Stony Brook University

Breast Cancer Survivors' Perception of Yoga Practice for Different Spans of Time

A Dissertation Presented

by

Karyn Kirschbaum

to

The Graduate School

in Partial Fulfillment of the

Requirements

for the Degree of

Doctor of Philosophy

In

Social Welfare

Stony Brook University

December 2011

Stony Brook University
The Graduate School

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Abstract of the Dissertation

Breast Cancer Survivors' Perception of Yoga Practice for Different Spans of Time

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This qualitative study uses an exploratory research design that incorporates both grounded theory and phenomenological approaches in order to gain insight into the meaning of yoga in relation to coping with breast cancer. The study focuses on the individual, lived experience and relies on in-depth interview strategies to capture the subjects' sensations and perceptions of the practice and utility of yoga over the duration of time. By interviewing women who practice yoga for different spans of time, several aspects are explored: if the length of time affects any observed changes; if transitional stages in yoga progression can be identified, and if so, what influences these changes; and how differing stages of yoga practice affect a woman's coping with breast cancer. The data generated a narrative account of common themes that identify four stages of yoga commitment and eight variables that mediate change and suggest engagement, advancement, a deepening relationship to yoga, and a gradual identity transformation. In addition, prevailing themes regarding yoga's meaning and impact on coping with breast cancer come to light.

As dominant themes emerged from the women's stories, health behavior change theories were initially considered to enhance understanding of the emergent themes. Important constructs from social cognitive, planned behavior, and transtheoretical theories were found to be salient within the context and findings of this study, but no one theory was sufficient to understand the themes that emerged. In addition, principles of structural symbolic interactionism and identity theory were similarly identified that could explicate aspects of a noted identity transformation among the respondents.

In the final analysis, where health behavior theories fall short, concepts of identity theory complete an explanation of the transitions that occur as the yoga practice deepens. Combining constructs of both behavior change and identity theories may represent a possible new theory that more accurately reflects the observed mechanisms and emergent themes expressed by the respondents as they use yoga to cope with breast cancer.

Dedication

Grandma Sonia always wanted a doctor in the family. I dedicate this project to her memory along with other family members who have passed. To Aunt Reeva, Cousin Sunny, and Grandma Jenny whose lives were all cut short because of breast cancer, I dedicate my work to your memories.

To my family and friends who remained supportive and encouraging throughout this long ordeal, I thank you. To my sons Jeffrey and Bryce, I am so proud of both of you and I thank you for being such special and talented young men who inspire me to be a better person. Finally, to my wonderful husband and life partner Cary, I thank you for giving me the space to pursue this challenge and for being there for me at the finish line. I couldn't have done this without you cheering me on. I love you and I owe you big!

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Glossary

Ahimsa – Nonviolence to yourself and others. The first of Patanjali's yamas and the foundation of the practice of yoga.

Asana – Yogic postures.

Iyengar Yoga – Strives for precise anatomical alignment in poses using various props.

Hatha Yoga – In the west, it has come to be used as a generic term for various styles of yoga that include the physical poses.

Kripalu Center – A center for yoga and health located in Lenox, Massachusetts that offers residential programs featuring both Kripalu teachers and others from a wide range of yoga and holistic health disciplines.

Kripalu Yoga – Emphasizes emotional release, spiritual growth, and self-acceptance.

Niyamas – Spiritual and personal observances including cleanliness and purity, contentment, discipline, self-study and devotion to God.

Patanjali – Compiler of the Yoga Sutras, the approximately 2000 year old collection of aphorisms that many consider the most important text on yoga.

Pranayama – Yogic breathing exercises that comprise yoga and help to quiet the mind.

Restorative Yoga – Positions using props such as blankets, blocks and bolsters to allow one to completely relax into the pose, settle and draw the senses inward.

Savasana- Sanskrit for Corpse pose, this is typically the last posture of a yoga class and sometimes referred to as Deep Relaxation.

Yamas – Ethical guidelines including non-harming, non-stealing, truthfulness, sexual restraint and non-hoarding.

Yoga – The state of connection or union. Often used as shorthand to refer to the practices, particularly asana, that comprise yoga.

(McCall, T, 2007)

Acknowledgement

I assembled a strong committee of scholars led by an outstanding advisor who would together provide the expertise and guidance necessary to complete this seven year endeavor. Each one played a unique role and contributed a specific strength to the process that made the collegial experience most gratifying. Charles Robbins, DSW demonstrated his support early on and despite his promotion and transfer to the main campus at SUNY Stony Brook, his commitment to my success was ever present. I was fortunate to find Kathleen Shurpin, PhD, RN, NPP as the outside committee member, whose professional experience and expertise in oncology nursing and qualitative research would ensure the authenticity of my data and research. Carolyn Peabody's, PHD qualitative expertise in social welfare provided insights into aspects of grounded theory development and analysis as she challenged me to examine the data on a deeper level. Dr. Peabody put in many hours reading and editing, as she assumed a strong supportive role on the home front.

My advisor, Candyce Berger, PhD demonstrated her expertise, leadership, and commitment throughout this project. Even after she moved across the country, her dedication to my success was evident throughout all the face-to-face meetings, conference calls, and transatlantic flight readings. She remained a steadfast and dependable leader, always communicating her belief in me, informing and driving the process. She spent countless hours over the years providing her technical assistance, never giving up on me, and helping me achieve my ultimate goal. I am forever grateful to her and the rest of my committee members for their support and encouragement.

I was fortunate to encounter many phenomenal professors and staff members who inspired me throughout the doctoral program. One such individual who must be acknowledged for her integral role in my success is Edie Lundgren. From the time when she first called with news of my acceptance into the doctoral program until her final attendance at my defense, she was there every step of the way. She helped navigate the often frustrating and confusing system including registration, waivers, fees, graduation, deadlines etc.

Lastly, I would be remiss if I didn't acknowledge the tremendous support that I received from both the breast cancer community and the yoga community. All phases of this study including contacting key informants, recruiting potential subjects, and most importantly conducting the interviews were met with genuine enthusiasm and interest. The study could not have been possible without the outpouring of support among the 43 respondents as well as the numerous yoga instructors, physical therapists, nurses, breast cancer coalition volunteers, and other individuals who I encountered along the way. I acknowledge the courage and trust that the respondents all displayed in their heartfelt stories of suffering and triumph and I extend my deepest appreciation for their generosity to make this study possible.

Chapter I

Introduction

This qualitative study was inspired by a personal interest to understand what transpires when breast cancer survivors practice yoga for different lengths of time and what their yoga experience is in relation to their coping with the disease. It was hoped that important insights that could explain both the relationship with and the meaning of yoga would emerge within the disease context. Increasingly, studies among different populations are reporting physical and emotional benefits that can be attributed to yoga. Still, design limitations and adherence to such interventions continue to pose a challenge. Behavioral change theories were examined in an effort to explain mediating variables that lead to motivation, transitions, and a growing commitment. By interviewing women who practiced yoga for different spans of time, several aspects were explored: if the length of time had significance to any observed changes; if transitional stages and a yoga progression could be identified; and if a transformational process occurred over time and if so, how could it be characterized.

The findings in this study make an important contribution to the existing body of knowledge on yoga and breast cancer. The design permitted the investigator to gain a deeper understanding of the meaning, beliefs, and expectations of yoga within the context of the survivors' diagnosis, treatment, and recovery. In addition to addressing the initial research questions and objectives, unanticipated ideas emerged as the stories were told and the data analyzed.

Plan of the Report

The following summary outlines the content and direction of this study. Chapter I provides an overview of complementary therapies with special attention to yoga, along with

statement, purpose, and significance of the study. Chapter II presents a thorough review of the literature, including both research related to yoga and breast cancer as well as summaries and research involving the dominant behavior change theories. Chapter III outlines the research methodology and the rationale behind the design used. A statement of the research questions and details about subject criteria, data collection, data management, and analysis are included. In Chapter IV, an analysis of the results is presented about the respondents, the four stages of yoga commitment, the eight variables that determine the stages and progression of yoga, and any relevance to existing theories. Chapter V presents a discussion of results and Chapter VI includes a summary of key findings, limitations, and implications for social work policy, practice, and research.

Background

The numbers of patients seeking complementary and alternative medicine (CAM) to deal with their health problems have been steadily rising in recent years. For some time now, these alternative and often unorthodox approaches have been gaining acceptance and credibility in Western culture. Growing numbers of consumers, health-care providers, and researchers have been considering the role that the mind can play on healing and disease prevention (Finger & Arnold, 2002). Despite the broad range of treatment modalities that comprise complementary and alternative medicine, they all share a common philosophical theme that unites mind, body, and spirit in their approaches. Achieving harmony and balance among these three dimensions guides their treatment process while allopathic practitioners are driven almost exclusively by physiological issues.

Indian traditions have developed metaphors to describe the body from the inside out, such as life forces and energy centers. Yoga's holistic view, like a number of other complementary

therapies, supports a systems perspective that integrates the body, breath, and mind (Thomson, 2001). While research into the efficacy and mechanics of yoga is limited, the findings are encouraging and suggest that health benefits of yoga among cancer patients merit further investigation (Cohen et al, 2004).

Breast cancer is the second most common form of cancer in women (after non-melanoma skin cancer). According to the Centers for Disease Control, in 2006 191,410 women were diagnosed and 40,820 women died from the disease (CDC, 2010). These staggering morbidity rates continue to generate the need for therapies that address symptoms and side effects facing survivors. Interventions have been developed to minimize psychological morbidity including improvements in daily functioning and quality of life. The more conventional strategies such as support groups and cognitive behavioral techniques have seldom included non-cognitive approaches such as mind-body movement and spiritual exploration (Targ et al, 2002).

Statement of the Problem

The practice and philosophy of yoga may have practical implications for breast cancer survivors while yoga can have a profound impact on one's survival. It seems that yoga tools including relaxation, meditation, and breathing practices can assist with numerous aspects of diagnosis, treatment, and the increasing likelihood of long term survivorship. It would be helpful to know what factors motivate women to practice, what factors contribute to sustaining a practice, and are there characteristics of a yoga practice that can delineate stages of progression and possibly represent a deepening commitment to it.

Purpose of the Study

In order to gain a better understanding of the yoga experience from the perspective of the breast cancer survivor, this research focuses on the survivors' perceptions of the meaning and

utility of yoga by the duration of time practiced; whether transformation, as perceived by the subject, does or does not occur over the length of time practiced; and identifying possible transitional stages and characteristics of the progression and a deepening relationship with yoga.

Significance of the Study

There are a number of policy considerations that may emerge from this study. This analysis may or may not lend support toward advancing the integration of allopathic and complementary medicine (western and eastern practices respectively). Barriers to accessing yoga have policy implications regarding licensure, insurance coverage, cost, and quality control. A better understanding of the multi-dimensional aspects of yoga that are important to breast cancer survivors may help to elevate its utility, contribute to the national dialogue, and advance its acceptance among health care practitioners and consumers.

Development of Complementary and Alternative Medicine in the West

The establishment of the National Center for Complementary and Alternative Medicine (NCCAM), at the National Institute of Health in 1998, was one of the most important developments to legitimatize and propel the body-mind medicine movement forward. This center has heightened awareness and drawn national attention to alternative forms of healing through its funded research, trainings and information dissemination (National Center for, 2000, June). At that time, CAM was defined by its foundational components of well-being, including nutrition, the mind-body connection, and spirituality (Fortney et al, 2010). The gradual acceptance on the part of consumers and health care providers towards CAM can be attributed to incremental occurrences: recognition of its increasing use and popularity; the establishment of NCCAM; a growing body of scientific research on its safety and efficacy; and expanded physician interest (Ruggie, 2005).

The term "integrative medicine" (IM) was coined in the 1990's to encourage the integration of CAM and conventional therapies in an effort to prevent disease and facilitate health. More recently, IM has been defined by the Consortium of Academic Health Centers for Integrative Medicine as "the practice of medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic approaches, healthcare professionals, and disciplines to achieve optimal health and healing." (Deng et al, 2009; Kligler et al, 2004). IM has since become less concerned about the therapeutic labels and has focused more attention on gaining insights into therapies that can result in optimal health. By making health its primary objective, IM has fostered greater collaboration between both CAM and allopathic communities (Fortney et al, 2010).

At the same time, Frenkel and Cohen (2008) have identified numerous obstacles impeding the integration of complementary and integrative medicine (CIM) into the conventional setting. Such barriers include: financial disincentives; concerns about legal actions; communication gaps among CIM providers, health care providers, and physicians; identifying and integrating CIM providers into the system; lack of access to accurate information and education about CIM; conventional system resistance towards CIM; disparate beliefs about healing; limited information on clinical outcomes; and inability to overcome the above mentioned obstacles.

Physicians have been reported to express indifference or opposition to complementary therapy use for a variety of reasons. Their lack of education keeps them uninformed about its utility. Physicians who are already skeptical of the benefits of complementary therapies and who rely heavily on scientific evidence, may avoid opportunities to explain options to their patients.

Their unwillingness to learn reflects their concerns about the concurrent use of complementary and conventional medicine (Corbin-Winslow et al, 2002; Roberts et al, 2005). It has been discovered that oncologists underestimate the usage of CAM among their patients and that patients don't disclose this information for fear of physicians' reactions (O'Beirne et al, 2004). Little has been written about integrating CIM into the cancer treatment system because this field of integrative oncology is still in its infancy (Frenkel et al, 2008).

The increasing physical, emotional, and financial impact of CAM therapies by this population underscores its significance as a public health issue. Conventional medicine has justifiably been critical of most CAM therapies for their relative lack of peer-reviewed, scientifically conducted analyses. Despite the paucity of validated research, the public demand for and widespread use of CAM has steadily increased; so much that the medical community has begun to take note of this growing interest and its impact on traditional treatment modalities (Lengacher et al, 2002).

Complementary and Alternative Medicine (CAM) for Cancer

The formation of the Society for Integrative Oncology (SIO) in 2004 resulted in the expansion of scientific research and the clinical integration of complementary interventions, the dissemination of evidence-based information, and the creation of the Journal for the Society for Integrative Oncology (JSIO). Gaining acceptance in recent years, "integrative oncology" has been identified as both a science and a philosophy that focuses on achieving a state of health among individuals with cancer by endorsing the use of complementary therapies to accompany allopathic medicine (Deng et al, 2009).

The Integrative Oncology Practice Guidelines were first published in 2007 and then updated in 2009. Although not a formal meta-analysis, they do provide guidance on evidence-

based complementary therapies that support patients through their conventional cancer treatments. They also recommend the need for a new research framework to address the comprehensive multimodal treatments necessary to improve quality of life issues. The guidelines do concede that important aspects of care may not be completely captured in the recommendations made from empirical evidence based on randomized controlled trials (RCTs) as they recommend that more qualitative research designs utilizing indepth interviews be conducted. (Wesa et al, 2008).

Increasingly sought after by cancer patients, women living with breast cancer have become particularly intrigued by CAM as a way to control the disease and deal with the treatment-related symptoms. Complementary therapies have been found to be an integral part of both the treatment and recovery process (Balneaves et al, 1999). Cancer survivors experience a wide range of symptoms during and after the completion of treatment, with symptoms often persisting for years. Complementary therapies, used as adjuncts to mainstream medical care, are considered a non-invasive, inexpensive, and useful option to control symptoms and improve quality of life. Complementary therapies are distinguished from "alternative" therapies which are unproven or disproved methods promoted as viable treatment options. The terms integrative medicine or integrative oncology help distinguish the untested practices from the evidence-based complementary therapies. The change in terminology reflects a commitment to and expectation of more rigorous evidence (Wesa et al, 2008).

Research suggests that up to 80% of individuals with cancer choose CAM in addition to their prescribed treatment therapies. Several surveys such as the Data Monitor Survey have been administered to determine trends among women with breast cancer and findings have clearly shown a significant increase in CAM use from 1998 to 2005. However, research is still limited

on the frequency and predictors of CAM use among this population of women (Boon et al, 2007).

Various mind-body therapies including meditation, hypnosis, relaxation, and guided imagery are gaining popularity and play a role in mainstream medical care. According to a meta-analysis of 116 studies, mind-body practices have been found to decrease anxiety, depression, and mood disturbance and improve coping skills in cancer patients (Devine et al, 1995). One important aspect of the mind-body therapies is that regular, daily practice helps to ensure ongoing benefits for cancer survivors (Wesa et al, 2008).

There is a growing body of literature supporting relaxation techniques such as mindful meditation. The most extensively studied form of meditation in oncology is Kabat-Zinn's (1990) mindfulness-based stress reduction and relaxation (MBSR) intervention that involves three basic techniques: a body scan, sitting meditation, and hatha yoga, and has been used in studies involving breast cancer survivors (Tacon et al, 2004). The body scan involves a gradual and thorough sweeping awareness of the entire body, with a nonjudgemental focus on sensations or feelings and periodic suggestions and attention on breath. Sitting meditation involves increased attention on breath with a heightened state of nonjudgemental observation of thoughts and cognitions. Hatha yoga involves simple stretches and postures designed to strengthen and relax the body and develop mindful movement, or meditation in motion (Tacon et al, 2004). All three of these MBSR techniques are essential components of yoga.

Women cite numerous reasons for using CAM therapies including reducing physical distress, fatigue, anxiety, depression, sleep disturbances, nausea, weight gain, hair loss, diminished concentration, and pain (Boon et al, 2007). The most common reasons have been to boost the immune system, followed by increasing quality of life, prevention of recurrence, and

providing a sense of control over life (Boon et al, 2000). It has been hypothesized that individuals gain a sense of control over uncontrollable events such as a life-threatening illness and assume personal responsibility for one's health (Balneaves et al, 1999).

One common element among the range of complementary practices is the focus on the whole person as opposed to the specific health problem; it has been found that individuals who value a holistic health philosophy are more likely to choose complementary therapies. In addition, these therapies are seen to promote personal autonomy in health care. Patients who use complementary therapies may do so because of the perceived connection between the practice and their own personal beliefs and values (Sirois & Gick, 2002). Fostering a woman's sense of control also encompasses a broader focus on prevention and health promotion. This control may involve one's exploration of complementary and alternative medicine or some other significant life style change. By empowering women in their treatment and recovery process, their capacity for learning to live with cancer is increased (Brown et al, 1999).

Spirituality

One study evaluating breast cancer survivors' use and beliefs about the role of CAM in their recovery, prevention of recurrence, and life satisfaction reported some interesting findings (Hann et al, 2005). The majority of women indicated that CAM gave them hope and helped them cope with stress. In addition, they reported that certain forms of CAM such as meditation and yoga, increased their sense of spirituality as well as their participation and control in the recovery process (Hann et al, 2005). Spirituality has been shown to play an integral role in managing psychological adjustment to cancer (Laubmeier et al, 2004). Recent research in the nursing field has expanded its quality of life measures of physical, psychological, social functioning, and life satisfaction to include spirituality (Canales & Geller, 2003).

There is a distinct spirituality component of yoga that is expressed in the data and supported in existing literature. At the same time, some cancer survivors report that their diagnosis has redefined their sense of self and has led to a profound process of spiritual transformation (Vachon, 2001; Vachon, 2008). Brennan (2001) proposed a Social-Cognitive Transition Model of Adjustment that assesses both positive and negative adjustments to a cancer diagnosis. Such a diagnosis can affect one's core assumptions regarding life trajectory, beliefs about self, control, worth, attachment and spirituality (Vachon, 2008).

Spirituality is a construct comprised of faith and meaning, an effort to connect to or become aware of a "deep knowing" of one's existence (Vachon, 2008). There is an abundance of literature on health and religion which is often portrayed as an institutional, structural variable. Less abundant is literature on health and spirituality, seen as more existential and individual. Practices and interventions that promote meaning and spirituality may well serve to advance the survivor's physical, psychosocial, and spiritual well-being (Vachon, 2008).

Mind/Body and cognitive therapies are similar in that they both incorporate observing thoughts in their approaches, while the mind/body techniques emphasize the added experience of body sensation and emotion, rather than problem solving (Targ & Levine, 2002). Although numerous studies have documented significant improvements in physical and psychological outcomes among cancer survivors using prayer, meditation, guided imagery, or movement therapies, no studies had previously investigated the effects of spiritual exploration on medical or psychosocial outcomes according to Targ and Levine.

Complementary psychosocial interventions like yoga and meditation possess spiritual traditions that often awaken a spiritual awareness for patients. In Targ and Levine's (2002) study examining the efficacy of mind-body-spirit interventions on breast cancer survivors, close

attention is paid to the role of spirituality in the breast cancer survivors' adjustment to cancer as the following questions are raised: 1) is it possible and/or appropriate to include spiritual issues in a hospital based support group; 2) what is the relevance of spirituality outcome measures to conventional psychosocial outcome measures; 3) do spiritual interventions result in changes in spirituality outcome measures?

Targ and Levine (2002) found the spiritual aspects to be considered relevant, non-offensive, and useful by most patients. Regarding relevance to outcome measures, findings were consistent with a large body of survey data where participation in spiritual activities and communities, and intrinsic spiritual attitudes were strongly associated with better quality of life and increased health status. In reference to the third question, although improvements were detected in both groups, the complementary intervention added a dimension of connectedness, trust and spiritual growth not observed in the traditional group (Targ & Levine, 2002).

The complementary program participants showed significant increases in their use of yoga, meditation, prayer, and other alternative modalities compared to the traditional group. While this increased use was not associated with improved quality of life, it was associated with increased spiritual integration. The lack of correlation with quality of life reminds us that implementing or expanding a yoga or meditation practice alone is not sufficient to improve quality of life. Other essential components such as flexibility and choice must be present in order to create a successful intervention (Targ & Levine, 2002).

Power and Control

Evidence has shown that when patients are given a choice in their treatment options, psychosocial symptoms have been reduced (Morris et al, 1988). Studies have demonstrated the positive impact of informed and mutual decision-making on a variety of cancer outcomes. When

patients were informed, they experienced less anxiety and depression (Fallowfield et al, 1990). When they have been given the opportunity to ask questions of the health care providers, patients reported fewer mood disturbances (Lerman et al, 1993). The literature supports the notion that the patients' sense of empowerment gained through a mutual communication process has positive outcomes and mitigates some of the symptoms of the disease (Brown et al, 1999).

A diagnosis of breast cancer often elicits feelings of helplessness and loss of control. Research suggests that one's perception of control during stressful events plays an important role in both psychological and physical health. Studies have shown that increasing an individual's sense of control can have profound health implications. On the contrary, negative responses can have a detrimental effect on the patient's outcome. In addition, loss of control has been associated with increased levels of anxiety and depression, other symptoms commonly found following diagnosis (Shapiro et al, 2001).

The growing body of evidence in the area of control and cancer warrants further exploration of the construct of control. Researchers have argued that the relationship between control and health is not a simple linear one. The transition to acceptance is a unique feature of control that is often minimized in Western practice. Yet literature demonstrates that acceptance is a critical component in achieving an optimal sense of control (Shapiro et al, 2001). Carver et al (1993) found that acceptance was significantly associated with decreased levels of distress in women with early-stage breast cancer. Astin et al (1999) found that women with breast cancer using both assertiveness and acceptance as part of a balanced mode of control exhibited the best psychosocial adjustment. The sense of control and its impact on breast cancer and quality of life merit further research (Shapiro et al, 2001).

Short and Long Term Affects of Cancer Treatment

CAM also plays an important role among long-term survivors in their ongoing struggle dealing with consequences resulting from the disease and treatment. CAM can address the physical, psychological, and spiritual needs that continue throughout life (Canales et al, 2003). Specific issues that arise among older women confronting breast cancer can exacerbate their condition and should be considered. The acute cancer episode in conjunction with other existing age-related chronic conditions, the increased likelihood of social isolation, and normal deterioration of physical function, all detract from the health status of the older breast cancer survivor (Ganz et al, 2003).

Both newly diagnosed cancer patients and long-term survivors face an uncertain and tenuous future. Their physical and emotional well-being is continually threatened by fear, isolation, anxiety, depression, fatigue, disfigurement, and pain. These symptoms reinforce one another and present a constant reminder of the illness and its implications (Rosenbaum et al, 2004). Depression is quite prevalent although it often goes undetected and untreated by the traditional medical care system. Clinicians should remain alert to these possible symptoms and by gathering a complete history of complementary therapies, might help reveal unaddressed psychosocial concerns, even many years after diagnosis (Ganz et al, 2002). Both symptoms and reactions from pharmacologic interventions create opportunities for complementary therapies to be used as low cost, convenient adjuncts (Deng et al, 2005).

Upon completion of prolonged and complex treatments, a broad range of physical symptoms, including hot flashes, night sweats, aches and pains, and vaginal dryness have been reported. According to Patricia Ganz, MD (2008) and Director of the Division of Cancer Prevention & Control Research at UCLA, women are generally well informed about their diagnosis, prognosis, and the acute toxicities of breast cancer treatments (nausea, vomiting,

alopecia, and fatigue); however are less prepared for the longer range patterns of recovery including distress and fear of recurrence, changes in body image and sexuality, and physical toxicities resulting from adjuvant therapy.

Given improved life expectancy due to breast cancer treatment (Allen et al, 2009) more attention should be given to the symptoms that women report following treatment therapies because of their association with poorer physical and emotional well-being (Ganz et al, 2004). Virtually all cancer survivors who have had toxic chemotherapies experience short-term memory loss and poor concentration during and immediately following treatment. Recent research is reporting that about 15%, or approximately 360,000 of the nation's 2.4 million female breast cancer survivors, suffer from some residual cognitive impairment years after treatment (Gross, 2007).

Long-term consequences of adjuvant therapies can result in sexual impairment, psychosocial issues, and physical symptoms and can impact quality of life (Casso et al, 2004). Evidence suggests that breast cancer survivors experience a lower quality of life long after their diagnosis (Buettner et al, 2006; Casso et al, 2004). In reaction to the many possible long range symptoms that could result, breast cancer survivors have sought out complementary and alternative therapies, including yoga (Buettner et al, 2006)

Trends in CAM including Yoga among Breast Cancer population

Studies reporting the use of yoga in follow-up care of breast cancer survivors reveal varying patterns of use. One fairly large longitudinal, follow-up assessment reports only 6.8% of the women practicing yoga, 12.1% meditating, 10.9% using breathing exercises, and 12.5% using other relaxation strategies (Ganz et al, 2002). In one large scale nurses' health study, (Buettner et al, 2006) 12 % of the respondents reported in a survey that they practiced yoga.

These low percentages remind us that yoga, meditation, and breathing therapies comprise a relatively small portion of the broader complementary and alternative category that women with breast cancer choose following cancer treatment. More frequent complementary and alternative therapies included vitamins (86.6%), diet or diet supplements (60.7%), and herbs (59.3%) (Ganz et al, 2002).

In the Boon, Olatunde, and Zick (2007) survey data comparing trends in complementary and alternative medicine use by breast cancer survivors between 1998 and 2005, yoga was not among one of the more commonly used modalities reported by the 2005 respondents for symptoms associated with breast cancer. More common practices were massage, diet/nutrition, reiki, and naturopathy. In the study, yoga was combined in a category with other healing strategies, indicating that patients were choosing it less frequently.

One large program evaluation took place at the Stanford Center for Integrative Medicine where traditional and complementary services (including yoga) were consolidated into one setting and offered to patients. Questionnaires were developed to ascertain the patients' acceptance of the various CAM modalities and their physical and emotional experiences. During the 16 month study, restorative yoga was found to be the most popular class. Restorative yoga was particularly appropriate for those dealing with cancer because of its attention to relaxation, supported poses, and stress reducing qualities. The postures generated specific physiological responses that are found to be beneficial to health while triggering relaxation responses through breath, position of the head, chest, and heart. Of those patients asked to evaluate their experience, 96% felt it reduced their stress, 94% felt an increased sense of well-being, 75% felt an increase in energy, 65% reported more restful sleep, and 51% noted some improvements in pain (Rosenbaum et al, 2004).

Yoga

A growing number of established disciplines including conventional medicine, behavioral, and social science are responding to the paucity of research on yoga and other mind-body expressions. Efforts are gradually being made to: (1) evaluate its benefits and contributions to the nascent body of knowledge in the scientific community; (2) reframe traditional practice toward an integrated and positive paradigm of mind-body influences; (3) broaden the dialogue about positive health and quality of life and to discuss the implications of a positive health model as opposed to a disease model; (4) and develop and pursue a corresponding scientific research agenda. (Frenkel & Cohen, 2008).

Approximately twenty different versions of contemporary yoga are practiced, each with its unique attributes and style. These variations complicate matters for researchers in their quest to study the effects of yoga. Most styles, however, share the common foundation of hatha yoga, a gentle style which seeks to balance the opposing forces of yin (feminine) and yang (masculine), tension and relaxation, or breath (spiritual) and body (physical). Yoga, a Sanskrit word for "union" refers to the unity of body, mind, and spirit as it connects physical postures and mindful breathing to develop muscular control, feelings of relaxation, and wellness (Mees, 2005). Yoga consists of a complex system of spiritual, moral, and physical practices aimed at attaining 'self-awareness,' and is made up of three basic components: asanas (postures), pranayama (breathing exercise) and dhyana (meditation) (Pilkington et al, 2005).

Yoga was introduced to the United States in the late 19th or early 20th century through individuals such as Swamis Vivikenanda and Krishnamacharya. Prominent Indian swamis and gurus continued to bring their unique styles to the United States from 1940's through the 1980's. Since 1990, the discipline of yoga has expanded to an industry that generates roughly 5.7 billion

dollars from classes, trainings, media, apparel, and equipment. A 2008 "Yoga in America" survey indicated that 15.8 million people in the United States practiced some form of yoga, while an additional 9.4 million reported their desire to try it (Hayes & Chase, 2010).

Despite its increasing popularity and the mounting evidence supporting its legitimacy, no legal training requirement exists to become a yoga teacher in the United States. There are, however, self-regulating bodies such as the Yoga Alliance that register and attempt to standardize yoga schools and instructors. The growing discipline of yoga therapy is gaining popularity as an independently viable healing practice as it becomes better integrated with the more widely accepted western practices. This has been supported through participation in and dissemination of research studies. Timothy McCall, M.D. (2007), author of *Yoga as Medicine*, identifies forty research-supported health benefits derived from yoga's postures, breathing, and meditation. Although the research into yoga as medicine is in its infancy stages, there is a large body of work in India, and developing scientific evidence in the West that inform us about the practice. Many studies have already demonstrated promising, preliminary data that merit further inquiry (Hayes & Chase, 2010).

