>
<tr>
<td>$50,001 - $75,000</td>
<td>32</td>
<td>30.8</td>
</tr>
<tr>
<td>$75,001 - $100,000</td>
<td>19</td>
<td>18.3</td>
</tr>
<tr>
<td>$100,001 - $125,000</td>
<td>17</td>
<td>16.3</td>
</tr>
<tr>
<td>Above $125,000</td>
<td>14</td>
<td>13.5</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Women reported a mix of initial treatments (see Table 7). The majority of women (64%) reported receiving hormonal therapy. In addition to the hormonal medications, women reported using other medications. In all, 83% of the women in this study were taking some type of medication. The majority of women reported no lymphedema (88%).

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Table 7

Initial and Hormonal Treatments for Breast Cancer
(N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Treatments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery Only</td>
<td>19</td>
<td>18.3</td>
</tr>
<tr>
<td>Surgery &amp; Radiation</td>
<td>23</td>
<td>22.1</td>
</tr>
<tr>
<td>Surgery &amp; Chemotherapy</td>
<td>24</td>
<td>23.1</td>
</tr>
<tr>
<td>Surgery, Radiation, &amp; Chemotherapy</td>
<td>38</td>
<td>36.5</td>
</tr>
<tr>
<td>Hormonal Therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tamoxifen®</td>
<td>67</td>
<td>64.4</td>
</tr>
</tbody>
</table>

The DDF contained items about personal experiences in survivorship with regard to use of complementary modalities, volunteer activities, use of services, and participation in support groups. The data revealed that 30% of participants reported use of one or more complementary modalities. Those participants using complementary modalities reported a similar pattern of usage for current (at the time of data collection) and treatment usage (during active treatment) (see Table 8). For both periods, use of massage, spiritual healing, and/or multiple modalities were reported most often (see Table 8). The majority of participants reported involvement in volunteer activities (53%) and being the recipients of services (76%) (see Table 9). The pattern of volunteer activities and services received differed based on period (current or during treatment) in the expected direction, i.e., volunteer activities were engaged in currently (47%), while services were primarily received (72%) during treatment (see Table 9). Most women (53%) reported participation in support groups during treatment (see Table 9).
Table 8

Personal Experiences: Complementary Modalities
(N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementary Modalities - Current*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Patterning</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Therapeutic Touch</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Reiki</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Massage</td>
<td>14</td>
<td>13.5</td>
</tr>
<tr>
<td>Nutritional Healing</td>
<td>7</td>
<td>6.7</td>
</tr>
<tr>
<td>Spiritual Healing</td>
<td>11</td>
<td>10.6</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>7.7</td>
</tr>
<tr>
<td>Multiple</td>
<td>11</td>
<td>10.6</td>
</tr>
<tr>
<td>Complementary Modalities - Treatment*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Patterning</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Therapeutic Touch</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>Reiki</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>Massage</td>
<td>13</td>
<td>12.5</td>
</tr>
<tr>
<td>Nutritional Healing</td>
<td>6</td>
<td>5.8</td>
</tr>
<tr>
<td>Spiritual Healing</td>
<td>13</td>
<td>12.5</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>8.7</td>
</tr>
<tr>
<td>Multiple</td>
<td>16</td>
<td>15.4</td>
</tr>
</tbody>
</table>

*Not equal to 104 or 100% as participants may identify none or multiple modalities

Patterns of participation in support groups were in the expected direction with participation being reported more frequently during treatment. Additional comments were invited and 60% of participants did so. Some women described experiences with diagnosis and treatment, desire to help others, hope for the future, and, for some, their lingering concerns.
Table 9

Personal Experiences: Volunteer, Services, Support Groups
(N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer Activities*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>49</td>
<td>47</td>
</tr>
<tr>
<td>Treatment</td>
<td>27</td>
<td>26</td>
</tr>
<tr>
<td>Receiving Services*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Treatment</td>
<td>75</td>
<td>72</td>
</tr>
<tr>
<td>Participation in Support Groups*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>32</td>
<td>31</td>
</tr>
<tr>
<td>Treatment**</td>
<td>55</td>
<td>53</td>
</tr>
</tbody>
</table>

*Not equal to 104 or 100% as participants may identify none or multiple experiences
**Missing values = 2

Evaluation of the Instruments

Based on reliability estimates (see Table 10), all instruments performed adequately. The QLI-CV (Ferrans, 1990b; Ferrans & Powers, 1985) (see Appendix I), had a high Cronbach alpha coefficient (.92). Two of the subscale alphas were marginal (Socioeconomic and Family) (see Table 10). The results are consistent with those reported in other samples of breast cancer survivors (Ferrans, 1990a; Sammarco, 1998, 2003). Concurrent validity was supported by a correlation \( r = .80, p = .000 \) between a question on participants’ general satisfaction with life and the total Quality of Life score. This finding is consistent with that reported by Ferrans (1990b).
Table 10

Internal Consistency Reliability Results for Study Instruments (N=104)

<table>
<thead>
<tr>
<th>Instrument/Subscale/Factor</th>
<th>Alpha Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLI-CV</td>
<td>.92</td>
</tr>
<tr>
<td>Health/Functioning</td>
<td>.85</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td>.71</td>
</tr>
<tr>
<td>Psychological/Spiritual</td>
<td>.84</td>
</tr>
<tr>
<td>Family</td>
<td>.77</td>
</tr>
<tr>
<td>PKPCT</td>
<td>.96</td>
</tr>
<tr>
<td>Awareness</td>
<td>.84</td>
</tr>
<tr>
<td>Choices</td>
<td>.85</td>
</tr>
<tr>
<td>Freedom to Act Intentionally</td>
<td>.90</td>
</tr>
<tr>
<td>Involvement in Creating Change</td>
<td>.91</td>
</tr>
<tr>
<td>MUIS-C</td>
<td>.89</td>
</tr>
<tr>
<td>STS</td>
<td>.69</td>
</tr>
</tbody>
</table>

Note: QLI-CV = Quality of Life Index-Cancer Version, PKPCT = Power as Knowing Participation in Change Tool, Version II, MUIS-C = Mishel’s Uncertainty in Illness Scale-Community Form, STS = Self-Transcendence Scale

The PKPCT (Barrett, 1998) (see Appendix J), had a total Cronbach alpha coefficient of .96 and high factor alphas supporting the reliability of the instrument (see Table 10). A retest item for each factor is included as a measure of stability. The stability coefficients, computed using Pearson $r$, Awareness ($r = .70$), Choices ($r = .61$), Freedom ($r = .58$), and Creating Change ($r = .50$), were all statistically significant ($p = .01$), suggesting that the items were stable and response bias was not an issue. These findings were consistent with those found in previous studies that ranged from .40 to .92 (Barrett & Caroselli, 1998; Larkin, 2001; Wall, 1999; Wright, 2000).
The MUIS-C (Mishel, 1990c) (see Appendix K) had a Cronbach alpha coefficient reliability of .89 (see Table 10). This alpha supports the internal reliability of the scale in this study and is consistent with those found in other studies (Mishel, 1990b; Sammarco, 1998, 2003).

The STS (Reed, 1987b) (see Appendix L) had an alpha of .69 (see Table 10). This finding was below an alpha of .80 and below alphas reported in other studies (.73 to .94) using the STS (Coward, 1991; 1996; 1998; Diener, 2003; Mellors et al., 1997; Reed, 1991b). The scale was examined for possible alpha improvement based on item deletion and none were found to improve the alpha reliability above .70.

The instrument author was contacted to discuss the low alpha. P. Reed (personal communication, January 2002) identified the STS as a new scale. While the scale has been used with women with breast cancer, those with chronic illnesses, and well persons, it has not previously been used with women in the intermediate stage of survivorship.

Alphas of newer scales used in social science research are generally considered acceptable at .7 (Carmines & Zeller, 1979; Nunnally, 1978; Pedhazur & Schmelkin, 1991). As the STS can be considered a newer scale, the researcher interpreted the alpha for the STS as marginally acceptable.

In addition to reliability estimates, descriptive statistics including the score ranges and mean scores for the main study variables are reported (see Table 11). Higher scores on the QLI-CV, PKPCT, MUIS-C, and STS indicate higher Quality of Life, Power, Uncertainty, and Self-Transcendence, respectively. The ranges and means found in the current study were consistent with those reported in the literature (Barrett & Caroselli, 1998; Coward, 1991; Diener, 2003; Ferrans, 1990b; Mellors et al., 1997; Mishel, 1990b; Sammarco, 1998, 2003).
Table 11
Possible and Actual Ranges, Means, and Standard Deviations for Study Instruments (N = 104)

<table>
<thead>
<tr>
<th>Instrument/Subscale/Factor</th>
<th>Possible Range</th>
<th>Actual Range</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLI-CV</td>
<td>0 – 30</td>
<td>10.74 – 29.23</td>
<td>23.17</td>
<td>3.79</td>
</tr>
<tr>
<td>Health/Functioning</td>
<td>0 – 30</td>
<td>9.43 – 29.11</td>
<td>22.64</td>
<td>4.26</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td>0 – 30</td>
<td>10.67 – 30.00</td>
<td>23.44</td>
<td>3.97</td>
</tr>
<tr>
<td>Psychological/Spiritual</td>
<td>0 – 30</td>
<td>5.21 – 30.00</td>
<td>23.00</td>
<td>4.60</td>
</tr>
<tr>
<td>Family</td>
<td>0 – 30</td>
<td>2.00 – 30.00</td>
<td>24.68</td>
<td>6.18</td>
</tr>
<tr>
<td>PKPCT</td>
<td>48 – 336</td>
<td>180 – 336</td>
<td>277.19</td>
<td>33.18</td>
</tr>
<tr>
<td>Awareness</td>
<td>12 – 84</td>
<td>45 – 84</td>
<td>69.12</td>
<td>8.55</td>
</tr>
<tr>
<td>Choices</td>
<td>12 – 84</td>
<td>41 – 84</td>
<td>68.41</td>
<td>8.63</td>
</tr>
<tr>
<td>Freedom to Act Intentionally</td>
<td>12 – 84</td>
<td>39 – 84</td>
<td>69.82</td>
<td>9.54</td>
</tr>
<tr>
<td>Involvement in Creating Change</td>
<td>12 – 84</td>
<td>36 – 84</td>
<td>69.82</td>
<td>9.56</td>
</tr>
<tr>
<td>MUIS –C</td>
<td>23 – 115</td>
<td>24 – 80</td>
<td>43.82</td>
<td>11.74</td>
</tr>
<tr>
<td>STS</td>
<td>1 – 4</td>
<td>2.73 – 4</td>
<td>3.48</td>
<td>.27</td>
</tr>
</tbody>
</table>

Main Analyses

A test of the assumptions for multiple regression analyses revealed that Quality of Life, Power, and Self-Transcendence were negatively skewed indicating that scores generally fell in the higher range. The Skew Ratios (Skew/S.E. Skew), an evaluation of the extent of skewness, were greater than two for Quality of Life (-4.27), Power (-2.88), and Self-Transcendence (-3.13). Uncertainty was positively skewed, indicating that scores generally fell in the lower range, and the skew ratio (2.86) was greater than two.

Transformations using log 10 and square root were evaluated to determine if any benefit would be realized. Log 10 transformations did not correct skewness. For example,
both Quality of Life and Power remained negatively skewed and the skew ratio was as high as -9. Self-Transcendence had a reversed skew. As log 10 transformations worsened the skewness, no further examination was made. However, square root transformation resulted in skew ratios less than two for Quality of Life (1.27), Uncertainty (1.6), and Power (-1.6), with Power remaining negatively skewed. Self-Transcendence had a skew ratio of 2.26 after transformation. While analyses using square root transformations resulted in some improvements in the shape of the distribution, the results of main analyses using transformed and original data were essentially the same with one exception, which did not change the interpretation of the research question. In view of the minimal benefit to normality, the lack of substantial differences in the results of analyses, and in view of the difficulties presented in interpretation and comparison of the data with transformed variables, a decision was made to use the original data in the analyses.

Scatterplots supported linearity and homoscedasticity. Assessment for multivariate outliers was conducted by regressing Quality of Life on Power, Uncertainty, and Self-Transcendence. One case (case 37) was identified on casewise diagnostics. All data entry was accurate for the case and no remarkable differences based on demographic data were found. An examination of studentized residual (discrepancy), leverage, and Cook’s influence revealed no extreme values and Cook’s influence was less than one. The main analyses were run with and without case 37 and no differences were found. Therefore, the case was not removed.

The nature of the study was exploratory and model generating; thus, patterns of relation amongst Power, Uncertainty, Self-Transcendence and Quality of Life; Power and Uncertainty to Quality of Life; and Power and Uncertainty to Self-Transcendence in breast cancer survivors were considered. In all, five research questions were investigated.
Research Question 1

The first research question asked was, "What are the relations amongst Power, Uncertainty, Self-Transcendence, and Quality of Life in breast cancer survivors?" The bivariate correlations among the variables were conducted and all were found to be statistically significant. The correlation matrix is reported in Table 12.

Table 12
Correlation Matrix of Associations Among Main Study Variables
(N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Quality of Life</th>
<th>Power</th>
<th>Uncertainty</th>
<th>Self-Transcendence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Life</td>
<td>-</td>
<td>.315**</td>
<td>-.354**</td>
<td>.604**</td>
</tr>
<tr>
<td>Power</td>
<td></td>
<td>-</td>
<td>-.307**</td>
<td>.496**</td>
</tr>
<tr>
<td>Uncertainty</td>
<td></td>
<td></td>
<td>-</td>
<td>-.333**</td>
</tr>
<tr>
<td>Self-Transcendence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .001, one-tailed

The strength of the correlations were interpreted using Cohen's (1988) scheme for evaluating correlational results within the behavioral sciences. More recently, Weinberg and Abramowitz (2002) reinforced this convention. Using Cohen's recommendations, a correlation of .1 is weak, .3 moderate, and .5 strong. Uncertainty is moderately and inversely correlated with all other variables. Greater Uncertainty is related to lower Quality of Life ($r = -.354, p = .01$), lower Power ($r = -.307, p = .01$), and lower Self-Transcendence ($r = -.333, p = .01$). Moderate to strong, positive statistically significant correlations were found amongst the other variables. Participants who reported higher Power reported higher Self-Transcendence ($r = .496, p = .01$) and higher
Quality of Life ($r = .315, p = .01$). Similarly, those who reported higher Self-Transcendence reported higher Quality of Life ($r = .604, p = .01$).

After bivariate correlations assessed the relation of each variable to Quality of Life and to each other when considered separately, simultaneous multiple regression analysis was conducted to determine the extent to which variance in Quality of Life could be explained by Power, Uncertainty, and Self-Transcendence when considered together (see Table 13). The model explained 39% of the variance in Quality of Life. However, standardized regression coefficients show that only Uncertainty ($beta = -.174, t = -2.076, p = .040$) and Self-Transcendence ($beta = .551, t = 5.988, p = .000$) made a statistically significant contribution to the explained variance. For each one-unit change in

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>-1.340</td>
<td>.010</td>
<td>-.012</td>
<td>-.128</td>
<td>.898</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>-5.636</td>
<td>.027</td>
<td>-.174</td>
<td>-2.076</td>
<td>.040</td>
</tr>
<tr>
<td>Self-Transcendence</td>
<td>7.772</td>
<td>1.298</td>
<td>.551</td>
<td>5.988</td>
<td>.000</td>
</tr>
</tbody>
</table>

F = 21.411
Sig. F = .000
Multiple R = .625
R Square = .391
Adjusted R Square = .373
Uncertainty, there is a standard deviation change in Quality of Life of -.174, with the effects of Power and Self-Transcendence held constant. Likewise, for each one-unit change in Self-Transcendence, there is a standard deviation change in Quality of Life of .551, with the effects of Power and Uncertainty held constant (Bryman & Cramer, 2001; Weinberg & Abramowitz, 2002). It is of note that despite the moderate, positive, statistically significant correlation between Power and Quality of Life, Power does not make a statistically significant contribution to the explanation of Quality of Life when the effects of Uncertainty and Self-Transcendence are considered.

Research Question 2

After considering the effects of all the variables on Quality of Life, the main and interaction effects of Power and Uncertainty on Quality of Life were investigated. Research question two asked, “Do Power and Uncertainty contribute to an explanation of the variance in Quality of Life in breast cancer survivors?” To determine the main effects of Power and Uncertainty on Quality of Life, Quality of Life was regressed on Power and Uncertainty in step one of a hierarchical multiple regression. Step one of the regression is reported using centered variables (Power and Uncertainty). Centered variables are obtained by subtracting the mean from each score (Weinberg & Abramowitz, 2002). This procedure centers the mean at zero. Centered variables are used when interaction terms are explored. Centering reduces the impact of multicollinearity among the variables and the cross products term. Furthermore, the technique is thought to make interpretation of the interaction more meaningful (Pedhazur & Schmelkin, 1991; Tabachnick & Fidell, 2001; Weinberg & Abramowitz, 2002) (see Table 14).
Table 14

Step I: Regression of Quality of Life on Centered Power and Centered Uncertainty
(N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centered Power</td>
<td>.876</td>
<td>.365</td>
<td>.228</td>
<td>2.398</td>
<td>.018</td>
</tr>
<tr>
<td>Centered Uncertainty</td>
<td>-1.107</td>
<td>.370</td>
<td>-.284</td>
<td>-2.991</td>
<td>.003</td>
</tr>
</tbody>
</table>

F = 10.547  
Sig. F = .000  
Multiple R = .416  
R Square = .173  
Adjusted R Square = .156

The main effects of Centered Power and Uncertainty together explain 17% of the variance in quality of life, $F (2,101) = 10.547, p = .000$ (see Table 14). Standardized regression coefficients show that Centered Power ($beta = .228, t = 2.398, p = .018$) and Uncertainty ($beta = -.284, t = -2.991, p = .003$) contribute statistically significant main effects. For each unit change in Power, there is a standard deviation change in Quality of Life of .228, with the effects of Uncertainty on Quality of Life held constant. For each unit change in Uncertainty, there is a standard deviation change in Quality of Life of -.284, with the effects of Power on Quality of Life held constant.

**Research Question 3**

Once main effects of Power and Uncertainty had been partialled out in the first step of the regression equation, the interaction effects of Power and Uncertainty on Quality of Life were then examined to answer Research Question three which asked, "Do Power and Uncertainty contribute in an interactive way to the explanation of the variance in Quality
of Life in breast cancer survivors?" To answer this research question (see Table 15), the centered cross products term (Centered Power x Centered Uncertainty), now termed Centered ProductPU, was built and entered the hierarchical regression on the next regression step. The interaction term, ProductPU, did not make a statistically significant change in the explained variance in Quality of Life, $F_{change} (1, 100) = 1.311, p = .254$, $R^2_{change} (1, 100) = .011, p = .254$ (see Table 15). The results indicated no significant contribution of the interaction term to the model and Power and Uncertainty do not have a conditional relation on Quality of Life.