In 1998, a national telephone survey was conducted by researchers from the Osher Institute at Harvard Medical School to ascertain the prevalence and patterns of yoga use among adults in the U.S. They were surprised to discover that although yoga was considered fairly safe, there were no systematic evaluations of physical and/or mental risks reported. Despite yoga's prevalence of use among other established CAM therapies such as acupuncture, there was a disproportionately smaller amount of Western scientific literature on it. A Medline search from 1975-2002 revealed 43 randomized controlled trials (RCTs) of yoga, while a similar search for

acupuncture yielded 427. Among the 43 studies found, many were limited in size and generalizability (Saper et al, 2004).

Techniques involving the manipulation of the meridian system, such as yoga and acupuncture, may activate the self-organizing system of an organism and improve its structure and function at a more fundamental level than symptomatic relief. Development of these techniques may lead to diagnosis, treatment, and improved health beyond mere absence of disease (Shang, 2001). Several explanations based on Western physiology have been offered to account for the potential effects of yoga on various medical conditions. The following summaries have been given: modulation of autonomic nervous tone and consequent reduction in sympathetic tone, activation of antagonistic neuromuscular systems which triggers relaxation response, and stimulation of the limbic system (Riley, 2004). Immediate physiological responses consistent with relaxation include decreased respiratory rate and blood pressure, increased cardiovascular functioning and brainwave activity. (Loveland, 2000).

An informal query posted on the *American Medical Society for Sports Medicine's* e-mail listserv generated many responses from physicians advocating yoga for their patients because of their own first hand knowledge and personal experience of its benefits (Mees, 2005). Doctors are coming forward and recommending the ancient practice to patients who complain of stress-related conditions. An increasing number of medical doctors are intrigued by the combination of deep breathing, stretching, and strength-building movements. Their openness to yoga as a therapeutic approach reflects an acceptance of the mind-body connection. Despite the fact that only a few randomized, controlled clinical trials have been conducted, doctors who are yoga enthusiasts agree that it's easy to extrapolate from studies that have documented the ill effects of

chronic stress on the immune system and the benefits of exercise and relaxation (Thompson, 2004).

Limitations in Yoga Research

Breast cancer research has advanced new technologies, new interventions, and new therapies. With all these innovations, improvements in quality-of-life, increased sense of control, increased range of motion, improved mood and improved quality of sleep have emerged. Like other forms of treatment for breast cancer, yoga interventions should be held to the same rigorous research standards. However, as demonstrated thus far, there are inherent qualities of yoga that make the ability to properly measure and evaluate it more elusive.

Yoga research has examined different styles and interventions, addressed numerous medical and emotional issues, and has been conducted by a variety of professional disciplines. The challenge for yoga-based studies has been confounded by the fine line that separates the different complementary and alternative modalities such as transcendental meditation, relaxation/mindfulness meditation, biofeedback, and deep breathing, in addition to the numerous styles of yoga practice (Krisanaprakornkit et al, 2006). The distinction made between meditation, breathing exercises, and yoga seems clear in practice; however, some blurring has occurred between the therapies when operationalized in studies.

Other challenges are also presented when researching yoga. A typical yoga session lasts for 60 – 90 minutes with numerous possible poses or asanas. Since the different postures vary in purpose and levels of energy consumed, a good research design should clearly specify which poses will be used and why. There are many types of yoga poses and few standard protocols for comparing the effects of yoga on any particular health condition. The control condition should match the experimental condition in such elements as the amount of energy expended, the

variations in poses, and the aerobic versus anaerobic effects. It can take several weeks or more for the practitioner to progress from basic poses to more challenging ones. In order to conduct sound research, the progression must be carefully documented while the individuals in the control group must mimic this subjective progression of postures as closely as possible (The Continuum Center, n. d.). The challenge that researchers face is how best to conduct an intervention consisting of carefully prescribed postures and directives without compromising the entire yoga experience and overlooking inherent qualities of the practice.

Holding yoga research up to the same scientific scrutiny and standards is a problem the researcher is faced with due to its transformational nature, the range of yoga styles, and its overlap with other mind-body practices. The transformative quality of yoga makes it difficult to quantify and resistant to easy delineation. For thousands of years, yogis have believed that changing behavior is largely a matter of the mind. A core element of yoga incorporates mind control, having a huge impact on health and well-being, and ultimately leading to life transformation. In medical terms, neuroplasticity refers to the brain's capacity to change due to the repetitive performance of new actions. This neurobiological explanation supports the yogic model that systematically creates healthy behaviors to replace older, dysfunctional ones (McCall, 2007).

It seems that the effects of yoga on the body and mind are so complex and esoteric that it would be impossible to directly attribute any specific changes in the body to yoga. Researchers have continued to struggle with the diffuse, abstract nature of this process. Much more data is needed on this transformative process to help integrate yoga into a more preventive and outcome focused health care delivery system (Luskin, 2004).

On a positive note, the climate is changing; the yoga field has united and mobilized an international voice of researchers, physicians, physical therapists and other health care providers who are inspiring credibility and accountability in the field while advocating for more research. The International Association of Yoga Therapists (IAYT) has created a public platform with medical providers to address such challenging concerns as credentialing and third party reimbursement, two issues that are directly impacted by the integrative medical model (Goldin & Manber, 2006).

Until recently, breast cancer treatment and yoga were on opposite sides of the globe, metaphorically, paradigmatically, and philosophically. In the last few years, however, we have begun to witness medical doctors, researchers, and institutions examine the interaction between the disease of breast cancer and yoga. The research is limited, short term, quantitative, and typically comprised of small samples. What is missing is an in-depth, qualitative narrative that can capture the nuances, perceptions, and experiences of women with breast cancer who may well provide new meaning to their experience of practicing yoga over time. No extensive, in depth research has been done in this area.

The following literature review chapter provides a broad overview of research on yoga and physical activity in relation to breast cancer. Also included are summaries of relevant health behavior, adjustment and identity theories that will be referred to in the results chapter. It is important to note that various theories initially informed areas for exploration in the qualitative interviews. Once grounded theory was used to identify themes, a more extensive inquiry into several of the theories was conducted in order to interpret the findings that data collection yielded. For example, while identity theories are reported in Chapter II, they were not examined until after data collection was completed.

Chapter II – Literature Review

Existing Research

Although research into the efficacy and mechanics of yoga is in its infancy stages, the findings are supported and suggest that the health benefits of yoga in cancer patients warrant further investigation (Cohen et al, 2004). Yoga's focused breath awareness together with an internal mental focus facilitate the mind-body connection. This combination of breath awareness, mental concentration, and physical movements modulate the parasympathetic nervous system and subsequently impact the stress response (McCall, 2007).

Four recent studies of breast cancer patients showed significant quality of life improvements including emotional well-being and distressed mood, following weekly yoga classes lasting seven to twelve weeks. Sixty-nine percent of all participants attended at least half of the classes, suggesting that even intermittent yoga practice can significantly impact their emotional well-being (Moadel et al, 2007; Wesa et al, 2008). Breast cancer survivors in a 7-week study also demonstrated physical as well as emotional benefits on an average of 56 months post diagnosis (Culos-Reed et al, 2006; Wesa et al, 2008). In one eight week yoga study among women with metastatic breast cancer, improvements were observed in levels of pain and fatigue (Carson et al, 2007; Wesa et al, 2008).

One pilot study conducted by S. Nicole Culos-Reed et al (2006) provides preliminary evidence that yoga has a positive psychological impact on cancer survivors. Findings indicate that yoga positively impacted mood, quality of life and stress among the survivors in the experiment group. One of the major limitations of this and other similar studies is the relatively short duration of the intervention, ranging from 6 – 12 weeks. Yoga tradition tells us that techniques need to be practiced for at least six months before benefits can be seen (News RX,

2004). Although differences are detectable between the pre and post-test assessment, only short-term, immediate responses can be observed. Despite this and other limitations, it appears that yoga offers a promising complementary therapy for cancer survivors, promoting a number of similar psychological benefits (Culos-Reed et al, 2006).

Two pilot studies were conducted by Blank, Kittle & Haberman (2005) to describe the immunological and biopsychosocial functioning of breast cancer survivors practicing Iyengar yoga. Similar to the previously mentioned studies, both comprised a small sample size and short duration. Preliminary findings from both reported several themes: improvements in body image, reductions in self-reported symptoms of stress, an initial unfamiliarity with yoga practice, concerns about the inability to practice yoga due to physical limitations, and the unexpected feelings of support and cohesiveness among the women.

Another study examines the effects of yoga on the quality of life in cancer patients. This research by Ozlem Ulger and Naciye V. Yagli (2010) although limited to a small sample, short term, and a weak design, did show promising results. Findings suggest that yoga can help achieve relaxation, reduce stress, improve physical capacity, and impact overall quality of life measures (Ulger & Yagli, 2010). A large scale nurses' health survey (Buettner et al, 2006) administered to breast cancer survivors to determine utility and prevalence of CAM, revealed an interesting association between yoga and quality of life. Findings reported that 12% of the women surveyed practiced yoga and that among all the survey respondents, better quality of life scores were achieved among this group of women.

Scant information exists regarding the maintenance and improvement in health for women living with breast cancer regarding the practice of yoga. As time goes on, however, information should become more abundant as the field of integrated medicine gains in

popularity. Currently, women rely primarily on conventional cancer risk data to inform them about their prognosis and what they can expect during and following treatment. There is a need for alternative types of exercise to favorably influence both fatigue and body mass index (BMI) for breast cancer survivors. Increased BMI following breast cancer treatment is correlated to changing levels of hormones, a physiologic effect of chemotherapy, altered eating patterns, and psychological factors. Studies show that an increase in BMI may be associated with advanced stages of breast cancer (Galantino, 2003). The increased BMI can adversely affect a woman's general well-being and prognosis, not to mention the link with depression and low self-esteem. Yoga, among other forms of mind-body practices may positively affect both BMI and cancer related fatigue (Galantino, 2003). Evidence from scientific research conducted in both the United States and India suggests that a multi-pronged yoga practice can facilitate weight loss (McCall, 2007).

Fatigue has been universally recognized as one of the side effects of cancer and cancer treatment. The impact of cancer related fatigue on a patient's quality of life has profound implications for women who experience a considerable loss in their functional ability while undergoing treatment. Exercise is one intervention that has been used to reduce fatigue, but the research is still limited. Studies have also shown that those women who exercise are likely to report decreased levels of anxiety, depression, and overall mood (Galantino, 2003). No reported studies have examined the effects of yoga on cancer related fatigue.

One current study led by Dr. Lorenzo Cohen (2006), Director of Integrative Medicine Program at M.D. Anderson Center, is assessing the physical and psychological benefits of yoga. Lifestyle factors such as fatigue, sleep, mental health, and distress are being examined along with cognitive and emotional processing, social networking interactions, coping, and other

psychosocial factors. Dr. Cohen states that there is extensive evidence suggesting that stress suppresses cell-mediated immunity, a component of the immune system involved in tumor surveillance (CMP Media, 2006).

Research suggests that stress-reducing approaches tailored to the cancer setting help patients cope with the effects of treatment and improve quality of life. Although there has been interest in the therapeutic application of yoga for patients with cancer, few studies actually have examined the benefits of yoga in this group. One current study purports that yoga offers benefits to various aspects of quality of life. However, the applicability and efficacy of yoga among underserved and ethnic populations has not been studied. In Moadel's (2007) research, a yoga intervention that was offered to a disadvantaged, multi-ethnic, urban population had preliminary findings that support high responsiveness to a cancer center-based yoga program among the underserved population.

In a study conducted by CD Joseph (1983), 125 patients undergoing radiotherapy were randomly assigned to three different groups using group therapy, meditation, or yoga. The patients in the yoga group experienced an improved quality of life during and immediately following therapy. In particular, the patients reported increased appetite, increased tolerance to the therapy, improved sleep, improved bowel habits, and feelings of peace and tranquility (in Cohen et al, 2004). In a more recent study involving an experimental group that received mindful meditation, visualization, imagery, yoga stretches and a wait-list control group, the experimental group experienced less mood disturbance and decreased overall distress compared to the control group (Cohen et al, 2004).

Sleep disturbances are a common and under-investigated problem among cancer patients and ability to sleep may mediate both psychological and physical health. Moreover, sleep

disturbances have been associated with diminished quality of life including increased depression and increased pain levels. A recent clinical trial of Tibetan yoga in patients with lymphoma included controlled breathing, visualization, and mindfulness (Cohen et al, 2004). Its low impact and readily adaptable techniques made it particularly appropriate for cancer patients undergoing treatment or upon completion of treatment. This appears to be one of the first controlled studies to examine the effects of yoga in a cancer population. The findings that Tibetan Yoga is associated with a decrease in overall sleep disturbances and an improvement in subjective sleep quality, sleep latency, sleep duration, and reduced use of sleep medications are particularly salient in a cancer population.

At this point, the body of evidence is still sparse, as noted by researchers Smith and Pukall (2009) who conducted a literature search of yoga as a complementary intervention for patients with cancer between May 2007 and April 2008. They found only six published random controlled trials (RCTs), two non-controlled studies, and one program evaluation, and each study relied on a different yoga intervention. This evidence-based review found that the variability across studies and methodological shortcomings limited the degree to which yoga could be deemed effective for managing cancer-related symptoms. Overall, however, the article provided important details about the types of yoga administered and the various components of the interventions.

While some positive results were noted, limitations including the lack of long-term data, small sample size, and low adherence rates, prevailed. They recommended that future studies examine what components of yoga are found to be most valuable and the types of patients that would benefit the most. Although each had its limitations, the recent yoga studies involving individuals with cancer and specifically women with breast cancer do suggest enhanced health-

related quality of life, decreased depression, anxiety, sleep difficulties, and improvements in fatigue (Danhauer et al, 2009).

Exercise and Physical Activity

The line that separates physical activity and exercise from yoga is often blurred and this is especially apparent when reviewing studies that compare the different modalities. Some researchers define yoga as a form of physical activity while others do not. In one study examining the physical and psychological effects of yoga on cancer survivors, yoga is considered to be a beneficial physical activity (Culos-Reed et al, 2006). With studies like this and others that use similar language, it makes sense to review some of the current literature addressing physical activity interventions and breast cancer. The evidence, theories, and findings may be useful when looking at yoga and breast cancer. In reviewing the definitions of physical activity and yoga, the greatest distinction that separates the two is the involvement of the mind that provides the stillness.

Numerous studies have demonstrated the effectiveness of various modes of exercise for improving quality of life issues in breast cancer survivors during and following treatment. A meta-analysis conducted by McNeely et al (2006) found exercise to be associated with small but statistically significant improvements among breast cancer survivors' quality of life, physical function, and fatigue (Cadmus et al, 2009; McNeely et al, 2006). A review of 26 published studies of exercise interventions for cancer patients during and after treatment was compiled by Galvao and Newton (2005) reporting similar physiological and psychological benefits. Similar to many of the yoga study references, the majority examined in this review suffered from weak designs (not RCTs) and/or small sample sizes. Improvements in anxiety, depression, body-image, stress, fatigue, nausea, vomiting, cardiovascular fitness, lean body mass, and weight

fluctuation have been observed with exercise during chemotherapy. Improvements in anxiety, fatigue, physical functioning, and sleep have been observed with walking programs during radiation therapy. Similar improvements have been observed with physical activity following treatment as well (Mustian et al, 2002).

In their review, Galvao and Newton (2005) also attempt to establish a training dose-response based on existing literature. They claim that manipulation of training, intensity, specificity, and rest results in differentiated effects on specific physiological adaptations for both cardiovascular and resistance exercise. However, long-term trials comparing different training modalities even among healthy adults are rare. The short-term nature of the interventions reviewed would most likely restrict the ability to discern specific physiological responses. Furthermore, considering that exercise is recommended as an essential component of a healthy lifestyle and should be viewed as a lifelong behavior, more long range studies should be undertaken to reveal the impact of exercise over time.

Another consideration are the potential dangers and limitations inherent in physical activity and exercise for breast cancer survivors. While research in this area is scarce, it has been suggested that physical exercise can increase the likelihood of developing lymphedema, a harmful condition where lymphatic fluids accumulate in the arm (Pinto et al, 1999; Mustian et al, 2002). In addition, the paucity of evidence supporting the optimal mode, amount, frequency, intensity, and duration of exercise to maximize quality of life benefits among breast cancer survivors leaves many unanswered questions. What exercises would be most beneficial for specific outcomes such as improved mood, fatigue, or body image, and would most likely be adopted and maintained among women treated for breast cancer, remain unknown. As many of

these questions regarding appropriate activity levels are raised, further research is warranted, especially among larger samples (Pinto et al, 2003).

Similar to the existing body of yoga and breast cancer research, the limitations of most of the randomized controlled trials of exercise and breast cancer are due to short duration, typically 10 to 12 weeks (Segal et al, 2001). The American College of Sports Medicine recommends that regular exercise must continue for a period of at least 15 to 20 weeks in order to realize important fitness benefits (American College of Sports Medicine, 1991). It is not clear whether similar temporal expectations for achieved benefits in the yoga realm exist. These benefits have not been well established given the short term duration of most of the existing studies.

In general, exercise has been found to be an effective intervention to improve quality of life, cardiorespiratory fitness, physical functioning and fatigue among breast cancer patients and survivors. Most of the trials examined in McNeeley's et al (2006) systematic review and meta-analysis reflected extensive variability and diversity in exercise prescription. This was not surprising given the lack of consensus on optimal exercise interventions for this population. Despite the heterogeneity in study methodology and outcomes, the small sample size, and the fact that statistical significance was not achieved for all outcomes, the overall results of exercise were positive.

Except for evidence linking exercise to an increased risk of lymphedema (Pinto & Maruyama, 1999), physical activity and exercise have been shown to be safe during allopathic, adjuvant therapies and beyond, and studies have revealed the physical and psychological benefits derived from regular physical activity. Breast cancer survivors have much to gain by taking up a regular exercise regimen. Seventy-six percent of breast cancer patients have indicated an interest in exercise as a complementary treatment while 38% have reported actually engagement

in it (Mustian et al, 2002). The smaller participation rate is expected especially when considering how prevalent sedentary lifestyles are in the United States. Approximately half of individuals who attempt to engage in an exercise program revert back to their former inactive levels within three to six months following exercise initiation (Pickett et al, 2002).

Adherence, Adoption and Maintenance

Inherent challenges have been encountered with regard to both recruitment, adoption, and adherence rates (Danhauer et al, 2009). Adherence pertains to the compliance rates with which subjects perform an assigned behavior in an intervention. As with any other behavioral change, sustained adherence can be extremely challenging and in its absence can negatively impact results in a study.

A recently published study entitled, "Randomized-Controlled Trial of Yoga among Breast Cancer Patients," reported on the feasibility of implementing a restorative yoga intervention for women with breast cancer and considered group differences in self-reported emotional, health-related quality of life, and symptom outcomes. Although limited in sample size, this randomized pilot study suggested potential benefits of restorative yoga on emotional outcomes and fatigue in cancer patients and feasibility for targeting this population. Researchers intentionally expanded the eligibility period for the study in order to determine when women with breast cancer were most likely to participate. Their findings suggested that increased adherence was associated with higher self-reported physical health and health-related quality of life; similar to a prior study that found improved adherence was associated with significantly improved fatigue, physical well-being, and distress (Moadel et al, 2007).

Adoption, adherence and maintenance of a new behavior can be equally challenging and behavioral theories have been developed to address the complexities associated with the stages

and factors associated with them. Breast cancer survivors can find adopting an exercise program to be extremely difficult. Pickett's et al (2002) pilot study examining exercise adherence during breast cancer therapy found several interesting correlations. Women who had previously engaged in regular physical activity prior to their diagnosis were more likely to continue to exercise during their treatment without the need for any structured intervention. Sedentary women on the other hand, would benefit greatly from a structured exercise intervention, including information and support related to adherence strategies.

It has been determined that most breast cancer patients who participate in exercise programs following their diagnoses do so on their own accord and not because they have been systematically recruited. The typical post treatment recommendation often involves a one-time demonstration specifically designed to rehabilitate the damaged tissue, neglecting any broader quality of life deficiencies. Patients and survivors are predominantly left to discover and solicit physical activities on their own (Mustian et al, 2002).

Theoretical Models

In order to address the dynamic and complex nature of interventions designed to enhance adherence, a theoretical framework with a motivational component is needed (Mihalko et al, 2004). Identifying and integrating mediators into theory-based interventions, though challenging, can enhance treatment efficacy if achieved. Ascertaining individuals' perceptions about the intervention as well as about their cancer and other related concerns, can impact participation and outcome (Danhauer et al, 2009).

Adherence refers to the level of active and voluntary participation in a behavioral regimen and requires an element of motivation (Meichenbaum & Turk, 1987). This definition guides the integration of theoretical constructs into designs that promote sustained participation

in behavioral plans of action as well as the development of new theoretical frameworks to advance the understanding of behavior change and maintenance (Brawley et al, 2000).

A good deal of the adherence literature examines the determinants that influence participation in behavior. While these correlational relationships reveal common factors and themes, they do not suggest causation; thus, limiting the ability to predict and change behavior (Mihalko et al, 2004). Pinto and Floyd (2008) examined theories that were the basis for RCTs promoting health behavior change among adults diagnosed and treated for cancer. Theories and interventions included in their literature review were: Transtheoretical Model, Motivational Interviewing, Social Learning and Social Cognitive Theory, Theory of Planned Behavior, and Cognitive Behavioral Theory. Although studies of relaxation exercises such as yoga were excluded from their review, the findings still warrant a closer examination of relevance to yoga interventions.

Theory of Planned Behavior

One theoretical model in particular, the Theory of Planned Behavior (TPB) has particular relevance to this study. Central to TPB is the notion that the performance of any behavior is codetermined by behavioral intention and perceived behavioral control (Armitage, 2005). Behavioral intentions are characterized as plans of action that reflect one's motivation to engage in a behavior. These intentions are determined by three independent constructs: perceived behavioral control, subjective norms and attitudes (Ajzen, 1991). Attitudes are defined as the individual's overall appraisal of the behavior and subjective norms reflect the social pressures influencing the individual to perform or refrain from the behavior. Perceived behavioral control contributes to behavior through one's confidence of whether a behavior can be carried out based

on the perceived level of difficulty as well as availability of resources and opportunities (Rhodes & Courneya, 2003).

In their investigation of exercise, using the components of TPB, Rhodes & Courneya (2003) reported several findings. They found that social support that involves help and assistance from others to exercise may be an important contributing factor for the intention and the actual performance. Affective attitude or if the behavior is perceived favorably or not appears to play an important role in intention among cancer survivors. This suggests that fundamental affective beliefs may need to be targeted for successful exercise adoption. Unfortunately, current strategies in the exercise domain have primarily focused on perceptions of benefit and harm, and have overlooked one's perception of enjoyment and pleasure related to the activity.

Intention has consistently explained a significant amount of variance in exercise behavior while perceived behavioral control, attitudes, and subjective norms have demonstrated varying degrees of influence on exercise intention, depending on the type of cancer and medical condition. For example, subjective norms have been found to explain a significant percentage in variance in intention among breast cancer patients (Rogers et al, 2004). Jones et al (2005) in their study examining the effects of oncologists' recommendations within the framework of TPB found that an oncologist recommendation was a normative source of motivational influence. In addition, it was found that a normative source of exercise motivation could influence other TPB constructs, theorizing that a change in a specific normative belief could lead to a change in global attitude or perceived behavioral control as well as subjective norm (Ajzen 1991; Jones et al, 2005). Their analysis demonstrated that by receiving an exercise recommendation from a salient source such as an oncologist, one's perception of approval for exercise from that individual (a normative belief) could support feelings of approval (subjective norm effects) and a

favorable belief about exercise (attitude effects). A positive attitude and subjective norm towards exercise could result in an increased motivation to perform the behavior (Jones et al, 2005).

While research on TPB has dominated the field of physical activity as evidenced by the volume of reviews and meta-analyses (Marcus et al, 2000), research in this area has been characterized by a number of conceptual and empirical limitations (Armitage, 2005). There is a dearth of research on the maintenance of behavior and while a great deal is known about the ability of TPB to predict the initiation of behavior, little research examines the factors that contribute to sustained behavior. Although TPB has been used to study breast cancer patients, the theory only measures the unidirectional impact of personal and environmental factors on physical activity behavior (Rogers et al, 2004).

A second limitation concerns how past behavior predicts future behavior. Little is known about the effects of repeated past behavior on future behavior. What is presumed is that there is a critical period after which continued performance of the health behavior exerts a diminishing effect on future behavior and the behavior in question is then regarded as habitual (Armitage, 2005). Ouellette and Wood (1998) argue that behaviors performed daily or weekly in stable, predictable contexts become habitual and therefore, are less likely to be guided by TPB (in Armitage, 2005).

Social Cognitive Theory

The Social Cognitive Theory (SCT) of behavior is based on a dynamic and reciprocal model of interactions among behavior, personal factors, and environmental influences with self-efficacy being the central construct of the theory (Rogers et al, 2004). According to Bandura's (1997) concept of personal mastery, these experiences are considered important means by which

perceived behavioral control (or self-efficacy) is enhanced. The key to personal mastery is the idea that successful performance of a behavior increases perceived behavioral control, which in turn increases the likelihood of successful performance in the future or outcome expectations. Bandura's work suggests that perceived behavioral control will both predict and be enhanced by successful repeated performance of the behavior (in Armitage, 2005).

Self-efficacy refers to a person's confidence in the ability to perform a behavior and achieve a specific goal. Primary sources of efficacy include performance experience, verbal persuasion, vicarious experience, and physiologic and affective states (Armitage, 2005). If an individual feels confident that she can successfully engage in a specific behavior, then she is more likely to perform it. Self-efficacy is more likely to be acquired when individuals are encouraged to set realistic, achievable goals, especially at the onset of an intervention (Pinto & Floyd, 2008). Interventions that improve self-efficacy will increase behavior compliance.

Because SCT constructs have been consistently identified as activity correlates among breast cancer survivors, attempts to improve self-efficacy, its central construct, in order to overcome barriers to exercise were addressed in group discussions in Roger's et al (2011) research. Other constructs including perceived barriers, social support, observational learning, exercise pleasure, coping, goal setting, and outcome expectations were also examined (Rogers et al, 2011). Interventions based on SCT focus on one's ability to control behavior and how cognitive and/or environmental changes can impact behavior. Participation in health behavior is influenced by antecedents that can either facilitate or impede adoption of that behavior, as well as positive or negative consequences that can affect subsequent participation or adherence. Successful initiation of or adherence to the behavior change is determined by one's own ability to regulate behavior through personal and environmental strategies (Pinto et al, 2008).

Outcome expectations, defined as the individual's belief that performance of a behavior will produce a specific result, have been found to be another key construct of SCT. Interventions to increase physical activity that have focused on both outcome expectations and self-efficacy have demonstrated effectiveness in increasing participation. Despite the association between outcome expectations and physical activity, most studies have failed to measure this construct when evaluating SCT, and have not been able to demonstrate as consistent an association between the two as with physical activity and self-efficacy (Rogers et al, 2005).

Other essential SCT constructs applied to behavior-change interventions include: environment such as physical, social, and situational; behavioral capability including knowledge and skills; self-control or goal directed behavior; observational learning from role models; reinforcements such as incentives; and emotional coping responses like stress management (Glanz et al, 2002). Decisional balance components and social support have also been identified as SCT skills (Pinto et al, 2008). The influence of these additional constructs on physical activity behavior are mediated by self-efficacy, outcome expectations and values (Armitage, 2005). Prospective studies evaluating SCT have demonstrated the importance of behavioral, affective, and social influences on self-efficacy for exercise adherence.

Until recently SCT had not been researched adequately among breast cancer survivors and although TPB had been studied with this population, a comparison of both TPB and SCT studies demonstrated that SCT accounted for greater variance in physical activity behavior suggesting potentially greater application of this theory (Rogers et al, 2005). Demark-Wahnefried et al (2006) examining exercise and diet interventions based on SCT constructs found significant increases in self-efficacy for exercise adoption at six months among cancer

patients. Mediator analyses of SCT constructs in intervention trials among the cancer population have not yet been conducted (Pinto et al, 2008).

One small pilot study conducted by Laura Rogers et al (2005) measured the association between physical activity and SCT constructs during breast cancer treatment. Findings indicated that increased daily energy expenditure was significantly associated with higher barrier (the ability to overcome barriers) and task self-efficacy, the presence of an exercise partner, the presence of an exercise role model, increased physical activity enjoyment, and decreased negative value score. Researchers concluded that SCT might prove to be a useful framework for understanding physical activity among breast cancer patients during treatment, and considered assessing theory constructs as potential mediators in intervention evaluation. The authors found that task self-efficacy was significantly associated with physical activity among those patients, suggesting task performance as an important aspect of self-efficacy to be considered in future studies.

Transtheoretical Model

Prochaska and DiClemente's (1983) Transtheoretical Model (TTM) of behavior change is currently the most widely used stage model in health and is one of the few models that explicitly includes a maintenance stage (in Armitage, 2005). This model treats behavior change as a dynamic phenomenon defined by one's past behavior and plans for future action. The five discrete stages include: precontemplation, contemplation, preparation, action, and maintenance (Prochaska et al, 1992). Three factors are hypothesized to mediate the change process. These include an individual's self-efficacy for change, the decisional balance of perceived advantages and disadvantages of change, and the strategies and techniques used to modify one's thoughts, feelings, and behavior (Marshall & Biddle, 2001). In addition to classifying the stages, TTM

includes an array of factors that are thought to facilitate movement through the five stages. Because the attributes that define stages of health behavior are usually internal to the individual such as beliefs, plans, and perceptions, measurement can be problematic. Although research has indicated that people at different stages respond to different strategies and hold different beliefs about behavior, the specific strategies and beliefs that foster movement from one stage to the next are not well understood (Weinstein et al, 1998).

There are advantages and disadvantages of stage-based theories. If stages are incorrectly delineated and barriers between stages have not been properly identified, or if behavior change does not progress in a linear fashion, then one may be tempted to conclude that stage theory does not apply. A stage model can be useful in creating interventions if it is possible to identify and alter the particular factors that help people progress from one stage to the next. The advantage of a stage-based intervention depends on one's ability to identify stages accurately and efficiently. If a complex assessment process is required, it may be difficult to apply (Weinstein et al, 1998).

One investigation explored the construct validity of the stages of change for behavior, intention and self-efficacy associated with adoption of mild, moderate, and strenuous exercise. Yoga was considered a mild or lower intensity physical activity and results demonstrated that only the concept intention could discriminate adjacent stages of change. More moderate and strenuous forms of exercise were shown to distinguish stages of change for all three constructs including behavior, intention, and self-efficacy. The results indicate that the current conceptualization of the stages of change might not be appropriate for a lower intensity exercise such as yoga (Schumann et al, 2003).

Marshall and Biddle's (2001) meta-analysis study reports on several relevant findings. The report finds few studies that make process-specific predictions at each stage of change.

Their findings support the suggestion that consciousness-raising is particularly important when moving from pre-contemplation to contemplation. They also find that the greatest effect when moving from pre-contemplation to contemplation was self-liberation, defined as the belief that change is possible and that responsibility for change lies within. Items that measure self-liberation appear theoretically consistent with concepts of autonomy, which have been shown to predict interest and adherence to physical activity and yoga.

The relationship between people's attitudes and their behavior has challenged the fields of social psychology and health promotion for years. It's quite possible that a positive attitude towards a behavior does not guarantee adoption of that behavior. At the same time, it's possible that intentional, everyday behaviors are largely a product of psychological schema about themselves and their world. Given the highly intentional nature of exercise, it's likely that physically active people will display an accompanying psychological schema that is central to the maintenance of the behavior. The questions raised about TTM refer to how accurately the model reflects the underlying psychological makeup, whether there are standard psychological correlates of physical activity, and whether people actually progress through stages as they become committed to regular exercise (Brug et al, 2005).

Motivational Interviewing

Motivational interviewing (MI) is an intervention technique that is designed to encourage movement through stages of behavior change. This approach focuses on reducing resistance to change by drawing awareness to a discrepancy between one's current behavior and inherent values, goals, and self-image. By resolving the ambivalence between behavior and attitude and providing supports to encourage behavior change, intrinsic motivation is enhanced (Pinto & Floyd, 2008; Miller & Rollnick, 2002). The four core principles of motivational interviewing

include: expressing empathy in order to reduce resistance; recognizing discrepancy which involves distinguishing between one's current behavior and values, goals, and self-image in order to facilitate change; responding to resistance by altering strategies; and supporting self-efficacy. The MI approach recognizes that the individual is the ultimate decision maker and has the ability and resources to change her own behavior (Miller & Rollnick, 2002).

Health Promotion

Researchers have observed how interest in health promotion activities increases among women diagnosed with breast cancer during that first critical period when their health is being threatened. It's likely that the diagnosis of a life threatening disease such as cancer might inspire a teachable moment for the patient as her relationship with mortality is being tested. Given their increased vulnerability, cancer survivors represent an accessible population with whom to target such health promotion interventions. The circumstances create an opportune time for health care providers to offer the necessary supports to encourage adoption and adherence of desired lifestyle modifications (Demark-Wahnefried et al, 2006; Rowland, 2008).

One study conducted by Blanchard et al (2003) examined changes in lifestyle behaviors following a cancer diagnosis, and looked specifically at smoking, dietary habits, and exercise. From the fairly small sample of adult cancer survivors, 15.7% exercised more, 53.6% exercised the same, and 30.6% exercised less. Almost twice as many adults decreased their exercise following their diagnosis, than those who increased it. These results were consistent with previous research (Courneya & Friedenreich, 1997; Courneya & Friedenreich, 1997) that showed a decline in exercise behavior among breast and colorectal cancer survivors from pre diagnosis through treatment (Blanchard et al, 2003).

Patient compliance, adherence and withdrawal during an intervention is a common problem in research and especially difficult in physical exercise interventions. In a healthy population, 50% of participants in an exercise program are expected to drop out during the first six months (Valenti et al, 2008). The challenges to boost adherence rates for PA interventions are that much greater among individuals whose health status has been compromised.

There is emerging evidence linking physical activity to increased survival. Recent observational evidence suggests that moderate levels of physical activity may even reduce the risk of death from breast cancer (Holmes et al, 2005; McNeely et al, 2006). Additional studies suggest a survival benefit among cancer survivors who have a prior history of being or remaining physically active after cancer (Rowland, 2008). This possibility indicates the need to learn how to assist women to become and remain active into long-term survivorship (Harrison et al, 2009).

A growing body of research is addressing lifestyle issues that impact survivors' quality of life, with increased attention to physical activity as a health promotion strategy.
The increasing interest in health promotion can be attributed to a number of changes that have taken place across the survivorship landscape; the most significant one being the sheer increase in overall cancer survivors, with over 10.8 million currently in the United States (Rowland, 2008). Of all the survivors, breast cancer represents the largest segment of the cancer population at 23%. The longevity of this ever growing population continues to expand and with this aging population comes the added risk of other co-morbid conditions that must be addressed (Rowland, 2008). While there is not enough evidence to establish improved cancer outcomes with lifestyle modifications such as sustained physical activity, the likelihood that these changes will lead to improved emotional and functional health and possibly reduce other morbid conditions is considerable (Rowland, 2008).

Other changes have contributed to the growing interest in health promotion and prescribing physical activity interventions for cancer survivors. An increased focus on quality of life issues as an outcome for interventions has increased awareness in utilizing more physical activity. In the past when survival rates were shorter, treatments were designed to target a specific medical condition. Exercise was not viewed as an acute treatment at the time and therefore, was not designed to address symptom management or quality of life issues. Another change to the cancer landscape is the improved tolerability to the latest adjuvant therapies. While side effects have not been completely mitigated, the current patient is more likely to be able to engage in a physical activity intervention than she might have been years ago. One final change that has contributed to the increased push for health promotion is the growing participation of disciplines joining in physical activity research such as behavioral medicine, social psychology, and nursing, among many others (Courneya, 2009).

Physical activity and health promotion research has grown considerably over the last ten years, with most studies suggesting that physical activity is positively associated with physical function and quality of life among long term survivors (Courneya & Friedenreich, 2007). Eager to regain control of their lives again, many survivors begin to use physical activity as a means to improve body image, fight depression and fatigue, and restore an overall sense of well-being and normalcy (Rowland, 2008). However, as cited in the earlier examples, the process of behavior adoption is fraught with inherent resistance and external deterrents.

Adaptation Mechanisms and Theories

Existing models and theories contribute to an understanding of responses and adaptations to a life threatening event. Johnson (2009) in his book, "Therapist's guide to post-traumatic stress disorder intervention," identifies the following factors that can impact one's responses to

an event such as a breast cancer diagnosis: an individual's innate and learned coping abilities; one's prior experiences with trauma; concurrent stressors present during the traumatic event; perceived ability to cope; a sense of resilience and optimism; and perceived social support. Adaptive cognition is related to strong coping abilities such as resiliency and trust while maladaptive cognitions result from feelings of weakness, vulnerability, incompetence, and unworthiness (Johnson, 2009; Bush, 2010).

Anxiety is a psychological reaction to a perceived threat that can trigger a physical stress response. This physiologic stress response is an adaptive and inherently protective function designed for self-preservation. While it may have some utility in preparing an individual for action such as fight or flight, a prolonged state of anxiety may be detrimental to one's health. If left untreated, an extended state of anxiety can trigger a pathologic reaction. Anxiety can simultaneously trigger behavior and experiential responses that are influenced by personal and external factors (Pedersen et al, 2010).

As breast cancer survivors navigate the disease trajectory, fluctuations in anxiety can and do occur at different stages. A multitude of deleterious physiological changes, impacting the immune system and other regulatory mechanisms, can take place in reaction to prolonged exposure to high levels of anxiety (Pedersen et al, 2010). Health behaviors can also become altered as a result of chronic anxiety and can manifest into any number of stress-related disorders (Pedersen et al, 2010).

One's adaptation, adjustment, and coping abilities in response to a breast cancer diagnosis provide a context for this research and may provide a deeper understand of emergent issues related to congruence or discord between diagnosis and yoga. The cancer continuum has been conceptualized as consisting of three phases: acute, extended (also known as the reentry

phase), and permanent survival. The acute phase involves coping with the diagnosis, initial treatments, and side effects. The extended phase refers to a period of remission and resuming normal activities. The permanent phase refers to the long-term adjustment and adaptation to life beyond cancer (Kaplan, 2008). At any of these turning points or stages, one can feel ill-equipped to deal with the complex nature of the disease and often may necessitate further support.

While there is a scarcity of empirical literature on the transition phase beyond the point when medical treatment ends, a sense of loss and control has been observed through this period that has been termed the "reentry phase." It has been suggested that the treatment regimen, as difficult as it is, serves as a vehicle for control and a focal point for active engagement in the healing process. It provides a structure to direct one's energy in a positive way and facilitate coping mechanisms. Once the treatment comes to a halt however, the patient can be left sensing a void and feeling unprepared to manage the physical or emotional challenges that lay ahead (Stanton et al, 2005).

As cancer is a life altering disease, patients are often confronted with existential questions associated with uncertainty, fear, isolation, depression, and a search for meaning and hope (Taylor, 1983; Warner, 2006). With the many negative reactions that can take place, there is a growing body of evidence that suggests that cancer can trigger a psychosocial transition that leads to positive adaptation and growth. It's possible that both positive and negative outcomes may occur simultaneously as one experiences growth and distress (Werner, 2006).

The range of responses to a breast cancer diagnosis can be quite extensive where some resume their normal life, others find it redefines their sense of self, still others find it to be a turning point, and others find that it leads to a spiritual transformation (Vachon, 2001; Vachon, 2008). Several constructs and theories have been presented that attempt to explain the adaptation

process resulting from a cancer or other life threatening diagnosis. The diagnosis becomes the catalyst for a series of reactions that involve self reflection and change. One's ability to adjust and overcome a serious illness or some other tragic event has been explained by a Theory of Cognitive Adaptation (Taylor, 1983; Coward, 1997). This theory maintains that when individuals are faced with personal tragedies, they respond with cognitively adaptive actions that enable them to return to or exceed their previous level of psychological functioning. Taylor (1983) proposes that constructing new meaning within the context of an altered personal world, regaining a sense of mastery and control, and restoring self esteem are all fundamental to reestablishing a sense of purpose and equilibrium (Taylor, 1983; Coward, 1997).

Adaptation mechanisms have been examined among different populations facing mortality to elucidate the process of healing. Four coping mechanisms have been associated with positive psychological responses: positive reappraisal, goal-directed problem-focused coping, spiritual beliefs and practices, and the infusion of ordinary events with positive meaning. The one common feature that all four of these coping processes share is the discovery of positive meaning (Mount et al, 2007).

In Mount's et al (2007) study, individuals who demonstrated capacity to attain a sense of well-being and wholeness while facing a life-threatening illness found new meaning, while those experiencing suffering and anguish only experienced a sense of meaninglessness. Achieving a sense of meaning was evidenced by a sense of renewal, security and equanimity, and was associated with the ability to form bonds and connections. Other features of the healing process that emerged in Mount's et al data included the significance of the present moment and the ability to let go.

Mount et al identified healing connections in a phenomenological study that explored the relevance of existential and spiritual domains to suffering, healing, and quality of life. These healing connections were found to be the defining qualities that distinguished those with positive coping responses from those with negative ones. Appropriately called 'healing connections,' the four bonds identified were: to self; to others; to the phenomenal world experienced through the five senses; or to a God-like figure.

A Social-Cognitive Transition Model of Adjustment was proposed by Brennan (2001) who recognized that a cancer diagnosis could affect one's core assumptions regarding life trajectory, beliefs about self, control and self worth, the nature of attachment, and spiritual/existential meaning. A healthy response included a re-examination of self leading to the discovery of a new sense of control and enhanced interpersonal relationships. Other positive outcomes including personal, social, and spiritual changes were attributed to intense social support (Brennan, 2001; Vachon, 2008).

Spirituality has consistently been identified as an important part of a breast cancer patient's experience. Despite differences in religious, cultural, and ethnic backgrounds, self-reflection and spirituality increase when women are faced with cancer. Spirituality has been found to help women cope and deal with thoughts of mortality (Vachon, 2008). One literature review that looked at spiritual well-being among patients with advanced cancer identified six essential components of psychiatric well-being themes: self-awareness; coping and adjusting effectively with stress; relationships and connectedness with others; sense of faith; sense of empowerment and confidence; and living with meaning and hope (Vachon, 2008).

Only in recent years has the spiritual domain been considered a potential resource for individuals dealing with stressful life events and has been related to adjustment to cancer (Gall &

Cornblat, 2002). Breast cancer patients report religious faith to be an important aid in dealing with their illness and the cancer experience can lead to an increased awareness of their spirituality (Gall & Cornblat, 2002). The religious/spiritual resources may serve multiple functions in a long-term adjustment to cancer including enhancing self-esteem and confidence, providing a sense of meaning or purpose, reducing emotional distress, increasing inner peace, providing comfort, and nurturing a sense of hope and optimism (Gall & Cornblat, 2002).

Several qualitative studies found that a distinct turning point in life experience preceded a permanent commitment to behavior change which if successful, triggered an identity shift. In Kearney's and O'Sullivan's (2003) research of existing qualitative studies examining behavior change, they attempted to identify common elements shared among individuals who were able to modify unhealthy behaviors. They found that one key turning point that contributed to a sustained behavior change for at least six months was a critical reappraisal of self and situation. If a successful behavior change took place, it generated positive indicators of a possible new identity. This triggered behavior change, which strengthened the newly formed identity that in turn triggered more behaviors, and so forth. Both behavior change and identity shift were found to be reciprocal with each one interacting with and dependent on the other. Social and environmental influences were found to either foster or inhibit the changes and numerous constraints to both behavior and identity changes were revealed.

Evidence suggests that a diagnosis of a life-threatening illness can be a catalyst for life transformations that include shifts in attitude, perspective, meaning, and interpersonal relationships (Carpenter et al, 1999). Described as both a process and outcome, the concept of self-transformation involves redefining one's sense of self within the context of the illness

experience. The precise mechanism whereby suffering or awareness of mortality triggers a self-transformation continues to remain elusive (Carpenter et al, 1999).

One qualitative study by Carpenter et al (1999) analyzed this phenomenon of self-transformation among 60 people. Study results identified three categories associated with breast cancer survivors: 16 who achieved positive transformations, 27 who experienced minimal transformations, and 17 who felt stuck. A sudden awareness of personal mortality was identified as the trigger for increased self-awareness, commencing a positive transforming process. Women who experienced a minimal transformation were not as deeply affected when faced with mortality. Because the awareness of mortality did not impact these women in the same way, they were less inclined to engage in a process of self-examination and introspection. In addition, they expressed a level of self-acceptance and felt no need to make any changes.

Three factors characterized the 'stuck' women who exhibited an unfulfilled desire to make changes in their lives: a lack of mental and physical strength or courage; a lack of clear expectations; and a lack of support to make the desired changes. Lacking courage, women found themselves paralyzed with fear and as a result, chose to avoid making any changes. The lack of clear expectations was communicated through their desire for change and an inability to articulate how they could make it happen. A sense of frustration and helplessness negatively impacted their perception of self as personal expectations for change seemed unattainable. Women described a lack of support from health care providers, family, and friends and an absence of appropriate resources and information to facilitate a change process and introspection (Carpenter et al, 1999). Sixteen out of the 60 respondents in Carpenter's et al study exhibited a positive identity transformation while the remaining 44 did not.

Identity Theory

Identity theory provides a framework to help understand the formation of identity that can occur when facing a life-threatening illness. Derived from social theorists Charles Cooley (1902) and George Mead's (1967) explanations of self, one's identity is formed by assimilating the reflected socially constructed views of society through the "generalized other." (in Deimling et al, 2007) Identities are self-concepts that result from internalized role expectations that are attached to positions in socially constructed relationships. Structural symbolic interactionism links social interaction to roles and identities where social structures facilitate and constrain assignment of roles and positions. Social structures contain regular patterns of human interactions where a majority of the members participate in similar social exchanges (Stryker, 1980/ 2002b; 2007).

According to identity theory, it's likely that a diagnosis of cancer has the potential to alter the salience of specific identities that have always defined oneself and replace them with illness related identities. At the same time, the disabling effects of treatment can have a major impact on role performance central to one's identity (Deimling et al, 2007). While cancer can result in an altered sense of self that may impact gender and role performance, it can also be viewed as an opportunity for personal growth, reintegration, and positive transformation of self. A newly adopted survivor identity can provide alternative identities to supplant those related to disease or those lost due to the diagnosis (Carpenter et al, 1999; Deimling et al, 2007).

The concept of biographical disruption provides some context for the breast cancer survivor's experience and contributes to an understanding of what takes place when one is confronted with a chronic illness (McCann et al, 2010). By recognizing breast cancer as a chronic and disruptive illness, it allows its meaning to be defined in relation to self and identity. Unlike an acute illness, a cancer diagnosis becomes central to one's identity and impacts how

one perceives self and how one thinks others perceive her. Any pre-morbid identity and existence becomes jeopardized by all the unknown facets of the disease related to treatment, side-effects, prognosis, recurrence, and duration. These potentially unknown outcomes weaken one's sense of self and necessitate a renegotiation of identity as visions of the future are modified, relationships shift, and a sense of self is altered (McCann et al, 2010). The patient is left both vulnerable and susceptible to other forces as her health and future are in question.

Little et al (2002) provides another way to understand cancer identity and survivorship through his narratives of discourses and observations among survivors and caregivers. He defines identity as the sense of personhood that consists of qualities, possessions, and capabilities that solicit interactions with the surrounding social systems. The individual constructs and experiences self but its experience is largely influenced and modified by events and associations within the social environment. At the same time, different perceptions of identity are assigned by others allowing the subjective sense of identity and the external perceptions of identity to reflexively engage with each other. Cognitive processes assign meaning to important identity-defining events in one's life taken from past memories, current and imagined future contexts. The meaning that is assigned to one's plans and expectations, forms the basis of stability in one's life and personal identity. Those plans and expectations can suddenly be altered (i.e. cancer diagnosis) by which disrupting future memories and having devastating results (Little et al, 2002). Interrupting and dislocating one's continuity of identity can leave a cancer survivor vulnerable to external perceptions, both positive and negative.

A positive healing trajectory involving any or all of the preceding constructs and theories is not inevitable and does not apply to all breast cancer survivors. If it does occur, it may not necessarily take place immediately. One's recovery often involves a great deal of pain, fatigue,

suffering, anxiety, and loss of body image, all contributing to a reduced quality of life (Moadel et al, 2007). Cancer survivors endure a range of distress symptoms throughout the cancer trajectory. Distress consists of unpleasant emotional sensations of a psychological, social, or spiritual nature that can interfere with one's ability to cope effectively with all aspects of the cancer diagnosis, treatments, and side effects. The range of experiences can be quite vast from mild sadness to debilitating depression, panic, and social isolation. The highest incidence of distress occurs at the aforementioned turning points or transitions (Kaplan, 2008).

The review and summary of current research, theories, and models that apply to breast cancer survivors and yoga set the stage for this study and raise questions about an alternate approach to better understand the respondents' experiences. The initial literature review helped inform areas for exploration in the qualitative interviews. After grounded exploration was conducted, additional literature was reviewed in order to interpret findings.

While each of thee theories discussed has merit and involves constructs that may help understand themes in this study, the research design described in the next chapter is better suited to examine both the broader dimensions and the intimate details underlying behavior change through the voices of the breast cancer survivors. By ascertaining individual perceptions of the yoga practice amidst the diagnosis, treatment, and coping processes, key variables and theory constructs may emerge that explain participation, outcomes, and components of an optimal yoga intervention for women coping with breast cancer.

Chapter III - Methodology

The research design presented was chosen for this study in order to gain a better understanding of the yoga experience from the perspective of the breast cancer survivor. This chapter opens with the research questions and the rationale for the design, followed by a thorough description of the respondents, data collection, management, and analysis. Finally, potential validity issues are raised with sufficient explanations to dismiss such concerns.

The research examines the breast cancer survivors' perceptions and experiences of yoga by the duration of time practiced; describes whether transformation, as perceived by the respondent, does or does not occur; and identifies possible transitional stages and characteristics that contribute to or inhibit progression and a deepening yoga practice. The two research questions that the investigator chose to ask are: what does yoga mean in relation to breast cancer; and what accounts for a commitment to and deepening of a yoga practice.

Rationale

The practice and philosophy of yoga has been shown to have practical implications for breast cancer survivors, and can have a profound impact on one's survival. Evidence suggests that interventions such as yoga can assist with aspects of the disease trajectory. It would be helpful to understand factors that motivate or inhibit engagement, contribute to or impede a sustained practice, and characteristics that can delineate stages of progression and possibly represent a deepening relationship with it. Issues related to engagement and maintenance of yoga have not been closely studied and remain poorly understood. Affecting meaningful and sustained behavioral change poses a challenge in any domain, and yoga is no exception. As such, the dominant behavior change theories and models in the physical activity domain were considered for relevance and application to emergent themes.

This design may help elucidate the transformational process of yoga as it conceptualizes transitions and stages that women experience through this dynamic process. While there is an increased emphasis on the use of randomized control trials (RCTs) to test effectiveness of interventions, such approaches might preclude a more complex multi-dimensional analysis. In a recent publication, Verhoef, Casebeer, and Hilsden argue that a qualitative approach can greatly enhance the understanding of complementary therapies by ascertaining the meanings, beliefs, and expectations of the intervention through the patients' experiences (Roberts et al, 2005).

A body of evidence across multiple disciplines has been accumulating over the last few years, examining the interaction between the disease of breast cancer and yoga. All of the existing research appears to be limited to short term studies, quantitative designs, and typically comprised of small samples. What is missing is an in-depth, qualitative narrative that captures the nuances, perceptions, and experiences of women with breast cancer who may well provide new meaning to their experience of practicing yoga over time. No extensive in-depth research has been done nor have any recognized theories or conceptual frameworks been developed pertaining to this area. It is this gap that the present study seeks to fill.

Description of Study and Methodology

The research design for this study is exploratory, combining both grounded theory and phenomenological approaches. A grounded theory approach is used to discover analytical schema of the phenomenon in order to explore alternate theory(s) that may ultimately help in understanding factors that might be used to engage breast cancer survivors in the practice of yoga, motivate them to continue to practice, and possibly lead to a deepening practice. According to Glaser and Strauss (1967), theories should be grounded in data from the field and expressed in actions, interactions, and the social processes in which people engage.

I have chosen to use grounded theory as my primary methodology since its central focus is the generation of a theory that will closely relate to conditions surrounding the experience of breast cancer survivors practicing yoga. In keeping with Anselm L. Strauss and the early Chicago school pragmatist principles of grounded theory, this research approach drew on a variety of existing theories to gain an understanding of what the emergent themes meant. According to Kathy Charmaz (2008), constructing grounded theories must include past and present interactions with people, perspectives, and practices. In medical contexts, motivational change is often based on theories of human behavior such as the Health Belief Model (Weinstein et al, 1998), Stages of Change Model (also known as the Transtheoretical Model) (Pinto & Floyd, 2008), Theory of Planned Behavior (Pinto & Floyd, 2008), and Social Cognitive Theory (Lenert et al, 2005). While constructs of these theories have relevance to this study, it is my contention that none of the theories fully captures the essence of the experience of women with breast cancer.

My pursuit of one or a combination of theories that more adequately reflects the prevailing themes is fueled by the multi-dimensional aspects and complexities of yoga that distinguish it from other forms of physical activity. The elaborate descriptions of women's beliefs, meanings, and sensations that are manifested in their physical, emotional, spiritual, and life transforming experiences transcend the dimensions implicit in behavior change theory. As discussed previously, these behavior theories were developed to investigate health-promotion behaviors among diverse populations, examining different interventions. They have equally been used to test motivational and adherence models for women with breast cancer, predominantly in the area of physical activity.

The accumulation of scientific advances in behavior research for cancer survivors over the last ten years includes: prevalence rates and patterns; identification of medical, demographic, and social cognitive determinants; physical activity preferences; and testing behavior change interventions (Courneya & Friedenreich, 2007). While all meaningful contributions to the growing knowledge base, a void still exists that begs for grounded theory development to capture the nuanced and complex behavior changes occurring with yoga. There is a critical need for research that is grounded in the lives of individuals who are studied in order to discover the ways in which women with breast cancer make sense of their lives and choices. A theoretical approach that is complementary to the use of grounded research is phenomenology.

Phenomenology focuses on the individual, lived experience and usually relies on interview strategies to elicit deep meaning and nuances from the respondent's personal experience. The investigator "brackets" her own preconceptions, enters into the individual's world through the interview process, and interprets those experiences as they are voiced. The goal of phenomenology is to acquire understanding of the meaning of the individual's experience, which is often grouped into thematic categories (Marshall, & Rossman, 1999).

For this study, I conducted in-depth, semi-structured interviews with three groups of women: those practicing yoga for less than six months, six to eighteen months, and more than eighteen months. The selection criteria called for respondents who practiced yoga regularly (at least one time per week) at home, using a DVD/VCR video, or with an instructor certified with Yoga Alliance, Kripalu, Iyengar or any other nationally recognized yoga institution. An assumption was made by the investigator that the fundamental components of a yoga practice prevailed over any variations in style or tradition. Although there are many styles of yoga

practiced in the United States, the three components common to most are the postures, breath control, and meditation (Bower et al, 2005).

Subject Criteria

The three time intervals were determined after speaking with several key informants including yoga instructors who had experience working with breast cancer survivors. Based on their practical teaching experiences and observations, they believed that these intervals could define subtle yet detectable changes in their students' yoga practice, and would allow the investigator to capture divergent perspectives characterized by the three time spans. In this way, a wide array of understandings and common themes would emerge from these three groupings.

The following inclusion criteria were used in sample selection:

- first diagnosis of primary invasive breast cancer;
- a minimum of 45 years of age;
- between one and four years post completion of treatment;
- practicing yoga at the time of interview for at least one month;
- did not consistently practice yoga immediately prior to diagnosis, using the same definition of a regular weekly practice;
- disease free (i.e. free of cancer since completion of treatment) and under no current cancer therapy other than tamoxifen or other hormone therapy;
- English speaking;
- Sufficient mental capacity to give informed consent;
- Sufficient cognitive and physical capacity to participate in a 90 minute interview.

The original age criterion was established at 50 in order to identify a segment of women experiencing similar age-related hormonal changes, fewer childrearing responsibilities, and more

flexibility with personal time as they approached retirement. In addition, midlife is often defined at 50 years of age and a period in life when, statistically speaking, a woman's chance of getting breast cancer is higher (Northrup, 2003). A minimum age of 50 was initially chosen with the expectation that enlisting eligible subjects would not be an issue. Numerous women who initially contacted the investigator to express interest in participating had to be turned away because they were between the ages of 45 and 49. In an effort to increase recruitment without compromising the study, the age was eventually lowered to 45 as there seemed to be little discernable difference in those five years with regard to developmental and physiological stages as well as life experience.

The originally planned face-to-face interviews limited the geographic boundaries of the respondents to the tri-state area. Once data collection was expanded to include telephone interviews, geographic restrictions were no longer an issue.

Data Collection

The proposal for this study was approved by the Stony Brook University Committee on Research Involving Human Subjects (CORIHS) on January 15, 2008. A subsequent revision was also submitted and approved by the Committee on July 24, 2008. (see APPENDICES A and B)

The planned number of women to be interviewed was 15 in each of the three time spans, for a total of 45 women or until content saturation was attained. Crabtree and Miller (1992) recommend 12-20 interviews for heterogeneous samples with the focus being information richness. A purposive, quota sample was used and recruitment occurred several different ways. For the initial mailing, a list of local yoga studios, instructors, breast cancer coalitions, and integrative medical centers was assembled from sources including regional yoga and health

magazines, websites, advertisements, and key informant referrals. When possible, announcements were communicated in local web-based publications such as local breast cancer coalition newsletters and yoga studio websites. The investigator posted the announcement on web-based Craig's List for one month. Telephone calls and emails received in response to the mailings and announcements often led to additional contacts and as these new leads were uncovered, mailings and emails followed.

Each mailing consisted of the following:

- An introductory letter, (APPENDIX C)
- A project description, (APPENDIX D)
- A consent form, (APPENDIX E)
- An announcement flyer, (APPENDIX F)
- A business card.

Recipients of the mailing were asked to display the announcement flyers or publicize the research description in order to inform survivors of this opportunity. A snowball sample was utilized as another form of recruitment. Upon completion of an interview, respondents were asked if they knew of others who might qualify and be interested in participating, as well as yoga instructors who might be willing to publicize the study. If so, they were given additional flyers to share.

Recruitment was found to be more challenging than expected. In order to broaden outreach efforts and increase participation without impacting the integrity of the study, the decision was made to include telephone interviews. Although the visual cues from face-to-face interviews often guide the investigator, by using a semi-structured interview schedule in conjunction with having established rapport with the respondent prior to the interview, it was

possible for verbal messages and cues to aid in the interview process (Berg, 2004). Upon IRB approval of this modification, a new wave of announcements was sent beyond the initial geographic boundaries (tri-state vicinity) since distance was no longer a barrier.

A description of the study was posted on several websites including International Association of Yoga Therapists and Yoga Bear (a not-for-profit organization comprised of breast cancer survivors who advocate yoga). By broadening the reach, women from across the country could learn about the study and contact the investigator. Google searches on the internet were conducted seeking names of yoga studios and instructors who provided classes to breast cancer survivors. Names of cities were arbitrarily entered into google searches with the key words 'yoga' and 'breast cancer' and yielded new contact information. Upon acquiring names of new studios and instructors, recruitment packets were sent by U.S. mail or email.

If interested in participating, prospective respondents contacted the investigator by email or telephone, as per instructions in recruitment materials. The investigator discussed with the potential respondents the nature of the study, what would be involved if participation was to take place, verified that they met eligibility criteria (APPENDIX G), and that they agreed to be interviewed. At the same time, an initial rapport was established as the investigator conveyed the study's legitimacy and the value of the respondent's contribution (Berg, 2004). If the prospective respondent expressed interest in participating and met eligibility criteria, a consent form was mailed or emailed and an interview was scheduled within the next ten days. One day before the scheduled interview, a reminder call was made by the investigator to confirm time, date, and site (if relevant).