**Research Question 4**

After considering the main and interaction effects of Power and Uncertainty on Quality of Life, the main and interaction effects of Power and Uncertainty on Self-Transcendence were investigated. Research question four asked, "Do Power and
Uncertainty contribute to an explanation of the variance in Self-Transcendence in breast cancer survivors? To evaluate the main effects of Power and Uncertainty on Self-Transcendence, Self-Transcendence was regressed on Centered Power and Centered Uncertainty in step one of a hierarchical multiple regression (see Table 16). Centered Power and Uncertainty together explained 28% of the variance in Self-Transcendence,

Table 16

Step I: Regression of Self-Transcendence on Centered Power and Uncertainty (N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centered Power</td>
<td>.118</td>
<td>.024</td>
<td>.435</td>
<td>4.907</td>
<td>.000</td>
</tr>
<tr>
<td>Centered Uncertainty</td>
<td>-5.509</td>
<td>.024</td>
<td>-.199</td>
<td>-2.252</td>
<td>.027</td>
</tr>
</tbody>
</table>

F = 19.843
Sig. F = .000
Multiple R = .531
R Square = .282
Adjusted R Square = .268

F (2,101) = 19.843, p = .000 (see Table 16). The standardized regression coefficients show that both Power (beta = .435, t = 4.907, p = .000) and Uncertainty (beta = -.199, t = -2.252, p = .027) contribute statistically significant main effects. For every unit change in Power, there is a standard deviation change in Self-Transcendence of .435, with the effects of Uncertainty held constant. For each unit change in Uncertainty, a standard deviation change in Self-Transcendence (-.199) occurs with the effects of Power held constant.
Research Question 5

Once the main effects of Power and Uncertainty had been partialled out in the first step of the regression equation, the interaction effect of Power and Uncertainty on Self-Transcendence was then examined to answer research question five which asked, "Do Power and Uncertainty contribute in an interactive way to the explanation of the variance in Self-Transcendence in breast cancer survivors?" Step two of a hierarchical regression analysis introduced the two-way interaction term, ProductPU, and entered the hierarchical regression on the next regression step. The interaction term of Power and Uncertainty did not make a statistically significant change in $R^2$ ($R^2 = .008, p = .290$). The results indicated no significant contribution of the interaction term to the model, and Power and Uncertainty do not have a conditional relation on Self-Transcendence, that is, high Uncertainty in the face of low Power does not contribute to the explanation of Self-Transcendence (see Table 17).

Table 17

Step II: Regression of Self-Transcendence on Centered Power, Uncertainty, and ProductPU (N=104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centered ProductPU</td>
<td>2.866</td>
<td>.027</td>
<td>.093</td>
<td>1.065</td>
<td>.290</td>
</tr>
</tbody>
</table>

$F = 13.624$
Sig. $F = .000$

Multiple R = .539
R Square = .290
Adjusted R Square = .269
R Square Change = .008
Ancillary Analysis

In view of the findings of the main analyses that revealed Power did not contribute to the explanation of Quality of Life when Self-Transcendence was considered and the absence of interaction or moderating relations for Power and Uncertainty, the investigator considered possible mediating relations. Baron and Kenny (1986) suggested that “one may begin with a moderator orientation and end-up elucidating a mediator process” (p. 1178). Moderators are independent variables that influence an outcome variable given a specific situation. For example, in the current study, Power and Uncertainty were examined for their moderating or interaction effect. In other words, were there situations like high Power and high Uncertainty that accounted for differences in Quality of Life? Based on the situation in which the interaction occurs, the relation with the dependent variable would be different. Of course, no interaction was found.

On the other hand, mediating relations focus on an independent variable that accounts for changes in the relation between an independent variable and a dependent variable. While mediating factors have been associated with causal modeling, it is also clear that mediating relations are examined to uncover a process of relation or how theoretically linked concepts are related (Baron & Kenny, 1986; Bennett, 2000; James & Brett, 1984; Kim, Kaye, & Wright, 2001). In other words, in the presence of a mediating (independent variable) variable, the relation between another independent variable and the dependent variable is changed. Thus, in contrast to the moderating relation, regardless of the situation, in the mere presence of the mediator, the relation between an independent variable and the dependent variable is changed.

The theoretical rationale suggested a relation amongst Power, Self-transcendence, and Quality of Life. Specifically, Power may assist with one’s journey toward self-transcendence and that, through this journey an association with Quality of
Life may be present. While bivariate correlations indicated statistically significant correlations between Power and Self-Transcendence ($r = .496, p = .000$), Power and Quality of Life ($r = .315, p = .001$), and between Self-Transcendence and Quality of Life ($r = .604, p = .000$), multiple regression analysis revealed that the study model explained 39% ($p = .000$) of the variance in Quality of Life but that Power ($beta = -.012, t = -.128, p = .898$) was not a statistically significant contributor in the regression equation. These findings may be attributed to issues of multicollinearity, redundancy, and/or singularity amongst power and self-transcendence or the presence of another type of relationship amongst the variables, e.g., a mediating relation.

First, the presence of high multicollinearity was examined. Examination of bivariate correlations indicated strong associations between Power and Self-Transcendence ($r = .496$) and Self-Transcendence and Quality of Life ($r = .604$) but they did not approach the correlations ($r \geq .8$) that experts have identified as indicating high multicollinearity (Lewis-Beck, 1980; Schroeder, Sjoquist, & Stephan, 1986; Tabachnick, & Fidell, 2001). The Variance Inflation Factors (VIF) were evaluated by examining the square root of the VIF for each independent variable and all were well below 2 (Fox, 1991). Regressing each independent variable on all others, a preferred method (Lewis-Beck), suggested that high multicollinearity was not a concern, as $R^2$ did not approach 1.0. The highest $R^2$ was .282. Tolerances for the independent variables were well above 0 indicating issues of redundancy and/or singularity were not a concern (Tabachnick & Fidell, 2001). Furthermore, partial correlations were explored. The partial correlation between Power and Quality of Life ($r = .02, p = .818$) controlling for Self-Transcendence and Self-Transcendence and Quality of Life ($r = .54, p = .000$) indicated that Self-Transcendence was playing a role in the relation between Power and Quality of Life.
In view of the suggested theoretical link and the statistical evidence presented above, the possibility of a pattern of relation such as one where Self-Transcendence was mediating the relation between Power and Quality of Life was examined (Baron & Kenny, 1986; Bennet, 2000; Kim, Kaye, & Wright, 2001). A series of multiple regression analyses were performed. A three-step process outlined by researchers and statistical experts (Baron & Kenny; Bennett; Kim, Kaye, & Wright) was used to evaluate the presence of mediating relations.

First, the mediator, Self-Transcendence, is regressed on the independent variable, Power, to determine if Power contributes to a statistically significant explanation of Self-Transcendence. As reported in Table 18, Power contributed statistically significantly (\( \beta = .496, t = 5.770, p = .000 \)) and explained 25% of the variance in Self-Transcendence, \( F(1,102) = 33.288, p = .000 \). Criterion one was met (see Table 18).

The second equation tests the independent variable, Power, as a statistically significant predictor of the dependent variable, Quality of Life. Table 19 outlines the results of equation two showing that Power contributes statistically significantly to the

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>4.022</td>
<td>.001</td>
<td>.496</td>
<td>5.770</td>
<td>.000</td>
</tr>
</tbody>
</table>

\( F = 33.288 \)

Sig. \( F = .000 \)

Multiple \( R = .496 \)

\( R \ Square = .246 \)

Adjusted \( R \ Square = .239 \)
explanation of variance (10%) in Quality of Life, $F(1,102) = 11.269, p = .001$. The contribution of Power is significant ($\beta = .315, t = 3.357, p = .001$). The second criterion was met (see Table 19).

Table 19

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>3.604</td>
<td>.011</td>
<td>.315</td>
<td>3.357</td>
<td>.001</td>
</tr>
</tbody>
</table>

$F = 11.269$

Sig. $F = .001$

Multiple $R = .315$

$R^2 = .099$

Adjusted $R^2 = .091$

Thirdly, the dependent variable, Quality of Life, was regressed on both the independent variable, Power, and the mediator under investigation, Self-Transcendence, to determine if a) the mediator is a significant predictor of the dependent variable, Quality of Life, and b) if the independent variable, Power, becomes a less significant contributor than it was in equation two or if it becomes non-significant. The results of the third regression confirmed that Self-Transcendence continued to make a significant contribution to the explanation of Quality of Life ($\beta = .593, t = 6.496, p = .000$) while Power became non-significant ($\beta = .021, t = .231, p = .818$) (see Table 20). All three criteria were met. The reduction in the standardized regression coefficient and loss of significance is consistent with the presence of a mediating relation. Specifically, Self-Transcendence mediates the relation between Power and Quality of Life. This finding contributes to the
understanding of how Power is related to Quality of Life and why Power's role as
significant contributor to the explanation of Quality of Life was lost in the presence of
Self-Transcendence in research question one of the main analyses. As seen in Table 20,
the complete loss of significance of Power in the presence of Self-Transcendence
indicates that Self-Transcendence is a strong, dominant mediator for the relation

Table 20
Test of Mediating Variable: Equation III Regression of Quality of Life on
Power and Self-Transcendence
(N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sag T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>2.414</td>
<td>.010</td>
<td>.021</td>
<td>.231</td>
<td>.818</td>
</tr>
<tr>
<td>Self-Transcendence</td>
<td>8.361</td>
<td>1.287</td>
<td>.593</td>
<td>6.496</td>
<td>.000</td>
</tr>
</tbody>
</table>

F = 29.012
Sig. F = .000
Multiple R = .604
R Square = .365
Adjusted R Square = .352

between Power and Quality of Life (Baron & Kenny, 1986; Kim, Kaye, & Wright, 2001).

In view of the role of Self-Transcendence uncovered above, further exploration
of the role of Self-Transcendence was conducted. In the theoretical rationale for the
study, the researcher posited that living with Uncertainty may require new ways of being
in the world, Self-Transcendence, which may be associated with Quality of Life. As the
intention of this research was to explore relationships among these theoretically
important variables, Self-Transcendence, as a mediator of the relation between Uncertainty and Quality of Life, was examined.

In the first step, Self-Transcendence, the proposed mediator, was regressed on Uncertainty. Uncertainty \((\beta = -0.333, t = -3.567, p = .001)\) contributed statistically significantly to the explained variance (11%) in Self-Transcendence (see Table 21). Criterion one was met.

Table 21

Test of Mediating Variable: Equation I Regression of Self-Transcendence on Uncertainty 
(N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty</td>
<td>-7.635</td>
<td>.002</td>
<td>-0.333</td>
<td>-3.567</td>
<td>.001</td>
</tr>
</tbody>
</table>

\[ F = 12.724 \]
\[ \text{Sig. } F = .001 \]
\[ \text{Multiple } R = .333 \]
\[ \text{R Square} = .111 \]
\[ \text{Adjusted R Square} = .102 \]

Next, Quality of Life, the dependent variable, was regressed on Uncertainty, the independent variable, to determine the contribution it makes to an explanation of Quality of Life (see Table 22). Uncertainty \((\beta = -0.354, t = -3.829, p = .000)\) contributed a statistically significant portion of the 13% explained variance in Quality of Life. The second criterion was met.

In the third step, the dependent variable, Quality of Life was regressed on Uncertainty and Self-Transcendence. Self-Transcendence, the proposed mediator,
contributed significantly ($beta = .546$, $t = 6.634$, $p = .000$) to the explained variance in Quality of Life (39%) (see Table 23). In this step, Uncertainty, the independent variable, had a reduced standardized regression coefficient ($beta = -.173$, $t = -2.095$, $p = .039$).

While Uncertainty still contributed significantly to the explained variance in Quality of Life, the reduced $beta$ (from -.354 to -.173) and the reduction in the significance level (from $p = .000$ to $p = .039$), meet the criteria for step three. Self-Transcendence exhibited a pattern of mediation for the relation of Uncertainty and Quality of Life.

Table 22

Test of Mediating Variable: Equation II Regression of Quality of Life on Uncertainty (N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty</td>
<td>-.115</td>
<td>.030</td>
<td>-.354</td>
<td>-3.829</td>
<td>.000</td>
</tr>
</tbody>
</table>

$$F = 14.660$$

Sig. $F = .000$

Multiple $R = .354$

$R$ Square = .126

Adjusted $R$ Square = .117

In the main analyses, results from research questions three and five indicate that the interaction term of Power and Uncertainty (Product PU) did not contribute to the explained variance in either Quality of Life or on Self-Transcendence. Bennett (2000) suggests that if a researcher does not consider the possibility of mediating relations, particularly when correlations are statistically significant and multicollinearity is not deemed a problem, a more precise explanation may be missed. Nurse researchers
Table 23

Test of Mediating Variable: Equation III Regression of Quality of Life on Uncertainty and Self-Transcendence (N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty</td>
<td>-5.575</td>
<td>.027</td>
<td>-.173</td>
<td>-2.095</td>
<td>.039</td>
</tr>
<tr>
<td>Self-Transcendence</td>
<td>7.699</td>
<td>1.161</td>
<td>.546</td>
<td>6.634</td>
<td>.000</td>
</tr>
</tbody>
</table>

\[ F = 32.425 \]
\[ \text{Sig. } F = .000 \]
\[ \text{Multiple R} = .625 \]
\[ R \text{ Square} = .391 \]
\[ \text{Adjusted R Square} = .379 \]

encourage a broader use of analyses to detect moderating and mediating effects when exploring data (Bennett; Kim, Kaye, & Wright 2001). In order to examine the relations of Power and Uncertainty with Self-Transcendence more fully, potential mediating effects, suggested by a theoretical perspective, were explored further.

Theoretically, Reed (1997) posits that Self-Transcendence demands knowing participation in order to maintain well-being during potentially fragmenting experiences. Uncertainty was thought to influence or promote other factors in one’s life, such as Self-Transcendence (Mishel, 1990a; Nelson, 1996). Both Power and Uncertainty have a relation with Quality of Life directly and indirectly through Self-Transcendence. Both have a direct relation with Self-Transcendence. No interaction effect is present. Is there an indirect or mediating pattern of Power and Uncertainty in the relation with Self-Transcendence? To answer the question, a series of three multiple regression analyses, described previously, to examine the criteria for mediating effects were conducted.
The theoretical rationale suggests that Power is the mediator in the relation between Uncertainty and Self-Transcendence. The three-step multiple regression analysis was performed to test the relation. In the first equation, Power, the proposed mediator, was regressed on Uncertainty, the independent variable (see Table 24). The second equation tests the independent variable, Uncertainty, as a statistically significant predictor of the dependent variable, Self-Transcendence. Table 25 displays the results of equation two in which Uncertainty contributes statistically significantly to the explanation of variance (11%) in Self-Transcendence, \( F(1, 102) = 12.724, p = .001 \).

Table 24

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty</td>
<td>-.868</td>
<td>.266</td>
<td>-.307</td>
<td>-3.260</td>
<td>.002</td>
</tr>
</tbody>
</table>

\[ F = 10.626 \]
\[ \text{Sig. } F = .002 \]
\[ \text{Multiple } R = .307 \]
\[ R \text{ Square } = .094 \]
\[ \text{Adjusted } R \text{ Square } = .085 \]

In the final equation, the dependent variable, Self-Transcendence, was regressed on Uncertainty and Power (see Table 26). The findings indicated that Power mediates the relation between Uncertainty and Self-Transcendence as seen by the drop in \( \beta \) and
Table 25

Test of Mediating Variable: Equation II Regression of Self-Transcendence on Uncertainty (N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty</td>
<td>-7.635</td>
<td>.002</td>
<td>-.333</td>
<td>-3.567</td>
<td>.001</td>
</tr>
</tbody>
</table>

F = 12.724  
Sig. F = .001  
Multiple R = .333  
R Square = .111  
Adjusted R Square = .102

Table 26

Test of Mediating Variable: Equation III Regression of Self-Transcendence on Uncertainty and Power (N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty</td>
<td>-4.574</td>
<td>.002</td>
<td>-.199</td>
<td>-2.252</td>
<td>.027</td>
</tr>
<tr>
<td>Power</td>
<td>3.525</td>
<td>.001</td>
<td>.435</td>
<td>4.907</td>
<td>.000</td>
</tr>
</tbody>
</table>

F = 19.843  
Sig. F = .000  
Multiple R = .531  
R Square = .282  
Adjusted R Square = .268

and significance level in the contribution of Uncertainty to Self-Transcendence in the presence of Power. All criteria were met.
Subscales/Factors and the Study Instruments

Two of the study instruments (QLI-CV and PKPCT) contained subscales/factors. The correlations of the subscales/factors among each other and with the respective total instrument were examined to provide further insight to the scale performance. In addition, in view of the correlations among the variables, the investigator sought to examine the pattern of subscale/factor associations with the other study variables.

Quality of Life Index-Cancer Version

The subscales of the QLI-CV are health/functioning, socioeconomic, psychological/spiritual, and family, all of which together represent Quality of Life (Ferrans & Powers, 1992). Correlations amongst the subscales and with the total QLI-CV were all moderately to strongly, positively, statistically significant (see Table 27). When

Table 27

Correlations among Subscales and QLI-CV

<table>
<thead>
<tr>
<th>Scale/Subscale</th>
<th>Health/Functioning</th>
<th>Socioeconomic</th>
<th>Psych/Spiritual</th>
<th>Family</th>
<th>QLI-CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health/Functioning</td>
<td>-</td>
<td>.695</td>
<td>.726</td>
<td>.535</td>
<td>.939</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td></td>
<td>-</td>
<td>.623</td>
<td>.445</td>
<td>.840</td>
</tr>
<tr>
<td>Psych/Spiritual</td>
<td></td>
<td></td>
<td>-</td>
<td>.411</td>
<td>.845</td>
</tr>
<tr>
<td>Family</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>.639</td>
</tr>
<tr>
<td>QLI-CV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* QLI-CV = Quality of Life Index–Cancer Version

*p* = .000 for all

Quality of Life was regressed on the subscales, 99.9% of the variance in quality of life was explained, *F*(4, 99) = 16630.245, *p* = .000. The contributions of each of the

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subscales are statistically significant \( (p = .000) \) with health/functioning as the strongest contributor \( (\beta = .467, p = .000) \) and family as the least strong \( (\beta = .155, p = .000) \).

The correlations of the QLI-CV subscales with the other study instruments were examined (see Table 28). One subscale, the family subscale, was not statistically significantly associated with Power or Uncertainty. A weak, positive \( (r = .237, p = .016) \) statistically significant correlation with Self-Transcendence was found. The other subscales were all statistically significantly associated with the main study variables. Power was most strongly associated with the psychological/spiritual subscale of the QLI-CV \( (r = .410, p = .000) \). Uncertainty was inversely correlated with the other QLI-CV subscales of which the health/functioning subscale was the strongest \( (r = -.393, p = .000) \). Self-Transcendence was statistically significantly correlated with all the subscales of QLI-CV, with the strongest positive correlation being the psychological/spiritual subscale \( (r = .732, p = .000) \).

Table 28

<table>
<thead>
<tr>
<th>QLI-CV Subscales</th>
<th>PKPCT</th>
<th>MUIS-C</th>
<th>STS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health/Functioning</td>
<td>.264*</td>
<td>-.393**</td>
<td>.557**</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td>.272*</td>
<td>-.246*</td>
<td>.405**</td>
</tr>
<tr>
<td>Psychological/Spiritual</td>
<td>.410**</td>
<td>-.300**</td>
<td>.732**</td>
</tr>
<tr>
<td>Family</td>
<td>.022 NS</td>
<td>-.137 NS</td>
<td>.237*</td>
</tr>
</tbody>
</table>

*Note. QLI-CV = Quality of Life Index-Cancer Version, PKPCT = Power as Knowing Participation in Change Tool, MUIS-C = Mishel’s Uncertainty in Illness Scale-Community Form, STS = Self-Transcendence Scale, NS = Non-significant* 

\*\( p = .01 \), **\( p = .00 \)
Power as Knowing Participation in Change Tool

The PKPCT is a unidimensional scale measuring unitary power. Four factors, awareness, choices, freedom to act intentionally, and involvement in creating change, are indicators of power as knowing participation in change. All four PKPCT factors are strongly, positively, and statistically significantly interrelated with each other and with the total PKPCT (see Table 29). The total PKPCT was regressed on the four factors, which together explained 100% of the variance in Power. Each of the four factors contributed essentially equally to the explained variance of Power ($\beta = .26$ to $.29$, $p = .000$).