Interviews

At the onset of the interview, a script (APPENDIX H) was read by the investigator summarizing the consent form and reminding the respondent of what she had agreed to by giving verbal consent. Adherence to the CORIHS ethics guidelines of informed consent, voluntary participation, confidentiality, and anonymity was maintained. A semi-structured interview lasting approximately sixty to ninety minutes in duration was held with each participant. The 43 interviews took place from February 2008 to March 2010. Respondents 1 – 21 were interviewed face-to-face and 22 – 43 were done over the telephone. The investigator transcribed all of the interviews verbatim. In an effort to ensure that no observable differences occurred between the two groups (face-to-face and telephone interviews), transcripts were compared examining length of interviews, quality and depth of responses. No observable differences were noted.

An interview guide (APPENDIX I) was used and included the following demographic and descriptive categories: age; ethnicity; marital status; family composition (gender and ages of children); level of education attained, occupation; history of breast cancer in family; date of diagnosis and treatment; comorbidity (defined as the prevalence of heart disease, stroke, hypertension, diabetes, asthma, other cancers, or arthritis and did not preclude respondents from the study); history of physical fitness activities including yoga; type of yoga/meditation practiced; frequency of practice; onset of practice. Some of these demographic questions could be considered throw-away questions that would not be analyzed and were used to establish rapport between the investigator and subject. The essential questions were designed to elicit specific information central to the focus of the research (Berg, 2004). A number of similar questions about the experience and perceptions of practicing yoga were worded differently to

increase the likelihood of structural corroboration and internal validity (Rudestam & Newton, 1992).

The interview focused on women's perceptions of physical, emotional, and spiritual states of stress and well-being, corresponding sensations and experiences, and awareness of behavioral patterns and attitudinal changes associated with the yoga practice. Each of these conceptual domains was framed within the context of coping with breast cancer. Women were asked more probing questions to elicit the meaning of yoga, factors related to their initial and current experiences, as well as factors that may have facilitated or inhibited the progression of their practice. The interview guide was based on categories and theoretical frameworks discovered during the literature reviews and interviews with key informants. The guide consisted of questions addressing stages and transitions of yoga, based on behavioral change theories. Additional questions focusing on physical, emotional, and spiritual aspects and sensations were drawn from existing yoga research. All questions were fairly basic in keeping with the process of grounded theory. Discussions, however, were not restricted to these topics. Following principles of phenomenological design, the semi-structured interview allowed the investigator to deviate from the questions and probe more deeply into the respondent's own experience in order to capture all aspects relevant to the essence of that experience. The interview structure allowed for flexibility to not only address the key research questions, but to pursue discussion of unanticipated topics when appropriate.

A single semi-structured interview format was initially chosen for several reasons. This method lends itself to a free-flowing conversation, giving the respondent a stronger voice and providing a rich understanding of the individual's opinions, beliefs, attitudes and perceptions (Berg, 2004). It serves as a way of collecting large amounts of useful information in a short

period of time. Other benefits of the in-depth interview include the following: uncovering of participants' perspectives; data is collected in a natural and comfortable setting; immediate follow-up questions and responses for clarification can be generated; it fosters descriptions of complex issues, interactions, and nuances; nonverbal behavior and communication are delivered; flexibility in formulating hypotheses is provided; context information is provided; and cooperation is fostered (Marshall & Rossman, 1999).

Data Management

Interviews were tape recorded in order to secure a verbatim recording of the entire interview. According to Rubin & Rubin (2005), the presence of the tape recorder does not interfere with the interview proceedings, nor does it inhibit participants from answering any questions. The investigator transcribed the data verbatim into a word document using a transcribing device. Each transcript was numbered and only those fictitious names that had been selected by the respondents appeared throughout the texts.

Observational data describing things seen, heard, or experienced during the interview, including the respondent's affect, body language, dress, and other forms of nonverbal expression were recorded during and immediately following the first twenty-_one interviews. The remaining interviews were conducted over the telephone, thereby eliminating any exposure to nonverbal cues. Notes were taken during and upon completion of both the face-to-face and telephone interviews to serve as an observational catalyst and an "aide memoire" (Mount et al, 2007) concerning details of the interactions and feelings experienced. In order to maintain consistency in record keeping, a standard form was developed and used (APPENDIX J) to record post-interview impressions, reactions, ideas, questions, and emerging insights and findings. Despite the lack of visual cues during the telephone interviews, the investigator was able to gauge

attitudes and personalities. Several factors contributed to this: a rapport had been established between investigator and respondent early on; a genuine willingness on the part of the respondent to disclose very personal information; and a sensitivity and insightfulness on the part of the investigator.

Respondents' rights were preserved throughout the research. A fictitious name was selected by the respondent, utilized during the interview, and referenced throughout the transcription and analysis process. At no time was a list of participants' names maintained. Women were sent or emailed a consent form and asked to read it. The IRB had approved a waiver of signature on the consent form so as to protect the anonymity and privacy of the individual. The respondent was informed that she could refrain from answering any questions and that she could terminate participation at any time during the interview.

To further protect anonymity, as soon as a transcript was completed and checked for accuracy, all identifying records of that individual were destroyed. This included contact information such as telephone number, address, email address, and any notes where names may have appeared.

At the close of each of the face-to-face interviews a small gift from Bath and Body Works was given to the respondents as a token of appreciation. This practice was suspended once the face-to-face interviews ended and the telephone interviews began. Since no mention of these gifts appeared in any of the written materials viewed by the respondents, the investigator discontinued this in order to avoid the inconvenience and expense of shipping.

Data Analysis

The data generated was transcribed into narrative expression to develop insights into one's perception of the experience and sensations that occurred when practicing yoga for three

different spans of time (Creswell, 2006). The investigator had initially planned on using MAXQDA to assist with data collection and analysis. However, as the process got underway, a decision was made to rely on manual techniques as are described below.

The interview data was catalogued systematically using thematic categories and subcategories that emerged from open coding of the interview data.

The central purpose of open coding was to allow for expansive inquiry. Strauss' (1987, p. 30) guidelines were considered while conducting open coding in order to allow the most relevant and accurate information to emerge from the data: 1) the data were examined with a specific and consistent set of questions which were developed by continuously reflecting back to the original research objectives, while remaining open to unanticipated results; 2) the data were analyzed minutely; 3) the coding was frequently interrupted to respond with theoretical notes and; 4) care was taken to eliminate any false assumptions of analytical relevance until the data revealed such findings (in Berg, 2004).

Each transcript was read several times, beginning with annotating first impressions and initial descriptive codes in the margins. The investigator recorded literal meanings, questions formulated, and specific passages that elicited emotional responses. Recurring themes, salient patterns, and grounded categories of meaning that were expressed in the transcripts were ascribed to an appropriate descriptive label and organized into an accordion folder filing system (Marshall & Rossman, 1999). Each slot represented one descriptive label and contained relevant text segments that were referenced by the transcript number.

Photocopies of all transcripts were made beforehand so that key sentences or word segments could be cut out and inserted into the suitable slot, annotating the respective transcript name and number. After all the transcripts were reviewed thoroughly and sentences and strings

of words were sorted and assigned to the appropriate slots, separate word documents were created for each of these themes comprising all the slips of paper. As themes, categories, concepts, or principles of organization emerged, the investigator considered the plausibility of new understandings and explored them through the data. This involved searching through the individual documents for discrepancies or interruptions in the patterns, and incorporating these inconsistencies into larger constructs (Marshall & Rossman, 1999).

The following are some of the more general themes that emerged: first experiences and perceptions of yoga, stages of yoga, commitment to yoga, indications of progression in practice, awareness, connections to classes and teachers, sensitivity to environment, attitudes, perceptions of age and body, physical, emotional, spiritual experiences, meaning, social support, stress, personality, discipline, control, and benefits. The themes were then broken down further into the three time spans so that one document was created reflecting each theme and time span. The investigator systematically went through all the transcripts until all of the themes were filed and catalogued. Because of similar and overlapping meanings, some themes were then collapsed into broader themes, capturing the core or essence of the combined themes.

Following these preliminary steps, the investigator entered into a focused coding phase where the transcripts were reread line by line in order to penetrate the data with a closer examination of the respondent's meaning in order to reveal key content (core themes) of each of the transcripts. Remaining close to the data, codes were constructed that would actively name data, often providing greater dimension to the experience and a fresh way to reflect on the respondent's perspective. Engaging in this more focused coding allowed the investigator to identify the most useful themes that emerged from all the transcripts, measure them against the extensive collection of data already filed, and direct subsequent data-gathering toward the issues

that were being defined. This multiple coding process ensured that nothing was lost and the entire range of ideas existing within the transcripts was fully captured. The process of assimilating and analyzing the central emergent themes formed the basis of the final report (Charmaz, 2008).

Validity of the Qualitative Research Method

Inherent problems of researcher bias are possible when the investigator assumes dual roles of data collector and analyst. Samples that are more homogeneous tend to reduce reliability as do small numbers of descriptors for a theme. Because of the heterogeneity of the subjects and the depth of data drawn from the interviews resulting in "thick description," the investigator took measures to insure that reliability would be achieved (Crabtree & Miller, 1992). Several steps were taken to increase the internal validity through structural corroboration. Important questions about the experience and perceptions of practicing yoga were rephrased and asked several times in order to check for any distortions or inconsistencies in the transcripts. In this way, any discrepancies in the data could be revealed by engaging in triangulation. This process was accomplished by matching data from the transcripts with the field notes taken during the interviews and the observations and impressions noted on the standardized post-interview forms (Rudestam & Newton, 1992).

The exploratory approach described in this chapter, provided both grounded theory and phenomenological analysis in order to gain insight into the meaning of yoga in relation to coping with breast cancer as well as identify what accounted for a deepening yoga practice. The chosen methodology permitted access into the lives of breast cancer survivors who practiced yoga for different spans of time in the hopes of identifying stages that denoted change and variables that

contributed to or inhibited engagement, progression, and commitment. The following chapter will present an analysis of the results generated by this research design.

Chapter IV – Analysis of the Results

This exploratory approach provided both grounded theory and phenomenological analyses in order to gain insight into the meaning of yoga to a breast cancer survivor as well as identify what variables accounted for a deepening of a yoga practice. The research design allowed the investigator to discover respondents' sensations, perceptions, and growth experienced through varying lengths of yoga practice. At the same time, the changes, reactions, and challenges that breast cancer survivors endured in relation to their diagnosis served as the back drop for this research.

While some respondents were absolutely convinced that sensations they recalled could be attributed to their yoga practice, implicit in others' responses was an uncertainty as to whether credit should be given to the disease, the yoga, or a combination of both. To complicate matters further, advancing age played into their experiences and could obscure any changing sensations and insights. Despite the confluence of variables, certain transitions or defining moments stood out, allowing many to distinguish changes due to yoga, breast cancer, and aging, as well as to articulate specific turning points in their experiences. One thing they were all certain of was that very profound and tangible changes had occurred.

It has been found that the cancer experience can generate a transformation of self. This process involves a redefining of self within the context of the illness by integrating different aspects of the disease experience into one's identity. Changes that take place can be viewed as positive or negative by the individual, where the experience engenders both loss and growth. The illness can be perceived as an event that leads to agonizing side effects, loss of role functioning, anxiety, or depression, and at the same time as an opportunity for personal growth and improved quality of life. Whether self-transformation is viewed as a process or an outcome

of a cancer diagnosis, the abstract mechanisms of both remain somewhat elusive and will continue to provide context as the stages of yoga are examined (Carpenter et al, 1999).

While parameters for time spans of yoga practiced were initially considered as a way to distinguish building relationships with yoga, it became apparent early in the interviewing process that factors beyond the initially defined temporal categories contributed to a progression, a deepening, and a noted transformation that was observed among all of the women interviewed. Not to minimize the impact that the length of time practicing yoga had, because it certainly played a role in one's progression, but other equally important factors were identified.

Descriptions of Respondents

Forty-three women ranging in age from 45 to 73, whose mean age was 57.2 and median age was 56, were interviewed during the period January 2008 through March 2010. The education levels, chosen professions, and ethnic groups presented a picture of exclusivity and raised questions about equal access, availability, and interest in yoga. Forty women held college degrees and 24 of them had advanced degrees. Consequently they worked as professionals, including educators, lawyers, professors, government officials, CEOs, sale representatives, nurses and counselors. All are Caucasian and only one is Hispanic. Exclusivity and access to yoga may be a reflection of the recruitment process. The lone Hispanic participant was not affiliated with any yoga or breast cancer group and was the only one who learned of the study through Craig's List. Respondents can be found listed on Table 1.

The mean length of time practicing yoga was 3.8 years. The mean length of time since diagnosis was 5.8 years.

On the surface these women appeared to be a homogeneous group based on age range, race, level of education and socioeconomic status. However the individual traits and experiences

that they embodied including fitness levels, personality types, and former yoga experience portrayed diversity. Variation existed in the severity of diagnosis and treatment, and when combined with the varied environmental determinants such as the quality of the yoga instructor, type of class, and degree of support that impact their yoga practice, their experiences became more heterogeneous. Amidst these distinct personal and environmental variables, grounded theory analysis and initial descriptive coding allowed the investigator to construct three distinct stages that reflected a building relationship with yoga. Each of the women was assigned to one of the three: early, middle, or advanced. Upon further investigation, interpretive coding distinguished two stages among the early practitioners: ten women who were just getting started and expressing intentions to continue, who I termed "Enthusiasts," and four women who engaged in recreational yoga, who I labeled "Casual Users." Fourteen women embraced yoga and desired a deeper practice, who I termed "Believers," and 15 who had fully integrated yoga into their lives, who I labeled "Transformed."

What distinguishes the different stages of yoga practice?

Four groups representing advancing relationships to yoga were identified among the 43 women interviewed. Casual Users comprise women whose relationship with yoga is recreational and based on convenience. Enthusiasts consist of women who are new to yoga, are beginning to recognize the benefits and express a desire to continue. Believers face personal constraints that limit their ability to partake in yoga as much as they would like and prevent them from incorporating it into other aspects of their lives. All other expressions of Believers' yoga experiences are remarkably similar to the Transformed who exhibit the deepest relationship with yoga and who identify it as a central and integral part of their lives.

An extensive description including case studies and excerpts representing each of the four categories beginning with the deepest level, is presented in the following section. The case studies are accurate, in-depth depictions of the experiences, attitudes, and involvement with yoga that closely resemble others' from those groups.

The Transformed

The Transformed category is made up of women who have fully immersed themselves in their yoga practice so that it has become a central part of their existence and their identity. They demonstrate a longevity as the mean number of years practicing yoga among the 15 women is 9.1. In addition to the yoga classes in which they participate, each one of them has a home practice. This consists of time set aside at home at least once a week to do yoga with the aide of a video, a book, or completely on their own. They describe permanent changes in their behavior and outlook including yoga being fully integrated into their lives. It is repeatedly described as "a way of life," "part of my life," "a tool to help get through my life," "an integral part of my life," all denoting a deepened relationship with yoga. Constance captures the essence of this category in the following statement: "It's an elevator down to my inner self. It gives me new perception, feels real, an authentic adventure. I'm fully committed, it's an invaluable and permanent part of my life. Yoga is a way to grow. Yoga is life."

The 15 women in this group express a transformed identity, a changed perception of self, and a new life perspective. In their view, one's level of spirituality and spiritual journey are strongly connected to the yoga practice. There is an authenticity and clarity in their perception of self and a deep appreciation of how yoga has contributed to this understanding. Yoga has given them tools to approach life differently and has become a central part of their existence.

Respondents' personal identities are defined by it; they express a need for it and feel they cannot live without it. Interestingly, four of the women in this group are yoga instructors.

Case Study: Suzanne, Transformed

Suzanne was the 28th woman to be interviewed. She was extremely articulate and her reflections, experiences, and sensations seemed to represent many others inthe group. She was 60 years old at the time of the interview, was diagnosed at the age of 57, and began practicing yoga a month after her diagnosis, three years ago. She had done some yoga prior to her diagnosis and explained her earlier relationship with yoga to be more physical and casual. "When I first started yoga I found it enjoyable. I wasn't dedicated to it, it was just something that I did and it was more of a physical practice."

She describes herself as a Type-A personality, a scientific, programmatic 'number cruncher' who found herself quite surprised by her connection to yoga and her unexpected spiritual journey. She credits yoga for being the vehicle to help her search for meaning following her breast cancer diagnosis. The following quotation captures her relationship with yoga including engagement, deepening, and transitions.

> As soon as I was diagnosed, I knew I was in a bad place physically and emotionally and knew that I had to do something and felt the best course was yoga. I never thought I was particularly stressed before breast cancer, although family members did, so for me stress was a way of life. I didn't recognize it. Now I have a different outlook on life. I no longer internalize stress. I was in a very stressful situation at work for 20 plus years. I was a workaholic and I've been a Type-A Personality my whole life.
>
> Initially I enjoyed the stretching, the company, and the rest, but I didn't really experience quite what I'm getting out of it now. I can get into a meditative state. I've had pretty amazing experiences that are more spiritual in nature. I've always been a scientific thinker, a number cruncher. This is very unusual for me and only since yoga after breast cancer, when I was trying to get a grip on what life is really about.

> I'm a much better mother than before. I feel more grounded. I'm a happier person and feel happy with my own self. I'm not continuously trying to improve or reach new goals. I'm more content with who I am and feel more at ease and at home in my own body. I'm more satisfied with my life. I'm going off of Wellbutrin which my doctor had prescribed.
>
> I attribute a lot of the practice and the mentorship to my yoga instructor. It's like religion. There are a few things that I have personally in my life that just belong to me and I absolutely love: painting and yoga.

Suzanne talked at length about her former self who she identified categorically as a workaholic who easily worked 60 hour weeks. She was classically trained at a nationally known, top rated music and arts college and carried this intensity and competitive nature into all aspects of her life.

How she presently deals with stress has been completely transformed. She credits yoga with redirecting her awareness from the ordinary world and putting her more in touch with herself, giving her a new found sense of calmness about her life that sometimes can be frenetic. Her yoga practice completely disconnects her from her working world. She's made significant adjustments in how she handles stress and attributes her new outlook on life to yoga. Her blood pressure has dropped since practicing yoga and she feels strongly that the reason she was taken off of the blood pressure medication is because of the yoga.

She states that her physical transformation has been remarkable. She was never a "super physical person," never did weights nor worked out, but now feels very strong. She's among mostly younger people in her class and believes that she's able to keep up with them. She's much more flexible than a lot of the women who are 20 and 30 years her junior. Her teacher is constantly amazed that she continues to get better and stronger all the time.

She claims that she had been neither a very spiritual nor a religious person. She was a "matter of fact kind of person living her life believing in lots of scientific theory." When she

was diagnosed with cancer, she sort of came up against a brick wall spiritually. With the help of a psychiatrist and a yoga instructor, yoga enabled her to reconnect with herself and to look internally, something she had never done before.

She defines herself by yoga, has fully integrated it into her life and credits her transformation to yoga. Suzanne's story typifies what all 15 women reveal as each one describes a strong need to do yoga as it plays an integral role in their lives and their identity. They express a changed identity, perception of self, and a new life perspective, while fully internalizing yoga as a permanent change in behavior. They each describe a similar depth of yoga practice where it has become a central part of their existence.

The following quotes provided by different members of the Transformed group capture the extent of their relationship with yoga: "It's not so much a desire to practice yoga, it's a need." Laura is a 53 year old yoga instructor whose life and persona have undergone a complete transformation, following major trauma and loss. She credits yoga with her ability to stay healthy and describes a deep bond with yoga. "I need to be connected on every level, to the world and with myself, to stay balanced, to stay in harmony. If I couldn't practice, I wouldn't be healthy."

Similarly, Josie states, "Yoga is a life force and is part of me." Josie is a 56 year old dance instructor who also believes that yoga has kept her healthy. Formerly a substance abuse intake coordinator at a hospital, her life has also undergone a radical transformation. Following debilitating surgeries and treatments, she found herself unable to dance. She was however, able to do yoga and experienced almost immediate physical improvements, giving her a tremendous amount of flexibility, mobility, and range of motion. While noticing physical changes from the yoga, she also gained an ability to calm herself. These newly acquired benefits were very

empowering. "I breathe a lot. I keep focus on myself and make myself happy. I do what makes me feel good and then it will filter out to everyone else."

Roberta is a 65 year old yoga instructor who also attributes her well-being to yoga. Her comments reveal how closely entwined her life is with yoga. "It's part of my life, like brushing my teeth. I just do it. I felt like I had to do yoga every day because it made me feel better. It helped me connect with my body." Roberta raises an element of "habit" or "routine" as she compares it to brushing teeth. Norma, 61 year old, also uses the term, "habit" in her description of the relationship with yoga. "It's all a matter of habit. It's been integrated into my life and is part of me now." All 15 Transformed women repeatedly describe an intrinsic "need" for yoga, their "best friend;" terms implying a profound and lasting relationship with yoga.

Similar expressions are used among the following group, the Believers, to convey their connection with yoga, changing perceptions and identity. What distinguishes the two groups are the barriers that the Believers face that interfere with their yoga practice.

The Believers

Believers are women who experience similar physical, emotional, and spiritual sensations as the Transformed however report the presence of constraints that prevent them from advancing quite as far. Their yoga practice, however deep, resembles a respite as they are less able to integrate the skills beyond the yoga class into their daily lives. Limited time resulting from work and financial obligations, and family responsibilities including childrearing or caregiving prevent them from practicing as much as they would like. They express strong intentions to expand their practice and more fully assimilate it into their lives when these constraints are lifted.
Motivation is clearly articulated and as with the Transformed group, the 14 women in this group similarly describe a deepened relationship with it and observable benefits.

Case Study: Anna, Believer

Anna was the 37th woman interviewed. She was 46 at the time of the interview and had been diagnosed at the age of 43. She had been practicing yoga for eight months and was introduced to it through an announcement that was given out at an event for breast cancer survivors. It was being touted as a free class for survivors with an instructor who was also a breast cancer survivor. True to her nature, Anna felt that she had nothing to lose by trying it.

Anna is a young mom, has an extremely busy schedule taking care of the children, working part time jobs, doing volunteer work, and is primary caregiver for her elderly parents including a mother who is in advanced stages of Altzheimer's. Her husband works long hours leaving most of the family and home responsibilities to her. Needless to say, her grueling schedule leaves little or no time for herself and when this yoga opportunity came up, it seemed like a good thing to do.

The early classes came easily to Anna because of her childbirth experience with hypno-birthing. She believes that the breathing and relaxation techniques that she learned during childbirth were similar and could easily be transferred to her nascent yoga practice. These skills gave her an advantage as she connected with yoga from the onset.

> I thought the first class was wonderful. I was familiar with some of the things she had us do. I made the mind-body connection during natural childbirth when I realized that my mind could control anything. After that, yoga seemed like a natural next step.
>
> I started to do yoga because it was something that I could do that got me physically active. It was baby steps especially when I knew I couldn't start running and didn't have time to go walking. The environment was very supportive because of the kind of class it is and the women were just very welcoming. It's a very safe, bright, and warm environment.

One of the important differences between the Transformed and the Believers are the restraining forces that interfere with the Believers' yoga practice. Anna's life is encumbered with family, home, childrearing, work, caregiver, and financial responsibilities that prevent her yoga practice from advancing. Although she recognizes these constraints, "with all the stuff that I have on my plate and everything that I've been through," she still expresses desires and intentions to build her practice. She alludes to her interim relationship with yoga and considers her experiences in class to be a luxury. She understands that due to the current demands of her life, she cannot access them all the time.

> Going into yourself is really pampering because I don't have time for myself. This is a luxury and not wasted time because I'm doing something positive with it. I enjoy the exercise, the women, and the inner peace. This is like time with my best friend, the inner me and I feel a yearning when I have to miss it. I'm very interested in trying some new things.
>
> There's more of an interest and an awareness so for me, my practice has definitely deepened. I can just go and sit cross-legged and just sit in the pose and close my eyes and take myself to that quiet place.

One of the characteristics present among the Believers and the Transformed is a growing spirituality. Anna also articulates these feelings.

> Part of how I have managed to look at my last three years is very much looking for the positives in things. In yoga, the idea of being in harmony with the universe and just the openness and opened mind seems to just kind of all fit together.
>
> I think there's a kind of union of all the different faiths that are around me. I visited a Hindu Temple and there was an illumination or an epiphany that it's not all so different and anything is good if it brings you closer to God or a closer union with goodness. Yoga provides an hour of inner peace and a chance to just kind of be quiet and still within myself and just put aside all those things into a box, aside, and just be.

The greatest distinction between Transformed and Believers are the obstacles beyond their control that deter Believers from fully embracing yoga. The following quotes demonstrate

Believers' intentions to advance to the next level. Nancy is a 64 year old divorced, unemployed woman who had worked as a child advocate for many years before moving cross country and settling into a new home. She is fiercely independent and talented and devotes a good deal of her time to restoring an old house that she recently purchased. She began doing yoga six months ago. She takes a weekly yoga class and does yoga once or twice a week at home with the aide of a CD. Her intentions to deepen her practice are clearly articulated in the following statement, as is the restraining force that's impeding her progress.

> As soon as we're done working on this place, I intend to do it a lot more. I would like to take classes more often. I feel like I'm just getting started and would like to have more instructions so I can really progress more into it. I feel like yoga is part of keeping my health. It's starting to be my own.

Lisa is a 53 year old divorced woman and member of the Believers who recently graduated with a social work degree, following a long career as a real estate appraiser. Over the years, she has suffered from depression, chronic fatigue, and anxiety; all interfering with work and putting her under enormous financial stress. Cognitive problems resulting from the chemotherapy have compounded her problems and interfered with her ability to support herself. She struggles to maintain her yoga practice which she began four years ago, while facing the financial, physical, and emotional challenges that restrain her ability.

> I would do more yoga but the class is free and I've had financial issues. Yoga is an important part of my life and I want to make it more important because of all the emotional, physical, and spiritual aspects. I think it makes me able to focus more on my spiritual life when I don't have all the emotional and physical things involved. If I have pain physically or emotionally, I'm kind of distraught. Then my focus is not on my spiritual life, it's more on the other problem. If I take yoga once a week, I can keep muscle pain, anxiety, and depression to a minimum. Occasionally I practice on my own. I intend to do it.

The distinction between the Believers and the Enthusiasts is the degree to

which women can fully embrace yoga. Believers encounter more external restraining forces that interfere with a deepening practice while the Enthusiasts describe more internal and emotional barriers. Enthusiasts are also exposed to fewer mediating variables that are associated with progression. Despite these differences, all women in both groups continue to demonstrate movement in their practice.

The Enthusiasts

Enthusiasts are characterized by having advances toward a deepening practice that are more modest. The group consists of ten women who have spent less time with yoga and are beginning to experience growth and deepening across all domains. They express an immediate connection to yoga, recognize its health benefits, and feel determined to stay with it. The majority of them credit yoga with distinct changes in expressions of emotional and spirituality.

Temporal constraints affect 4 of the 10 women who have been practicing yoga for six months or less. The remaining women face other restraining forces that interfere with their practice. One such constraint relates to the group experience and the type of social support that they receive. Half of them are not involved with a yoga class for breast cancer survivors. Emotional issues impact 9 of the 10 respondents; five identify themselves as Type-A personalities, two suffer from depression, one suffers anxiety, one is dealing with caregiver responsibilities and stress. The tenth woman is experiencing non-cancer related health issues that prevent her from practicing yoga with regularity.

Anna is one of the members of the Enthusiasts who suffers from depression and is exposed to excessive amounts of work related stress. As CEO of a large not-for-profit, she has struggled with the loss of a financial administrator while going through a national accreditation at the same time she became sick. She tries to mitigate some of the pressure she feels with her

daily yoga routine at 5:30 a.m. at home with the aid of a videotape. In the following excerpt she describes some of the stress, the time constraints, and her sudden "vacation" from yoga. Clearly there are several legitimate forces in her life interfering with her yoga progress, despite the fact that she has a daily practice.

> When I finally hired someone and I've been trying to decide if she's the right person, then we got this new grant and at the same time the bottom fell out of the economy.
>
> One way I cope with stress is I prioritize. I try to figure out what I need to worry about and what I can just worry about later.
>
> My goal has been to figure out a way to exercise that fits my schedule. I can't always control when I get out of work. For a while I was able to think of the yoga as part of my treatment so I felt a little bit more flexible about coming in late and leaving a bit early. I don't feel that anymore.
>
> This is the first week that I've taken off from yoga since I've been feeling well. I don't know what's going on. There's always a lot of stress at work and I have been feeling really exhausted and almost like I did when I was having my radiation therapy and I decided that maybe my body just needs a little bit more of a rest than it's been getting, a little like a vacation.

Case Study: Robin, Enthusiast

Robin was the 14th woman interviewed. She was turning 51 around the time of the interview, had been diagnosed with breast cancer two years before at the age of 48, and had begun yoga four or five months prior to the interview. Leading up to her diagnosis, she had been on hormone replacement therapy from 1999 to 2006 due to an idiopathic early menopause and immediately stopped the HRT once she was diagnosed. Her preconceived notions and early attitude about yoga prevented her from ever trying it, despite the fact that her husband practiced yoga. Her drive to burn calories, sweat, and lose weight through physical workouts trumped any desire to do what she considered to be a more subdued activity. Her husband understood her desire to work out intensely in her never ending quest to lose weight, and did not try to encourage her to do yoga.

> He never said you should try yoga but he knows that I like to lose weight. I'm more geared up for something aerobic to lose weight like go on an elliptical or take a class, you know a cardio or strength class. I was always more thinking that yoga wasn't really gonna help me in my ultimate goal of losing weight but I was aware of it and thought it would be good to do once I was in shape.

Robin's personal and professional obligations echo those of other Enthusiasts and precluded opportunities to indulge in yoga prior to diagnosis. She finds her job in sales to be extremely demanding and time consuming while juggling such personal responsibilities as crises management for her elderly parents and high school and college-age daughters. She refers to the sandwich generation and her innate nature as a caregiver. Her elderly parents need her assistance on a regular basis and her daughters rely heavily on her ability to resolve problems. These commitments coupled with her desire to lose weight continued to interfere with her trying yoga. She was even given a gift certificate two years earlier by a friend but never made it to the studio "because I worked during the day and felt like I couldn't close my mind off to work as much as I would need to take a class during the day."

Not until she really felt that it was a necessity to help improve her mental and physical strength, did she seek out yoga. Careful to fit class into her schedule, she was not initially willing to compromise her existing personal and professional timetable. She now understands that her friend gave her the gift certificate because "she thinks of me as a pretty busy person with a lot of stress in my life."

Although she's only been at it for less than six months, Robin expresses an interest in learning more and advancing her practice. She also admits to a growing understanding of the stress and the need to prioritize her life and take better care of herself in order to feel better. Although she was initially resistant to yoga, she claims that it's been a positive experience and the benefits are outweighing her earlier concerns.

> The first question is how do you, you're so busy and you're feeling stressed by not having any time. You feel the stress of how am I going to get to yoga? But then you realize that that's what's going to help you feel less stressed if you put it into the right place in your life.
>
> I liked the concept, the calm, the introspective support, the teachers and I found it soothing and relaxing. I was never really sure if I was doing things right. I still feel the need to take a one-on-one class to understand all the differences. I haven't found an instructor that I'm following yet. I wonder how to get better at it.
>
> I see it as more of a necessity to help improve my mental and physical strength. It's not surprising that I wound up doing it because it was something I was considering but it was just a matter of finding the time.
>
> I'd like to consider yoga a regular routine because I find it's good for my body and soul. I feel that I can start to think about taking out the things that are more stressful and putting my time into keeping myself healthy. The thing I like about yoga is it's something I'll have for a lifetime. Hopefully I can do it when I'm eighty.

Susan found strenuous exercise to meet her individual needs, and similar to Robin, her drive to workout intensely increased early resistance to yoga. Susan has always been a thin, athletic, and disciplined individual, as she describes what vigorous exercise did for her. "I dealt with stress mostly on the bicycle and lifting weights. I was always driven and had an A type personality. I just kept pushing and releasing the stress through the workouts." She has been practicing yoga for four years, although her practice consists of one power class each week in a semi-private class with a close friend. Several restraining forces prevent her practice from deepening: her intense nature and compulsion to exercise excessively; she has a very demanding job with limited free time; she has a young, very active daughter with a demanding schedule of her own, and the absence of group social support..

Upon first review and analysis, all 14 women from the Enthusiasts and Casual Users groups appeared to be one and the same. After further analysis, a distinction surfaced that would

separate the women into two groups. Due to common characteristics and experiences that emerged, the Casual Users demonstrated a more recreational relationship with yoga.

The Casual Users

Casual Users consist of women whose relationship with yoga is more superficial despite the longevity of their practice. While they enjoy it and recognize its value, the four women in this group equate yoga to a more physical and recreational experience and are content with their practice as it is. Although yoga appears to be more episodic and motivated by external factors such as convenience, there are references to their gratitude for and awareness of the benefits. Spirituality is a construct that connects women across stages of the continuum although it is noticeably absent from the Casual Users. The reluctance of Casual Users to advance their yoga practice coincides with yoga's failure to penetrate to other domains and is reflected in the cursory and concrete responses to questions about spirituality. There are inconsistencies in Casual Users' responses that can be attributed to ambivalence towards yoga.

Each of the four women engages in and is equally involved in other competing activities that she is not willing to give up. One is involved with a breast cancer coalition and the other three with competing physical activities that interfere with their yoga practice. Linda, a retired social worker who is on a limited budget, refers often to the other activities that she's engaged in. "The day I do yoga doesn't feel different than other days because I have opportunities to walk and exercise a lot. I'm trying to do a lot of things that don't cost a lot of money."

The following statement from Alana, a 65 year old, retired teacher, captures the casual relationship that exists, "I have to admit it's all a matter of convenience and that's when I say I'm not a student because I'm not driven. I really enjoy it and if it works into my schedule, I take it." At the time of the interview, Alana had been away from yoga for a while due to cataract

surgery. While she knew she needed to be more physically active, Alana never sought out yoga on her own. She did, however, see a newspaper article describing an "older instructor" who was giving classes in her neighborhood. This was the impetus she needed to enroll in the class. She believed, "it was meant to be." She did harbor some preconceived notions of yoga and associated it with youth, "pretzel" flexibility, and wearing leotards. These perceptions of yoga gradually dissipated as her practice evolved and she admitted to becoming more open-minded.

Similarly, Sam had also been away from yoga as she had an extended out of town visit with relatives. Sam is a 71 year old retired, medical secretary and market researcher, who suffered debilitating side effects throughout her treatments. She described herself as an "energizer bunny" who never stopped and a Type-A personality. Because of her nature, she found that she had no patience for the gentle yoga offered to breast cancer survivors through the hospital where she worked. "It's gentle where I don't have patience for that. I knew I'd flip out. It would get me more aggravated." Her high energy level kept her constantly on the move once she regained the strength that allowed her to engage in more strenuous physical activities.

Sam expresses her positive feelings towards yoga and at the same time indicates limitations and her reservations.

> I like yoga, I love yoga. I think it has a place in my life and it always will. I can't say that I'm going to be a devotee and that I'm going to do this every day. No way. I can't. So I walk one day and I'll do yoga another day and I'll do something else. I want to mix them and vary them. I've seen some friends of mine who've gotten crazy with exercise where they do the same thing every day and they actually had to be told to stop for a while and so I think varying is the best way to go. The important thing is to be able to control your emotions.

A combination of restraining forces impacts their experiences with yoga and prevents them from going deeper. The lack of a sense of belonging and social support, lack of mastery,

lack of early positive experiences, and emotional barriers are some of the prevailing forces that continue to interfere with their practice. The following case study is a Casual User who has been practicing yoga for several years with characteristics and qualities indicating that she remains in the early stages of the yoga continuum.

Case Study: Paula, Casual User

Paula was the 40th woman interviewed and whose interview took place over the telephone. She was diagnosed at age 42, is currently 45 years old and at the time of the interview had been practicing yoga for a little over a year and a half. Paula describes herself as a large-boned woman who has struggled with her weight most of her life. She has a history of dieting, fluctuating weight, and regular intense workouts at the gym that began back in her college days. Her daily exercise routine had become so intense and lengthy prior to her diagnosis that it resulted in emergency surgery to have a bladder tack inserted six months before breast cancer.

Paula is single, has never been married, and has no children. She lost both of her parents at a young age, both to cancer. Her mom had been diagnosed with breast cancer at age 41 and wound up dying four years later. It's no wonder that when Paula was diagnosed at age 42, she "kind of freaked out." She has virtually no family in close proximity and has relied heavily on her friends for support over the years. It's understandable that her responses to questions about yoga and other important activities that she engages in are framed around her relationships, as exemplified by recollections of her first yoga classes.

> They were fun and I think part of the class too is that there are peers of mine that are in there. It was just a bonding kind of thing that you would do with the women there talking before class. Also, we all started together at the hospital doing this yoga class. When they put the class together at the hospital some of the other girls were saying, 'oh, let's go there and try it out.'

> They have been talking about not offering this class as often and there are other classes I could attend. It's not about that though. It's more about the people that are in the class that are the cancer survivors as opposed to going to a public class that doesn't have that extra aspect. I don't like change so I don't know, maybe if a few of us went elsewhere but I just think it wouldn't be the same kind of thing that we have right now with the other cancer survivors.

When asked 'what does yoga mean to you?' Paula's immediate response was 'camaraderie.' She goes on to mention other benefits including relaxation, feeling better, and awareness, but her initial response reflects the motivating force that seems to sustain her yoga involvement, at least at this point in time.

> At the class at the hospital, that's where I feel my social needs are met and I guess that what I'm afraid of is that I won't have those same social needs or social ties met. At the Y when I have been there a couple of times, I have been a member over the past few years and I guess I always feel like the outsider because those other people have been going to class for so long and they know the moves and they know the routines and they can do things that I can't do because I've never done them before.

Paula expresses concern about participating in more mainstream yoga classes, as she questions whether she'd fit in. These reservations are mentioned by several women, not only Casual Users, who have been practicing strictly in a gentle, restorative, cancer-specific yoga class. Nancy, one of the Believers, shares similar worries, "I'm a little resistant to going to a regular class. The few that I've attended, I haven't felt that comfortable. It's not as easy for my body to do all the stretching and postures in a classical way." More vigorous and mainstream classes can be intimidating, especially if one's health and physical ability have been altered due to cancer. Paula continues:

> It's more about the people that are in the class that are the cancer survivors as opposed to going to a public class that doesn't have that extra aspect. I guess I don't like change. Maybe it would be the same if a few of us went but I just think that it wouldn't be the same kind of thing that we have right now.

The activity that Paula is completely enamored with is pole dancing which she began shortly after the yoga. This class was another group activity that came about from the breast cancer support group friends.

> We can be kind of crazy. It was advertised they were starting a new studio here and we're like, 'oh, we need to try it out,' and it's really fun. It's funny because we call it 'slutty yoga' because there's a lot of floor work that you do, a lot of the yoga type activities and then you do the pole stuff which is your tricks. It's the same kind of thing where it's a bunch of women, you get together, you giggle, you don't care about your body, you know and so it's really therapeutic.

Paula likes the peaceful feeling where you can let all your stress go, especially "savasana where you get in that half state where you're not asleep and you're not awake." She feels so relaxed and energized afterwards and thoroughly enjoys these opportunities. However, she is aware that she still bottles up her stress enough so that she must wear a mouth guard when sleeping as she grinds her teeth. Although she describes herself as being a laid back person, she feels that she holds in a lot of work and personal related stress.

Paula describes benefits from the yoga although any internal drive to practice yoga is outweighed by her desire for belonging and the relationships in her life. She finds comparable pleasure in the pole dancing which is strongly derived from the fun she has with her friends. She also expresses a fear and reluctance to venture out of her comfort zone to do yoga elsewhere. Paula's relationship with yoga is less progressed due to the restraining forces that impede change.

All the women interviewed acknowledge that yoga begins as a physical and de-stressing experience that eventually expands to other domains. Most of the Casual Users and Enthusiasts strongly identify yoga with relaxation while a few maintain that it's a 'physical experience.' These one-dimensional and more superficial responses reflect the restraining forces that

distinguish Casual Users and some of the Enthusiasts from the others who are more advanced in their practice.

The temporal dimension and behavior change theories were initially considered as a way to help understand the emergent themes. Parameters for the three time spans that were identified for purposes of this study (less than 6 months; 6 – 18 months; beyond 18 months) were established based on input from key informants. It was determined early on that factors beyond the originally established temporal ones interfered with or contributed to a progression, a deepening, and a noted transformation that was observed among the respondents. The investigator was interested in understanding what it was about the experiences that could explain the paths taken, and if the social cognitive theory (SCT), theory of planned behavior (TPB), or the transtheoretical model of change (TTM) could contribute to a deeper understanding of changes taking place.

Based on the depth of their relationships with yoga, women are assigned to one of four distinct stages. Although the categories do not completely align with the original time spans, there is considerable overlap. Yoga is a complex and multidimensional activity that involves progress along multiple domains. Factors that impact the physical, emotional, psychological, social, and spiritual domains all contribute to the engagement, a deepening, and an identity transformation that delineate the four stages. At the same time, restraining forces play a role in inhibiting progress. These concepts become clear when presented with descriptions and excerpts.

What accounts for a building relationship and a deepening yoga practice?

The following list includes variables that emerged in the data that mediate changes observed. An analysis of the transcripts revealed that the respondents move through stages of

yoga at different rates depending on the following contributing factors that reinforce or inhibit their practices. More detailed explanations and excerpts will be used to illustrate each:

- Prior Experiences, Perceptions and Attitudes of Yoga and other Mind-Body Disciplines
- Referrals and Access
- Prompts and Triggers
- Instructors
- Sense of Belonging
- Mastery and Self-Esteem
- Opportunities, Time, and Resources
- Support Systems

The above-mentioned antecedent variables, including both motivating and restraining forces that lead to or impede yoga following diagnosis are important areas that were explored. The presence, absence, and magnitude of the identified variables all play a role in advancing or inhibiting progression of yoga from engagement through identity transformation. They each contribute to movement along the yoga continuum and together help determine assignment to one of the four groups.

Prior Experiences, Perceptions, and Attitudes of Yoga and other Mind/Body Disciplines

Twenty-four of the respondents came to yoga post-diagnosis with some former experience with yoga and/or other mind/body disciplines ranging from participation at a yoga retreat, Tai Chi classes, or meditation. Their exposure to yoga was quite varied, as were their lasting impressions, depending on what the circumstances were. Regardless of whether these past experiences were positive or negative, the data suggest that they did play a role in

accelerating the engagement process. Recollections of breathing and relaxation techniques learned as well as favorable perceptions surfaced during the early yoga classes following diagnosis. The familiarity made skills easily transferable and facilitated the engagement process in those first classes. Their former experience also helped women achieve a sense of mastery, another factor explained later in this section.

Although the skills may have better prepared women for yoga, the majority of respondents with prior experience did not feel compelled to seek out yoga upon learning of their diagnosis. Only 10 of the 24 who had prior exposure to mind/body disciplines reported feeling a strong need to begin yoga following their diagnosis. A recent commitment to such practices as Tai Chi, meditation, Karate, or hypno-birthing that utilized breathing techniques similar to yoga also appeared to play a role in increasing their yoga engagement.

Several women who had begun Tai Chi immediately following their diagnoses seemed to transition easily to yoga with the skills acquired. One woman's experience in childbirth using hypno-birthing familiarized her with a set of breathing and relaxation techniques that she could draw on in yoga, similar to what others experienced with Tai Chi. Another woman's mastery of martial arts combined with attendance at a yoga retreat center, easily prepared her for yoga as she explains, "I got it right away because I had been a martial artist so I kind of got the discipline." These positive associations and familiarity with practices based on a similar set of skills seemed to accelerate the engagement process.

"Feelings of frustration," "anxiety," "imperfection," "nervousness," "embarrassment," "inability to relax," "challenged," and "resistant" were terms and phrases used to describe what many women felt when they first began their post-diagnosis yoga practice. Preconceived notions about yoga that served as barriers to engagement were not uncommon. Yoga seemed too

hard for some (a common perception where yoga involves putting yourself into a pretzel), it appeared too slow for others who expected an intense work out, and it was too "cultish," or "out there" to some of the more self-described conventional, reserved women. Sabrina, one of the Enthusiasts, who held two degrees each in law and education, expresses her skepticism. "I thought it [yoga] was a little too culty and I didn't really know what it was. I didn't want to get involved with the spiritual aspects of it. I'm not a groupie." Galaxy, another member of the Enthusiasts and a 66 year old retired educator, refers to her concerns. "I thought it would be very tough having seen some of the poses. I never thought I would be doing it."

Trudy**,** a 52 year old human resources manager from the Transformed group who has since become a yoga instructor, began doing meditation more than the physical postures following her diagnosis. Trudy identified herself as a perfectionist who internalized all her problems. As the oldest child of alcoholic parents, her role as caregiver was defined early in life, as she stated, "I'm the oldest, so I take care of everything."

Following her treatment she felt she wanted to "play it safe" and waited until well after her surgery when she began incorporating a more physical practice. Her earlier experiences with yoga in her youth led her to seek out some alternative type of practice following her diagnosis and gave her a natural affinity for it.

> The first time I ever took a class I was eighteen years old. It was the energy that got my attention because I could feel after the class and it was a different feeling from after you work out with weights or doing cardio. I could feel the energy flowing through me and I thought, 'wow, this is pretty interesting.' And that was it. I would go to an occasional yoga class, but I never really did anything with it. It was always in the back of my mind. I got a little bit more interested in it about six, seven years ago (about 4 years before diagnosis) but I wasn't really doing anything. I was always into metaphysical stuff so yoga just kind of fit along nicely with it.

> Following my diagnosis, I was looking for it, maybe not specifically for yoga but any kind of alternative thing. I did see that they did offer yoga at Sloan Kettering but it was in the city, it wasn't here. When I wound up going back to yoga and meditation, it didn't surprise me because it was always there. It might not have been in the forefront, but it was always there.

Trudy identifies earlier metaphysical experiences and sensations with energy that led her to yoga and allowed it to resonate more naturally with her. The instant connection she felt with it enhanced engagement and helped her sustain the practice, even when facing the many personal barriers that she described. Similarly, other women found these pre-morbid experiences with mind/body practices to contribute to the engagement process.

Referrals and Access

It is often the referral, recommendation, or urging of a close and/or respected person that leads the women to yoga. For 10 of the women, it was a medical, mental health provider, or mind/body practitioner who referred them. For 13 others, it was a close friend or relative, most of whom had been practicing yoga for years, demonstrating it and/or gently suggesting it. Ten women were encouraged by their local breast cancer coalition or cancer center where yoga was being offered. Recommendations and referrals to yoga appeared to be critical in the engagement process. Women were likely to begin yoga following their diagnosis when a health care provider or some significant other recommended it, and when there was a class available.

Dot, one of the Believers, was looking for massage because of lower back pain. She found a massage therapist who happened to be a cancer survivor and who introduced her to the local integrated medicine center. "I was not looking for yoga, I was looking for massage. The massage therapist suggested that I try yoga and that I could get a free class because I was a survivor. That's what I did."

The Theory of Planned Behavior (TPB) provides some understanding of behavior changes involving engagement, although all available supporting research examines TPB and physical exercise, not yoga. Referring to exercise behavior among cancer survivors, Jones et al (2005) found that the oncologist's recommendation to exercise served as a normative source of motivational influence. Moreover, the medical referral was found to influence other TPB constructs, theorizing that changes in a specific normative belief could lead to changes in global attitude or perceived behavioral control (Ajzen, 1991; Jones et al, 2005). Their analysis demonstrated that a recommendation to exercise provided by a salient source such as an oncologist could impact perception of approval for exercise, feelings of approval, and a favorable belief about exercise. The positive attitude and subjective norm towards exercise could result in an increased motivation to perform the behavior (Jones et al, 2005).

Fran, an Enthusiast is a 73 year old woman who was diagnosed at age 71. She had recently lost her husband to whom she was married for over 50 years. He had suffered a stroke and the last few years of his life were spent in a nursing home. Fran was fully devoted to him and absorbed in her role as caregiver and although he was institutionalized, she was his constant companion and advocate. He died a year after she was diagnosed. She has since moved into a senior community and is beginning to adjust to her new life as a widow.

Fran belongs to a generation whose values and lifestyle choices are more conventional and do not embrace yoga as a norm. The types of exercise that she and her friends were accustomed to prior to her diagnosis were Jazzercise, Curves, and walking. Yoga was not something that she had ever considered doing until her doctor recommended it.

Several of her responses throughout the interview revealed a compliant nature with regard to the health care providers to whom she had the "utmost respect." When asked if she had

tried any alternative or complementary therapies in addition to the conventional treatments, she responded, "it was not suggested." When her oncologist recommended that she try yoga after the completion of her treatment, she "just followed his orders."

> It was the oncologist that recommended it when I was all finished with treatment. He supported it very highly. I didn't like it much at the beginning and kept thinking, 'what did I get myself into?' But because it was doctor recommended, I gave it top priority. He's a very friendly doctor who I like very much. He's very supportive and by him recommending yoga, I followed his orders.
>
> He not only is a good doctor, he's thinking about my mind also. He's not a psychiatrist or anything like that. He's strictly an oncologist but he seems to know the whole body and treats you with a whole body [perspective]. I have great faith in my doctors. My family doctor I have had for twenty four years.
>
> I have improved since beginning yoga. I started out sitting on a chair and after maybe two months, I didn't need a chair anymore. I haven't tried practicing yoga at home yet but I am interested in it. I don't have a tape or a DVD and would like to buy one. I've been thinking about practicing at home over the last few months, since I moved into the new location.

The recommendation by a salient source such as an oncologist to do yoga is a compelling factor and does impact one's engagement. When patients hold health care providers or significant others in high esteem, it seems likely that they will respond favorably to their recommendations. The presence of this variable also outweighs a neutral or negative attitude. This variable is absent in 3 of the 4 Casual Users and does appear to restrain their progress.

Prompts and Triggers

Fifteen of the 43 women admitted to feeling a need and/or searching for something to make them feel better at the time of the diagnosis, or even shortly before it. The smallest hint or suggestion of a program, through a newspaper advertisement, a yoga class announcement flyer, or word of mouth was enough to prompt them. Nine women were introduced to yoga by a casual acquaintance, an overheard conversation, a newspaper advertisement and several women

mentioned moments when "seeds were planted" while eavesdropping in on a stranger touting the benefits of yoga.

Linda II, one of the Transformed whose oncologist had recommended doing Tai Chi, recollects how she had not given yoga a thought since she was fully immersed in Tai Chi. Her husband is the one who came home with a flyer about yoga one day. "It wasn't even on my radar because I felt that I had the meditative piece form the Tai Chi. So my husband and I went to the yoga class and we liked it."

Although Joy, another member of the Transformed, claims that she was influenced by a friend who had been practicing yoga, she recalls a vivid memory that piqued her interest in it. "I was having a manicure and the manicurist was saying she does yoga. She mentioned how great she felt afterwards. I remember thinking, 'I want to check into that.' I was thinking about it." At the time, Joy had no knowledge about yoga, just that it was an ancient practice. From that point on, she began to think about it. "Prior to my diagnosis I was considering yoga so on some level I was thinking that I had to make some changes." It's not certain if examples like Joy's involve serendipity or just an accumulation of information and events. What's important is that casual incidents that the nine respondents referred to did precipitate an exploration that led to yoga.

Carol, a member of the Transformed group, describes herself as an extremely active and athletic person. She recalls how she first found yoga.

> I think it might have been something that I've always wanted to try and they had advertised this yoga center which was close to my home and it said they would offer a free class before the session started to see if you liked it or not. I actually went and I was hooked.
>
> I probably had been thinking about taking yoga within the last ten years. It wasn't something that I can honestly say I wanted to do because I was more attuned to being outdoors and doing stuff outside.

Twenty-three respondents admitted that they were not instinctively drawn to yoga following their diagnosis. A few did admit to a feeling of being overwhelmed and a desire to address the mounting stress that they were dealing with, prior to diagnosis; some even considered yoga beforehand. For more than half however, yoga was not something they were thinking about. With their physical limitations, their advancing age, their preconceived notions of yoga, and even their past exposure to it, it was not given a thought. This is more reason why the triggers and prompts seem to play a pivotal role in inspiring behavior change.

Yoga Instructors

One of the strongest contributing factors that impacts women's attitude towards yoga and their ability to embrace it is the perceived quality of the instructor. Thirty-four women mention the instructor's influential role as it pertains to familiarizing them and drawing them into yoga, making the instructor the most cited predictor of motivation and engagement. Many of the respondents' comments credit the instructor with innate abilities, intuition, sensitivity, inspiration, and encouragement. It's interesting to note that of the 15 Transformed women who demonstrate the deepest relationship with yoga, 11 of them assign the following superlative qualities to the instructor: "floating angels," says Laura; "very special person," says Diana; "uniquely gifted," adds Constance; "fabulous," states Carol; "spiritual guide," says Suzanne; "an angel from heaven and soul mate," says Norma; "she is all," adds Frances. These descriptions reflect an intense connection and high regard for the instructor that develop over time. In contrast, among the Casual Users, Linda comments, "I like the instructor and her style. The other one was good." Only one Early Adapter identified the instructor as "wonderful." Other terms used among women in this group simply referred to the quality of the class. They do give

credit to the instructor but their praise is more restrained, referring to the instructor's technique, how good they feel as a result of the class, and less about their instructor's positive attributes.

Norma is a 61 year old member of the Transformed group who is retired from retail work. She identifies herself as an "energizer bunny" and a very "hyper kind of person." She puts on a good show for others as they think she's "strong as an ox" but claims "I happen to be my biggest stress; I keep my stress." Her life has completely transformed with yoga and she credits the instructor for much of her initial attraction to it. Her pre-yoga perception of yoga was as follows: "I thought it was cute and adorable, but I wasn't a believer." She refers to the qualities of the instructor in the following passage:

> I will say without a doubt I was drawn in to yoga first because of the teacher. It was absolutely the teacher. But now that I've seen, now I understand, I have the world open to me to go to other yoga teachers. During the timeframe when she wasn't teaching I had given up on trying to even go to other teachers. Once I relaxed into what I was doing, I realized that it was also the yoga. My teacher is an angel, she is an angel from heaven. She is my soul mate. She was given a gift. Just listening to her talk makes me relax.

Qualities of the instructor are described by almost all the respondents in the context of engagement, mastery, and stages of progression. Like Norma, many assert that they were unequivocally drawn to yoga because of the teacher. Research over the years on women's relationship schemas contributes to a better understanding of these emergent themes regarding the relationship with the yoga instructor. According to the relational perspective, the pursuit and growth of mutually empathic relationships among women is a fundamental developmental goal. Components that have been identified in this process of mutuality between two people include empathy, engagement, authenticity, diversity, and empowerment (Kayser & Sormanti, 2002).

These recurring themes regarding the role of the instructor in yoga engagement may be better understood by examining properties of motivational interviewing (MI). Without specifically employing any therapeutic MI strategies, the instructor facilitates a process of recognizing discrepancies between behaviors and values. The self-reflection and appraisal that take place heighten an awareness of existing contradictory practices and possibly inspire or contribute to behavior change. Examples of these new understandings appear throughout the transcripts and are associated with changed behaviors.

Sarah, a Believer and a college professor who identifies herself as a Type A personality, articulates a discrepancy between her values and behaviors. "I am more aware of what I've done in the past and how much of my own stress I create. I put a lot of personal pressure on myself." Sarah acknowledges an incongruity between her strong desire to remain healthy and former behaviors that may have been detrimental to their well-being.

Zena, one of the Believers and who has suffered from debilitating side effects that have prevented her at times from doing yoga, reflects on a different type of experience with the teacher.

> The instructor has said many times, 'if you feel you can't do a move, you can go to a child pose, if the move doesn't honor you, just imagine that you're doing it. Thinking that you're doing it is as good as doing it.' When she saw me in the hallway she said, 'just come to class and just sit there and close your eyes, breathe and imagine that you're doing what everybody else is doing. It will be just as good as doing it.'
>
> I remember thinking, 'come on, I don't know if I buy that.' A day or two passed and I was getting cranky just being home so I decided to give it a shot. I cane to the class and it was wonderful. How much worse would it have been sitting at home by myself, not being around hearing the music, not hearing what she was saying and not getting my mind straight.

Constructs of mutuality can help understand the relationships that are described between yoga student and teacher as well as among other students. Themes of engagement due to the strong bonds that develop appear to align with Kayser's and Sormanti's (2002) research confirming their hypotheses that the quality of women's close relationships plays an important role in their psychosocial adjustment to life threatening diagnosis, treatment, and beyond.

Yoga Class and Sense of Belonging

The yoga class with or without breast cancer survivors adds another dimension to the social and emotional support received. A sense of connectedness, community, and camaraderie is expressed by many of the women and becomes a strong reinforcing factor. Thirty-two of the respondents felt a strong bond with the other women and most believed that the sense of community strengthened their yoga practice.

Feminist theory contributes to a better understanding of what these emergent themes mean. Early feminist explanations of the meaning of human relationships among women due to their child-rearing experiences, are echoed by Nancy Chodorow (1974) in the following passage: "in any given society, feminine personality comes to define itself in relations and connection to other people more than masculine personality does" (Gilligan, 1982, pp 43-44). The women in the yoga classes are mentioned frequently as the vast majority of respondents express high regard for both the women and the class. They describe its importance in the following phrases: "sense of connectedness," says Lynne; "camaraderie," says Sabrina and Paula; "a safe place," says Dot and Diana; "common bonds," says Tracy, Therapy, Fran, and Carrie; "a source of comfort," says Melissa; "sisterhood," says Lynne; "a feeling of communion," says Constance; "sharing the same experience," says Sara; "sense of community," say Ann, Zena, and Michelle; "second

family," says Michelle; "sense of peacefulness and healing," says Victoria; "loving, supportive, and positive," says Anna; and "upbeat place" says Fran.

Among the four groups, 11 of the 15 Transformed, 13 of the 14 Believers, 7 of the 10 Enthusiasts, and 1of the 4 Casual Users acknowledged the value of the bonds formed and found the yoga groups to be extremely fulfilling and supportive. Ten out of the 11 women who had participated in both yoga classes and traditional support groups, favored the yoga class. Lynne, one of the Enthusiasts, is a 64 year old retired nurse who acknowledges her caregiving and high strung tendencies. She summarizes others' sentiments in the following statements, "Yoga is a cancer support group of sorts that I can deal with. But this is a fun activity that's relaxing. We can communicate but the central focus is not 'poor us, we have breast cancer.' This is how we can feel better."

Victoria, a Believer and a 53 year old retired secretary, is one of the few in the group who at the time of the interview was participating in both. The majority of women who had attended both a traditional support group and a breast cancer yoga class preferred the yoga class. Victoria admitted that she continued to attend support group meetings out of a sense of loyalty and guilt. Sometimes she would even skip the meeting and meet the girls afterward. She describes both:

> People [are] just falling apart. Sometimes I don't want to be there anymore. You don't want all that negative energy coming at you all the time. You've got to go somewhere where you can find positive energy. In yoga there is a sense of peacefulness and healing. There's a real camaraderie here with the other girls in the group. Being able to share with other girls, what they've gone through, it was a godsend coming here.

The impact that both the instructors and the class have on women's behaviors can be understood by the concept of perception of social normative pressures or relevant others' beliefs from the Theory of Planned Behavior (TPB). According to TPB, subjective norms are

determined by normative beliefs, which are based on normative expectations of relevant others (Pinto, & Floyd, 2008). This construct provides insight into the recurring theme that respondents' behaviors are impacted by both instructors and other women in their classes.

Fifteen of the women respond favorably to the breast cancer yoga classes they attend and recognize the dual functions it serves. Jennifer, one of the Enthusiasts who claims to have suffered from depression and bi-polar disorder says this about the class.

> This group is really pretty powerful and seeing them on a regular basis, knowing that if I have any questions I can go there and get them answered and get supported when I share the results of an annual check-up and stuff like that. That's pretty powerful. The class does serve two purposes because it is partly a support group.

A bonding experience similarly occurs in the regular yoga classes according to 15 respondents. Ann, a Believer is a 49 year old woman who is married with no children. She was diagnosed with breast cancer at age 44 and has been practicing yoga for 18 months. Fifteen years before her diagnosis, she was in a terrible automobile accident where she suffered a broken shoulder blade among other injuries to her collar bone, breast, and ribs. Because of all the resulting scar tissue and calcium nodules related to the accident, she was having diagnostic mammograms every six months. It was during one of these routine exams when the tumor was found.