The correlations among the PKPCT factors and the other study variables are presented in Table 30. All Power factors had weak to strong, positive statistically significant correlations with Quality of Life and Self-Transcendence. Uncertainty had weak to moderate, negative statistically significant correlations with all factors except the Involvement in Creating Change factor of the PKPCT.

Table 29

<table>
<thead>
<tr>
<th>Scale/Factors</th>
<th>Awareness</th>
<th>Choices</th>
<th>Freedom</th>
<th>Creating Change</th>
<th>PKPCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>-</td>
<td>.866</td>
<td>.811</td>
<td>.693</td>
<td>.915</td>
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<tr>
<td>Choices</td>
<td>-</td>
<td>-</td>
<td>.861</td>
<td>.730</td>
<td>.941</td>
</tr>
<tr>
<td>Freedom</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.745</td>
<td>.935</td>
</tr>
<tr>
<td>Creating Change</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.871</td>
</tr>
<tr>
<td>PKPCT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note. PKPCT = Power as Knowing Participation in Change Tool, Version II*

$p = .000$ for all
Table 30

Correlations among PKPCT Factors and Other Study Instruments

<table>
<thead>
<tr>
<th>PKPCT Factors</th>
<th>OLI-CV</th>
<th>MUIS-C</th>
<th>STS</th>
</tr>
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<tbody>
<tr>
<td>Awareness</td>
<td>.277**</td>
<td>-.337**</td>
<td>.413**</td>
</tr>
<tr>
<td>Choices</td>
<td>.365**</td>
<td>-.264*</td>
<td>.508**</td>
</tr>
<tr>
<td>Freedom to Act Intentionally</td>
<td>.293**</td>
<td>-.345**</td>
<td>.474**</td>
</tr>
<tr>
<td>Involvement in Creating Change</td>
<td>.225*</td>
<td>-.182NS</td>
<td>.422**</td>
</tr>
</tbody>
</table>

*Note. PKPCT = Power as Knowing Participation in Change Tool, QLI-CV = Quality of Life Scale-Cancer Version, MUIS-C = Mishel’s Uncertainty in Illness Scale-Community Form, STS = Self-Transcendence Scale, NS = Non-Significant

*p < .02; **p = .00

Study Variables and the Demographic Data

Finally, as planned a priori, attention was given to the role of the demographic data in relation to the study variables. Correlations, where appropriate, and differences in means were examined for demographic factors and the study variables. Only those reaching statistical significance are reported. There were six demographic factors that accounted for mean differences in study variables. The six demographic factors were use of complementary modalities, household income, education, medication use, participation in a current support group, and time since completion of treatment.

Quality of Life and Use of Complementary Modalities

Mean differences in Quality of Life were found based on the use of complementary modalities. Independent sample t-test, $t (102) = 1.963, p = .052$ indicated that participants who reported no use of complementary modalities ($M = 24, SD = 3.73$) had higher mean Quality of Life than did those reporting the use of complementary
modalities ($M = 22, SD = 3.76$). The effect size, an estimate of the magnitude of the difference between the means, was moderate (.42) (Weinberg & Abramowitz, 2002).

**Power and Household Income**

Mean differences in Power were found based on the demographic factor of household income. Higher perceived Power was reported by those participants who reported upper middle income levels ($75,001-$100,000). One-Way ANOVA was chosen for this analysis as it has been described as robust to violation of the assumption of normality (Weinberg & Abramowitz, 2002). The results revealed statistically significant mean differences in Power based on household income, $F (5, 97) = 3.238, p = .010$. As reported earlier, the distribution of Power is skewed. Household income skew ratio is less than one. All groups did not have equal cases and only one group contained more than 30 cases. When cell sizes are unequal, experts suggest a test of homogeneity be confirmed (Bryman & Cramer, 2001; Weinberg & Abramowitz). Equal variances, determined by a non-significant ($p = .777$) Levene's test of Homogeneity of Variances are present. To confirm the mean difference, a Kruskal-Wallis test for differences among three or more groups was conducted (Bryman & Cramer, Weinberg & Abramowitz). The results of the Kruskal-Wallis test, $x^2 (5, N = 103) = 17.006, p = .004$, supported the One-Way ANOVA finding that Power does vary by household income.

Post hoc examination (Tukey) indicated that those reporting an income of $75,001 to $100,000 (upper middle income) had statistically significantly higher Power ($M = 294, SD = 29.77$) than those with incomes of less than $30,000 (lowest income) ($M = 249, SD = 35.86$) and those who reported incomes in the range of $30,001 to $50,000 (low income) ($M = 260, SD = 25.20$).
A medium effect size (.143), defined as the magnitude of the effect of the between groups factor (calculated by dividing the Sums of Squares between groups [SSb] [16018.523] by the Sums of Squares total [SSt] [111991.79]), was found for the difference in Power based on household income (Cohen, 1988; Weinberg & Abramowitz, 2002). The medium effect size indicates that 14% of the variance in Power was explained by household income (Cohen).

Other demographic factors are weakly to moderately statistically significantly correlated with household income, and include Age ($r = -.22, p = .023$), marital status ($r = -.195, p = .048$), education ($r = .36, p = .000$), employment ($r = -.24, p = .014$), and current lymphedema ($r = -.21, p = .030$), and receiving services currently ($r = -.215, p = .029$). The factors inversely associated with household income are age, marital status, employment, and current lymphedema. Categories of Marital Status such as divorced, separated, or widowed are represented in the higher response numbers on the DDF. The negative correlation suggests that participants reporting these categories had lower income. Similarly, the higher numbered categories for employment included circumstances such as medical leave/disability, retired, student, or other, suggesting that participants in the higher categories reported lower income on the DDF. Older women, participants reporting lymphedema, and women currently receiving services reported lower income. Education had a moderate, positive, statistically significant association with income, suggesting that participants with higher education levels reported higher income.

**Uncertainty and Education**

Mean differences in Uncertainty based on education category were found. There were nine possible education categories ranging from low to higher education. Mean
differences were examined using One-Way ANOVA. Results indicated that equal variances were found based on non-significant \((p = .163)\) Levene’s test of Homogeneity of Variances. The results, \(F (7, 96) = 2.258, p = .036\), suggested that differences in Uncertainty based on educational level were present. The effect size was calculated \((2005.152/14184.224)\) and a medium effect size was found (.14), suggesting that 14% of the variance in Uncertainty was explained by Education. The results were confirmed with a Kruskal-Wallis test, \(x^2 (7, N = 104) = 14.416, p = .044\).

Post hoc analyses were not performed because one group contained fewer than two cases (other category). Inspection of the group means indicated that those with a doctorate \((M = 51, SD = 10.34)\) had the highest mean Uncertainty. The “other” group, containing only one case, had the lowest Uncertainty \((M = 28)\). The next lowest Uncertainty \((M = 38, SD = 14.13)\) for a group with more than one case was the associate degree group. The associate and doctoral degree groups had an equal \((n = 6)\) number of cases.

Education was statistically significantly correlated with two other demographic factors. Interestingly, psychiatric problems \((r = .27, p = .007)\) were weakly, positively associated with education, indicating that those reporting higher educational levels reported experiences with psychological problems. Secondly, a weak, negative association with receiving services currently \((r = -.24, p = .015)\) was present, suggesting that those with lower educational levels were currently (at the time of data collection) receiving services.

**Uncertainty and Medication Use**

Mean differences in Uncertainty were found based on medication use. The variable of medication use was dichotomous (2 groups), those who did not and those who
did use medications. An independent samples t-test was performed to determine if differences in Uncertainty were present based on medication use. As there were not 30 cases in each group and there were unequal group sizes scores, the test for homogeneity of variances was examined and found to be non-significant (.496) suggesting that the variances were equal. The results of the t-test, $t(102) = -2.531, p = .013$, were statistically significant, suggesting that women who do not use medications ($M = 38, SD = 9.3$) had lower Uncertainty than those who did report using medications ($M = 45, SD = 11.83$). The calculated effect size was .66, a medium effect size. A check to confirm the findings were done using the Mann-Whitney test, a non-parametric procedure for two groups. The results ($U = 485, p = .013$) were consistent with the t-test results suggesting that Uncertainty varies by medication use.

Statistically significant associations with medication use and four other demographic variables were found. Three variables, Age ($r = .22, p = .023$), hormonal therapy ($r = .3, p = .002$), and menopausal status ($r = .26, p = .008$), had weak to moderate and positive statistically significant associations with medication use. The fourth variable, household income, had a weak, negative statistically significant association with medication use ($r = -.24, p = .016$). The findings suggest that using medications was associated with older age, use of hormonal therapy, postmenopausal status, and lower household income.

**Uncertainty and Current Support Group**

Mean differences in Uncertainty were found based on reported current participation in a support group. The demographic variable, current support group, was dichotomous. Mean differences were evaluated using t-test. The assumption of homogeneity of variance was met ($p = .160$). While groups were not equal, there was a
minimum of 30 cases per cell. The results, \( t(102) = -2.271, p = .008 \), indicated statistically significant mean differences such that participants reporting current support group (\( M = 48, SD = 12.86 \)) had higher mean Uncertainty than those (\( M = 42, SD = 10.68 \)) who were not. A medium effect size was calculated.

Four other demographic factors were statistically significantly associated with current support group. A weak positive association between women with other family members who experienced breast cancer (\( r = .22, p = .024 \)) and participating in current support groups was present. Time since diagnosis was weakly associated to current support group (\( r = .25, p = .010 \)), suggesting that those further from diagnosis reported participating in current support groups. Statistically significant correlations were found between participation in current support groups and current volunteer (\( r = .28, p = .004 \)) and participating in support groups during treatment (\( r = .29, p = .004 \)).

**Self-Transcendence and Time Since Completion of Treatment**

Finally, a One-Way ANOVA was conducted to evaluate differences on Self-Transcendence based on time since completion of treatment. The assumption of homogeneity of variance was confirmed (\( p = .177 \)). Differences in Self-Transcendence were found, \( F(6, 97) = 2.190, p = .05 \). A medium effect size (.119) was calculated, suggesting that 12% of the variance in Self-Transcendence could be accounted for by time since completion of treatment. On post hoc examination, mean differences were present for women less than one month since completion of treatment (\( M = 3.7, SD = .1247 \)) and women who completed treatment 8 to 12 months ago (\( M = 3.3, SD = .2661 \)). Groups were not equal and there were not 30 cases per cell for all groups; therefore, the results were considered tentative. When Kruskal-Wallis Test was
examined, $x^2 (6, N = 104) = 12.135$, $p = .059$, a loss of significance was found. This finding may indicate a possible trend.

Statistically significant correlations between time since completion of treatment and two other demographic variables were found. First, a strong, positive statistically significant association ($r = .87$, $p = .000$) between time since completion of treatment and time since diagnosis was found. Secondly, a moderate positive association with current volunteer ($r = .32$, $p = .001$) was found, suggesting that those who are further from the time of completion of treatment reported volunteer activities.
CHAPTER V
DISCUSSION

The purpose of this researcher was to investigate the relations of Power, Uncertainty, Self-Transcendence, and Quality of Life for breast cancer survivors in the intermediate stage of survivorship. The nature of the study was exploratory and model generating. The theoretical rationale for the study linked the theories of Barrett (1983, 1986); Mishel (1981, 1990a), and Reed (1991a, 1997) with Ferrans' (1990a, 1996) conceptual model of Quality of Life from the perspective of Rogers’ Science of Unitary Human Beings (SUHB) (1970, 1992).

Rogers (1970, 1992) conceptualized human beings as open energy fields in a pandimensional reality. The uniqueness and distinguishing characteristic of an energy field is pattern (Rogers, 1990, 1992). The descriptions associated with human beings are reflective of Rogers’ (1992) four postulates: openness, energy field, pandimensionality, and pattern. While field pattern is an abstraction, manifestations of field pattern are observable (Rogers, 1986; 1992). More recently, Alligood and Fawcett (2004) performed hermeneutic interpretation of Rogers’ work related to the postulate of pattern and concluded that patterning is a dynamic process of living for human beings and manifestations of patterning are observable emergents of the person-environment process. Phillips (1989, 2004) identified the significance of pattern in Rogers’ SUHB. He wrote,

The significance of pattern in Rogers’ system is further indicated through her manifestations of Field Patterning in Unitary Human Beings. These manifestations encompass the four postulates and the principles of homeodynamics since they are manifestations of the mutual human field and
environmental field process that signifies increasing diversity as evidenced by higher frequency wave patterns. (p. 55)

The guiding principles of the SUHB, the Principles of Homeodynamics, suggest that manifestations emerge from human-environmental field mutual process, are continuously innovative, and are characterized by increasing complexity, unpredictability, and diversity (Rogers, 1992). The Principles of Homeodynamics are integrality (mutual process), resonancy (frequency of wave patterns), and helicy (increasing diversity of field pattern). The principles are integral with each other and together describe the continuous change in field pattern.

Rogers (1970) asserted that individuals participate knowingly in human field patterning for well-being. Quality of life was defined as a person’s sense of well-being stemming from satisfaction or dissatisfaction with the areas of life that are important to the human being (Ferrans, 1990b; Ferrans & Powers, 1985). Barrett (1983, 1986; Caroselli & Barrett, 1998) conceptualized Power as knowing participation in change. Barrett described Power as being operationalized through awareness, choices, freedom to act intentionally, and involvement in creating change. Power is a way human beings engage in mutual process with their environment to actualize potentials for change.

Rogers (1990) theorized that change is unpredictable and increasingly diverse. Mishel (1990a) described change and growth within the context of ongoing uncertainty, where uncertainty can be a positive force in a person’s life giving way to an evolution from old ways of being. Reed (1991a) theorized that new ways of being in the world manifest the journey toward self-transcendence. Self-Transcendence is concerned with awareness of fluctuations in human-environmental field patterns and personal wholeness that go beyond the view of the self and the world while integrating new life experiences by transcending older ways of thinking and being (Reed, 1991a, 1996, 1997).
Emerging from this perspective, the investigator posited that women survivors of breast cancer have the inherent capacity for knowing participation and in the face of uncertainty, maximize their potential for self-transcendence as manifested in their quality of life. In the current study, Quality of Life, Power, Uncertainty, and Self-Transcendence were viewed as manifestations of human field patterning for women in the intermediate stage of breast cancer survivorship. To examine the relations amongst the field pattern manifestations, five research questions were posed.

The findings of the current study expand our knowledge of the overarching perspective of Rogers’ SUHB and suggest new insights into how manifestations of human field patterning may be related. The results of the research questions and ancillary analyses demonstrate the pertinence of Rogers’ perspective to nursing knowledge about human field patterning in the intermediate stage of breast cancer survivorship. The findings provide support for the ideas of Ferrans (1990b; Ferrans & Powers, 1985), Barrett (1983, 1986; Caroselli & Barrett, 1998), Mishel (1990a), and Reed (1991a, 1996, 1997). In addition, the findings provide preliminary support for the ideas posited by the researcher in the theoretic rationale.

The findings for each research question are discussed in relation to theory and the literature. Methodological issues are addressed. Finally, the significance of the study is discussed.

Research Questions

Research Question 1

The findings of the first research question, "What are the relations amongst Power, Uncertainty, Self-Transcendence, and Quality of Life in breast cancer
survivors?,” indicated that the cluster of field pattern manifestations occur together for women in the intermediate stage of cancer survivorship by the moderate to strong statistically significant correlations amongst the manifestations (see Table 11).

Furthermore, Uncertainty and Self-Transcendence enhanced the understanding of Quality of Life by contributing 39% to the explanation of Quality of Life (see Table 12). The remaining discussion of the results of research question one provides more detail about participants’ reports for each manifestation and the unique and common contributions of each manifestation in relation to the others, theory, and the literature.

Power and the Other Manifestations

The results of the test of associations amongst the pattern manifestations provided support for Barrett’s Theory of Power as Knowing Participation in Change (Barrett, 1983, 1986; Caroselli & Barrett, 1998). Power as conceptualized by Barrett has not been studied before in relation to Uncertainty, Self-Transcendence, and Quality of Life in breast cancer survivors; therefore, the findings must be considered preliminary. Barrett, in her theory of Power suggests that, as a human capacity, Power is always present and it varies in intensity, frequency, and form (Barrett et al., 1997; Lewandowski, 2004). In the current study, the participants indicated a range, moderate to high, of perceived Power (180 to 336) with a mean of 277 \( (SD = 33) \). These data indicated that, indeed, Power was present for the participants and there was evidence of varying intensity of Power. The investigator interpreted presence of Power in its varying intensity and form to mean that for this group of breast cancer survivors, women perceived a strong sense of being knowing participants in their survivorship experiences.

Furthermore, the moderate to strong statistically significant correlations amongst Power and the other manifestations \( (r = -.307 \text{ to } .496, p \leq 0.001) \) suggested that within
the flow of life experiences for women in the intermediate stage of breast cancer survivorship, Power occurs along with, albeit in varying forms, Uncertainty, Self-Transcendence, and Quality of Life. Within the cluster of manifestations examined in the current study, Power was inversely associated with Uncertainty and positively associated with Self-Transcendence and Quality of Life. While Quality of Life had not previously been studied in relation to Power for breast cancer survivors, the moderate positive correlation between Power and Quality of Life \( r = .315, p < 0.001 \) was consistent with the moderate to strong positive statistically significant correlations that have been reported between Power and either life satisfaction or well-being in samples of adults with and without long-term care needs, adults over 65, and adults residing in the community and nursing homes (McNiff, 1995; Morris, 1991; Rizzo, 1990). When commenting on the findings of these researchers, Caroselli and Barrett (1998) suggested that the associations suggested that Power is a continuous theme in life experiences. Barrett (1983, 1986) described the theory of Power as emerging from Rogers’ (1970) ideas that human beings participate knowingly for well-being. The association between Power and Quality of Life supports these notions. The presence of Power as reported by the current participants and the association of Power and Quality of Life in the current study add support for the idea that Power is a theme in the life experiences of breast cancer survivors.

The participants in the current study were invited and submitted additional comments. Some of the comments illustrate Barrett’s manifestations of Power and suggest Power’s association with the other human field pattern manifestations that were examined. Several comments described awareness and the importance of information. For example, one woman wrote, “...my access to information and support is quite good....” Another shared, “I feel that knowledge is power. The more I knew about my
illness, the more power I had...,” and yet another wrote, “I feel that the more people who share their feelings, the more aware others will be.”

The importance of choices came up several times as well. One woman simply wrote, “The radical mastectomy was the right choice for me.” The individual nature of women’s choices was illustrated when one woman wrote,

I was lucky not to need chemo and radiation, so I was lucky some [others] say that it was better for them to have that [chemo and radiation] and not have my surgery – to each her own choice!”

The complexity of choices, their difficulty, and possible linkage to Uncertainty were illustrated by one participant’s comment, “Having a cancer diagnosis was like sinking to the bottom of an ocean - going into a dizzy whirl of choices and fear that death might be near.” Another woman shared an experience that may reflect freedom to act with intention and involvement in creating change for the purpose of helping others, a characteristic of Self-Transcendence.

I called Reach to Recovery myself because I knew it existed. I believe that every hospital should send a support person to every woman hospitalized for breast cancer surgery, but apparently, the surgeons do not allow this to happen unless they write a specific order. This is wrong, and I have begun discussion with the head of the Cancer Center where I had my surgery, in order to get the policy changed.

The voices of the participants, as shared in their additional comments, enriched the observation that the preliminary statistical evidence supported the ideas proposed in the Power theory (Barrett, 1983, 1986, 1998; Barrett et al., 1997; Caroselli & Barrett, 1998).