She was first introduced to yoga by her sister who had been practicing for about four or five years. Ann had always been fairly active lifting weights, using cardio machines, and walking, but she always struggled with her weight. At one point in her early thirties, she lost close to 100 pounds on the Jenny Craig diet. It was shortly after the weight loss when she was in a near fatal car crash and subsequently gained much of it back.

She has always viewed herself as an analytical and scientific person and one who was not particularly introspective or spiritual. Knowing this, she found it quite surprising to be drawn to the yoga.

> I enjoyed it enough that I knew I wanted to go back and partially it was because it was an activity I could share with my sister. We don't have a lot of interests. We're very close, we're only two years apart in age. Where she's a night person, I'm a morning person. She's Type A, I'm not and so we're very different in a lot of ways. But we're also very close and because I work a normal job and she works in theatres, we don't get to spend as much time with each other so I was looking forward to it as something that I could do with her that would also be good for me.
>
> I'm not embarrassed that I'm not skinny and I think that's partially because of the atmosphere. There are people in the class that are in such good shape, it's just joyful to sit next to them because I can just watch them and think, 'oh my god, the human body can be so amazing.'
>
> There's a sense of community. It's like being in a little secret club too because you'll meet somebody else and they'll go, 'oh I do yoga.' There's also the community of people that you're with. Because it's not the traditional physical activity, it does make you look at the world a little differently and maybe help you be a little more open minded and more aware of the connectedness of my mind, body, spirit stuff.
>
> It's nice to have a class and that's very important being part of the community. Because there's definitely a feeling of community at the studio and I'm not naturally a joiner person that looks, but it's nice to be in a community and you feel the kinship which is nice.

The above example illustrates the welcoming and supportive environment that many respondents find in the yoga class. The tools and social support offered facilitate the transition from disease to a position of hope and optimism. Linda II, a 55 year old special education teacher and one of the Transformed, captures her experience in a very vivid metaphor. "Sometimes I feel like I'm walking into a hug. It's a very personal experience even though there's a group of people and it's a great energy."

For most people, the diagnosis of cancer disrupts one's equilibrium, sense of coherence and precipitates fear, uncertainty, and loss of control. The extreme isolation and aloneness one experiences at this juncture often force one to reach out to others for help and support. Connection to both the instructor and the women in the class appears to be strong predictors of engagement to yoga and both will prevail over less important variables such as negative attitude. Likewise, the absence of one or both serves as a strong restraining force that will likely inhibit yoga engagement.

Mastery and Self Esteem

As women begin to engage in yoga following their diagnosis and/or treatment, many are dealing with pain, functional limitations, and physical changes (Hanson Frost et al, 2000). Mobility, flexibility, strength, balance, and energy levels are all compromised in varying degrees. They are physically and emotionally assaulted by the cancer diagnosis and treatment. For many, this becomes a pivotal time as they hope to repair and rebuild their damaged sense of self. Fran, a 73 year old Early Adapter who endured two surgeries, radiation, chemotherapy, an infection, and slight edema, spent the first few months of class doing yoga in a chair. Dot, a 62 year old Believer had six surgeries in one year including an aortic bypass immediately following her double mastectomy and transflap reconstruction, and consequently had surgical scars traversing her entire chest and abdomen. Despite invasive surgeries and limited abilities, each woman experienced a sense of mastery early on as the yoga appeared to be adaptable to even the weakest or most physically challenged women.

Lotus, a Believer was one of many who experienced severe side effects restricting her ability to engage in the level of physical activity to which she had been accustomed. She suffered from intense joint pain, extreme fatigue, bilateral lymphedema, arthritic knees, and

weight gain. No one encouraged her to do yoga. She just believed that it would make her feel better, and it did. She alluded to how forgiving yoga was and how she was able to practice despite her limitations and still experience the full benefits of it. An unexpected bonus was that it actually turned out to be a confidence booster.

> The class got me to a level of flexibility that I felt gave me some confidence because after I recovered from surgery and chemo, I really was at an all time low, confidence wise and my physical state. Anything I wasn't capable of doing, I didn't do or I modified. I always enjoyed it and always felt like the stretching and the breathing, that I was healing from it and I was getting a benefit from it.

Physical prowess defined many of the women before diagnosis. Yoga helped them navigate that period of time when their impairment slowed them down and restricted the more intense physical activity that they were accustomed to doing. Respondents with an aptitude for athleticism were also more inclined to engage in yoga following diagnosis. Twelve of the women self-identified as extremely athletic, former dancers, and marathon runners. They all experienced an easy transition into yoga, as it restored their confidence and offered a physical outlet.

Josie**,** a Transformed group member was a 56 year old dancer. Because of the extensive mastectomy and reconstructive surgeries, her ability was drastically altered. The yoga was something that she could master early on until she was healed and stronger. By the time she had regained enough strength and agility to return to dance, she was already fully committed to yoga. "I couldn't dance in the beginning. Yoga led me back there because I was able to physically feel better. I could do something. My balance was better. Yoga did that for me."

The construct of mastery provides an understanding of occurring themes in relation to the yoga. Every one of the 43 respondents expressed that a sense of mastery and competence

resonated with them, if not immediately in those first classes, then shortly after. The complexity of components that comprise yoga made it more readily accessible to the respondents, allowing them to experience a sense of mastery in different ways. Depending on the individual's limitations and strengths, mastery was achieved through physical movements, breathing exercises, ability to stretch or relax, balance, flexibility, strengthening, meditation, or a spiritual practice. All 43 women expressed positive perceived behavioral control and an ability to perform some aspect of yoga. This became one of the determinants that would advance the practice.

Anna, a member of the Enthusiasts who suffered from depression, fatigue, and joint problems commented, "I could do it and that was the big thing." Michelle, one of the Transformed, who also suffered from depression with multiple complications from the six surgeries that she had in one year echoed, "I was just grateful for everything that I could actually do in those first classes." The issue of mastery plays an integral role in engagement of yoga, especially with a population of women who have undergone serious physical challenges. Across the continuum of yoga practice from Casual Users to the Transformed, women express the mastery and self-esteem as a strong source of motivation early on in their practice.

Self-efficacy, defined as an individual's confidence in her ability to perform the constituent components of a behavior, is considered a key construct of social cognitive theory (SCT). Primary sources of self-efficacy include performance experience, verbal persuasion, vicarious experience, and physical and emotional states. This theory is based on a dynamic and mutual model of behavioral, personal, and environmental interactions (Rogers et al, 2005). Although SCT has been studied widely with physical activity, scant research has been done examining if this theory applies to physical activity and breast cancer. There doesn't appear to be any existing research examining its application to breast cancer and yoga. Despite the paucity

of research of behavioral theories and yoga, key constructs of both SCT and TPB can still help us understand prevalent themes regarding mastery.

Time, Opportunities and Resources

The presence or absence of time, opportunities, and resources plays an important role in influencing one's practice and can have an impact on one's progression. Because of the age of the respondents, a number of the women are retired or nearing retirement age where free time that they may not have had before opens up to them. Several allude to this new found freedom just as Believers mention the personal and financial constraints that interfere with progress.

Factors such as time constraints can inhibit one's practice, while free time and unlimited resources accelerate it. Private sessions with instructors are considered luxuries and can have enormous impact on one's advancement. The concentrated and personal attention that the student receives in a private session accelerates the learning curve. Few are in a position to take advantage of these opportunities, but those who do certainly recognize the privilege. Participation at yoga retreats and spas can similarly advance the engagement process as guests are generally afforded opportunities to indulge in numerous classes in a setting that is more conducive to a fulfilling practice. Restraining forces such as limited time and money can impede one's building yoga practice and will diminish access to other mediating variables such as teachers and belonging, further inhibiting the practice.

Forty-two out of 43 respondents attend a free yoga class or have the funds available to cover the cost of a class or private instruction. Gladys, one of the Enthusiasts and the only respondent who contacted the investigator through Craig's List, was doing yoga at home on her own. She acknowledges her lack of dedication to it. She talks about financial constraints that

prevent her from taking a yoga class and is unaware of any free classes available in her neighborhood for survivors.

> I would do it more in a group than at home because I think it makes a bigger difference. You connect with people more and you probably pick up some stuff that you're not doing right. When you have a group you kind of push yourself more. At home [I use] the tape and if I do it, fine. If I don't, I don't.
>
> I wish there would be free classes for yoga. They should offer it especially to women with breast cancer.

Contrasting Gladys' lack of adequate resources and access to a yoga class, Theresa lived in a very affluent neighborhood. A member of the Believers, Theresa is a 54 year old woman who was diagnosed 10 years before. She took yoga several times following her diagnosis but could not make a long term commitment because at the time she was diagnosed, she was juggling a demanding work load on Wall Street and a six-month old son. She practiced yoga faithfully for a while, but found it extremely difficult to fit into her schedule and eventually gave it up. She retired in 2001 and although she practiced sporadically, she did not fully resume her yoga classes until years later.

A weekend retreat at the Kripalu Center is what initially spurred her interest in yoga. She found the experience to be very positive, although she could not fully integrate it into her life until several years later. When she returned to yoga eight months ago, she felt a strong need for regular exercise to strengthen her body, along with some form of meditation. She thought that yoga would be the perfect solution since it incorporated both. She liked to walk, but avoided any type of routine work outs.

References to the intensity of her job, her tendency to hold in stress, and her struggle with life long depression were mentioned several times. She always considered herself to be a very excitable person and attributed that to growing up in a very Italian, demonstrative type of family.

She was diagnosed with depression at the onset of puberty and endured years of medication and therapy. She believed that yoga made her feel good and gave her the power to change her mood. Although she felt quite low due to menopause, she noticed that her mood was lifted when she did yoga.

When she returned to yoga eight months ago, it was with a private instructor on a weekly basis. In addition to the class, she began to practice daily on her own.

> I do yoga for 20 minutes every day to get my body energized in the morning. I don't have the discipline to sit and do it for an hour. I've been thinking maybe about incorporating and doing it twice a week with the teacher. I have a lot more flexibility in my body and I have strength. As I progress I can do a lot of the postures where you have to stand perfectly still and that's been a challenge for me that I see every week I can do a little bit more. As I progress, I know that I'm learning to clear my mind and turn off the chatter. It makes me feel very calm and I can do the breathing to alleviate anxiety.

Her yoga practice is progressing quickly on multiple domains because of her private sessions. She feels physical improvements, emotional changes in learning how to deal with stress, and a spiritual deepening. The benefits of the personally tailored, private classes have advanced her practice and she is very cognizant of the changes and growth.

Support Systems

This variable pertains to external sources present in the respondent's environment, outside of the yoga practice that serve as a source of encouragement or neutrality. Women who perceive pro-yoga support from their loved ones or close friends seem to be motivated to practice more while the absence of outside support appears to interfere with one's yoga progress. For some, significant others such as friends, daughters, sisters, and other relatives have planted seeds, offered encouragement, and/or modeled the behavior. Over time, these gentle and constant reminders do seem to play a role in one's decision to try it or continue.

Similar to the social cognitive theory (SCT), the theory of planned behavior (TPB) has also been studied extensively in the exercise domain. Both provide a better understanding of prevailing themes and what they mean in relation to yoga. Constructs underpinning TPB are equally dispersed throughout the data and may help explain behavior changes observed in this study. Three independent variables have been found to contribute to one's intention to perform a behavior. It is the subjective norm that reflects perceived social pressures to perform or abstain from that behavior that an individual senses. One is more likely to perform the behavior if she believes that significant others think she should do it (Courneya et al, 1999). This variable is congruent with respondents' comments about social support present throughout the data and can be understood by constructs of SCT.

Carrie, a Believer, was a 58 year old social worker who found the initial yoga classes to be very challenging. At the same time she felt compelled to stay with it and offered two explanations: one was the instructor and the other was perceived social pressure from external sources, her spouse and the community. She joked that her husband encouraged her when she slacked off. "He says, 'I think you need to get back into yoga more.'" Carrie lived in a small, progressive city that supported a culture of arts and a more liberal lifestyle. Here she describes the challenges she overcame and clearly articulates the subjective norm as a source of motivation.

> The instructor is not easy. They were really, really challenging and I really felt like I had to stick with it. At that time, I was listening to the instructor. I was also living in this town and I think I was just seeing, I think I was knowing more of my peers and more people around me were doing yoga. It had become so popular and middle aged baby boomers were doing it and so I think about four years ago I started looking around saying 'oh my gosh, all these people are doing this. There must be something to this.' And hard as it was with her, I just, I stuck with it.

Alana, a 65 year old retired teacher and one of the Casual Users, presented a divergent set of circumstances that led to a different outcome. Alana found out about the yoga class from a newspaper article featuring an 'older' instructor who taught yoga to 'older' individuals. The article intrigued her and when she read that classes were held in her neighborhood, she felt that it was 'meant to be.' The appearance of the article was the catalyst that motivated her to try yoga; she had been feeling the need to get more physically active, especially since her retirement. She just hadn't done anything about it prior to seeing the article.

Alana is a widow with no children who devotes a good portion of her time to the local breast cancer coalition and has been an active member for years. Unlike some of the other breast cancer coalitions encountered through this research, this one does not offer any formal yoga program, nor do any of Alana's close friends practice yoga. She states that friends are supportive of her practice but little evidence of this is found in the transcripts. The point is only mentioned one time and she does not elaborate on how friends or loved ones demonstrate their support. At best, the perceived support from her social and personal networks appears to be neutral, since only a vague reference to it is made.

The small yoga class she attends remains separate and independent from her other personal, social, volunteer, and recreational activities. Because of the class size, her words and tone imply a sense of obligation to the instructor and two other students who attend the weekly class. "My one class, that's a given. We also depend on each other because there's only three of us so if one is absent or two are out, nobody wants to be the only one in the classroom. It's unfair to the instructor."

In the scenario that Alana presents, it's apparent that several contributing factors to a deepening relationship with yoga are absent. The lack of strong outside support and the lack of a

group sense of community and connectedness impede her progress. Despite these weak determinants, she still describes multiple benefits from the yoga.

Each one of the respondents in this study demonstrate some degree of movement and behavior change ranging from casual engagement to a deep, life transforming practice. This makes sense given that all respondents who volunteered to participate in the interview were actively engaged in yoga, as per the criteria for the study. The four stages that were constructed from universal themes found in the data, characterize women's progress and stage attainment that are associated with above mentioned independent variables. Tables 2-5 present members of the four groups and the variables associated with each of them (Table 2: Transformed; Table 3: Believers; Table 4: Enthusiasts; Table 5: Casual Users). While the restraining forces or weak determinants delay or impede progress, each respondent is moving forward. The combination of variables present or absent and their magnitude determine which of the four groups captures the woman's relationship with yoga.

The following section will reflect further on these variables in relation to the prevalent theories and constructs that were described in the literature review.

Chapter V – Discussion of the Results

What does yoga mean in relation to breast cancer?

The following sections reflect prevailing themes that emerged from the data regarding yoga's impact on and meaning in relation to breast cancer. It is noted that there is considerable overlap among the sections as multiple domains are involved in the respondents' narrative expressions. Although current evidence suggests that the majority of breast cancer survivors overcome challenges and demonstrate a pattern of recovery following treatment, the road to healing and survivorship impacts the very same physical, psychological, social, and spiritual domains that are discussed in this study. Existential concerns, fears of recurrence, mood swings, feelings of loss, emotional distress, changes in self-concept, body image, and sexuality, and family and financial issues are many of the naturally occurring responses that survivors face (Knobf, 2011). Cancer survivors have been known to suffer with side effects and symptoms that extend well beyond ten years following treatment (Harrington et al, 2010; Tighe et al, 2011).

Despite these difficult and ongoing reminders, multidimensional aspects of coping, adaptation, and adjustment take place throughout the healing trajectory, also impacting all domains. Predominant experiences with yoga and how they relate to coping with breast cancer have been sorted into six thematic groupings, each one addressing the question: What does yoga mean in relationship to breast cancer?

Principles of feminist theory contributed to a deeper understanding of what many of the themes meant. Exploring the women's experiences of breast cancer and yoga through a feminist perspective broadened the scope of analysis and interpretation. The data revealed concepts that related to sex, gender, feminism, socioeconomics, identity, and empowerment and provided a

context of changing roles and expectations for women that had not been anticipated at the outset of the study.

- Empowerment and Control
- Healing/Taking Care of Oneself
- Emotional Changes
- Spirituality
- Physical Benefits
- Identity Shift/Transformation

Feminist Perspective

As the data were analyzed and distilled, what became apparent was a common expression of personal problems rooted in women's subordinate yet demanding status in both family and society. Recurring themes emerged presenting a norm that reflected unequal gender expectations such as the multiple roles that women occupied including daughter, wife, mother, caregiver, and worker. The caregiver role assumed by 13 respondents and the 18 women who self identified as "perfectionists," "Type A personalities," or "energizer bunnies" could be understood by considering performance expectations associated with specific roles and social status ascribed to women (Payne, 1997). Feminist theory contributed to understanding the innate drive to outperform and multi-task that characterized so many of the respondents along with the internalized stress, depression, anxiety, and sense of control voiced by 40 respondents. Joy, one of the Transformed, a nurse, lactation consultant, and mother of three, captures the essence of role performance and gender role as she describes her pre-morbid emotional state:

> Being at work, like a treadmill. Gotta do this, do that. It's hectic. I would start to feel overwhelmed. I always exercised to cope with stress, bottled things up, didn't express how I felt, speeding around. I put everyone else first, held things in. I used to

> be very list oriented and I was a perfectionist. I had to be the best mom, the best nurse, the best wife, and the best friend. I didn't know how to stand up for myself. I'd stand up for everyone else.

Gender roles refer to patterns of culturally approved behaviors that are considered to be more appropriate for females or males. This social construction of gender sustains broad expectations for roles that are congruent with attitudes and norms in that culture. Both descriptive and prescriptive in nature, gender conceptions define appropriate and expected behaviors for individuals in various social settings. These expectations for female- or male-based behaviors are shaped within a social context that affirms them, resulting in self-fulfilling prophecies to achieve them. Sex-related attributions and expectations are so heavily enmeshed in the concept of gender that it is difficult to distinguish the independent effects of the two. The notion of gender is influenced even before birth as expectant parents and others impose their own gender stereotypes and expectations on the unborn child (Karraker et al, 1995).

Over the last 20 years, dramatic shifts in family dynamics that have redefined the traditional family and family roles have impacted and transformed women's lifestyles and assigned roles. Increasing numbers of women entering the labor force have encountered a whole host of new challenges as they have assumed multiple roles at home and work and have attempted to balance pressures that have arisen on both fronts. Specific changes have occurred as more women have remained single, married later in life, had fewer children, divorced, engaged in single parenthood, enjoyed longer life (longevity), and assumed caregiver roles as members of the "sandwich" generation. According to Hanmer and Statham (in Payne, 1997, p. 255), the majority of women will care for their own children in addition to other dependants over their lifespan.

Feminist Theory contributes to a greater understanding of the theme of the caregiver role that emerged. The very nature of women fuels their innate capacity to 'care' for others in their lives while overlooking their own well-being. The theme of self-neglect and loss of control characterizes 21 of the respondents' former pre-morbid lives in this study. By the same token, the inherent need for mutually empathic relationships and a sense of belonging with the instructor and others in the yoga classes are salient themes that resonate with respondents and subsequently accelerate engagement. According to Carol Gilligan (1982), the nature of relationships and dependency are experienced differently by women and men. For girls and women, feminine identity is not contingent on issues of separation from the mother or the attainment of individuation, as is true with men. On the contrary, femininity is defined through attachment and consequently threatened by separation, making problems with individuation more prevalent among women.

Empowerment and Control

For the 26 women in the study who describe controlling tendencies, drive, intensity, and caregiver responsibilities that predominated their pre-cancer lives, the diagnosis is a strong reminder of lives spinning out of control. Losing the control that many are accustomed to puts them in a very vulnerable position and triggers an array of emotions from fear and uncertainty to aloneness and isolation (Coward, 1997). A breast cancer diagnosis can elicit strong feelings of helplessness and loss of control, often associated with increased anxiety and depression (Shapiro et al, 2001).

Josie's explanation of power and control captures a common theme that permeates the transcripts. A member of the Transformed group, Josie was diagnosed at 42 years of age and

has been practicing yoga for 13 years. In the following excerpt, she expresses a distinct shift in attitude and belief about her sense of control.

> I feel like it's a dichotomy. I feel like I do have power to control my life but then cancer is the ultimate way to say you have no control over your life. I had no risk factors. In fact I went for the Braka test and I don't have the mutation of the gene. There's no reason why I should have gotten it at such a young age. So in that way, I felt like I didn't have any control. But what I feel I have control over is my life is mine now. I do anything I want. I feel in that way, I have control over it.

Surrendering and learning to let go of the need for control is a common feature of the healing process. Dr. Larry Dossey, M.D., an expert in spiritual healing, has discovered that people who experience miraculous recoveries have found a state of equanimity. "They have a quality of acceptance and gratitude, as if things are quite all right in spite of the presence of the disease" (Khalsa & Stauth, 2002, pp 130-131).

Dot, a member of the Believers who has been burdened with caring for her sick husband for the last 18 years, links a sense of control and the yoga in the following statements:

> You have complete control over your quality of life, what you eat, what you do physically, how you feel mentally. You're the only one that has control over that and the yoga helps you be calm and it helps you focus as to what you need to do or not do.

Recurring themes in this study suggest that yoga provides the tools that allow the capacity to regain control. The women interviewed admit that a growing awareness and an emerging sense of power and control are spawned and cultivated in the yoga class. Just about every single one of the Transformed and Believers refer to a sense of control that has been acquired through their practice. Diana, a member of the Transformed group and a psychologist, captures its essence in her statement, "I am more aware of my emotions and have more control over them and I don't have to react. I act more than react." A shift in perspective and attitude

takes place for many, beginning with a heightened awareness. Women credit yoga with their increased ability to control responses to stress.

Laura, a 53 year old member of the Transformed group and a former teacher who subsequently became a yoga instructor, speaks to this process as she recounts her personal experience. Included in this passage is her definition of control which represents what so many of the respondents express.

> That's the thing about the whole breast cancer yoga connection is that I got my power back. I lost it for probably a decade. I probably lost it for four decades because I was so busy doing what I thought I was supposed to be doing. But I realize that it enabled me to get my power back and the power isn't the power over people. It isn't power over financial status. It's not any of those things but it's having that internal power to be authentic and truthful with who you are and what you need for your life in order to live a good, happy, abundant, prosperous life. It has to begin here because once you're ill, everything else falls away.
>
> I realize it's about control and the only person who can be in charge of that is me, not even my doctors.
>
> When something is off like your breath, you tend to get nervous, you get anxious. You can't really control yourself with stimulus. You get nervous, you have that fight or flight response and I found that I have more control over my health and my ability to not get sick.

Laura's reference to getting her power back was no small feat. Within a short period of time prior to her diagnosis, she was faced with losing her mother suddenly, a sibling's suicide, her father having a nervous breakdown, her dog died, her marriage fell apart, and the ultimate blow, her breast cancer diagnosis. Even prior to all the personal tragedy and loss, she found herself to be in a permanent state of anxiety. She suffered frequent panic attacks and wound up hospitalized several times due to such episodes. For Laura to actually regain her power after all she had endured over years was a huge accomplishment.

Frequently used metaphors uttered by the respondents within the context of power and control include "relinquishing control," "surrendering," and "acceptance." The irony reflected in these expressions is that by giving up control, one gains it. This paradox has been examined in numerous studies involving prayer. Dr. Dossey, M.D. has studied and documented mind-power influence and has found, "In many situations, one has to let go, in the realization that there are simply some things one cannot make happen." (Khalsa & Stauth, 2002, p 131) He makes the distinction between surrender and giving up whereas surrender implies an expectation that whatever happens will be acceptable. Giving up means that one expects the worst to occur and with that expectation comes dread (Khalsa and Stauth, 2002).

Examples of acceptance and empowerment are themes heard across the transcripts and represent the juncture where identity transformation begins. Carol, a 54 year old member of the Transformed group who identifies herself as "an extremely active and athletic person who has been a scheduler and planner her whole life," expresses a shift in her awareness, "I continue to do yoga because of the way it makes me feel. I feel like I can control my body. I was so out of control with my body for so long." Linda II, another member of the Transformed who similarly describes herself as "extremely physically active, athletic, disciplined, and who exercised her stress away," echoes Carol's sentiments. "It makes me feel centered and connected. I feel that I have control over my body. It just slows me down from a crazy day and lets me take control of my life." Listening to the both Carol's and Linda's words, one might think they came from the same person.

Melissa, one of the Believers, who at the time of the interview was dealing with both of her parents' recent cancer diagnoses, and worse, her mother's poor prognosis. In the follow excerpt, she provides a very poignant and candid reflection of inner thoughts, confronting this

devastating news, strategizing how to use the tools she has acquired through yoga, and recognizing changes that have taken place.

> I pray for strength to deal with what I have to deal with. Thinking of the yoga, one thing I like is that the instructor will have us make an intention and my intentions are usually the same. Just give me the strength to deal with what I have to deal with. I can't change what's being thrown my way. Hopefully I can change the way I handle things.
>
> The yoga helps me deal with things, even if it's not so much doing the practice, it's just the mental, the meditation part and just thinking about things that I never, never thought about before. When I got some bad news about my mother I realized that I just need time to be and absorb that and to think about it. I'm going to do that through my breathing, using things she's taught us. It might not be an actual pose but it'll be part of the yoga and I'm looking forward to doing that, to help me accept things that I need to accept.
>
> I feel like I can control getting upset. It's going to happen but I can stop it. I can't eliminate stress from my life but I have to learn how to cope with it because there are things I can do. I think I'm a little more even keeled than I was. I think knowing I'm taking care of myself and doing something for me.

Feminist approaches to empowerment can be conceptualized in several ways and provide additional understanding of common themes voiced. As women recollect and describe feelings of powerlessness in such expressions as feeling "out of control," they portray a renewed sense of power gained through the skills learned in the yoga practice. They become empowered as they confront their challenges in more constructive ways, while replacing negative feelings and responses with strength and pride in their new found ability to cope. Their pre-morbid descriptions define women who were unaware of the many external and personal demands that were impacting their lives. While unable to abandon burdens and obligations, yoga allows women to begin to mindfully acknowledge and recognize their own needs in order to take care of themselves, without guilt. Learning to let go of the need to control is a common feature of the healing process and also a tenet of yoga.

The diminished sense of control can be compounded by unrealistic expectations of one's sense of self and role performance as well as others' equally misguided expectations. Following treatment, survivors may anticipate a full resumption of pre-morbid roles and responsibilities, not recognizing that lingering fatigue and other side-effects may hinder a seamless return to old roles (Stanton et al, 2005). This disconnect between expectations and reality may contribute to increased levels of distress and loss of control.

Taking care of oneself, a by-product of empowerment, represents a universal theme that emerged and can similarly be understood through a feminist perspective. Frances, a 67 year old member of the Transformed who worked and traveled extensively as a government official for years addresses both issues. In the following passage, she talks about what she has gained from yoga and how it has helped her grow and cope. Frances credits yoga with giving herself permission and skills to put herself first and frames these changes within the context of the diagnosis, her age, and her increased free time.

> Yoga has given me a way of dealing with emotional things in a calmer way. It's given me a good sense of self and time to focus on myself in a very self-centered way, in a way that helps me with everything else that I do. I don't get as upset about things that I used to and I handle things better. Yoga has developed in me a feeling that I can cope.
>
> It has also raised awareness of taking care of myself. Doing something for myself is much stronger having gone through cancer than it was before. Being older, I can make time for myself because there are less pulls on me than previously.
>
> I feel that yoga helps give me a sense of control. It makes me feel strong; it makes me feel like I'm upgrading my position of strength. At least I can feel strong in myself and that it makes it easier to deal with all other things. So it's very important in the way I feel about myself.

Healing andTaking Care of Oneself

Giving oneself permission to relax and put oneself first are new concepts for the women who have always assumed roles as caregivers and providers. Several women maintain these roles long after their diagnoses and treatment, in order to fulfill their duties of caring for their children or spouses. Dot, a 62 year old Believer, whose husband suffered a serious head injury 18 years ago, has been his sole caregiver for the last 17 years. Besides enduring her own personal health issues, she knows the true definition of caregiver stress. Her evolving experiences with yoga over the last four years have contrasted her lingering years of stress and provided a respite as she describes in the following words.

> I feel calm and I can bring on that calm feeling through the breathing. It's a very peaceful, very calming feeling. Savasana is great because it's like a mind cleansing. Your brain just goes somewhere else and your body is physically there but you don't have to deal with anything. It's just like you're floating.

In a number of cases, the caregiver tendencies spill over into other conditions that seem to make it equally difficult to take care of self and put oneself first. Lynne, one of the Enthusiasts personifies this prevailing theme.

> I tend to be a very high strung person. I am a nurse and tend to take care of other people before I take care of myself. I have this hurry, scurry, I have to clean the house, I do this, I do that, my sleep is interrupted and I get migraine headaches and irritable with stress. I would get very anxious when I went to chemotherapy. Even the thought of going would get me anxious.

In addition to the innate caregiver roles assumed by 15 of the respondents, an even larger group of women are found to neglect their own well-being due to the Type-A personality and perfectionist traits that they describe. Sam, a petite, waife-like 73 year old member of the Casual Users, embodies these attributes.

> I never stopped. I didn't listen to my body before, I just kept pushing. I was like the energizer bunny. I had 94 projects going on at the same time. I'm a Type-A Personality. I can't help

> it, that's my nature. If I can do five minutes, I'm going to do ten minutes tomorrow. I internalized stress and would bite my lip and have it bleed before I'd cry. So it was all internal. I always did everything myself. I'm not the kind of person who can ring your bell and ask for help. It's very hard for me.
>
> I didn't put myself first before. Even though I was alone, I was always there for everybody.

As women are coping with the breast cancer, yoga provides a reprieve and allows them to settle into a state of complete relaxation, a sensation that many had not experienced for a long time, if ever. Robin, one of the Enthusiasts, describes the yoga class, "This was my time, don't mess with it, my hour on Wednesdays." To begin to give permission and allow oneself this one luxury is dramatic. Trudy, a Transformed group member who claims to always having been a perfectionist and very hard on herself, expresses a sense of easing up, "There is a shift. I am letting myself off the hook now. I used to beat myself up if I couldn't do it perfectly. It's like the willow, bending and being flexible, respecting your body more."

Respondents repeatedly refer to a feeling of tranquility that belies the sense of agitation, anxiety, and tension that many internalized prior to their discovery of yoga. This sensation of calm is a new feeling and is juxtaposed with the pre-morbid frenetic and stressed lives that so many describe. Although stress can be externally driven, it is often fueled by one's internal thoughts. References to internalized stress predominated 33 of the transcripts as did the sensations of calm achieved through the yoga practice.

Every one of the 43 women reports experiencing an immediate, calming effect from yoga during those first classes, impacting their perceived ability to cope with breast cancer. This new found feeling of stillness conjures up images of stress and how they were dealing with it prior to diagnosis. Women become increasingly aware of this paradox as they experience "one hour escape," "a release of emotions," "a respite," "going into myself," "cathartic," and a

"positive experience." Constance, one of the Transformed who identifies herself as a Type-A personality, recalls, "I've always been a person who couldn't sit still so even the 20 minutes was a level of introducing peace into my life."

Women are learning to treat themselves better, take care of themselves, and put themselves first. One of the key ethical guidelines of a yoga practice is the concept of Ahimsa which means do no harm. As with other aspects of yoga philosophy, this one is offered by most instructors and integrated into the class with gentle reminders, cues, and examples. Not to harm oneself or others is the first of five Yamas or ethical guidelines. These Yamas along with five Niyamas or spiritual guidelines are analogous to the 10 Commandments. It's up to the instructors, their training and belief systems, to determine what degree of yoga philosophy they will incorporate into their classes. Each of the ten (five Yamas and five Niyamas) is a very basic and straight forward element including: non-harming; non-stealing; truthfulness; sexual restraint; non-hoarding; cleanliness/purity; contentment, discipline, self-study, devotion to God (McCall, 2007).

Carrie, a 58 year old Believer who labels herself as "ADDish," has struggled with many physical and emotional challenges throughout her life. She claims, "I used to walk around feeling rattled and frazzled." Here she offers her interpretation of the Yama Ahimsa. "When they say 'give yourself a hug' I think this is a way of being gentle to yourself in class."

A growing awareness and understanding of one's inherent qualities result from a self-examination process that begins at diagnosis and is cultivated through yoga. Both Believers and Transformed report experiencing more profound and longer lasting benefits as they practice and learn to let go. They experience a sense of overall calm as they employ new skills that intensify

awareness and control in dealing with emotions and coping with breast cancer. With the calm comes a more accepting and less judgmental attitude.

With time, and barring any barriers, respondents articulate their increasing desire and need for it. Tracy, a divorced mother of six, and one of the Enthusiasts, recognizes her growing commitment. "I keep coming back to yoga every week because I'm doing something good for myself." At the same time women are becoming aware of improvements in their physical conditions and diminished limitations. Many are overcoming substantial challenges due to invasive surgeries and aggressive treatments. The gradual physical transformation that is occurring in conjunction with an intense emotional release and tangible benefits reinforce the practice.

Anna, one of the Believers and a 46 year old mom who was overwhelmed with responsibilities, went on Prozac because she "felt like I wasn't being a good mom." She recalls, "I was not dealing as well with stress before my diagnosis, not as calmly." Here she talks about her "quiet time."

> You do need quiet time and to be good to yourself. You can go for just so many manicures or things like that. Going into yourself is really pampering because I don't have time for myself. This is my luxury. It's an hour of inner peace and a chance to just kind of be quiet and still within myself and just put aside all those things and just be.

Feminist theory is useful to help understand the ways that women assume roles and behaviors involving self-sacrifice, caretaking, and silencing (Rosedale, 2009) as these patterns are evident throughout the data. The examples provided represent genuine transformations and shifts in attitude that are closely related to emotional sensations, presented in the next section

Emotional Changes

For more than three quarters of the women, yoga begins as a physical practice but becomes apparent to them early on that it offers much more than just exercise. Almost every one of the respondents experiences an immediate release of tension and a visceral response contrasting the turbulent emotions associated with the diagnosis and treatment. A recurring theme of calm and relaxation due to the yoga is expressed by all 43 women. In addition, they describe how the yoga facilitates an introspection and self-examination process that helps them gain a greater insight into the challenges they face as they cope with breast cancer.

The emotional distress that precedes and follows the diagnosis appears to be mitigated by yoga. Patterns of anxiety and depression characterize the respondents who express gratitude for the sense of relief that yoga affords them, while coping with breast cancer. Jennifer is a 58 year old retired member of the Enthusiasts, who has a history of depression and bipolar disorder among other anxiety related conditions. She suffers from irritable bowel syndrome, has trouble sleeping, and has always internalized her stress. Despite all these issues, she believes that doing yoga over the last four years has provided her with some degree of emotional relief.

> I was very, very depressed. I've been working hard to get out of it and I've just been feeling good for the last few weeks and I pretty much stopped doing my walking at that point. I never stopped the yoga though. During my depression, it was very important for me to go to yoga even though when I was really ill, I wasn't necessarily focused well. It provided something for me to go to and really try to be calm and focused on something other than my stupid negative thoughts.
>
> I did feel relief from the classes. I was in really bad shape.

Sara, a member of the Believers, is a college instructor who feels that her depression has improved with yoga. She has always been one to internalize her stress, shut down, and become depressed. To exacerbate her emotional fluctuations, she experienced an immediate chemo-induced menopause which made hot flashes and other hormonal related issues intolerable.

> Emotional changes have taken place since practicing yoga. I think I have been more open emotionally with the people around me, not necessarily my family but the people in the world. I'm more willing to express my feelings or feel more comfortable expressing my feelings to people around me.
>
> I think that yoga has helped with depression. There is an emotional release that happens at the beginning of the class. It's this real kind of cathartic pose or movement where you sort of swing an imaginary ax and sort of let out a sound, a groan as you're doing it. I was just so stunned by how much emotional energy was released at certain times.

Sabrina, an Enthusiast who carries advanced degrees in both law and education, claims to have struggled with anxiety, depression, a bit of obsessive compulsive behaviors among other issues, describes what yoga does for her and contrasts it to other physical activities.

> It mellows me, it teaches me how to pause, it teaches me how to breathe, it teaches me how to work through some of the stress and I have to keep with it because I need to do that. I think the quietness of it, the mellow aspect of it, the use of the readings, the poetry, the Savasana, the routine, the little chime that she rings when it's over, the finishing of that touching your heart, looking inside yourself and your heart, that spiritual aspect of it sets it apart from other physical activities like swimming and tennis.

Sabrina is dealing with extraordinary challenges that she believes necessitate her yoga. Besides the typical childrearing responsibilities, she endures marital and financial difficulties. Physically she has undergone extensive surgeries, chemotherapy, radiation, and hormone treatments, each one causing devastating side effects and permanent damage, while leaving her emotionally traumatized. While Sabrina understands that she cannot completely disengage from the stressful demands in her life including her medical issues, she now has experienced calm and knows that tools exist to assist with coping in a healthier way.

Lisa is a 53 year old member of the Believers, practicing yoga for five years and a recent graduate with a Masters in Social Work (MSW). She is a divorced mother of two who's had a history of depression, anxiety, chronic fatigue syndrome, fibromyalgia, and perfectionism,

leaving her feeling completely "overwhelmed, powerless, and out of control." She credits returning to college with helping her refocus and getting her life back on track after she was diagnosed with breast cancer. In the following excerpt, Lisa refers to external factors that have had an impact on her sense of power.

> I guess that I feel like I have a lot of power over the quality of my life right now. Because of going back to school, the yoga helps with the quality of life, being able to walk, so I'm well enough physically that I have more control over it although I have had a lot of financial difficulty and at times it has made it difficult for me to feel like I had a lot of control.

Lisa has had enormous emotional obstacles to overcome that were exacerbated by breast cancer and credits yoga with relieving her anxiety, depression, and low energy. She has learned to observe her thoughts through the mindfulness in the yoga class and in doing so, is able to incorporate it more into her life and better cope with the disease. "Yoga makes me calm. When I have to take off I experience more anxiety and depression." Her struggles remain as she continues to use yoga to ward off and overcome her depression and anxiety.

Fourteen women identify themselves as suffering from depression and each one describes how she finds relief through the yoga. Forty of the respondents (including those with depression) acknowledge pre-morbid stressful lifestyles, innate tendencies to internalize stress, anxiety, caregiver responsibilities, and/or Type-A personality traits. Regardless of the degree of distress or the stage of yoga progression, each one of the respondents recognizes an increased awareness and introspection that takes place through the yoga.

More attention has been directed towards examining risk factors contributing to poor psychological prognoses, rather than factors associated with positive psychological outcomes. While promising results have been reported testing interventions that foster positive outcomes such as finding meaning (Lee et al, 2006), increasing self-esteem, and self-efficacy, research is

still needed to identify which survivors would most likely benefit and when interventions might be most effective (Andrykowski et al, 2008). While questions go unanswered about survivors' positive outcomes, emergent themes from this study reveal a congruity between yoga and the respondents' emotional and spiritual needs.

Spirituality

There is a spiritual aspect of surrendering as is noted in spirituality research. Few will refute that yoga has a spirituality component as yoga fosters feelings of gratitude, empathy, forgiveness, and the sense that one is part of something bigger (McCall, 2007). Existing research that addresses spirituality and breast cancer survivorship helps guide our understanding of prevalent themes that emerge in this study. Surrendering to a higher power, the universe, to others, or oneself is a process that has been documented as prevalent among individuals that have faced life-threatening illness. Research has found that patients have a higher recovery rate when they are involved in spiritual practices (Kissman & Maurer, 2002). Playing an active role in the recovery process is empowering and is reflected in one's willingness to cope with illness related stress. Such patients demonstrate the ability to "let go" and transcend the hopelessness associated with the stress of the illness (Kissman & Maurer, 2002).

The spiritual quality of yoga is well recognized and adds another dimension to the women's healing trajectory as the philosophy and meditation are infused into the building yoga practice. Spirituality is a construct composed of faith and meaning. It provides a moral framework for giving meaning to life and is often expressed as a relationship with God, nature, family, community or whatever entity gives a person a sense of meaning and purpose (Kissman & Maurer, 2002). While literature addressing religion and health is quite abundant, that of

spirituality and health is sparse. Religion is often represented as an institutional, structural variable, while spirituality is more existential (Vachon, 2008).

Healing connections with the phenomenal world refer to accessing and integrating the world through one's senses and is a common source of profound healing and increasing spirituality for many. Health is dependent on one's connection with self, others, the natural world, and the spiritual realm, according to Faull and Hills' (2006) clinical commentary on the spiritual domain in relation to health. References to nature, the universe, the earth and feeling the earth's energy are all examples provided by the respondents that communicate a sense of perspective and equanimity.

"I feel more connected to nature," voices Carol, a 54 year old member of the Transformed who lost her mother to breast cancer at the age of 54, the age she was at the time of the interview. Carol explains that she was brought up Catholic but found that it never helped her when she was dealing with her sister's and mom's illnesses. "It never was a comfort to me and I feel that yoga's kind of like my religion now." Theresa, one of the Believers remarks, "I find [myself] feeling the earth's energy and sort of pulling it into your body and I find it very spiritual. It puts you in touch with all of God's wondrous things." A 54 year old who considers herself to be a "lapsed Catholic," Theresa finds that yoga dovetails her beliefs and brings her closer to them.

References to self, evidenced by phrases such as, "going inside," "introspection," "looking inward," "connecting with myself," "taking time for myself" and references to God are mentioned frequently among women in both these groups and helps them cope with cancer. Jane, an art agent and one of the Believers succinctly describes her experience, "I feel that yoga

provides the calm atmosphere with all controlled movements. I think it enhances my being, looking within as opposed to without."

Linda II, a member of the Transformed group who lost her mother at the age of 43, believes that her mom played a role in her pursuing more tests despite a negative mammogram. "That was a spiritual experience and when I reflect back, it validates yoga." In the following lines, she conveys what others were expressing.

> There's a renewal. It gives me a chance to connect with myself while my mind is blank. I'm not thinking about anything. I'm just connecting with my body. It's very special and it's a special part of my day. There's no limitations. You just get to spend ninety minutes doing what makes you food good.

These quotes are consistent with a perception of the existential or spiritual domain. This important determinant of quality of life throughout the disease trajectory in cancer patients engenders a search for meaning and an introspection often triggered by diagnosis. Spiritual beliefs and practices have been found to contribute to both coping and meaning reconstruction among individuals dealing with grief (Mount et al, 2007).

A deep connection to God or a higher being seems to be complemented and in some cases facilitated by yoga. One-third of the women admit to a deep rooted religion and belief system that had been derailed. The combined experience of breast cancer and yoga either brought them back to it or renewed a sense of spirituality. Half of the respondents never had a strong religious connection until yoga inspired a spiritual path for them.

Spirituality was found to be salient in the lives of the women practicing yoga and 35 credit the yoga for this newly emerging connection. Some did attribute the breast cancer diagnosis or some other devastating event such as the loss of a spouse or a parent to an initial spiritual awakening. The following excerpt from Roberta, one of the Transformed, a 65 year old

woman who's been practicing yoga for 25 years and has encountered factors within the context of yoga that both impeded and accelerated progress down her spiritual path.

> I've become an observant Jew and I think yoga prepared me for that. There's a lot of talk about spirituality but for me it didn't resonate. It was somebody else's spirituality. All the symbols always looked liked Jesus Christ or something. It wasn't me. And they would say, 'don't you feel like you're coming home when you're chanting this Sanskrit prayer?' I would think, 'no, I don't feel like I'm coming home when I'm chanting, but I'll stick around, cause I want to stretch my joints.' To me, the spiritual part was just something to put up with. When my mother died and I returned to synagogue and was surrounded by renewal and all sorts of possibilities and options, I think the yoga prepared me for that and I kind of entered into it. I had never been interested in a higher power before and I'm really interested more in God, which surprises me. I started to become more spiritual at that point.

Diana, a 63 year old member of the Transformed, who worked as a consultant in domestic violence, credits her yoga practice with a very different spiritual journey. "Yoga made me aware that I have a very strong need to have quiet in my life. I feel more connected to the universe. I don't belong to a religion; it was just not my spiritual path. I belong to something larger; it's the universe. Yoga's helped me get back into that space."

Believers had similar responses and depending on their own personal experiences and belief systems, referenced deeper connections to their God, their spirituality, or the universe. Ann, a 49 year old, married member of the Believers, characterizes herself as "an analytical person who is not introspective, and who has difficulty relaxing." Her comments reflect a shift in perspective.

> I consider myself a pretty analytical and scientific person and not particularly spiritual so it kind of surprised me that I'm actually kind of drawn to the, I want to say spiritual but I don't mean it in a religious sense, but I am drawn to that [spirituality]. I put a lot of stress on myself and it's very helpful for me to help get rid of that.

> I don't think that the benefits that you gain are supernatural but in my own personal world I think that yoga does make you be a little bit more spiritual or introspective. I think yoga has made me be a little more introspective which is not a natural state for me. It's made me think more about the connectedness of things, physical connectedness to mental, and connectedness of community too.

All of the respondents who belong to the Transformed group, 13 of the 14 Believers, and 7 of the 10 Enthusiasts attribute a strong spiritual connection to yoga. The rest of the women find that yoga complements their religious beliefs but credit more of their spirituality to conventional religion. Tracy, a 62 year old divorced mother of six and member of the Enthusiasts who has been practicing yoga for two years, expresses her unwavering commitment to her religion.

> I think that people find God in lots of different ways and that just because I practice yoga, doesn't mean I have to share my religion. I've always been, I don't know if spiritual is the right word, I mean I go to church and practice my religion. That really hasn't changed. I do feel that yoga does not conflict with my religious beliefs.

Some cancer survivors as well as others experiencing traumatic occurrences have found that their diagnosis results in a spiritual transformation that manifests into a spiritual experience or awakening. The effortless transformation is related to one's ability to sense meaning that is realistic and has value and depth (Hirshberg et al, 1995; Vachon, 2008). It's not surprising to find these reactions are present among respondents in this study, but it is interesting to note how strongly women attribute the transition to yoga. Carrie, a 58 year old social worker and a member of the Believers, acknowledges her initial gratitude following the diagnosis and then clarifies that the spiritual awakening is derived from the yoga.

> I did have an appreciation of life after dealing with breast cancer but I have a deeper appreciation of life more from yoga. I do think there is something about that whole spiritual experience

> and the affirmations in yoga about living your life and I think it has opened me up to that.
>
> This sounds really corny for me to say it puts me in another level of the universe. It makes me feel like I am one with the universe.

Lotus, a 58 year old retired art teacher and Believer states:

> I think my spirituality has changed with yoga. I think I feel more in touch with a universal life force. I think I try to see a larger picture and try to deemphasize my ego when it comes to frustration. I've become open to everything good.

Respondents agree that yoga enhances their spirituality, reawakens or redirects it. In the following excerpt, Suzanne, a 60 year old director of revenue, and one of the Transformed group, describes yoga's contribution to her spiritual journey.

> I've not been religious and just been sort of a matter of fact kind of person living my life believing in lots of scientific theory and I think when I got the cancer, I sort of came up against a brick wall spiritually. When you have to deal with cancer, that puts a whole new perspective on things.
>
> I think for me for right now pretty much all of my spiritual needs are being met through yoga. That's been the most satisfying that it's allowed me to sort of reconnect with myself and to look internally which I've never done or known how to do. I've had some pretty amazing experiences that I think are more spiritual in nature. I've always thought of myself as being [a] very sort of scientific thinker type, a number crunching person so this is very unusual for me and this has only happened since I practiced yoga after the cancer, where I really was trying to get a grip on what life is really about.

Reactions to a life threatening diagnosis when one is overwhelmed with feelings of panic, despair, anxiety, or hopelessness, can result in a search for meaning resulting in a spiritual transformation (Vachon, 2008). Conversely, religious and spiritual factors have been associated with various facets of positive adjustment to breast cancer including quality of life, coping (Gall & Cornblat, 2002), self-esteem, optimism (Gall, 2000; Gall & Cornblat, 2002), and reported physical well-being (Gall & Cornblat, 2002). Such existing research may provide greater

understanding and insights into the central theme presented in this section regarding a deepening spirituality that is triggered by yoga and aids in coping with breast cancer.

Physical Benefits

Physical benefits experienced by respondents are abundant and range from improved flexibility, balance, strength, posture, coordination, chest opening, fluidity, tone, lymphedema, asthma, aches and pains, and reductions in blood pressure, cholesterol, and weight. Many of these physical improvements are a function of the length of time practiced as well as the frequency of the yoga classes. All women did report exhibiting physical progress over time and many experienced some benefits almost immediately. Table 6 breaks down physical changes as reported by the respondents in each of the four groups. Women practicing less than 18 months observed the most improvement in balance, followed by flexibility, range of motion, and posture. In addition to those four areas, women practicing for more than 18 months also indicated improvements in strength, levels of fitness and stamina, and a more positive body image. It's difficult to quantify physical benefits based on temporal categories as each respondent brings to the study her unique abilities and limitations as well as varied individual reinforcing and restraining forces.

The range of physical benefits that are observed among all women along the continuum is remarkable. In addition, many of the stretches and postures that are routinely done in any yoga practice target parts of the body that are particularly vulnerable to a breast cancer survivor: the chest opening, the upper arm and side body stretches and extensions, sites where lymph nodes have been removed, surgical areas where scar tissue has accumulated, and chemotherapy-induced neuropathies. Balance, posture, and strength can be compromised due to chemotherapy, surgeries, hormones, and radiation. These are compounded by advancing age,

and are frequently referred to when discussing noted improvements. Fatigue is another side effect from the treatments that diminishes with yoga as reported by 24 of the respondents.

According to DiStasio (2008), yoga poses can be adapted to meet just about anyone's abilities, regardless of physical limitations. Restorative classes are appropriate for everyone at any stage of illness or recovery and are especially helpful for women who may be experiencing weakness, fatigue, or stress. Restorative poses utilize supportive props such as bolsters and blankets, providing an environment that fosters total relaxation. The postures and simple breathing exercises can produce similar results to a more vigorous practice, and can be both energizing and relaxing (McCall, 2007). Roberta, one of the Transformed and a yoga instructor, says this best in the following statement, "Yoga meets me where I am."

Dot, a 62 year old Believer and primary caregiver for her husband for the last 17 years, talks about the protective stance that she assumed following surgeries.

> You instinctively want to bring your shoulders forward and yoga reminds you to bring them back. My niece noticed this summer that I wasn't hunched over like I used to be. My posture is much better. My mother has severe ostheoporosis and has shrunk from 5'6" to 4'9" with a big hump on her back. I was beginning to look like that and now I don't (started noticing changes six to nine months into doing yoga).
>
> The yoga makes you feel a little stronger. Even though you've been through a traumatic experience and body rearrangement and all the physical things, you don't feel that way because you've got the energy and strength to keep up with people younger than you.

The chest opening that is achieved in yoga through posture and breath serves as a metaphor for opening the heart. Thirty-six women address this fundamental aspect of yoga that strongly aligns with survivor's physical limitations and compromised physiology. In addition**,** **t**his action takes on a deeper, more spiritual meaning as women reflect and 'go within.' Their

references to posture and chest opening suggest congruity between yoga and breast cancer as these movements also facilitate opening the heart on an emotional level.

Lynne, an Early Adapter is a 64 year old retired nurse who was diagnosed with breast cancer at the age of 57 and has been practicing yoga for six months. Her innate caregiver qualities as a nurse have served her well as she has come to the aid of many family members over the years. She is an incest survivor, and has suffered from anxiety, migraines, and osteoporosis. She has always been extremely high strung and recognizing this tendency, her daughter had given her a yoga DVD to help her relax, years before her diagnosis. True to Lynne's nature, she never took the time to try it. These are Lynne's descriptions of her physical experience which also crossover into the emotional domain:

> The stretching, the bending, the meditation, the restfulness, the relaxation are very beneficial. I find the relaxation end of the yoga absolutely wonderful. I had never done yoga before and it helps me sleep better, the breathing things I can use at night. I had lots of fatigue with the chemo, but the more I do, the better it is for me and I feel that if I would do more, it would be better for me.
>
> The instructor said she had never seen anybody whose shoulders were so tight and she gave me some exercises to do. I know that after I had my surgery, my position of tension to put my shoulders together and just hold them tight was a self-protective stance that I took to protect the mastectomy site. I feel that everything that I do in yoga with all the stretching postures is really good.
>
> If I would have had the yoga and relaxation things that I have now when I was going through surgery and treatment with my back hunched and my anxiety whenever they had to poke, it would have helped me relax and not be so tight and rigid.

Dramatic improvements to the most vulnerable and compromised areas due to the surgeries, treatments, and side effects, are observed by all women. Yoga's readily adaptable techniques make it easily accessible despite the physical limitations that occur throughout the

breast cancer trajectory. Almost every aspect of pain, discomfort, weakness, posture, and balance is met in a very seamless and organic way according to the respondents.

While physical changes are noted by every one of the respondents, changes impacting the other domains are a function of the magnitude and frequency of variables summarized in Chapter IV. Restraining forces can and do impede what appears to be a naturally occurring progression of yoga and examples of such constraints are provided by members of the Casual Users, Enthusiasts, and Believers, in that order. However, due to the non-random sample of willing volunteers who participated in a study about yoga, there is a tone of partiality favoring yoga that is evidenced in themes presented of a deepening relationship with yoga among all.

The physical, emotional, social, and existential responses throughout the breast cancer trajectory are both complex and dynamic. Survivors can experience considerable distress lasting beyond diagnosis, treatment, and across the survivorship trajectory (Andrykowski et al, 2008). They are especially vulnerable immediately following the completion of treatment as they transition from patient to survivor (Stanton et al, 2005). A resounding theme of needs being met by yoga across all domains, are presented consistently and frequently. Based on stories told, yoga appears to create a personal framework that fosters healing and health promotion, emotional support, social connections, physical benefits and an unexpected spiritual path. It helps shape the course of survivors' experiences and illuminates what is meaningful as they continue to cope with physical, emotional, and social effects of cancer, including changes in body image, role function, and relationships. Beyond the physical, emotional, social and spiritual aspects, respondents who are more deeply involved with the practice begin to articulate a transformation and a noted identity shift.

Identity Shift and Transformation

Yoga transforms from a physical practice into an emotional and spiritual practice and for each woman, there is personal meaning associated with this transition. The elusive nature of yoga results in subtle transitions. "Sooner or later it becomes about other stuff besides postures," offers Josie, a member of the Transformed group, who calls yoga a "life force." Priscilla, a 68 year old member of the Transformed group who became a yoga instructor following a career as a lobbyist explains, "I'm calmer internally. I'm still that strong Type-A personality that needs to be slowed down once in a while so if I take the time, the rest of the day flows a little better." These changes are important and members of the Transformed group find that yoga facilitates a subtle transformation of identity.

Diana is a 63 year old domestic violence consultant who is a member of the Transformed. After practicing yoga for seven years, the following excerpt illustrates a gradual transformation in practice and perception.

> When I first started yoga I thought of it as an exercise and so I would push my body to do things, which is sort of what you do when you're kayaking, weight lifting, running, bicycling. And yoga is not that. I don't do that anymore. Yoga is more tied to my breath and it slows me down. It's not a physical exercise although it makes me feel physically better.
>
> The other thing I found interesting that happened was when I first went there, the instructor put us through many different things that didn't make sense to me. I just thought very quietly to myself, 'oh, that's pretty far out there.' That was my judgement. The chanting made me mildly uncomfortable. That seemed a little far out too. But now, I think the chanting is lovely. It's a beautiful thing to do with all of these women and everyone participates and it's just a wonderful way to be with people either in silence or chanting.
>
> When I first went I didn't understand some of the things that she would say like, 'bring relaxation to your toes, the space between the toes, and the top of your feet.' I'm thinking, 'what the hell is she talking about?' But now I do that and it works, just thinking about that particular area and focusing your energy on it.
>
> Using my breath to lead me through has tied it all together for me in some fashion. It's a very spiritual practice now but it

> started as more like a physical practice and it has transformed into something.

The loss of identity and control is common at the juncture of diagnosis and can leave women feeling disempowered and defenseless to surrounding circumstances including the decisions of others. Breast cancer is not only a threat to one's life and health, but is often viewed as an assault on one's integrity and self-perception as a woman. In a culture that values breasts as an important part of the female persona, many women are socialized to believe that to lose a breast challenges their very identity as a woman (Kasper, 1994).

Melissa, a 51 year old Believer has had extensive damage to her body and her self esteem from the treatments, including the Arumodex which she discontinued after five months. She has chronic joint pain, arthritic issues, trigger fingers, weight gain, and wears an arm sleeve for lymphedema. Despite the long list of side effects and trauma that she endures, her remarks sound remarkably counterintuitive and depict a genuine shift in perspective. Yoga has provided her with the tools to rebuild and strengthen her fragile sense of self.

> I would have to say without realizing it that yoga does play a role in sexuality. Just being able to move in certain ways, I feel more feminine. I like myself better. After the surgery I got a little mad at my body and it took a while to look and touch and feel myself. I think being able to look at my body differently, yoga has made a difference.
>
> I found out that I was never really in tune with my body. I was never aware of body sensations. Yoga made me almost respect myself or look at my body with more respect. I never thought I looked as pretty as someone else or I never liked the way my body fit into certain things. I was always critical about things.
>
> When I lost my hair it wasn't so much that I was going to be bald, but I thought I was going to look like a boy. I would always try to get something that made me look feminine because I felt I was going to look ugly. I think yoga has made me look at each part of my body and how it performs for me. I never thought like that before.

Laura, one of the Transformed, whose marriage ended shortly after her diagnosis, is grateful to yoga for becoming "comfortable in her own skin." She echoes Melissa's sentiments and provides insights regarding her own identity transformation. "Your thoughts control you so if you can get your attitude and thinking, if it comes through yoga practice, maybe those doors open. For myself, yoga makes me more sexual, only because I think I felt a certain liberation. I was working on the inside."

One aspect of identity transformation is the distancing of oneself from the category of 'cancer patient,' 'cancer survivor,' or 'victim.' Women describe the challenge of reclaiming their sense of self, cultivating a more positive perspective as a breast cancer survivor, and how yoga facilitates this process. The tools, connections, and confidence that come from a deepening yoga practice contribute to an awakening and a redefining of self. The shift from patient and survivor role to healing and recovery is significant and may explain why so many women prefer the yoga group over the traditional support group. Ten women express a strong desire to no longer dwell on the symptoms and side effects but instead, to move on. Conventional treatment can foster a newly assigned role as 'breast cancer patient,' 'survivor,' or 'cancer victim,' and for some, this 'victim' status supplants a pre-morbid identity. Traditional support groups and health care providers offer encouragement, empathy, medical information, and referrals and at the same time, sustain the woman's newly defined role as survivor.

Breast cancer survivors face traumatic challenges and progress through multiple recovery stages following the initial shock of the diagnosis. Women navigate through the experience relying on their own individual instincts and environmental supports to ease the strain and facilitate the healing process. They are emotionally and physically assaulted by a battery of invasive procedures and interventions including biopsies, surgeries and radiation, and drug and

hormone therapies, often resulting in cosmetic alterations and functional impairments. Psychological responses such as depression, anxiety, fear, worry, anger, or panic are not uncommon in the aftermath of a cancer diagnosis, nor are they unexpected while undergoing treatment. Later on, a new wave of stressors present themselves in the form of fear of recurrence, financial difficulties resulting from loss of employment, sexuality and intimacy limitations, and possible long-term adverse reactions due to treatment (Andrykowski et al, 2008).

The notion of "survivorship" was promulgated by the advocacy group, the National Coalition for Cancer Survivorship (NCCS) in 1986 to convey empowerment among those faced with cancer. By the late 1990's, the cancer survivorship movement had gained momentum and the terminology had become popular among health care professionals, researchers, and individuals recovering from cancer (Park et al, 2009). NCCS worked tirelessly to shift the perception of cancer patients from victims to survivors as it communicated its definition of survivor to be "from the time of diagnosis and for the balance of life" (NCCS, 1995).

The burgeoning breast cancer movement gained widespread support by its depiction of survivors as deserving mothers, wives, and citizens, and by demanding research for treatment and ultimately a medical cure. The breast cancer survivor became a metaphor for the dominant role of the medical industry to conquer the disease and heal women. In two years time from 1991 to 1993, federal funding for breast cancer research almost tripled from 155 million to 400 million, the likes of which no other cancer had ever seen. Its broad appeal attracted foundations, corporations, communities, families, and individuals in the effort to fight breast cancer (Kaiser, 2008).