Uncertainty and the Other Manifestations

Unlike the Power theory (Barrett, 1983, 1986, 1998), Mishel’s theory of Uncertainty in Illness (1981, 1990a) was not based in Rogers’ SUHB. Yet, linkages were found. Emerging from the theoretical rationale proposed by the investigator, the findings...
of the current study uncovered complex relations amongst Uncertainty and the other pattern manifestations.

Mishel (1990a) reconceptualized her theory to include an expansion of thinking and incorporate themes that had not previously been adequately addressed. The themes included the view that people are open energy systems interchanging with their environment and an orientation toward increased complexity rather than older ideas of equilibrium. Mishel suggested that Uncertainty could be a source of fluctuation and that, within the context of Uncertainty, a person may make a transition from one perspective of life toward a new and more complex view. These ideas were not unlike Rogers' postulates that human beings are open energy fields and integral with their environmental fields. Rogers' (1992) principles of homeodynamics describe change in terms of energy (low to high frequency wave patterns), as unpredictable and increasingly diverse, and within the context of mutual process of human and environmental field process. The connections in theoretical ideas and observations from the literature about experiences of Uncertainty for breast and other cancer survivors provided a basis for studying Uncertainty, as reconceptualized by Mishel, in relation to the other pattern manifestations from a Rogerian perspective.

Using the MUIS-C, a unidimensional scale based on Mishel's (1990a) reconceptualized views, participants reported Uncertainty ranging from low to the low end of high (range of 24-80). The mean was 44 (SD of 12). This suggested that Uncertainty continued to be present for breast cancer survivors in the intermediate stage of survivorship with varying frequency and intensity. While Uncertainty was negatively and moderately associated with all the other manifestations under study, the strongest association was a moderate, inverse, statistically significant association ($r = -0.354$,}
with Quality of Life, which was consistent with the findings of other researchers in samples of survivors of arrhythmias, breast cancer survivors, and women with gynecological cancers (Carroll et al., 1999; Padilla et al., 1992; Sammarco, 1998, 2003).

In one study of quality of life in breast cancer survivors, Uncertainty was the second most frequently reported concern (Yost, 2002). Similarly, other researchers have suggested that Quality of Life for women in the intermediate stage of survivorship is associated with ongoing concerns regarding Uncertainty (Grant et al., 1996; Leigh, 1997; Rabin, Leventhal, & Goodin, 2004). While Padilla et al. (1992) found an inverse relation between Uncertainty and Quality of Life in women with gynecological cancers, they concluded that "other factors" needed to be considered to form a better understanding of Quality of Life. The findings of the current study, demonstrating an association between Uncertainty, Power, and Self-Transcendence, provide insight into "other factors" that contribute some new understanding of Quality of Life in breast cancer survivors. The empirical data from the current study support connections found within the literature.

Qualitative researchers have reported the ongoing concerns of Uncertainty for women throughout their breast cancer survivorship (DeMarco, Picard, & Argretelis, 2004; Moch, 1995; Nelson, 1996; Pelusi, 1997). DeMarco et al. found that nurse breast cancer survivors described awareness of needing to integrate the unknown into life as part of their survivorship process. Other researchers have identified recurrence as a major source of uncertainty for women in the intermediate stage of survivorship and beyond (Dirksen, 2000; Gil et al., 2004). In addition to these examples of how Uncertainty continues along the survivorship trajectory, researchers have reported findings of growth and positive change (Nelson, 1996, Pelusi, 1997). Mishel (1990a) suggested that
Uncertainty changed over time and that an evolution in how one perceives Uncertainty occurs.

Participants in the current study provided comments that support the idea of continuing uncertainty and their responses suggested characteristics of change over time, varying frequency and intensity. One woman wrote, “I feel the immediate reconstruction contributed greatly to my emotional recovery and present state of well-being. My only real hang-up at this point is fear of recurrence.” A participant shared that while the experience of uncertainty was changing it was still present, “Each week is better – my moods are not as ‘moody’ – I still have a fear that cancer might show its ugly face again, but it is not (anymore) my first or last thought each day.” Another woman wrote,

I was a very positive thinking breast cancer patient. Expecting a good outcome and I got one. However, as the years go by (3 years this month) the fear of cancer occurring in the other breast becomes heavy on my mind. I truly don’t think the re-occurrence fear ever goes away. And I’m not saying I go around ‘brooding and anxious’ because I’m not. But, that tiny naggng is there, just the same! I am no longer afraid of the word CANCER! I can accept, fight, and go forward.

The data from the current study corroborate Mishel’s (1990a) reconceptualized theory of Uncertainty and Rogers’ Science of Unitary Human Beings (1970, 1992) that suggest Uncertainty is present in the unpredictable, increasing complex, rhythm of life and can give way to an evolution from old ways of being.

Self-Transcendence and the Other Manifestations

Reed (1991a) posited that the journey toward Self-Transcendence is manifested by new ways of being in the world and that Self-Transcendence may arise from fragmenting experiences or experiences during which one faces her/his own mortality. Reed viewed Self-Transcendence as a human potential resource and a homeodynamic imperative, meaning a human potential that emerges in the ongoing rhythm of life. In the
current study, Self-Transcendence was associated with the other pattern manifestations and had the strongest association with Quality of Life ($r = .604, p < .001$) between Self-Transcendence and Quality of Life. This relation had not previously been documented in breast cancer survivors.

However, the results are consistent with the findings of other researchers who examined Self-Transcendence and Quality of Life in persons with HIV and liver transplant recipients who found moderate to strong correlations between Self-Transcendence and Quality of Life (Mellors et al., 1997; Wright, 2003). Coward (1991, 1998, 2003) found moderate to strong correlations for measures of well-being and Self-Transcendence in samples of women who were newly diagnosed or who had advanced breast cancer. While not examining Self-Transcendence, other researchers have examined purpose in life or existential meaning in relation to Quality of Life or life satisfaction and found strong, positive, statistically significant correlations in samples of breast cancer survivors or adults over 65 (Rizzo, 1990; Schoen 2003; Schoen & Nicholas, 2004).

In her emerging theory, conceptualized within Rogers’ SUHB, Reed (1991a, 1996, 1997, 2001) hypothesized that Self-Transcendence was positively associated with well-being and was present during fragmenting experiences, those that threaten one’s well-being. Furthermore, she asserted that Self-Transcendence demands participation for well-being. The associations amongst the other pattern manifestations in the current study provide preliminary support for these ideas in that the findings revealed moderate to strong correlations between Power and Self-Transcendence and between Uncertainty and Self-Transcendence.

Again, the additional comments provided by the participants in the current study enrich the discussion of the findings, enliven the theoretical ideas presented, and further illustrate the consistency of the current study with the work of other quantitative and
qualitative researchers. For example, qualitative researchers found themes of awareness, creating change toward new meaning, taking actions to reach out to others, and being positive (Coward 1990, 1994, 1995; Neill, 2002; Pelusi, 1997). The findings of these qualitative researchers and the ideas put forth in Reed’s theory of Self-Transcendence are illustrated in the comments shared by participants in the current study. One participant stated,

Life is good – not perfect but good. I believe I can say, know, and feel this way because of my experience with breast cancer. Everyone I met before, during, and after surgery – was wonderful and supportive. I have made new friends through my support group and my volunteer work with the breast cancer hotline. I am more aware of my feelings and I am accepting them. My relationship with my husband, children, and family is my primary focus and I have learned to say ‘yes’ to opportunities. I’m not going to miss anything. This had been one of the best things that ever happened to me!

Another woman wrote,

This had been an amazingly positive experience. Both the early diagnosis and excellent medical care have insured that I have an excellent chance of survival. I have become very interested in raising awareness of early diagnosis and am hoping to contribute to the finding of a cure. I have two daughters and hope they will not have to experience breast cancer.

Here, the participant addresses the manifestations of Power while speaking to the manifestations of Self-Transcendence, such as, accepting help, reaching out to others, in the context of an Uncertain future. Again, this comment gives voice to the findings of the associations amongst Power, Uncertainty, and Self-Transcendence.

Manifestations and the Contribution to Quality of Life

Finally, research question one focused on the extent to which each of the manifestations contributed to the understanding of Quality of Life. Power, Uncertainty, and Self-Transcendence explained 39% (37% Adjusted) of the variance in Quality of Life for women in the intermediate stage of breast cancer survivorship. However, it was
interesting to find that when all manifestations were considered together, Power did not contribute in a statistically significant way to the explanation of Quality of Life (see Table 12).

While the findings of the regression analysis did not seem to support the full model of proposed relations presented in the theoretical rationale for the current study, the theoretical links and the statistical links seemed strong. Thus, questions remained. One possible statistical explanation for the loss of significance of Power was the presence of high multicollinearity (Lewis-Beck, 1980; Weinberg & Abramowitz, 2002). This possibility was discounted as all the suggested methods of assessing the presence of high multicollinearity were conducted (Lewis-Beck; Weinberg & Abramowitz) and found to be negative.

Rogers (1970) wrote, “The life process in man is a symphony of rhythmical vibrations oscillating at various frequencies” (p. 101). To extend the metaphor to the current study, Quality of Life is the symphony and Power, Uncertainty, and Self-Transcendence are the vibrations oscillating at varying frequencies, relating in diverse ways, all important to the symphony. As such, Power may be oscillating in a diverse way, in a relation that had not yet been uncovered. Phillips (1997) suggested that human field pattern increases in diversity when field manifestations are considered simultaneously. Perhaps, the lack of significance of Power to the explanation of Quality of Life in the presence of Uncertainty and Self-Transcendence is a case of the resonating low-high frequency of several pattern manifestations being considered simultaneously. Based on the theoretical perspective and statistical associations, further examination of the relations was warranted and ancillary analyses were conducted and will be discussed later under the section Ancillary Analyses.
Research Question 2

Interestingly, the results for research question two, “Do Power and Uncertainty contribute to an explanation of the variance in Quality of Life in breast cancer survivors?,” revealed that Power and Uncertainty contributed 17% (16% Adjusted) of the explained variance in Quality of Life for breast cancer survivors. Here, both Power and Uncertainty contributed statistically significant main effects, suggesting that both are important in an independent way to the explanation of Quality of Life for breast cancer survivors. Power and Uncertainty have not been examined in relation to Quality of Life in other studies. As noted previously, each has been examined with Quality of Life or a similar concept and the consistency with the findings of other researchers have been explicated.

Unlike the results of research question one, Power's statistically significant contribution to the explanation of Quality of Life supports the theoretical linkages between Power and Quality of Life. From a theoretical perspective, Power, as a manifestation of pattern, addresses the ways human beings engage in mutual process with their environment to actualize resources for well-being. Power has been described as the experience of being aware of what one chooses to do, feeling free to do it, and doing it intentionally (Caroselli & Barrett, 1998). Qualitative researchers reported that women identified participating more fully in life and participating in change toward healthy habits, decision making, getting information and making choices when asked about Quality of Life or well-being (Dow et al., 1999; Ersek et al., 1997; Moch, 1990). The descriptors are consistent with the integral factors of Power as knowing participation in change and suggest the importance of Power to Quality of Life.

In the theoretical rationale for the current study, Power and Uncertainty were viewed as being related to each other and to Quality of Life. The findings provide
preliminary support for those linkages through the moderate correlations amongst Power, Uncertainty, and Quality of Life and the finding that both contributed, in a statistically significant way, to the explained variance in Quality of Life accounted for by these two variables. It was intriguing that in the absence of Self-Transcendence, both Power and Uncertainty made statistically significant contributions to the explained variance in Quality of Life. This finding suggested that complex relations may be present among the variables. The complexity of low-high frequency relations may take on various forms. One possible complex relation that was considered is an interaction or moderating relation as examined in research question three.

Research Question 3

However, the results of research question three, “Do Power and Uncertainty contribute in an interactive way to the explanation of the variance in Quality of Life in breast cancer survivors?,” indicated that there was no interaction or moderating effect. The findings suggested that Power and Uncertainty do not work together in a multiplicative way to explain the variance in Quality of Life for breast cancer survivors. The question was posed to explore other patterns of relations among Power, Uncertainty, and Quality of Life.

Researchers have reported inverse relations between Uncertainty and Quality of Life, yet others taking a qualitative approach have suggested a positive influence (Carroll et al., 1999; Dow et al., 1999; Ferrans, 1994; Nelson, 1996; Padilla et al., 1992; Sammarco, 1998, 2003). Theoretically, Mishel (1990a) suggested that Uncertainty could promote a positive force in a person’s life. Power as the capacity to knowing participate in change in the face of Uncertainty was thought to influence Quality of Life, which is supported by the findings of the associations in research question one and the multiple
regression in research question two of the current study. In addition, it was thought that varying intensities of Power might influence the relationship between Uncertainty and Quality of Life. Moderators generally influence the strength or direction of an association between another independent variable and the dependent variable in given situations (Baron & Kenny, 1986; Bennett, 2000). While the rationale from the literature and the theoretical base seemed to be present, no statistically significant interaction was found. Questions remained which were explored in ancillary analyses and will be discussed later.

**Research Question 4**

Research question four and five addressed Power and Uncertainty in relation to Self-Transcendence. The results for research question four, “Do Power and Uncertainty contribute to an explanation of the variance in Self-Transcendence in breast cancer survivors?,” revealed that Power and Uncertainty contributed statistically significant main effects and explained 28% (27% Adjusted) of the variance in Self-Transcendence. Power was the stronger contributor in this model. The findings provided preliminary support for relations amongst Power, Uncertainty, and Self-Transcendence.

The theoretical foundations for the relations are the same as those described earlier (Barrett, 1983, 1986; Caroselli & Barrett, 1998; Mishel, 1990b; Reed, 1990a, 1996; Rogers, 1970, 1992). Barrett (Barrett et al., 1997) proposed that human beings actualize potentials and participate in creating their reality by engaging the Power manifestations. Reed, also coming from a Rogerian perspective, theorized that knowing participation was essential for Self-Transcendence. She suggested that Self-Transcendence was a resource or human potential emerging from fragmenting experiences, including those where individuals face their own mortality.
Uncertainty has been linked with experiences of end-of-life, life-threatening, and chronic illnesses (Crigger, 1996; Gil et al., 2004; Hilton, 1988; Nelson, 1996). Researchers have concluded that women survivors of breast cancer conveyed patterns that emerged from Uncertainty and fear of dying to working on an optimistic view of their future (Nelson, 1996; Pelusi, 1997). The findings for research question four suggested that Power and Uncertainty, as experienced by participants in the intermediate stage of survivorship, contributed to the explanation of Self-Transcendence.

The theoretical and statistical explanations were also corroborated by the participants' additional comments. For example, one participant wrote,

Knowing that I had Breast Cancer in the beginning was very hard to deal with. You see my fourth child was only 4 years old. Thinking that I would not see him grow up was very hard for me. Now I take life one day at a time....

Another breast cancer survivor shared,

I feel blessed that I have had my faith to keep me ‘hanging on’ during the early days of my diagnosis and treatment. My family and friends were truly lifelines. Talking with breast cancer survivors helped me realize I was ‘feeling’ normal feelings - no matter what they were and that I could make it. Support groups also made me feel I had some control at a time when I was doing so many things only because I ‘had to’ to heal and survive. Losing my hair was as bad as losing my breast. Crying helped. Accepting helped. Laughter really helped. Hugs helped a lot. Feeling that I’ve won is great! I learned so much more about myself since my cancer - I am a survivor!

Other comments illustrate the characteristics of Self-Transcendence that address reaching inward, reaching outwardly, and a changed perspective of time. One woman wrote,

I would do anything to help another woman avoid or if necessary deal with this unpredictable disease. I try to embrace life and live each day as if it were my last. Cancer has taught me not to take my life for granted. I also have met and made friends with many women I would not have had the pleasure of meeting had I not been diagnosed with cancer. I do volunteer work with the [organization name] and have helped many women either by listening and talking or putting them in touch with the [organization name].
Research Question 5

While the relations amongst Power, Uncertainty, and Self-Transcendence were clear and Power and Uncertainty contributed to the understanding of Self-Transcendence, the results of research question five, "Do Power and Uncertainty contribute in an interactive way to the explanation of the variance in Self-Transcendence in breast cancer survivors?," revealed no interaction or moderating relation present for this sample of breast cancer survivors. Bennett (2000) suggested that statistical detection of moderating models can be difficult. Moderating relations are of most interest when associations between variables are ambiguous or there are weaker than expected associations. The associations in the current study were moderate to strong and so questions remained regarding how the cluster of pattern manifestations were associated.

Bennett (2000) observed that moderating and/or mediating models provide more in-depth information about phenomena than can be explained by direct effects alone and urged researchers to examine both types of relations where there was a rationale for doing so. Mishel (1999) observed that researchers examining Uncertainty rarely investigate mediating factors and encouraged this line of inquiry. Mediating relations are examined when the variables are statistically significant and further examination about how the variables are related is of interest to the researcher (Bennett). While cautious about multivariate approaches in research methods and analysis, Fawcett (2005) did suggest that the purpose of research based in the SUHB is to develop new theoretical knowledge and to examine field pattern manifestations. It would seem that examining how the manifestations are related would assist in the development of new knowledge.

Phillips (1997) intrigued this researcher with his ideas about resonating low-high frequency for clusters of pattern manifestations to better understand the unitary nature of human beings. When exploring low-high frequency relations, questions about when, or
the conditions (moderating/interaction relations) under which certain relations are revealed may not be sufficient. Experts suggest that mediating relations should be tested when there are questions about how concepts are related (Baron & Kenny, 1986; Kim, Kaye, & Wright, 2001). Attention to how clusters of field pattern manifestations are related would be consistent with research grounded in the SUHB and may be useful.

The findings of the current study provide preliminary support for the relations amongst Power, Uncertainty, Self-Transcendence, and Quality of Life for breast cancer survivors in the intermediate stage of survivorship. However, the questions examining interactive or moderating relations uncovered no interaction effects for Power and Uncertainty as they relate to either Quality of Life or Self-Transcendence. Additional questions emerged in relation to how the field pattern manifestations were related. In an attempt to gain a more precise understanding of the relations amongst the cluster of manifestations, ancillary analyses were conducted.

Ancillary Analyses

Self-Transcendence Mediates the Relation of Power and Quality of Life

Strong evidence of a mediating relation was uncovered for Power, Self-Transcendence, and Quality of Life. From a statistical standpoint, the findings indicated that Power has a direct and indirect pattern of association with Quality of Life. Power's statistically significant association with Quality of Life and its contribution to the explained variance of Quality of Life when Self-Transcendence was not considered demonstrated the direct relation (see Tables 13 and 18). The statistical evidence that emerged from the series of multiple regression analyses demonstrated the indirect nature of the relations (Bennett, 2000; Kim, Kaye, & Wright, 2003). These data indicated that
Self-Transcendence mediates the relation between Power and Quality of Life for breast cancer survivors in the intermediate stage of survivorship. An interpretation of this finding in a theoretically consistent manner is essential.

Rogers (1992) explained that manifestations of human field patterning emerge out of human-environmental field mutual process. Phillips (1995) identified Quality of Life as a field manifestation and asserted it was integral with life. Barrett et al. (1997) described Power as freedom to make aware choices regarding involvement in life changes. Furthermore, Barrett wrote, “People actualize selected potentials and participate in creating their reality by being aware, making choices, feeling free to act on their intentions and orchestrating desired changes” (p. 32). Barrett’s theory of Power emerged from Rogers’ (1970, 1990) postulate that human beings participate knowingly in patterning their environment for well-being. Reed (1997) suggested that Self-Transcendence is a homeodynamic imperative in that it is a human resource, emerges from the life process, and demands knowing participation to promote well-being during certain life situations.

From the theoretical linkages and supporting statistical evidence, the researcher viewed the relation as a resonating relation that illustrates the innovation and growing complexity of the human-environmental field patterning for well-being. The potential for a resonating relation for Power-Self-Transcendence toward the promotion and expression of Quality of Life provided an explanation for the findings that seemed consistent with the theories linked in the theoretical rationale for the current study.

Furthermore, the possibility that the relations amongst Power-Self-Transcendence and Quality of Life seemed evident in the ideas posited by the researcher that women with the inherent capacity for knowing participation in change, in the face of Uncertainty, actualize the Self-Transcendent experiences, contributing to Quality of Life.

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for breast cancer survivors. Both Power and Self-Transcendence are important for Quality of Life. The perfect mediating relation found in the current study further explicates the relation of Power-Self-Transcendence-Quality of Life and suggests that Power-Self-Transcendence occur in a complex, high frequency resonating relation for Quality of Life in breast cancer survivors. This finding seems to support Phillips' ideas about the increased diversity that can emerge from considering more than one field pattern manifestation at a time. While the variables and theoretical perspective were different from the current study, Meraviglia (2006) reported that meaning in life was a mediator of individual characteristics and psychological well-being for a sample of breast cancer survivors (n = 84) in a mix of survivorships stages.

Self-Transcendence Mediates the Relation of Uncertainty and Quality of Life

While not a perfect mediating relation, a similar resonating relation was found for Uncertainty-Self-Transcendence and Quality of Life. Increased diversity of field pattern manifestation, such that Self-Transcendence mediated the relation of Uncertainty and Quality of Life was uncovered. The theoretical rationale suggested that Quality of Life for breast cancer survivors living with Uncertainty may require new ways of being in the world, Self-Transcendence.

Both Rogers (1970, 1992) and Mishel (1990) suggested that unpredictability/Uncertainty was present in the natural flow of life. Uncertainty has been quantified and described by other researchers in the lives of women survivors of breast and other cancers (Demarco et al., 2004; Dow et al., 1999; Nelson, 1996; Padilla et al., 1992; Sammarco, 1998, 2003). Reed (1997) suggested that Self-Transcendence was a manifestation of a pattern of wholeness at times in life when a sense of fragmentation threatened well-being. Uncertainty for breast cancer survivors can be a fragmenting experience. The findings of
this study suggested that Quality of life for breast cancer survivors may be better understood through a resonating pattern of the manifestations of Uncertainty-Self-Transcendence.

**Power Mediates the Relation of Uncertainty and Self-Transcendence**

Finally, as there was no interactive relation uncovered for Power and Uncertainty with Self-Transcendence in research question five, a mediating relation was tested to further explore how the manifestations were related. The criteria for mediation were met. Power played a mediating role for the relation between Uncertainty and Self-Transcendence. The findings of the research questions in concert with the results of the ancillary analyses, demonstrated the complexity and increasing diversity of human field patterning for women in the intermediate stage of breast cancer survivorship, such that each manifestation is important and that when viewed as mutual oscillations the complexity of the relations are revealed.

Rogers (1970) suggested that human behavior is synergistic. The footnote for this statement provided a definition of synergy as a “unique behavior of whole systems, unpredicted by any behaviors of their component functions taken separately” (p. 93). Phillips (1997) suggested studying clusters of pattern manifestations to better understand the unitary nature of human beings. The relations of Power to Quality of Life and Self-Transcendence, and Uncertainty to Quality of Life and Self-Transcendence in direct and less complex ways are present for breast cancer survivors in this study. But, the synergy between Power-Self-Transcendence and the Uncertainty-Power-Self-Transcendence-Quality of Life model illustrate the human field pattern complexity that is not uncovered when viewed separately. The meaning of the integral nature of one with the others
emerges for the cluster of human field pattern manifestations of Power, Uncertainty, Self-Transcendence, and Quality of Life.

Study Variables and Demographic Data

As identified a priori, an examination of instrument subscales and an examination of demographic factors in relation to the main study variables were planned as ancillary analyses. The analyses that relate to the instruments will be discussed in the section on methodological issues. The descriptions of the study participants will be discussed with comments on the sample in the section on methodological issues. The DDF contained items about demographic factors that were thought to be pertinent based on the literature, theoretical perspectives, or study inclusion criteria. Each of the demographic factors was examined for statistically significant correlations with the study variables. The results of an examination of the demographic factors uncovered six factors that were statistically significantly correlated to the study variables. Where appropriate, potential mean differences in main study variable scores based on the demographic factors were examined.

Quality of Life and Complementary Modalities

Participants who reported use of complementary modalities (CM) reported lower mean Quality of Life than those who reported non-use of CM. No studies of CM use and Quality of Life were found. Other researchers have focused on the use of CM by persons with breast cancer and reports have a wide range of results, with as little as 11% to as high a use rate as 84% (Adler & Fosket, 1999; Boon et al., 2000; Fouladbakhsh, Stommell, Given, & Given, 2005; Lengacher et al., 2002; Morris, Johnson, Homer, & Watts, 2000). The variability in reports within the literature may have been due to
variability in definitions, measurement, and participant characteristics. In the current study, usage was based on a simple question, “Have you participated in complementary therapies?”

The 30% use rate in the current study was well within the published range and consistent with that found by Fouladbakhsh et al. (2005) in a study of patients with cancer (n = 286) 31% of which had a diagnosis of breast cancer. In the current study, participants reporting current CM use identified massage, spiritual healing, other modalities, nutritional healing, and multiple modalities most often. During treatment, the same top five modalities were reported for this sample of breast cancer survivors. This is not unlike the frequencies found by other researchers (Boon et al., 2000). Burstein et al. (1999) and VandeCreek, Rogers, and Lester (1999) reported decreased frequency after treatment but during treatment physical, spiritual, and nutritional modalities were most common. Morris et al. (2000) reported the most frequently used therapies were nutrition, massage, herbs, relaxation, chiropractic, and acupuncture. Lengacher et al. used a tool for which preliminary reliability and validity data were available and they reported that nutritional and spiritual healing were used most frequently in their sample of breast cancer survivors. The Lengacher research team recommended further investigation to uncover specific correlates of use and the circumstances in which the modalities were being sought.

In one Canadian study (n = 411), researchers reported that the only characteristic that seemed to be significantly related to use or nonuse of CM was attendance in breast cancer support groups (Boon et al., 2000). Foulabakhsh et al. (2005) found that predictors of CM use in persons with cancer were gender (women), marital status (divorced or separated), cancer stage (late stage less likely to use CM), treatment (surgery or chemotherapy increased likelihood), and number of symptoms (three or more were more
likely to be associated with CM use). Lengacher, Bennett, Kip, Gonzalez et al. (2006) found that women undergoing treatment for breast cancer \((n = 105)\) used CM to manage symptom and/or treatment related distress and to reduce psychological distress.

An examination of the factors contributing to the use of CM was not the purpose of the current study. However, the results indicated that women participants in the current study who reported CM use reported lower Quality of Life. There were no other differences in Quality of Life based on demographic factors in the current study that might relate to predictors found by other researchers (Boon et al., 2000; Foulabakhsh et al., 2005). Participants in the current study were all women. While a highly tentative connection, it is of note that the QLI-CV addressed items related to health and functioning; both of which (gender and health related predictors) were identified by Foulabakhsh et al. as predictors of CM use. It is also of note that Lengacher, Bennett, Kip, Gonzalez et al. (2006) suggest that their study participants used CM in an effort to self manage their distress. This idea is akin to Rogers’ (1970, 1992), Barrett’s (1997), and Reed’s (1991a, 1996) ideas that human beings pattern their fields for well-being.

**Power and Household Income**

Interestingly, there was a weak, positive statistically significant association between Power and household income \((r = .243, p = .013)\) and mean differences in Power were found based on household income. Differences in Power were noted particularly between those with the lowest to low income (less than $50,000) and those in the upper middle range ($75,000 to 100,000) with those reporting lowest to low income reporting less Power. Moulton (1994) found that differences in Power subscale scores were accounted for by salary and prior experience in a study of nurse executives. She concluded that salary and experience could be considered manifestations of...
developmental potentials, and, as such, were consistent with Barrett’s conceptualization of Power. In the current study, several factors might have contributed to the income finding, such as geographical differences, educational preparation, or employment status.

Uncertainty and Higher Education, Medication Use, and Current Support Group

Differences in Uncertainty were detected based on level of education, medication use, and participation in a current (at the time of data collection) support group. Participants in the current study with higher education reported higher mean Uncertainty. Mishel (1997) in a review of research on Uncertainty in Illness in acute illness reported that findings in the literature were inconsistent regarding education. The current study examined Uncertainty (in relation to other pattern manifestations) for breast cancer survivors. Gil et al. (2004) examined sources of uncertainty in older African American and Caucasian long-term breast cancer survivors and reported a weak positive correlation ($r = .21, p < .001$) between higher education and number of triggers. Earlier researchers reported inverse associations of education with Uncertainty in spouses with multiple sclerosis and individuals in the early post myocardial infarction experience (Christman et al., 1988; Wineman, O’Brien, Nealon, & Kaskel, 1993).

In the current study, those with a doctoral degree had the highest mean Uncertainty. From a theoretical perspective, Mishel (1981) defined Uncertainty as a “judgment about an event or situation when it cannot be adequately structured or categorized because sufficient cues are lacking” (p. 258). Intuitively, one might speculate that those with higher education pride themselves in being able to place events or problems within a context and make judgments about them. By definition, if that cannot be adequately done, one may perceive greater unpredictability and Uncertainty.
Likewise, higher mean Uncertainty was found for those participants reporting the use of medications. Medication use had positive weak to moderate statistically significant correlations with age ($r = .22, p = .023$), hormonal therapy ($r = .3, p = .002$), and menopausal status ($r = .22, p = .008$). Explanations for the correlations seemed obvious. No other published studies reporting differences in Uncertainty based on use of medication were found. In the current study, women participants had completed treatment for breast cancer and the majority (64%) of them were taking hormonal treatments as part of maintenance or recurrence prophylaxis. While they were actively engaged in avoidance of recurrence, the unpredictability of their survivorship experience was still present. One cannot help but link the finding of higher Uncertainty in those using medications with the issue of fear of recurrence, which has been identified as a major concern of breast cancer survivors in the intermediate stage of survivorship and beyond (Ferrell et al., 1995; Fredette, 1995; Gill et al., 2004).

Similarly, mean differences in Uncertainty based on current support group may be attributed to women who perceived a need for ongoing assistance. What is interesting is that current support group (or for that matter medication use) did not make a difference in Power, Self-Transcendence, or Quality of Life. Given the inverse relations with Uncertainty, women with higher Uncertainty might be expected to have lower Power, Self-Transcendence, and Quality of Life. The theoretical perspective and the interpretations of the study as a whole provide insights as to why only Uncertainty was different for those in current support group.

The participants engaged in current support groups were pursuing involvement in creating change. Being aware of their need, taking an active stance, and attending support groups, may actually reflect knowing participation in change. Larkin (2003) viewed support groups as modalities for health patterning. She suggested that as people come
together they grow in pandimensional awareness and Power is enhanced. Reed (1990a) described the manifestations of Self-Transcendence, which included reaching out for help from others and experiences of pandimensional awareness. Support groups provide human contact, the possibility of shared problem solving, and new ways of being. One could speculate that differences in the other manifestations were not evident because Power was mediating the experience of Uncertainty toward Self-Transcendence and the manifestations were resonating together toward a more complex Quality of Life.

Self-Transcendence and Time Since Completion of Treatment

Finally, mean differences in Self-Transcendence based on time since completion of treatment were found but considered tentative. The data suggested that Self-Transcendence was higher for those who were within one month of completion of treatment. Wright (2003) studied Self-Transcendence in persons post liver transplant and found a weak but statistically significant negative correlation with time since transplantation. The findings of the current study are consistent with the idea that Self-Transcendence may be active when the individual is faced with mortality and other fragmenting experiences (Reed, 1990a). Reed posited that Self-Transcendence is manifested in fluctuating self-boundaries and pandimensional experiences. As such, she consistently expressed the idea that Self-Transcendence is a potential emerging within the rhythm of life and integral with well-being.
Methodological Issues

Research Grounded in SUHB

The unifying perspective of the current study was the SUHB and one of the strengths of the study lies within the strong theoretical foundation. As such, it was important to demonstrate how the research met the key criteria for research grounded in the SUHB as described by Rogerian scholars (Butcher, 2004; Fawcett & Alligood, 2003; Sherman, 1997). The scholars' recommendations cover the areas of the purpose of the research, the phenomena of interest, problem, participants, methods/designs, analysis, and contributions to the discipline of Nursing.

Experts agree that research within the SUHB should be focused on unitary human beings and their environment, that research address problems about pattern manifestations (Butcher, 2004; Fawcett, 2005; Fawcett & Alligood, 2003; Sherman, 1997). The purpose, problem, and phenomena studied by this researcher were all related to the examination of the relations amongst a cluster of human field pattern manifestations in unitary human beings, specifically, women in the intermediate stage of breast cancer survivorship. The criteria addressing the purpose, problem, and phenomena of research were all met.

The criteria addressing research methods include the areas of the design, setting, sampling, and analysis. The descriptive correlational design of the study and subsequent data analyses using descriptive statistics, correlations, and multiple regression analyses were consistent with Rogers' views about appropriate designs for research within the SUHB and met Butcher's (2004) criteria of Rogerian inquiry. Fawcett (2005) expressed a more cautious view about correlational and multivariate approaches. As suggested by Rogerian scholars (Butcher, Fawcett), the self-administered questionnaire contained two
Rogerian-based instruments and two instruments developed from other nursing paradigms that the researcher found to be consistent with the SUHB based on the unidimensional, unitary focus of the instruments and the conceptual and theoretical linkages. Before proceeding with the other criteria for research grounded in the SUHB, a discussion of the instruments is presented.

**The Instruments: Quality of Life Index-Cancer Version (QLI-CV)**

The QLI-CV was developed by Ferrans (1990b) and Ferrans and Powers (1985) to measure Quality of Life of persons with cancer. Ferrans’ conceptual model identified four domains, including health and functioning, socioeconomic, psychological/spiritual, and family. While there are subscales, Ferrans and Powers (1992) reported following psychometric evaluation of the instrument that the four factors or domains all loaded on one higher order factor, Quality of Life. The reliability estimate (.92) in the current study was consistent with those (at or above .87) found in samples of adults with cancer and women with breast cancer (Ferrans & Powers, 1985, 1992; Sammarco, 1998, 2003). Reliability estimates in the current study for each of the subscales were reported as ranging from .71 to .85 (see Table 9).

In the current study, moderate to strong, positive statistically significant correlations amongst the subscales and total QLI-CV were present and provided support for the unitary nature of the QLI-CV (see Table 26). The subscales were also correlated with the other study instruments (see Table 27). The family subscale was not significantly associated with the PKPCT or the MUIS-C. All other correlations were statistically significant. One possible explanation for this finding is the low number of items in this subscale and the fact that some of the items were not applicable to all respondents, for
example, the item about children and/or spouse. Overall, the QLI-CV performed consistently with what has been reported in the literature.

The Instruments: Power as Knowing Participation in Change Tool, Version II (PKPCT)

The PKPCT, Version II (Barrett, 1983, 1986; Barrett & Caroselli, 1998) was developed within the perspective of Rogers' SUHB. It is a measure of an individual's capacity to participate knowingly in change. There are four integral subscales representing the manifestations of Power. The reliability estimate (.96) for the PKPCT was consistent with reliabilities reported (range of .90 to .97) in a variety of samples (Caroselli, 1995; McNiff, 1995; Rapacz, 1991; Rizzo, 1990). The stability coefficients in the current study ranged from .50 to .70 and were all statistically significant. These findings were consistent with previous studies reporting a range from .40 to .92 (Barrett & Caroselli, 1998; Larkin, 2001; Wall, 1999; Wright, 2000).

Correlations amongst the subscales were all strong (.87 to .94), again, supporting the integral nature of the subscales or factors to unitary Power. Each subscale of the PKPCT was correlated with the other study instruments. Only the involvement in creating change subscale did not reach statistical significance with the MUIS-C. As there have not been similar detailed reporting of the PKPCT subscales and as Power and Uncertainty have not been studied together, no comparisons to the literature could be made. Overall, the PKPCT, Version II preformed well and in a consistent manner with other studies of Power using this instrument (Larkin, 2001; Wall, 1999; Wright, 2000).

The Instruments: Mishel's Uncertainty in Illness Scale-Community Form (MUIS-C)

The MUIS-C was developed by Mishel (1990b) as a unidimensional scale to measure Uncertainty in illness. The MUIS-C was consistent with Mishel's
reconceptualized theory of Uncertainty which was deemed consistent with the perspective of Rogers' SUHB. The community form is intended to measure Uncertainty for individuals who are currently not hospitalized, and if under current care, are cared for in the community. This point illustrates the consistency with the situation of the participants in the current study. The reliability estimate in the current sample was .89, which is consistent with estimates found in study samples of persons with cancer, women in menopause, and women survivors of breast cancer (greater than .88) (Hilton, 1989; Lemarie & Lenz, 1995; Mishel, 1990b). The instrument performed well in the current study.

The Instruments: Self-Transcendence Scale (STS)

The final instrument used in the current study was the STS developed by Reed (1987b) as a unidimensional scale conceptualized within Rogers' SUHB. In the current study, the alpha reliability was .69. This was below the reliability estimates reported in other studies (.80 to .94) (Coward, 1991, 1996, 1998; Mellors et al., 1997; Reed, 1991b).

After consulting with the instrument author, the researcher decided to interpret the current reliability estimate as marginally acceptable as the STS had not been used in breast cancer survivors in the intermediate stage of survivorship and was still considered a new tool by the instrument author. Statistical experts suggest that an alpha reliability for a new instrument is generally considered acceptable at .7 (Carmines & Zeller, 1979; Nunnally, 1978; Pedhazur & Schemelkin, 1991). It is also notable that a small percent of the participants reported the highest possible score and the mean STS score was high with a low standard deviation. It is possible that these factors contributed to lower reliability. However, Wright (2003) found a small ceiling effect in persons post liver transplant. The STS performed as reported by other researchers in terms of the high mean scores reported.
in other samples (Coward, 1991; Mellors et al., 1997). The STS was statistically significantly correlated with all the other instruments and with all subscales on the QLI-CV and PKPCT. The marginal reliability estimate and a trend toward higher scores is a limitation. Despite the limitation, overall the instrument performed adequately in comparison with other studies (Coward; Mellors et al.; Wright).

Setting and Participants

Continuing with the discussion of research criteria proposed by Rogerian scholars, other areas of importance to design/methodology and the participants were considered. Butcher (1998, 2004) suggested that Rogerian inquiry take place in the natural setting, meaning the “environmental setting or a particular life situation which provides a context or focus for the study” (p. 16). In the current study, women who were surviving breast cancer were asked to complete the questionnaires in the setting of their choosing. Butcher suggested that purposive sampling was consistent with research based in the SUHB. The current study used purposive sampling in an effort to find women surviving breast cancer within the intermediate stage of survivorship.

Decisions about the data took into account the preservation of the participants’ original reports, statistical manipulation was kept at a minimum. The researcher’s approach regarding handling of data was consistent with Fawcett’s (2005) and Butcher’s (1998, 2004) observations that in studies within the SUHB, emphasis is on the uniqueness of the unitary human being and the data as provided by the participants as it naturally occurred.

The participants were akin to those participating in other breast cancer research in regards to race/ethnicity, education, marital status, and religion in that the participants in the current study were primarily Caucasian, well educated, married, and identified a
Christian affiliation (Bardwell et al., 2003; Ferrans, 1994; Ferrell et al., 1997, 1998a; Sammarco, 1998, 2003; Tomich & Helgeson, 2002). The age of the participants covered a broad range (28-81) with the majority (74%) being in the age range of 40-60. This may have influenced Quality of Life for the sample as other researchers have reported that the Quality of Life of middle-age and older women has been found to be higher than that of younger women (Kroenke et al., 2004; Sammarco, 1998, 2003). Overall, the Quality of Life for the current study participants was high. This is consistent with the findings of other researchers who focused on the intermediate stage of survivorship (Bardwell et al., 2003; Dirksen & Erickson, 2002). The majority of the participants were employed full time (54%). This factor may also have influenced overall Quality of Life as some researchers have suggested that women who are employed do better than those who have not returned to work (Bellizzi & Blank, 2006; Mellon & Northouse, 2001). Likewise, the participants in the current study had a generally high household income. Persons with higher income generally have higher Quality of Life (Ferrans, 1990b, 1994; Ferrell et al., 1996). Despite these reports in the literature, the use of complementary modalities was the only demographic characteristic that accounted for a difference in Quality of Life.

It was notable that the breast cancer survivors in the current study had higher mean Power than those in samples of adults, staff nurses, nurse administrators, or nurse faculty (Mahoney, 2001; Wright, 2004). The current participant's Power means were generally as high or higher than participants in other studies who were adults, persons with chronic illness, polio survivors, persons living with schizophrenia, sober female alcoholics, or persons with lung cancer (Larkin, 2001; Rizzo, 1990; Rush, 1996; Salerno, 1999; Smith, 1992; Wall, 1999). The findings suggest that the participants in the current
study perceived themselves as being aware, making choices in their lives, feeling free to act, and being involved in creating change.

While some participants in the current study reported psychological problems such as anxiety and experiences with depression and this may be viewed as a limitation, no differences in Power were detected for those reporting or not reporting problems in this arena. This finding is in contrast to Malinski’s (1997) study where differences in Power were found for those with and without depression. One possible explanation for the lack of differences in Quality of Life, Power, or the other manifestations may be due to the fact that such a small number of women (18%) reported problems; there may not have been sufficient data to detect the differences. Another possible explanation for the lack of consistency with Malinski’s findings may be due to the fact that the reports in the current study were historical rather than current. In one small ($n = 25$) longitudinal study of breast cancer survivors, anxiety and depression decreased from baseline (prior to treatment) to one year post treatment (Byar, Berger, Bakken, & Cetak, 2006). Thewes et al. (2004) reiterated a caution to view psychological concerns as “problem areas” that may hinder Quality of Life rather than psychopathology and suggested that these “problem areas” are subclinical and common in the breast cancer survivor experience. No mean differences in Quality of Life were found based on reports of psychological problems.

In terms of Uncertainty scores, the participants in the current study reported a range of scores from low to the lower end of high scores (24 to 80), with a mean of 44. These scores were at comparable levels of Uncertainty to persons with illness and those who were survivors of life-threatening arrhythmias who had implanted cardioverters (Carroll et al., 1999; Mishel, 1990b). Higher range and mean scores were found in
perimenopausal and menopausal women, and for persons receiving pharmacologic treatment for life-threatening arrhythmias (Carroll et al.; Lemarie & Lenz, 1995).

The participants in the current study reported high mean (3.48) Self-Transcendence scores with a range of 2.73 to 4. While the mean was high and the standard deviation (SD = .27) was low and the instrument reliability was marginally adequate, these findings were similar to those found for older adults aged 80 to 97, prostate cancer survivors, women with advanced cancer, women newly diagnosed with breast cancer, and persons post liver transplant (Chin-A-Loy & Fernslet, 1998; Coward, 1991, 1998; Reed, 1991b; Wright, 2003).

Enhanced Understanding of Pattern Manifestations

Finally, Fawcett and Gigliotti (2001) stated that conceptual models guide and inform thinking and provide direction for theory-based research. Fawcett (2005) suggested that research based within the SUHB should contribute to an enhanced understanding of pattern manifestations, thereby, making a contribution to the body of nursing-specific knowledge. At the onset of this study, the researcher saw this as a factor contributing to the need and significance of the study.

Understanding is theoretically based. Fawcett (2005) concluded that theories provide structures for the interpretation of behaviors, situations, and events that may be confusing or misunderstood. Rogers (1986) suggested that by examining events from different perspectives, new explanations may emerge and new questions can be raised. In the current study, the researcher used the perspective of Rogers' SUHB to examine the relations amongst a cluster of field pattern manifestations that had not previously been examined together or from a Rogerian perspective. Experts invited researchers to use theoretical frameworks to suggest factors that may be associated with Quality of Life.
(Ashing-Giwa & Kagawa-Singer, 2006; King, 2006; King et al., 1997). This researcher answered that invitation and found that Power, Uncertainty, and Self-Transcendence are pattern manifestations that are related in complex and diverse ways to Quality of Life. The pattern profile that emerged from the study of this cluster of manifestations for breast cancer survivors supports the view of Rogers (1970) about the synergistic nature of human behavior.

Significance of the Study

The significance of the current study lies in the contribution it makes to the literature on Quality of Life for breast cancer survivors. The study addressed gaps in the literature related to factors associated with Quality of Life. McCormick (2002) and Gil et al. (2004) encouraged researchers to examine other factors that may contribute to an understanding of Uncertainty. Little was known about Power as knowing participation in change for breast cancer survivors. In addition, there was a paucity of research regarding Self-Transcendence for intermediate stage breast cancer survivors.

Experts identified the need for researchers to examine Quality of Life from theoretically based perspectives in an effort to uncover new knowledge. There were no studies linking middle-range theories, a conceptual model, and Rogers’ SUHB. One of the strengths of the current study is the strong theoretical base and grounding of research within the SUHB. The current study contributes to nursing science regarding the theories of Barrett (1983, 1986; Barrett & Caroselli, 1998), Mishel’s (1990a) reconceptualized theory of Uncertainty in Illness, Reed’s (1991a) theory of Self-Transcendence, Ferrans’ (1990a, 1996) conceptual model of Quality of Life, and Rogers’ (1970, 1992) SUHB. The findings support the theoretical linkages made by the researcher in that the cluster of...
field pattern manifestations contribute in simple and complex ways to the explanation of Quality of Life in breast cancer survivors.

Interdisciplinary interest in Quality of Life and the factors related to it are clearly evident by the emergence of new journals dedicated to Quality of Life and psychosocial issues for persons with cancer and by the level of research priority assigned Quality of Life by nurses' in oncology care and others. Quality of Life continues to be in the top 10 research priorities of the Oncology Nursing Society, is identified as an area of importance by the National Institute of Nursing Research (NINR), and is included in the outcomes of interest related to breast cancer in the Healthy People 2010 document (Berger et al., 2005; King, 2006, NINR, 2005; U.S. Department of Health and Human Services, 2000).

The current study provides oncology nurses and other health professionals new information about factors associated with Quality of Life. While the findings of this study are preliminary and further research is needed, the current research demonstrated that Power, Uncertainty, and Self-Transcendence are related to Quality of Life for a relatively small sample ($n = 104$) of breast cancer survivors in the intermediate stage of survivorship. Self-Transcendence and Power were uncovered as mediating variables in this model such that Self-Transcendence mediated the relations of both Power and Uncertainty with Quality of Life and that Power mediated the relation of Uncertainty and Self-Transcendence. This knowledge may help to increase nurses' and other health professionals' awareness of factors that contribute in synergistic ways to Quality of Life for women surviving breast cancer.
CHAPTER VI
SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The aim of the researcher was to examine the relations amongst Power, Uncertainty, Self-Transcendence, and Quality of Life in breast cancer survivors. The theoretical rationale for the current study linked the theories of Barrett (1983, 1986; Caroselli & Barrett, 1998), Mishel (1981, 1990a), and Reed (1991a, 1996, 1997) with Ferrans’ (1990a, 1996) conceptual model of Quality of Life from the perspective of Rogers’ SUHB (1970, 1992). From the unique linkages of the middle range theories and conceptual models, the investigator posited that women survivors of breast cancer have the inherent capacity for knowing participation and in the face of uncertainty, maximize their potential for self-transcendence as manifested in their quality of life. Power, Uncertainty, Self-Transcendence, and Quality of Life were viewed as manifestations of human field patterning for women in the intermediate stage of survivorship.

Recruitment flyers were used to make potential participants aware of the study, for which human subjects review approvals were received from New York University and the College of Staten Island/CUNY. All women contacting the researcher about the study received a brief description of the study and were screened for eligibility criteria. Women meeting the eligibility criteria on screening and wishing to participate were sent a research packet. There was a 95% return rate for the study.
The final sample consisted of 104 women who had completed breast cancer treatment prior to participation, the majority of whom (60%) were diagnosed between 19 and 60 months prior to the study. The participants could be described generally as being a mean of 53 years of age, married, Caucasian, Christian, well-educated, and employed full-time. The overwhelming majority of the women was treated by surgery and some form of adjuvant therapy (82%), and most (64%) reported receiving hormonal maintenance therapy. Data about other personal experiences of breast cancer survivors were elicited and analyzed.

The study questionnaire consisted of five instruments, Quality of Life Index-Cancer Version (QLI-CV) (Ferrans, 1990b), Power as Knowing Participation in Change Tool (PKPCT) (Barrett, 1998), Mishel's Uncertainty in Illness Scale-Community Form (MUIS-C) (Mishel, 1990c), and the Self-Transcendence Scale (STS) (Reed, 1987b). The questionnaire was counterbalanced with the last or fifth section of the questionnaire containing the authored demographic data form. Reliability estimates for the four psychometric instruments indicated that each performed marginally adequate (Cronbach alpha = .7 for the STS) to well (Cronbach alpha = .96 for the PKPCT) in the study sample. The actual range of scores on the study instruments indicated that variance was present. The QLI-CV had an actual range of 11 to 29 (possible range, 0-30), PKPCT scores ranged from 180 to 336 (possible range, 48-336), the MUIS-C had a range of 24 to 80 (possible range, 23-115), and the STS had a range of 2.73 to 4 (possible range, 1-4).

Based on the theoretical rationale, the main analyses addressed five research questions:

1. "What are the relations amongst Power, Uncertainty, Self-Transcendence, and Quality of Life in breast cancer survivors?" The findings indicated that all main study variables were statistically significantly associated with each other. All variables except
Uncertainty were positively associated and an inverse relationship between Uncertainty and the other variables was present. Simultaneous multiple regression analyses indicated that 39% of the variance in Quality of Life is explained by Power, Uncertainty, and Self-Transcendence with only Uncertainty and Self-Transcendence making statistically significant contributions to the explained variance.

2. “Do Power and Uncertainty contribute to an explanation of the variance in Quality of Life in breast cancer survivors?” Both Power and Uncertainty contributed main effects and explained 17% of the variance in Quality of Life.

3. “Do Power and Uncertainty contribute in an interactive way to the explanation of the variance in Quality of Life in breast cancer survivors?” No significant contribution of the interaction term was found.

4. “Do Power and Uncertainty contribute to an explanation of the variance in Self-Transcendence in breast cancer survivors?” The findings indicated that both Power and Uncertainty contributed statistically significantly to the explanation (28%) of Self-Transcendence.

5. “Do Power and Uncertainty contribute in an interactive way to the explanation of the variance in Self-Transcendence in breast cancer survivors?” No significant contribution of the interaction term was found.

Based on the results of the main research questions and the a priori theoretical rationale, questions remained. The ancillary analyses addressed questions that emerged from the findings of the main analyses and the remaining questions suggested in the theoretical rationale. Specifically, questions addressing mediating relations arose from the literature, the results of main analyses, and from the a priori theoretical rationale. Following the preliminary checks, mediating relations amongst the variables were examined using a series of multiple regression analyses.
The first procedure examined the possible mediating role of Self-Transcendence in the relation between Power and Quality of Life. Self-Transcendence was a strong mediator in the relation between Power and Quality of Life.

The second procedure focused on the mediating role of Self-Transcendence in the relation between Uncertainty and Quality of Life. The findings indicated that Self-Transcendence mediated the relation of Uncertainty and Quality of Life.

Finally, the role of Power as a mediator in the relation between Uncertainty and Self-Transcendence was tested. The results indicated that Power mediated the relation between Uncertainty and Self-Transcendence.

The remaining ancillary analyses that were performed addressed a more in-depth look at the instruments for intra and interrelations and other findings associated with the main study variables and the demographic data. In terms of the QLI-CV, all subscales were statistically significantly interrelated and the subscales explained 99.9% of the variance in the total QLI-CV, which was interpreted as an affirmation that the instrument measured unitary Quality of Life. Likewise, the PKPCT factors were all statistically significantly interrelated and explained 100% of the variance in the total PKPCT, again an affirmation of the integral nature of the Power factors. Both instruments with subscales or factors (QLI-CV and PKPCT) were examined for associations with the other study instruments. The subscales or factors were statistically significantly related with the other instruments with the exception of the Family subscale of the QLI-CV with the PKPCT (.022NS, see Table 27) and MUIS-C (.137NS, see Table 27) and the Involvement in Creating Change factor of the PKPCT with the MUIS-C (-.182NS, see Table 29).

The main study variables were associated with several demographic variables. In addition, the findings that indicated the presence of mean differences for study variables
based on demographic variables were given further consideration. Quality of Life was associated with the use of complementary modalities. Furthermore, statistically significant lower Quality of Life was found for those with reported use of CM.

Statistically significant differences in mean Power was found based on reported household income. Further analyses indicated that those participants reporting an income of $75,001 to $100,000 (upper middle income) had statistically significant higher Power than those with the lowest or low income (less than $30,000 to $50,000).

Uncertainty was associated with three demographic variables, education, medication use, and participation in a current support group. Inspection of group means indicated that participants reporting a doctorate had higher mean Uncertainty. Those reporting use of medications had higher mean Uncertainty. Thirdly, participants reporting current (at the time of data collection) participation in a support group had higher mean Uncertainty.

Finally, Self-Transcendence was associated with time since completion of treatment. Mean differences were found which explained 12% of the variance in Self-Transcendence (a medium effect size). The post hoc examination suggested that the differences lie between women within one month of completion and women who were 8 to 12 months since completion of treatment. The findings were deemed tentative as groups were unequal and there were not 30 cases per cell. In addition, when non-parametric tests were used, no statistical significance was reached.

Conclusions

The researcher concluded that the findings of the five research questions and the ancillary analyses provided preliminary support for the linkages visioned within Rogers’ SUHB that associated the middle range theories addressing Power, Uncertainty, Self-Transcendence, and the conceptual model of Quality of Life. Results of the research
questions revealed that for this sample of women survivors of breast cancer in the intermediate stage of survivorship:

Power, Uncertainty, Self-Transcendence, and Quality of Life were pattern manifestations that occur together and that Uncertainty and Self-Transcendence contributed statistically significantly to the understanding of Quality of Life.

Power and Uncertainty contributed significantly to the understanding of Quality of Life. However, there was no interactive or moderating relation with Quality of Life.

Power and Uncertainty contributed significantly to the understanding of Self-Transcendence. However, there was no interactive or moderating relation with Self-Transcendence.

Results of the ancillary analyses revealed:

Self-Transcendence had a mediating relation with Power that further informed the understanding of Quality of Life.

Self-Transcendence had a mediating relation with Uncertainty that further informed the understanding of Quality of Life.

Power had a mediating relation with Uncertainty that further informed the understanding of Self-Transcendence.

QLI-CV subscales were strongly intracorrelated. The subscales of the QLI-CV were strongly and significantly intercorrelated with the other study variables with the exception of the family subscale, which did not have a significant association with the PKPCT or the MUIS-C.

PKPCT factors or subscales were strongly and significantly intracorrelated. The PKPCT factors or subscales were significantly intercorrelated with the other study variables with the exception of the involvement in creating change factor/subscale, which did not reach significance with the MUIS-C.
Participants reporting use of complementary modalities had lower mean Quality of Life than participants who did not use complementary modalities. Participants reporting lower household income had lower Power than participants with reported upper middle income. Participants with a doctorate had higher mean Uncertainty than those who did not. Participants reporting use of medications had higher mean Uncertainty than those who did not. Participants reporting current support group participation had higher mean Uncertainty than those who were not in current support groups. Self-Transcendence within one month of completion of treatment may have been higher than for those 8 to 12 months since completion of treatment. This was considered a possible trend.

Implications

The researcher’s findings and conclusions have implications for theory, research, and practice. The results of the current study support Rogers’ ideas about unitary human beings who pattern for well-being. The study contributes to an understanding of Ferrans’ (1990a, 1996) model of Quality of Life, Barrett’s (1983, 1986) theory of Power, Mishel’s (1981, 1990a) reconceptualized theory of Uncertainty, and Reed’s (1991a, 1997) theory of Self-Transcendence; all linkages made explicit for the first time within the current study. The results of the current study support the relations amongst Power, Uncertainty, Self-Transcendence, and Quality of Life for breast cancer survivors in the intermediate stage of survivorship.

The researcher uncovered complex and diverse relations amongst the variables that provide new insights to manifestations of field patterning in unitary human beings. The findings support Phillips’ (1989, 1997, 2004) ideas about how an exploration of resonating low-high frequency for clusters of pattern manifestations may lead to a better understanding of the unitary nature of human beings. The resonating relations of Power-Self-Transcendence-Quality of Life, Uncertainty-Self-Transcendence-Quality of Life,
and Power-Uncertainty-Self-Transcendence clearly demonstrate the complex and diverse relations amongst the pattern manifestations, and a pattern profile for breast cancer survivors in the intermediate stage of survivorship emerged. The results of the current study provide a preliminary model for further testing.

From a research standpoint, implications regarding instruments and analysis approaches were considered. The reliability of the STS was tentative; however, the data about ranges, means, and standard deviations were consistent with other studies. The findings regarding the intracorrelations for the QLI-CV and the PKPCT indicated that one higher order concept was being measured and supports the use of these instruments as measures of unitary Quality of Life and Power.

As the study examined a model of relations amongst the cluster of field pattern manifestations for the first time, the approach was appropriately descriptive and correlational. While the a priori questions included interactive or moderating relations, the findings lead the researcher to include an examination of mediating relations to uncover a better understanding of how the manifestations were related. The multivariate data analyses used to examine the mediating relations were based on experts’ (Baron & Kenny, 1986; Bennett, 2000; Kim, Kaye, & Wright, 2001) recommendations. While statistical discussions of mediation include ideas about causality, multiple regression analyses do not suggest causality, merely relations, which are congruent approaches of analysis within the SUHB. However, new approaches that are more clearly consistent with research grounded in the SUHB may be helpful in the future to uncover low-high frequency relations among pattern manifestations of unitary human beings. Despite this limitation, the findings were interpreted and discussed from a theoretically consistent perspective. The emerging pattern profile uncovered in this basic research from the
perspective of Rogers' SUHB must be considered preliminary. Replication studies to test the patterns of relations uncovered in the current study are advisable.

The results of the current study are pertinent to practice on a preliminary basis. However, the information from the current study is anticipated to assist nurses and other health professionals to better understand factors associated with Quality of Life for women surviving breast cancer in the intermediate stage of survivorship. Understanding factors related to Quality of Life provide opportunities for oncology nurses and other health care providers to enhance a wholistic or unitary assessment and pattern the environment to promote well-being for breast cancer survivors.

Factors associated with Quality of Life may be helpful to include in a wholistic nursing assessment. Including assessments of Power, Uncertainty, and Self-Transcendence may be useful in understanding breast cancer survivors' Quality of Life. Understanding the data collected during assessment is essential to appropriate care. The findings of the current study suggest that nurses may need to view the use of complementary modalities and higher educational levels with more caution as these demographics may indicate unrecognized distress. For example, individuals using complementary modalities may be trying to manage distress and may be experiencing low perceived Quality of Life. Individuals with higher education may experience more Uncertainty.

The knowledge generated from the current study can contribute to oncology nursing practice by raising awareness that intermediate stage survivors continue to experience Uncertainty. Promoting breast cancer survivors' inherent capacity of knowing participation in change and their potential for Self-Transcendence may enhance survivors' well-being and Quality of Life. These points are some of the ways oncology
nurses might use the information suggested from this study to enhance the care of women breast cancer survivors.

Emerging from the preliminary knowledge contributed from the current study, nurses can demonstrate an awareness of the possibilities that women knowingly participate in their breast cancer survivorship experiences, that in the face of Uncertainty, women may journey toward Self-Transcendence. Furthermore, they can provide care with a sense of the symphonic beauty of Quality of Life that emerges from the synergistic oscillations of Power, Uncertainty, and Self-Transcendence.

Recommendations for Further Study

The current study has provided preliminary support for the theoretical linkages amongst Power, Uncertainty, Self-Transcendence, and Quality of Life for breast cancer survivors in the intermediate stage of survivorship. However, further research is needed to provide additional support for the linkages. Therefore, the first recommendation is to replicate the study to examine if the linkages proposed and model generated in the current study can be validated in other samples of breast cancer survivors in the intermediate stage of survivorship.

Additional recommendations relate to future samples, instrumentation, and other research methods. In terms of samples, it will be useful to replicate the study in more diverse populations or use comparative approaches. Examining the same model for individuals experiencing serious psychological and/or physical illnesses may help to understand the journey of those with more complex concerns. Continued use of the Self-Transcendence Scale to establish norms and further evaluate the psychometric properties is recommended. Other research designs and analytic approaches are recommended for future study. Using a longitudinal design to examine relations over time from diagnosis and through the intermediate stage of survivorship may provide other insights to the
breast cancer survivorship experience and changes that may occur. An analytic approach that might be considered in future research is the multivariate technique of canonical correlation as it may make a contribution to an understanding of patterns of relations amongst variables. Finally, it is also recommended that approaches developed within the SUHB, such as pattern portrait and pattern appreciation methods be used simultaneously with quantitative approaches to enrich our understanding of field pattern manifestations of unitary human beings.
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APPENDIX A

CONCEPTUAL-THEORETICAL-EMPIRICAL STRUCTURE

Rogers' Science of Unitary Human Beings

Human-Environmental Field Pattern Manifestations

Power  Uncertainty  Self-Transcendence  Quality of Life

Barrett  Mishel  Reed  Ferrans

Awareness  Choices  Change  Freedom

Unpredictability  Reaching out  Reaching in  Changed Time

Health/Functioning  Psychosocial/spiritual  SES  Family

PKPCT  MUIS-CF  STS  QLI-CV
APPENDIX B

STUDY MODEL

Power

Self-Transcendence

Quality of Life

Uncertainty
APPENDIX C

LETTER OF INTRODUCTION

Dear (name of the contact person):

I am a PhD candidate at the Division of Nursing at New York University. For my dissertation, I am conducting a study of quality of life for breast cancer survivors. As a nurse for more than 20 years, I have had the opportunity to practice in the areas of oncology nursing, psychiatric mental health nursing, and in women’s health. I currently hold advanced oncology nursing certification through the Oncology Nursing Credentialing Corporation. In my work with oncology patients, I became keenly aware of how life changing the experience of cancer can be and the importance of quality of life.

While quality of life is a much researched topic, I will be examining three variables, two of which have not been previously associated with quality of life. The purpose of the study is to examine the relations among the selected variables in an effort to extend our understanding of quality of life for breast cancer survivors.

I am requesting permission to invite breast cancer survivors from your site to participate in this study. The protocol for this study will be submitted to the New York University Committee on Activities Involving Human Subjects for approval. As required by the City University of New York, where I am a member of the faculty, I will also be submitting the proposal for review by the City University of New York, College of Staten Island Institutional Review Board. I have enclosed a brief description of the protocol, the description of the study to potential participants, and a recruitment flyer. I would be pleased to provide additional information.

I believe that the information from this project will help nurses and other health care professionals to better understand those variables that contribute to quality of life in breast cancer survivors. Variables that may potentially be important in association with quality of life are women’s knowing participation in change, their experience of uncertainty, and self-transcendence. Learning about the relation of these variables with quality of life may point to new ways to help women enhance their quality of life.

I sincerely appreciate your consideration. I will call your office in a week or so to explore permission to conduct the study at your site and to answer any questions you may have. If you would prefer to call or email me, I can be reached at [contact information]

Yours truly,

Arlene T. Farren, RN, MA, PhD Candidate, AOCN
Assistant Professor
College of Staten Island/CUNY
Staten Island, NY

Enclosures
APPENDIX D
BRIEF DESCRIPTION OF RESEARCH PROTOCOL

The proposed descriptive, correlational study will examine the relations among power, uncertainty, self-transcendence, and quality of life for breast cancer survivors. The sample will consist of a minimum of 100 women who have completed their initial treatment for primary breast cancer. The following are inclusion criteria:

❖ Women survivors of primary, unilateral breast cancer
❖ Completed initial treatment (includes surgery, adjuvant chemotherapy or radiotherapy, or a combination)
❖ Five years or less since diagnosis
❖ No previous history of breast or other cancers
❖ No debilitating physical illness
❖ No history of mental illness
❖ Able to read and write English
❖ A minimum of a high school education or the equivalent

Potential participants will be made aware of the study by recruitment flyers and by introduction of the study by the investigator. After receiving site approval, recruitment flyers will be displayed in public areas, distributed at appropriate organizational functions, printed in newsletters, and made available for distribution by site personnel at the request of potential participants. Potential participants interested in learning more about the study will contact the investigator. The investigator will explain the study to each potential participant in person or by phone. If the woman expresses a desire to participate, the investigator will provide a research packet to her. The research packet will contain: 1) a cover letter describing the study with
instructions, 2) two consent forms, 3) a five-part self-administered questionnaire, 4) two return, self-addressed stamped envelopes, and 5) a magnet calendar. The participants will complete the questionnaire at home. The questionnaire includes items that measure:

- Quality of life - Quality of Life Index – Cancer Version (Ferrans, 1990; Ferrans & Powers, 1985).
- Power as knowing participation in change - Power as Knowing Participation in Change Tool – Version II (Barrett, 1998).
- Uncertainty - Mishel Uncertainty in Illness – Community Form (Mishel, 1990).
- Self-transcendence - Self-Transcendence Scale (Reed, 1987).
- Demographic information

The time required to complete the questionnaire is approximately one hour or less. The consent form and questionnaire are returned separately in the self-addressed stamped envelopes to protect confidentiality. The information will be strictly confidential; all data will be analyzed using code numbers only. The only place where the participants’ name will appear is on the consent form. Participation is voluntary. The decision to participate or not to participate will not affect the care received from nurses, physicians, or other members of the health care team. I will be available to answer any questions.

Arlene T. Farren, RN, MA, PhD Candidate, AOCN
Assistant Professor

[postal mail, telephone, fax, and email contact information was provided]
Invitation to Breast Cancer Survivors

If you are a woman survivor of breast cancer and you:
1. Completed treatment for breast cancer in one breast,
2. Were diagnosed less than 5 years ago,
3. Read and write English, and
4. Have a minimum of a High School Education or GED,

you are invited to participate in a study that seeks to learn more about the experiences of women survivors of breast cancer. Your participation would be appreciated.

If you would like to be contacted to learn more about the study, submit your name, address, and phone number by mail, email, phone, or fax.

WOMEN HELPING WOMEN

If interested, please contact:
A.T. Pierre, RN, MA, AOCN
College of Staten Island/CUNY
Department of Nursing

[Contact information provided]
APPENDIX F

DESCRIPTION OF STUDY FOR PARTICIPANTS

You are invited to participate in a study that seeks to learn about the experiences of women survivors of breast cancer. If you choose to participate in this study, the investigator will provide you with a research packet that includes a cover letter, two consent forms, a questionnaire, and two self-addressed, stamped return envelopes. You may complete the questionnaire in the privacy and comfort of your own home. The five-part questionnaire contains questions about topics of concern to survivors of breast cancer. The questionnaire will take one hour or less to complete.

Participation in this study is strictly voluntary. If you choose not to participate or to withdraw from the study, your choice to do so will not affect the care you receive from your physicians, nurses, or any other members of your health care team. If you choose to participate, you will be required to read, sign, and return a consent form in the envelope provided. A second consent form is provided for you to keep. You will also complete and return the questionnaire in the other envelope. Your responses to the questions are important so that a fuller understanding of the perceptions of women survivors of breast cancer may be gained.

Your answers and all background information will be strictly confidential. Your name or other personal information will not be on the questionnaire. Only code numbers appear on the questionnaire. These code numbers will be used to analyze the data. The investigator will keep consent forms, which contain identifying information, in a locked cabinet separate from the questionnaires. Reporting of the results will be done only as a group; no individual results will be reported.

Although you may receive no direct benefits, this research will help nurses, physicians, and other health professionals to better understand the perceptions and experiences of women.
surviving breast cancer. You will receive a magnet calendar with the research packet. Of the participants who complete the study requirements and choose to have their names included in a drawing, eight participants will be randomly chosen to receive a $25 American Express gift certificate. All participants will also have an opportunity to receive a copy of the Investigator’s Study Report to the Participants at the completion of the study. While the investigator is making these small tokens available to you in appreciation for your time and participation, your contribution to promoting a better understanding of topics of concern to women survivors of breast cancer is immeasurable. Your participation would be very much appreciated.

If you are interested in participating, the investigator will provide a research packet. The investigator will be pleased to provide additional information pertaining to the study. You may call the investigator, Arlene Farren, at [phone] or email her at [email contact] if you have any questions.

Sincerely,

Arlene T. Farren, RN, MA, PhD Candidate, AOCN
Assistant Professor of Nursing,

[postal mail, phone, fax, and email contact information was provided]
Dear Ms. 

Thank you for your interest in this study about the perceptions and experiences of breast cancer survivors. Recognizing the busy lives that many women lead, I sincerely appreciate your willingness to consider sharing your experiences. Included in this packet are two consent forms, a five-part questionnaire, two return envelopes, and a magnet calendar.

If you agree to participate in this study, you will be asked to do two things:

❖ Complete the Consent Procedure: After reading the consent form, please sign the consent form, and return it in the small stamped, self-addressed envelope that has been provided. The second copy of the consent form is for you to keep.

❖ Complete the Five-part Questionnaire: Instructions for each section are included in the questionnaire. After responding to the items in the questionnaire, there is an opportunity for you to share additional comments if you would like to do so. After you have marked all your responses, place the questionnaire in the large stamped, self-addressed envelope that has been provided and return it as soon as possible.

The procedure is estimated to take 60 minutes or less to complete. The investigator will employ measures to ensure the confidentiality of your responses that will include using code numbers, storing consent forms and raw data (questionnaires) separately in locked cabinets, and reporting only group results.

I hope you will find the enclosed magnet calendar useful. It contains my name and contact information in case you have any additional questions. You may also choose to participate in two other opportunities for participants who complete and return their consent form and questionnaire:

❖ Drawing for Eight $25 American Express Certificates: When data collection is completed, eight participants will be randomly selected to receive gift certificates. In the event that you prefer not to be included in the drawing, you can indicate that by checking the appropriate statement that appears at the end.
of the consent form. The eight participants who are selected will be notified by mail.

❖ Receiving a Brief Report of the Study: After the study is completed, the investigator will send the Investigator’s Study Report to the Participants, which is a brief report of the study. If you would prefer not to receive the report, please check the appropriate statement that appears at the end of the consent form.

While these small tokens are offered in appreciation for your participation, your contribution to promoting a better understanding of topics of concern to women survivors of breast cancer is immeasurable.

Again, please accept my sincere appreciation for your participation in this study. If you have any questions about the study, forms, or instructions, or concerns related to your participation in this study, please feel free to contact me at [phone contact information].

Yours truly,

Arlene T. Farren, RN, MA, PhD Candidate, AOCN

Enclosures: Consent Forms (2)
Questionnaire (1)
Return Envelopes (1) small, (1) large
Study Magnet Calendar (1)
NYU Letterhead

You have been invited to participate in a study to learn about the perceptions and experiences of breast cancer survivors. This study will be conducted by Arlene T. Farren, RN, MA, PhD Candidate, AOCN, Division of Nursing, School of Education, New York University as part of her doctoral dissertation work. Her faculty advisor is John R. Phillips, RN, PhD, who can be contacted at New York University, Division of Nursing, School of Education, [phone contact].

If you agree to participate in this study, you will be asked to do the following:

❖ **Complete the Consent Procedure:** After reading the consent form, sign the consent form and return it in the small envelope that has been provided. Retain the second copy for your records.

❖ **Complete the Five-part Questionnaire:** The questionnaire contains questions about the perceptions and experiences of breast cancer survivors and background information (age, gender, education, etc.). Instructions for each section are included in the questionnaire. After responding to the items in the questionnaire, there is an opportunity for you to share additional comments if you would like to do so. After you have marked all your responses, return it in the large envelope that has been provided and return it as soon as possible.

Participation in this study will involve approximately one hour or less of your time to complete the questionnaire.

Although you may receive no direct benefits, this research will help nurses, physicians, and other health professionals to better understand the perceptions and experiences of breast cancer survivors. You have received a magnet calendar with the research packet. Of the
participants who complete the study requirements and choose to have their names included in a drawing, eight participants will be randomly chosen to receive a $25 American Express gift certificate. All participants who choose to will receive a copy of the Investigator's Study Report to the Participants at the completion of the study.

The investigator has explained this study to you and answered your questions. If you have additional questions or wish to report a research-related problem, you may contact the investigator at [phone and email contact information was provided], or in writing at College of Staten Island, 2800 Victory Blvd., 5S-213, Staten Island, NY 10314.

For questions about your rights as a research participant, you may contact the University Committee on Activities Involving Human Subjects, Office of Sponsored Programs, New York University, [phone contact].

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. Nonparticipation or withdrawal will not affect the care you receive from your nurses, physicians, or any other members of your health care team.

Confidentiality of your research records will be strictly maintained through the use of code numbers and secured storage of your personal information. Only code numbers will appear on the questionnaire. These code numbers will be used to analyze the data. The investigator will keep consent forms, which contain identifying information, in a locked cabinet separate from the questionnaires. Only the investigator will have access to these files. Reporting of the results will be done only as a group; no individual results will be reported. After the completion of the study, the investigator will retain all study data for at least three years.

You have received a copy of this consent document to keep.

Agreement to Participate

Participant's Signature                      Date

Participant's Name (Please Print)

Participant's Address

Do not enter my name in the drawing for a $25 American Express Certificate  □

Do not send a copy of the Investigator's Study Report to the Participants  □
## APPENDIX I

Ferrans and Powers

QUALITY OF LIFE INDEX – CANCER VERSION (QLI-CV)

AND WRITTEN PERMISSION TO USE INSTRUMENT

This section contains a Part I and Part II.

**Part I.** For each of the following, please choose the answer that best describes how satisfied you are with that area of life. Please mark your answer by circling the number. There are no right or wrong answers.

<table>
<thead>
<tr>
<th>HOW SATISFIED ARE YOU WITH:</th>
<th>Very Dissatisfied</th>
<th>Moderately Dissatisfied</th>
<th>Slightly Dissatisfied</th>
<th>Slightly Satisfied</th>
<th>Moderately Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Your health?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>2. The health care you are receiving?</td>
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<td>3. The amount of pain that you have?</td>
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<td>4. The amount of energy you have for everyday activities?</td>
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<td>5. Your physical independence?</td>
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<td>6. The amount of control you have over your life?</td>
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<td>7. Your potential to live a long time?</td>
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<td>8. Your family's health?</td>
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<td>9. Your children?</td>
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<td>10. Your family's happiness?</td>
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<td>11. Your relationship with your spouse/significant other?</td>
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<td>12. Your sex life?</td>
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<td>13. Your friends?</td>
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<td>14. The emotional support you get from others?</td>
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<td>15. Your ability to meet family responsibilities?</td>
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<td>16. Your usefulness to others?</td>
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<th>Question</th>
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<td>17. The amount of stress or worries in your life?</td>
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<td>19. Your neighborhood?</td>
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<td>20. Your standard of living?</td>
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<td>25. Your leisure time activities?</td>
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<td>26. Your ability to travel on vacations?</td>
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<td>27. Your potential for a happy old age/retirement?</td>
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<td>28. Your peace of mind?</td>
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<td>29. Your personal faith in God?</td>
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<td>30. Your achievement of personal goals?</td>
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<td>31. Your happiness in general?</td>
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<td>32. Your life in general?</td>
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<td>33. Your personal appearance?</td>
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<td>34. Yourself in general?</td>
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</table>
**Part II:** For each of the following, please choose the answer that best describes how important that area of life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

<table>
<thead>
<tr>
<th>HOW IMPORTANT TO YOU IS:</th>
<th>Very Unimportant</th>
<th>Moderately Unimportant</th>
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<td>3. Being completely free of pain?</td>
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<td>6. Having control over your life?</td>
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<td>7. Living a long time?</td>
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<td>12. Your sexual life?</td>
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<td>15. Meeting family responsibilities?</td>
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<td>16. Being useful to others?</td>
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<td>17. Having a reasonable amount of stress or worries?</td>
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<td>19. Your neighborhood?</td>
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<td>20. A good standard of living?</td>
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<td>21. Your job?</td>
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<td>22. To have a job?</td>
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<td>23. Your education?</td>
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<td>24. Your financial independence?</td>
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<td>25. Leisure time activities?</td>
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<td>26. Your ability to travel on vacations?</td>
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<td>27. Having a happy old age/retirement?</td>
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<td>28. Peace of mind?</td>
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<tr>
<td>29. Your personal faith in God?</td>
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<td>30. Achieving your personal goals?</td>
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<td>31. Your happiness in general?</td>
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<td>32. Being satisfied with life?</td>
<td>1 2 3 4 5 6</td>
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<tr>
<td>33. Your personal appearance?</td>
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<td>34. Are you to yourself?</td>
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</table>

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July 23, 1996

Ms. Arlene T. Farren

Dear Ms. Farren:

Thank you for your interest in the Ferrans and Powers Quality of Life Index (QLI). I have enclosed the cancer version of the QLI and the computer program for calculating scores. I also have included a list of the weighted items that are used for each of four subscales: health and functioning, social and economic, psychological/spiritual, and family, as well as the computer commands used to calculate the subscale scores. The same steps are used to calculate the subscale scores and overall score.

At the present time there is no charge for use of the QLI. You have my permission to use the QLI for your study. In return, I ask that you send me a photocopy of all publications of your findings using the QLI. I then will add your publication(s) to the list that I send out to persons who request permission to use the QLI.

If I can be of further assistance, please do not hesitate to contact me. I wish you much success with your research.

Sincerely,

Carol Estwing Ferrans, PhD, RN, FAAN
Assistant Professor
APPENDIX J

POWER AS KNOWING PARTICIPATION IN CHANGE TOOL, VERSION II
(PKPCT)
AND WRITTEN PERMISSION TO USE INSTRUMENT

INTRODUCTION
This part of the questionnaire presents an opportunity for you to describe the meaning of day-to-day change in your life. Four indicators of experiencing change are:
- AWARENESS
- CHOICES
- FREEDOM TO ACT INTENTIONALLY
- INVOLVEMENT IN CREATING CHANGE

It will take about ten (10) minutes to complete this section of the questionnaire.

INSTRUCTIONS
For each indicator, there are 13 lines. There are words at both ends of each line. The meaning of the words are opposite to each other. There are seven (7) spaces between each pair of words which provide a range of possible responses. Place an "X" in the space along the line that best describes the meaning of the indicator (AWARENESS, CHOICES, FREEDOM TO ACT INTENTIONALLY, or INVOLVEMENT IN CREATING CHANGE) for you at this time.

For example:
Under the indicator CHOICES, if your CHOICES are quite closely described as "informed", your answer might look like this:

informed | x | ______ | ______ | ______ | ______ | ______ | uninformed

If your CHOICES are quite closely described as "uninformed", your answer might look like this:

informed | ______ | ______ | ______ | x | ______ | ______ | uninformed

If your CHOICES are equally "informed" and "uninformed", your answer might look like this:

informed | ______ | ______ | x | ______ | ______ | ______ | uninformed

REMEMBER:
* There are no right or wrong answers.
* Record your first impression for each pair of words.
* You can place an "X" in any space along the line that best describes the meaning the indicator has for you at this time.
* Mark only one "X" for each pair of words.
* Mark an "X" for every pair of word.

(Please Go To Next Page and Begin)


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BARRETT PKPCT, VERSION II

**MARK AN "X" AS DESCRIBED IN THE INSTRUCTIONS**

My AWARENESS is

<table>
<thead>
<tr>
<th>profound</th>
<th>superficial</th>
</tr>
</thead>
<tbody>
<tr>
<td>avoiding</td>
<td>seeking</td>
</tr>
<tr>
<td>valuable</td>
<td>worthless</td>
</tr>
<tr>
<td>unintentional</td>
<td>intentional</td>
</tr>
<tr>
<td>timid</td>
<td>assertive</td>
</tr>
<tr>
<td>leading</td>
<td>following</td>
</tr>
<tr>
<td>chaotic</td>
<td>orderly</td>
</tr>
<tr>
<td>expanding</td>
<td>shrinking</td>
</tr>
<tr>
<td>pleasant</td>
<td>unpleasant</td>
</tr>
<tr>
<td>uninformed</td>
<td>informed</td>
</tr>
<tr>
<td>free</td>
<td>constrained</td>
</tr>
<tr>
<td>unimportant</td>
<td>important</td>
</tr>
<tr>
<td>unpleasant</td>
<td>pleasant</td>
</tr>
</tbody>
</table>

**MARK AN "X" AS DESCRIBED IN THE INSTRUCTIONS**

My CHOICES are

<table>
<thead>
<tr>
<th>shrinking</th>
<th>expanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>seeking</td>
<td>avoiding</td>
</tr>
<tr>
<td>assertive</td>
<td>timid</td>
</tr>
<tr>
<td>important</td>
<td>unimportant</td>
</tr>
<tr>
<td>orderly</td>
<td>chaotic</td>
</tr>
<tr>
<td>intentional</td>
<td>unintentional</td>
</tr>
<tr>
<td>unpleasant</td>
<td>pleasant</td>
</tr>
<tr>
<td>constrained</td>
<td>free</td>
</tr>
<tr>
<td>worthless</td>
<td>valuable</td>
</tr>
<tr>
<td>following</td>
<td>leading</td>
</tr>
<tr>
<td>superficial</td>
<td>profound</td>
</tr>
<tr>
<td>informed</td>
<td>uninformed</td>
</tr>
<tr>
<td>timid</td>
<td>assertive</td>
</tr>
</tbody>
</table>

(Please Go To Next Page)

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My FREEDOM TO ACT INTENTIONALLY is

- timid
- uninformed
- leading
- profound
- expanding
- unimportant
- valuable
- chaotic
- avoiding
- free
- unintentional
- pleasant
- orderly

assertive
informed
following
superficial
shrinking
important
worthless
orderly
seeking
constrained
Intentional
unpleasant
chaotic

My INVOLVEMENT IN CREATING CHANGE is

- unintentional
- expanding
- profound
- chaotic
- free
- valuable
- unimportant
- timid
- pleasant
- superficial
- shrinking
- following
- important
- assertive
- informed
- seeking
- valuable
- unimportant
- timid
- superficial
- profound

important
worthless
orderly
seeking

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This letter is to grant permission to_____________________

Aylena T. Farrow for use of the Power as Knowing Participation in Change Tool for your thesis. There is no charge to students for one time use of the tool for your research. However, I do request that you send me a copy of your completed thesis.

Good luck in your work,

Elizabeth Ann Manhart Barrett, RN, PhD, FAAN
Professor and Coordinator
Center for Nursing Research

Hunter-Bellevue School of Nursing 425 East 23 Street New York NY 10010-2590
APPENDIX K

MISHEL UNCERTAINTY IN ILLNESS SCALE – COMMUNITY FORM
AND WRITTEN PERMISSION TO USE INSTRUMENT

INSTRUCTIONS:
Please read each statement. Take your time and think about what each statement says. Then place an “X” under the column that most closely measures how you are feeling TODAY. If you agree with a statement, then you would mark under either “Strongly Agree” or “Agree.” If you disagree with a statement, then mark under either “Strongly Disagree” or “Disagree.” If you are undecided about how you feel, then mark under “Undecided” for that statement. Please respond to every statement.

1. I don’t know what is wrong with me.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

2. I have a lot of questions without answers.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

3. I am unsure if my illness is getting better or worse.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

4. It is unclear how bad my pain will be.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

5. The explanations they give about my condition seem hazy to me.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

(Please Go To Next Page)

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6. The purpose of each treatment is clear to me.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. My symptoms continue to change unpredictably.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. I understand everything explained to me.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. The doctors say things to me that could have many meanings.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. My treatment is too complex to figure out.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. It is difficult to know if the treatments or medications I am getting are helping.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Because of the unpredictability of my illness, I cannot plan for the future.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. The course of my illness keeps changing. I have good and bad days.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. I have been given many differing opinions about what is wrong with me.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. It is not clear what is going to happen to me.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. The results of my tests are inconsistent.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. The effectiveness of the treatment is undetermined.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. Because of the treatment, what I can do and cannot do keeps changing.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. I’m certain they will not find anything else wrong with me.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Please Go To Next Page)
20. The treatment I am receiving has a known probability of success.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

21. They have not given me a specific diagnosis.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22. The seriousness of my illness has been determined.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. The doctors and nurses use everyday language so I can understand what they are saying.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Request Form
MUIS-C

I request permission to copy the Mishel Uncertainty in Illness Scale Community Form for use in my research entitled, "The relation among power, uncertainty, self-transcendence, and quality of life in women following primary treatment for breast cancer."

In exchange for this permission, I agree to submit to Dr. Mishel a printout of the uncertainty data or a 5½ inch disk containing the data with a data dictionary. The data must contain information in each subject's age, sex, education, and diagnosis, along with the raw data on the uncertainty scale. This data will be used to establish a normative data base for clinical populations. No other use will be made of the data submitted. Credit will be given to me in reports of normative statistics that make use of the data I submitted for pooled analyses. I also agree to send Dr. Mishel a copy of my findings. I understand that my report will be used to compile information on the theory of uncertainty in illness. Credit will be given to me in any reports referring to my findings.

(Signature)

(Date)

Position and Full Address of Investigator.

Permission is hereby granted to copy the MUIS for use in the research described above.

Merle H. Mishel

(Date)

Please send two signed copies of this form to Merle H. Mishel, Ph.D., College of Nursing, University of Michigan, Ph.D.

School of Nursing
CB #4760, Carrington Hall

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APPENDIX L

SELF-TRANSCENDENCE SCALE (STS)
AND WRITTEN PERMISSION TO USE INSTRUMENT

DIRECTIONS: Please indicate the extent to which each item below describes you. There are no right or wrong answers. I am interested in your frank opinion. As you respond to each item, think of how you see yourself at this time of your life. Circle the number that is the best response for you.

<table>
<thead>
<tr>
<th>AT THIS TIME OF MY LIFE, I SEE MYSELF AS:</th>
<th>NOT AT ALL</th>
<th>VERY LITTLE</th>
<th>SOMEWHAT</th>
<th>VERY MUCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having hobbies or interests I can enjoy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Accepting myself as I grow older.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Being involved with other people or my community when possible.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Adjusting well to my present life situation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Adjusting to the changes in my physical abilities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Sharing my wisdom or experience with others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Finding meaning in my past experiences.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Helping younger people or others in some way.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Having an interest in continuing to learn about things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Putting aside some things that I once thought were so important.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Accepting death as a part of life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Finding meaning in my spiritual beliefs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Letting others help me when I may need it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Enjoying my pace of life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Dwelling on my past unmet dreams or goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

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Request Form

I request permission to copy the Self-Transcendence Scale (STS) for use in my research entitled: [Entitle the research project here, e.g., "The relationship among power, uncertainty, self-transcendence, and quality of life in women following open heart surgery."]

In exchange for this permission, I agree to submit to Dr. Reed a copy of the following:

1. An abstract of my study purpose and findings, which includes the range of STS scores and the mean STS score in my group of participants, and correlations between the STS scale scores and other measures used in my study. (This will be used by Dr. Reed to assess construct validity).

2. The reliability coefficient as computed on the scale from my sample (Cronbach's alpha).

3. A copy of the one-page scoring sheet (see attached) for each participant tested or a computer print out listing this same information for each subject, along with my data coding dictionary (which identifies the variables on the print out).

Any other information or findings that could be helpful in assessing the reliability or validity of the instrument would be greatly appreciated (e.g., problems with items, comments from participants, other findings).

This data will be used to establish a normative database for clinical populations. No other use will be made of the data submitted. Credit will be given to me in reports of normative statistics that make use of the data I submitted for pooled analyses.

(Signature)

(Date)

Position and Full Address

Permission is hereby granted to copy the STS for use in the research described above.

Pamela G. Reed

(Date)

Please send [two signed] copies of this form, and a stamped, self-addressed envelope to:

Pamela G. Reed, RN, PhD, FAAN
College of Nursing
APPENDIX M
DEMOGRAPHIC DATA FORM

SECTION E INTRODUCTION AND INSTRUCTIONS: Your responses to these questions are an important part of the study. Please answer the questions as completely as possible. The information will be kept confidential. Your name should not be written on any section of the questionnaire. No one but the researcher will have access to the information.

Please CIRCLE the number corresponding to the response that most closely describes your situation or WRITE-IN your response where indicated.

E-1. What is your present age in years? _____________________________________________

E-2. Which of the following best describes your current marital status?

1 SINGLE-NEVER MARRIED
2 SINGLE-LIVING WITH A PARTNER
3 MARRIED
4 DIVORCED
5 SEPARATED
6 WIDOWED

E-3. How would you describe your racial/ethnic background?

1 AFRICAN-AMERICAN
2 ASIAN OR PACIFIC ISLANDER
3 AMERICAN INDIAN OR ALASKAN
4 CAUCASIAN
5 LATINA
6 OTHER (Please specify) ______________________________________________________

E-4. How would you describe your religious preference?

1 CATHOLIC
2 ISLAM
3 JEWISH
4 PROTESTANT
5 OTHER (Please specify) ______________________________________________________

E-5. What is your primary language? ______________________________________________

E-6. What is your preferred language? _____________________________________________

E-7. Do you have any difficulty reading and understanding English?

1 NO
2 YES
E-8. What is the highest level of education you have completed?
1 LESS THAN 12 YEARS OF EDUCATION WITHOUT A GED
2 HIGH SCHOOL GRADUATE
3 HIGH SCHOOL EQUIVALENCY DIPLOMA (GED)
4 SOME COLLEGE
5 ASSOCIATE DEGREE
6 BACCALAUREATE DEGREE
7 MASTERS DEGREE
8 DOCTORATE
9 OTHER (Please specify)_________________________

E-9. What is your current employment status?
1 UNEMPLOYED
2 HOMEMAKER
3 EMPLOYED PART TIME (Less than 30 hours)
4 EMPLOYED FULL TIME (At least 30 hours)
5 EMPLOYED - ON MEDICAL DISABILITY/LEAVE
6 RETIRED
7 STUDENT
8 OTHER (Please specify)_________________________

E-10. What is (was) your occupation? ____________________________

E-11. What is your approximate annual household income?
1 LESS THAN $30,000
2 BETWEEN $30,001 - $50,000
3 BETWEEN $50,001 - $75,000
4 BETWEEN $75,001 - $100,000
5 BETWEEN $100,001 - $125,000
6 ABOVE $125,000

E-12. Has anyone in your family had breast cancer?
1 NO
2 YES

If yes, please circle all that apply:
1 GRANDMOTHER
2 MOTHER
3 AUNT
4 SISTER
5 COUSIN
6 OTHER (Please specify)_________________________
E-13. Has anyone close to you been through the experience of treatment for breast cancer?

1. NO
2. YES *

If yes, please circle all that apply:
1. CLOSE FAMILY MEMBER
2. CLOSE FRIEND
3. WORK ASSOCIATE
4. OTHER (Please specify) _______________________________________

E-14. Is this the first time you have been diagnosed with breast cancer?

1. YES
2. NO (Please specify) ______________________________________________

E-15. How was your breast lesion found?

1. CASUAL SELF EXAMINATION
2. ROUTINE SELF-BREAST EXAMINATION
3. PHYSICAL EXAMINATION BY A HEALTH PROFESSIONAL
4. ROUTINE MAMMOGRAM
5. DIAGNOSTIC MAMMOGRAM
6. OTHER (Please specify) _________________________________________

E-16. When were you diagnosed as having breast cancer?

1. 1 TO 6 MONTHS AGO
2. 7 TO 12 MONTHS AGO
3. 13 TO 18 MONTHS AGO
4. 19 TO 24 MONTHS AGO
5. 2 TO 3 YEARS AGO
6. 4 TO 5 YEARS AGO
7. MORE THAN 5 YEARS AGO (Please specify) _____________________

E-17. Which of the following breast cancer treatments have you completed?

1. SURGERY ONLY
2. SURGERY AND RADIATION THERAPY
3. SURGERY AND CHEMOTHERAPY
4. SURGERY, RADIATION THERAPY, AND CHEMOTHERAPY
E-18. How long ago did you complete your treatment(s)?

1       LESS THAN 1 MONTH AGO
2       1 TO 3 MONTHS AGO
3       4 TO 7 MONTHS AGO
4       8 TO 12 MONTHS AGO
5       13 TO 18 MONTHS AGO
6       19 TO 24 MONTHS AGO
7       3 TO 5 YEARS AGO
8       MORE THAN 5 YEARS AGO (Please specify) ______________________

E-19. Are you currently taking Tamoxifen?

1       NO
2       YES

E-20. Have you experienced any other serious medical or surgical conditions?

1       NO
2       YES (Please specify) _____________________________________________

E-21. Are you experiencing lymphedema (swelling and/or discomfort in the arm)?

1       NO
2       YES

E-22. Have you been treated for any psychiatric problems?

1       NO
2       YES (Please specify) _____________________________________________

E-23. Are you taking medications of any kind?

1       NO
2       YES (Please specify) _____________________________________________

E-24. What was your experience of menopause at the time of your diagnosis?

1       PREMENOPAUSAL (Before going through menopause)
2       GOING THROUGH MENOPAUSE (Perimenopausal)
3       COMPLETED MENOPAUSE (Postmenopausal)
4       DO NOT RECALL
E-25. Have you participated in complementary therapies?

<table>
<thead>
<tr>
<th>CURRENTLY</th>
<th>DURING TREATMENT</th>
<th>HEALTH PATTERNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
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<tr>
<td>2</td>
<td>2</td>
<td>THERAPEUTIC TOUCH</td>
</tr>
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<td>3</td>
<td>3</td>
<td>REIKI</td>
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<td>4</td>
<td>4</td>
<td>MASSAGE</td>
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<td>5</td>
<td>5</td>
<td>NUTRITIONAL HEALING</td>
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<td>6</td>
<td>6</td>
<td>SPIRITUAL HEALING</td>
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<td>7</td>
<td>7</td>
<td>OTHER (Please specify)</td>
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</tbody>
</table>

E-26. Have you been a volunteer for any of the following programs?

<table>
<thead>
<tr>
<th>CURRENTLY</th>
<th>DURING TREATMENT</th>
<th>REACH TO RECOVERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>2</td>
<td>LOOK GOOD - FEEL BETTER</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>HOSPICE</td>
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<tr>
<td>4</td>
<td>4</td>
<td>CHURCH</td>
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<tr>
<td>5</td>
<td>5</td>
<td>COMMUNITY</td>
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<tr>
<td>6</td>
<td>6</td>
<td>AMERICAN CANCER SOCIETY</td>
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<tr>
<td>7</td>
<td>7</td>
<td>OTHER (Please specify)</td>
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</table>

E-27. Have you received services from any of the following programs?

<table>
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<tr>
<th>CURRENTLY</th>
<th>DURING TREATMENT</th>
<th>REACH TO RECOVERY</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>LOOK GOOD - FEEL BETTER</td>
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<td>HOSPICE</td>
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<td>5</td>
<td>COMMUNITY</td>
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<td>6</td>
<td>6</td>
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<td>7</td>
<td>7</td>
<td>OTHER (Please specify)</td>
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</tbody>
</table>
E-28. Have you participated in a support group?

<table>
<thead>
<tr>
<th>CURRENTLY</th>
<th>DURING TREATMENT</th>
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<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

NO  YES %

(If yes to currently, please specify)

(If yes to during treatment, please specify)

THANK YOU FOR SHARING INFORMATION ABOUT THESE TOPICS.
APPENDIX N
ADDITIONAL COMMENTS PAGE

If there is anything else you wish to share about any of the topics addressed, about any aspect of the questionnaire, or any other topic you feel is important, your comments are welcomed.

MY COMMENTS

Thank you for your help.

Please return your completed questionnaire in the large, stamped, self-addressed envelope provided.

Helen T. Fores, Ph.D., RN, AOCN

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APPENDIX O
FOLLOW-UP POSTCARD TO PARTICIPANTS

Date (Approximately 8 days after the Research Packet is mailed)

As we discussed when last we spoke, approximately one week ago a questionnaire about your perceptions and experiences as a survivor was mailed to you. If you have already completed and returned the consent form and questionnaire, please accept my sincere thanks for your participation.

If not, won’t you take some time to do so today? If you have questions, I will be happy to try to answer them. Remember, your participation is voluntary and if you do choose to participate, your responses will be held in the strictest confidence. In the event that you did not receive the research packet or have misplaced it, I will provide another one. In either case, you can reach me by phone at [contact number], by fax at [contact number], by email at [email address]

I am especially grateful for your help because I believe your input is very important to this study.

Sincerely,

Arlene T. Farren, RN, MA, PhD Candidate, AOCN
Assistant Professor
[postal mail contact information]
APPENDIX P
FOLLOW-UP LETTER TO PARTICIPANTS

Date (Approximately three weeks after the second mailing)

Dear :

Approximately three weeks ago, I wrote to you seeking your perceptions and experiences as a breast cancer survivor. As of today, I have not received your completed questionnaire. I realize you may not have had time to complete it or may have misplaced it.

Because your input is vital to this study, I am enclosing another research packet containing a cover letter that includes some instructions, two consent forms, a questionnaire, and two self-addressed, stamped return envelopes. The completion of the consents and questionnaire is expected to take sixty minutes or less of your time. In the event that you have questions, I will be available to help in any way I can. Remember, your participation is voluntary and should you choose to participate, your responses will be held in the strictest confidence.

If you have already mailed the questionnaire, please accept my sincere appreciation for your help in this project.

Sincerely,

Arlene T. Farren, RN, MA, PhD Candidate, AOCN
Assistant Professor
[postal mail, phone, fax, and email contact information was provided]

:atf

PRIORITY MAIL.
Enclosures: (1) Cover letter, (2) consent forms, (1) questionnaire, and (2) return envelopes