The image of the breast cancer survivor as feminine, deserving, and committed to a medical cure made breast cancer the perfect cause and gained extensive private and

governmental support. At the same time, corporate sponsorship, product branding, and national campaigns, fundraisers, and awareness programs flooded the country. Their message was clear. "Breast cancer is not shameful, it is survivable, and it is neither disfiguring nor defeminizing" (Klawiter, 1999, p 111). Survivorship was portrayed as the picture of health and strength in the face of adversity. While these images were inspiring, they also alienated women who were either struggling with the threat of recurrence, felt no affinity to the concept as some believed they were only in early stages of cancer, or desired to keep their experience private (Kaiser, 2008).

Critics also professed that the notion of survivorship neglected to capture the inherent uncertainties of the disease. The language often used to describe the ordeal such as "beat," "conquer," or "win the battle," did not align with the true cancer experience, and minimized the underlying fear of reoccurrence that often remained with cancer survivors. Such messages implying victory often left women questioning their own identity and status as healthy or ill (Kaiser; 2008). Some found themselves reluctant to assume the "survivor" label for fear that it suggested cure, when in fact they were still suffering and concerned about a recurrence.

Opposing these positive messages of wholeness and femininity, a movement was mounting that demanded breast cancer be portrayed honestly and openly. Vocal breast cancer survivors and advocates were publicly criticizing the upbeat and unrealistic images of the disease while the frightening and painful realities were conveniently being hidden from view. Survivorship was being maligned for encouraging women to conceal the effects of cancer. On one hand, women were proclaiming their survivor status by adorning themselves with pink ribbons, t-shirts, and caps, while disguising the physical consequences of cancer with clothing, reconstructive surgeries, and prostheses (Kaiser, 2008).

In Talk of Love (2001), Swidler proposes the concept of survivorship as a tool that a woman uses to organize herself and learn to become a certain kind of person. Opportunities take place to learn, practice, and sustain this newly adopted identity. "Culture provides clear guidelines for what it means to be a survivor, as well as opportunities (i.e. breast cancer walks) to practice being a survivor" (p 82). However, for those women who reject or cannot fully embrace the survivorship identity, there are limited options available, especially given its ubiquitous nature. It is these women whose pursuit of an image that reflects their own personal fears of the underlying presence of cancer goes unaddressed (Kaiser, 2008).

Lotus, a Believer whose family has a strong history of breast cancer, states her concerns about adopting a survivor identity, "Yoga has made me realize that treating myself as a whole entire person rather than a survivor or somebody who's been compromised or damaged, has given me some level of confidence and has made me feel better." Diana, a 63 year old member of the Transformed group who's been married for 36 years with no children, takes issue with this role. "I don't like the terms 'battling cancer or fighting breast cancer.' It's something that happened to me. I don't feel like I'm battling it. I'm sure yoga changed my ideas about breast cancer."

This struggle with identity is evident among ten respondents who describe efforts to distance themselves from the disease. One woman's attempt to resume all normal, pre-morbid activities is exemplified by Robin, an Early Adapter, who attended a social affair the day after her lumpectomy and divulged to no one what had taken place the previous day. Seven women had negative experiences with traditional breast cancer support groups and found that those needs were better met in a yoga class. Anna, a member of the Believers, who as a young mom

with many family and business responsibilities and had very little time to herself, felt strongly about her identity.

> I didn't want to reintroduce myself every month, 'I'm DCIF with deep flap…' I wanted to move beyond. I'm not a Breast Cancer survivor. That is not who I am. It's a big part of me. I didn't want to keep doing it. Instead of talking about the past, I wanted to live life. I felt it was more important to go out and be rather than going in and talking about insurance or healing or whatever.

Their descriptions seem less about rejecting the survivor identity and more about embracing yoga practices as a central organizing tool, adopting an identity that delivers only positive sensations. There is a noticeable identity shift, from victim and survivor to healthy person and even 'yogi,' especially among the Transformed. Evidence of this shift is present among many of the Believers as well. Life style changes are taking place and are being shaped by their deepening connection to yoga. The skills they practice subsequently influence the way they view themselves and interpret the world around them, and these changing perspectives impact the way they live their lives.

Roberta, a 65 year old yoga instructor who has been practicing for 24 years and is a member of the Transformed, reflects on her life's path. As a younger person, Roberta struggled with her identity, often feeling like a misfit. She did not conform to family expectations but instead chose her own.

> I function on a much more open level. I found my own healthy way of dealing with the world, doing everything on my own. I feel grounded in my own airiness. There's things on the next level, more emotional things that you find. There's a meditative quality and you leave feeling good cause you're connected to your body.

Women repeatedly voice how they have transformed because of their yoga practice and are no longer the same individuals that they were before. These subtle transformations occur as

yoga becomes fully integrated into their lives. The women come to terms with and recognize a need for yoga in order to maintain their health, and in doing so, create a new path towards a healthier lifestyle and identity.

Michelle, a 51 year old, divorced, member of the Transformed who never focused on her own needs as a single parent, talks about her identity and attitude shift.

> I think yoga gives you more of an acceptance of yourself and therefore you're more open to others. Yoga makes you reflect whatever you want to get out of it. But it gives you a bigger acceptance of yourself. It stopped me from playing that victim role, that I wasn't good enough. Before I was very stressed out and worried constantly. I'm like a different person. I don't see myself as a victim. I have a different outlook.

Distancing oneself from the survivor image was found to be prevalent among the respondents. Furthermore, the relationship to yoga, the instructor, and the group of women who they practiced with were far more meaningful and overshadowed the import of any affiliation and identification with survivorship. A new found reverence for yoga emerged as it cultivated a bonding and empowering experience that would gradually transform identity.

Over time, the commitment to yoga alters identity and is reflected in how the respondents perceive themselves and their worldview. The physical benefits alone are staggering, especially for women whose health has been compromised and who are now advancing in age. How they manage stressors and integrate these stress reducing strategies into their lives have an impact on their sense of self and well-being. Two-thirds (27) of the respondents rate their state of health as good to excellent with 11 out of the 15 Transformed women responding with superlative descriptors such as "fabulous," "excellent," "healthier than I've ever been." Women do not appear to be haunted by the unpredictability of their illness, rarely mention it and if they do, it is

more matter-of-fact. Their reassuring presence and sense of self seem to diminish any fears that might typically be associated with breast cancer.

The increasing benefits experienced on all domains continue to strengthen a deepening commitment to yoga as evidenced by the expanding practice and the sustained motivation and intention. As their practice progresses, a growing need for yoga is perceived and expressed among the Transformed and Believers as a home practice is adopted by all 15 of the Transformed and 9 of the 14 Believers. Yoga meets their physical, emotional, social and spiritual needs and becomes self reinforcing and sustaining. The 15 members of the Transformed group share a total of 137 years of yoga. The full integration of yoga contributes to a newly formed identity that is distinct and apart from the pre-morbid one, as well as the identity of patient, victim, or survivor. Women view themselves as healthy, strong, youthful, and they credit yoga for these changes.

Implications of Health Behavior Change and Adaptation Theories

Key constructs of dominant behavior change theories in physical activity research contributed to an understanding of the themes and observed patterns of yoga progression among the respondents. Specific constructs provided meaning and a deeper understanding of the independent variables that were identified from the data analysis. Referrals, access, triggers, instructors, yoga class, and support systems could be explained by subjective norm; mastery explained by perceived behavior control or self-efficacy; time and resources explained by opportunities and resources; and prior experiences explained by positive attitudes. While these variables do not demonstrate causality within the design or context of this study, they do support evidence of mediators associated with behavior change along the yoga continuum and contribute compelling themes for future inquiry.

The Theory of Planned Behavior (TPB), Social Cognitive Theory of behavior (SCT), Transtheoretical Model of behavior change (TTM), and Motivational Interviewing (MI) all encompass elements that help us understand recurring themes. The central determinant found among all behavior change theories and models that provided meaning to a prevailing theme in this study was perceived behavioral control, also known as self-efficacy. Other key constructs identified in the existing theories that provided additional understandings were: the presence of a subjective norm, social support or significant others who encourage behavior; opportunities and resources available to facilitate the performance of the behavior; a positive attitude towards the behavior; barrier self-efficacy or the ability to overcome barriers; and outcome expectations, or expected results from performing a behavior.

Aspects of TTM's temporal stages and processes that represent shifts in attitude, intention, and behaviors were found to contribute some understanding. The three dominant processes that have gained the most theoretical and empirical attention in studies involving smoking, obesity, and psychological distress are: helping relationships, consciousness raising, and self-liberation (Prochaska et al, 1992). All three of these processes were found to contribute to recurrent themes. Other equally viable variables that have been hypothesized to mediate change and also added to our knowledge base regarding emergent themes included: an individual's self-efficacy for change, decisional balance (pros and cons of change), and strategies and techniques used to modify thoughts, feelings, and behaviors (Marshall & Biddle, 2001).

Core principles of Motivational Interviewing (MI,) especially that of recognizing discrepancies between current behaviors and values provided insight into predominant themes. Aspects of yoga engagement in relation to the instructor appear to relate to properties of MI. The instructor's empathic guidance facilitates a self-appraisal that brings to light personal

discrepancies, and at the same time provides alternative behaviors and supports self-efficacy (Miller & Rollnick, 2002).

The coping mechanisms, traits and healing constructs associated with positive adaptation responses to breast cancer provide insight into salient themes discovered in the research. The congruence of sensations as both an adaptation to a breast cancer diagnosis as well as within one's burgeoning yoga practice is striking. Such similarities include the search for meaning, self awareness, connectedness, empowerment, control, mastery, self-esteem, ability to let go, significance of the present moment, and spirituality.

Implications of Identity Theory

What the health behavior theories do not explain, however, are the collective images of a deepening practice and a transforming identity that members of the Transformed group and many of the Believers describe. Aspects of this metamorphosis are better understood by constructs underpinning structural symbolic interactionism and identity theory. Figure 5.1 visually depicts the combining of these constructs to represent a new theory.

Identity salience and psychological centrality are two concepts that contribute to an understanding of emerging themes in the study. The ability to maintain a given identity while facing external social forces and structures, as well as the perceived importance of one's self-concept are both qualities that resonate with members of the Transformed and some of the Believers and are strongly associated with a deep level of commitment and identity transformation (Stryker 2007).

Elements of structural symbolic interactionism and identity theory help explain themes that reverberate among the more advanced yoga practitioners, particularly the women who belong to the Transformed group. According to structural symbolic interactionism, social

interaction is linked to the adoption of one's role and identity. One's experiences and interactions derive meanings that are shaped by one's position in the social structure and channeled through cognitions and perceptions. These processes influence social life and subsequently impact both behavior and personality (Stryker, 2007). Identity theory recognizes that human behavior and interactions are shaped by interpretations of interactions that come from shared meanings that result from the social interactions. Identity or self-concept refers to the internalized meanings of social roles through the interpersonal exchanges. These principles, strongly reminiscent of Mead's contention that self reflects society, support the reciprocal components of symbolic interactionism where social behavior can impact self and self can impact society (Stryker, 2007).

Having drawn from a variety of theories to help understand the meaning behind themes identified in the analysis, I will present key findings of this grounded theory approach in the concluding chapter. Chapter VI will contain a summary of the purpose and methods, key findings and relevance for social work, limitations of the research, policy implications, and future recommendations.

Figure 5.1 Flow of Yoga progression according to Respondents

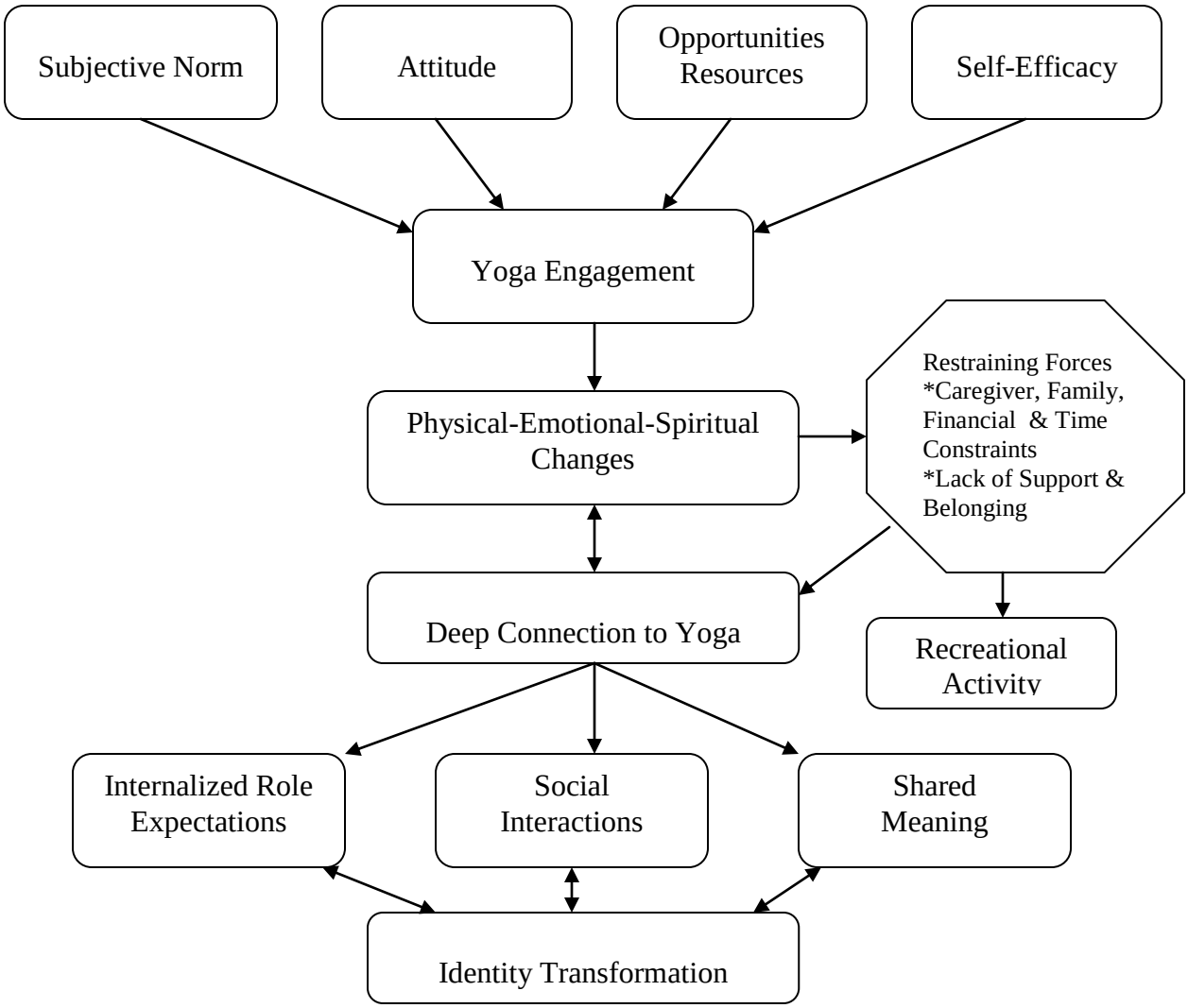

Figure X. The four constructs identified, subjective norm, attitude, opportunities and resources, and self-efficacy, comprise the eight antecedent variables that appear to mediate change, lead to yoga engagement and result in physical, emotional and spiritual changes. The presence, absence, frequency and magnitude of the variables determine the pace at which these changes occur. Restraining forces inhibit the progression of yoga while allowing women to experience physical and emotional benefits and spiritual growth. Over time, constraints may be lifted permitting yoga progression to resume. Ongoing social nteractions that are central to yoga and facilitate shared meaning, perceptions, cognitions and internalized role expectations, contribute to an eventual identity transformation.

Chapter VI – Summary, Research Limitations, Policy and Social Work Implications, Future Recommendations and Conclusion

Summary of Purpose and Methods

The purpose of this study was to examine breast cancer survivors' experiences practicing yoga for different spans of time to understand its relation to their coping with the disease, and to learn what variables might contribute to a deepening practice. Using a grounded theory approach, I identified the emergent themes from interviews with 43 women who had begun practicing yoga following their diagnosis. Subsequently, I considered the dominant health behavior change theories to see if there was relevance to the emergent themes. While not formally testing the application of social cognitive, planned behavior, and transtheoretical theories, important constructs helped to provide an understanding of what the themes meant. In addition, principles of structural symbolic interactionism and identity theory also contributed to an understanding of what accounted for the noted transformation among respondents.

The research design afforded the investigator an opportunity to examine yoga experienced over the duration of time. By expanding its scope and adopting a phenomenological approach to capture the meaning of the yoga experience through the women's lenses, the investigator hoped to determine if stages of progression existed and if so, what accounted for the stages, what contributed to engagement and a deepening experience, and what was the meaning of yoga in relation to coping with breast cancer. The grounded theory approach allowed for the exploration and possible discovery of a theory to better explain any changes that took place.

As so often is the case with qualitative research, the task of data analysis and synthesis revealed nuances of the breast cancer survivors' relationship with yoga that had not been anticipated and raised additional questions which were then explored and integrated into the

findings. The process of inquiry brought to light a broader context of issues related to the total breast cancer experience. Aspects of personality, lifestyle, behavior, identity and environment that might have been missed in a quantitative study, presented themselves.

Resounding themes that could not be ignored, emerged from the 43 respondents and were presented in Chapter V: (1) a feminist perspective combined with role theory that could explain the pre-morbid lives of respondents that were described by the women as lacking control, internalized stress, the absence of skills and/or awareness to release tension, overly driven, Type-A personality traits, and/or demanding caregiver roles; (2) the meaning of survivorship, distancing, and identity transformation, all resembling concepts of structural symbolic interactionism and identity theory; (3) the congruity of yoga and breast cancer, how yoga appears to meet physical, emotional, social, and spiritual needs, and the antithetical sensations of calm brought about from yoga that contrast the pre-morbid levels of internalized stress.

Summary of Key Findings and Relevance for Social Work

Upon final analysis, respondents are grouped into one of four categories that I constructed that reflected a growing relationship with yoga, more intense experiences within physical, emotional, and spiritual domains, and identity transformation. Respondents are assigned to one of these groups based on the presence, absence, combination, and magnitude of eight variables. In sequential order from most to least advanced practitioners, the four stages that I have labeled include the Transformed, the Believers, the Enthusiasts, and the Casual Users. The Transformed have fully integrated yoga into their lives as they describe a practice that is an essential and meaningful part of their identity. The Believers and Enthusiasts both demonstrate a growing relationship with intention to deepen their practice over time as constraints are lifted. The Casual Users exhibit a more modest and recreational relationship with yoga.

Eight antecedent variables are universally identified by respondents that appear to mediate change and suggest engagement, a deepening relationship with yoga, and a gradual identity transformation. The eight variables include: prior experiences, referrals and access, prompts and triggers, instructors, class and sense of belonging, mastery and self-esteem, time and resources, and support systems. These emergent independent variables are not sequential and their presence or absence may be simultaneous, thus impacting one's stage. Based on existing health behavior change literature, the eight can be collapsed into four key constructs as follows: (1) referrals, triggers, instructors, yoga class, and support systems align with subjective norm; (2) mastery aligns with perceived behavior control or self-efficacy; (3) time, resources and access align with opportunities and resources; and (4) prior experiences align with positive attitudes. While these constructs taken from TPB and SCT strongly resemble collective themes associated with behavior change in this study, they only explain part of the findings. Additional dynamic processes are taking place concurrently that can be better understood by identity theory.

Where health behavior theories fall short, concepts of identity theory and structural symbolic interactionism complete an explanation of the deepening yoga practice. All the constituents that facilitate behavior change also foster the interpersonal interactions and interpretation of shared meanings that are internalized and ultimately impact perceptions, cognitions, role expectations and identity. Figure 5.1 visually depicts the linking of these theories and concepts to represent a new theory that more accurately represents the yoga progression that the respondents are experiencing.

The four constructs identified, subject norm, attitude, opportunity/resources and self-efficacy, encompass the eight antecedent variables that appear to mediate change, lead to yoga engagement and result in physical, emotional, and spiritual changes. The presence, absence,

frequency, and magnitude of the variables determine the pace at which these changes occur. Restraining forces inhibit the progression of yoga while still allowing women to experience physical and emotional benefits and spiritual growth. Over time, constraints may be lifted permitting the yoga progression to resume. The ongoing social interactions that are central to the yoga practice, and facilitate shared meaning, perceptions, cognitions, and role expectations, contribute to an eventual identity transformation.

Limitations of the Research

The findings in this study must be considered within the context of its limitations, which include a small, non-random sample that can not be generalized beyond the 43 respondents. This was a convenience sample that by its very design omitted a segment of women who could provide a negative perspective of yoga; therefore comprising a biased sample of women who convey only a positive experience. By limiting the interview criteria to women who were currently practicing yoga, the design reduced the likelihood that women with a negative relationship to yoga would be interviewed. Given how the recruitment process took place, it would be likely that women who volunteered would bring a positive perspective of yoga to the study. However, the intention of the study was not to gather a representative sample, but rather to conduct an in-depth exploration of survivors' lived experiences practicing yoga. This was done deliberately in order to uncover the richest descriptions and meaning of the yoga experience in relation to coping with breast cancer.

Another limitation of this study is that one cannot distinguish what impact yoga has on women from the impact that other mind/body approaches (i.e. mindful meditation or Tai Chi) might have. Questions only touched on the other mind/body practices in relation to attitude and engagement and did not try to distinguish experiences or sensations.

Policy and Social Work Implications

Forty-three breast cancer survivors who practice yoga present common expressions of meaning constructed by their shared circumstances and experiences. The intrinsically coherent themes that emerged represent compelling empirical evidence to inform health and social welfare policy makers, and suggest implications for practice, as well as future inquiry. Despite its limitations, the qualitative data presented in this study demonstrate potential benefits and utility across all domains. It is hoped that mental health, health care providers, and policy makers can gain new insights regarding yoga from this research.

While breast cancer patients and survivors must be informed of the limited research, they should not be deprived of the promise that yoga holds for their symptom management. Providers and policy makers have opportunities to create programs, leverage resources, build capacity, increase access, and encourage participation in suitable yoga programs that can assist people to reshape the course of their illness. One cost effective policy recommendation would be to establish a universal requirement to assess and refer patients to yoga or some other appropriate complementary approach (i.e. mindful meditation, Tai Chi) in an effort to achieve an optimal and long term level of care.

Access is an important barrier, and as quickly as the yoga movement is gaining in popularity, it still fails to reach certain segments of the population. Access includes not only availability, but affordability, scheduling, and appropriately trained instructors. Based on this study's population, yoga is an activity of privilege. Forty of the respondents hold college degrees and 24 of them hold advanced degrees and are engaged in professions. Forty-two of the 43 women are Caucasian and the lone Latino (Puerto Rican) respondent was not affiliated with any yoga studio or breast cancer class. While the implications of this skewed demographic

representation likely resulted from the approach I took to gathering my sample; nonetheless, the possibility that it represents other dynamics remains an important area for further study. It may suggest that yoga represents a culturally incompatible practice for non-Caucasians. Or, it may reflect a lack of outreach and/or access for women of other groups.

Successfully run integrative medicine programs do exist in this country; as do strong partnerships between medical providers, breast cancer coalitions, and yoga centers. A number of respondents were referred to this study through such programs. Centers and programs like these are located in some communities and not others, making yoga available to some breast cancer survivors and not all. Providing equal access to yoga is crucial and opportunity to practice yoga should not be denied to women because of demographics, educational levels, economic status, or geographic barriers.

Myths and preconceived notions of yoga still prevail among certain sectors of the population, including providers, and these myths must be challenged in order to expand participation. Twenty-three out of the 43 women would never have tried yoga due to their own belief systems, had it not been for the referral by a health care provider, a trusted person, and an available class at a health center, yoga studio or breast cancer coalition. It's incumbent on both health care providers and mental health providers to impart accurate and encouraging information about yoga including its available. If future research were to substantiate and generalize the positive impact of the use of yoga in mitigating some of the serious social, emotional and psychological impacts of breast and perhaps other forms of cancer, the incorporation of yoga practice as a recommended adjunct to treatment could be part of national and state health insurance policies.

Mental health providers play an integral role in the referral process, especially since breast cancer survivors often seek care for depression, anxiety, or other emotional disorders. Fourteen out of the 43 respondents admitted to suffering from depression either following or preceding their diagnosis and treatment. The social work literature already reflects an increased interest in addressing spirituality in healing although it is not the general rule. The social work profession, especially those working in the field of oncology, should understand the complexities of yoga, its potential role in mitigating symptoms, and should be prepared to make routine referrals.

Future Directions for Research

The study limitation regarding the inability to discern the impact and outcomes of other mind-body approaches that share similar properties with yoga, such as mindful meditation or Tai Chi, suggests one recommendation for future inquiry. A comparative study to isolate distinctions in their impact on coping with breast cancer among these varied approaches would be one direction worth pursuing.

Findings from this study provide a good foundation for future research to determine the extent to which the emergent themes are representative of other breast cancer survivors' experiences. The eight variables identified all appear to play an essential role as determinants, processes, and outcomes of a building yoga practice. The fluid, reciprocal, and elusive interactions among these concepts that involve individual, environmental, and behavioral factors make explanations of motivation, engagement, and identity transformation a challenge. Research is warranted to expand the design and scope of this study to test if the findings have application to the larger community of breast cancer survivors. Illumination of the constructs that

contribute to a deepening yoga practice and identity transformation among survivors would be an important contribution.

The notion of fully embracing yoga or internalizing the behavior is particularly intriguing since adherence has consistently challenged researchers who have studied physical activity and other interventions among the breast cancer population. Although conclusions could not be drawn based on this study's design, the element of yoga engagement and adoption did pervade the transcripts, even when barriers such as depressive symptoms were present. Depressive symptoms have been shown to interfere with breast cancer patients' adherence to positive health behaviors such as physical activity (Emery et al, 2009). Although 14 respondents in this study did suffer from depression, their symptoms did not serve as an obstacle to their yoga practice and on the contrary, improvements in mood were attributed to the yoga. One direction for future research would be to compare properties of physical activity versus yoga to differentiate the inherent features of adherence that increase the likelihood of embracing or internalizing the behavior.

Many of the short term breast cancer and yoga studies that have been conducted were found to begin at baseline or point of entry. Often at the event of diagnosis, symptoms of stress and anxiety are already present and assumptions have been made that these responses were due to the diagnosis and treatment, and not characteristic of the pre-morbid woman. No studies have examined personality trait stressors that preceded the diagnosis (Ulger & Yagli, 2010) and this is one area that would be worth investigating, especially since these qualities were found to be salient in this study.

To date, research on stressful life events and breast cancer has been shown to be inconclusive. The results of one meta-analysis examining the relationship between exposure to

stressful life events and breast cancer found no link and only a modest association between death of a spouse and breast cancer risk (Duijts et al, 2003). This meta-analysis included studies involving external triggers of stress, and not the internal processes and reactions to stress that were so prominent in the present study. Although these pre-morbid patterns of personality, lifestyle, and behavior fall beyond the purview of this research, they cannot be ignored. The repeated descriptions of multi-tasking, internalized stress, workaholics, perfectionists, caregivers, high achievers, and above all, women lacking quiet time and self-care, raise questions about possible breast cancer risks and a pre-morbid profile of the breast cancer survivor. It is possible that the social, cultural, and personal pressures that women instinctively respond to as suggestive of feminist theory mentioned earlier, may increase their vulnerability.

Our culture and society minimize the effects of stress due to the complexities of our modern lives, and more attention should be directed towards it. Advances in technology challenge individuals to remain alert and sleep-deprived, while in constant communication, multi-tasking, and consequently leaving no downtime. Due to the fast-paced, over-stimulated, and sensory overloaded lifestyles, individuals are exposed more frequently to constant or chronic stress (Weiss, 2006). While practices such as mindful meditation have received national attention and validated research has produced sound evidence of its benefits in health care, it's still not as widely accepted as it could be (Kabat-Zinn, 1990). Yoga has much further to go in its evidence base, and of course, social acceptability, and yet it also could be viewed as the antithesis to stress and stress-related behaviors.

Conclusion

Qualitative methods give voice to 43 breast cancer survivors whose poignant stories of suffering and ultimate triumph uncover aspects of their lives that had not been anticipated.

Their exultant expressions of gratitude, contentment, and optimism are framed around their relationship with yoga. That relationship not only involves the practice itself, but the instructor and the other women in their classes as well. The results suggest that yoga fosters a sense of mastery, builds self-esteem, and restores a sense of control. It evokes feelings of tranquility and triggers a self-assessment, often heightening awareness of levels of stress experienced prior to diagnosis. At the same time, women bear witness to increased physical capacity, improvements in emotional well-being, a growing social support system, and an unforeseen spiritual journey. For those women fortunate enough to have the time to practice regularly and barring major constraints in their personal lives, they begin to observe a personal transformation. Others, whose practices progress more modestly due to such restraining forces as personal responsibilities, obligations, or financial constraints, also find themselves along that same trajectory over time.

Amidst the building yoga practice which leads to an internalizing of the behavior, a life transformation involving a perceived change in identity occurs. Independent variables are identified that are instrumental in facilitating the engagement process, and subsequently determine the degree of progress and integration of yoga into one's life. The identity transformation that occurs among the more advanced practitioners impacts the manner by which the respondents live, including their actions, attitudes, and perceived quality of life.

Wellness has been described as a deliberate attempt to advance one's physical, psychosocial, and spiritual health and encourage self-care in an effort to regain some control over one's health. Attention to the body-mind-spirit connection and integrating reflection on the meaning of cancer in one's life can lead down a path of wellness (Vachon, 2008). Yoga encourages survivors to engage in practices that promote meaning and spirituality, helping them

gain an awareness of their body and surroundings. Among this small, biased and non-random sample of 43 respondents, yoga seems to be self-reinforcing, denotes sustainability and commitment, and is a life transforming process.

The 43 interviews totaled approximately 65 hours of which I personally transcribed, read countless times, coded, recoded, and analyzed. Sifting through the aggregate and distilling codes allowed me to see the forest through the trees, revealing a composite of the breast cancer survivor and a level of complexity associated with yoga that poses intriguing possibilities for future research and post-cancer treatment.

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APPENDIX A - CORIHS approval

STONY BROOK
STATE UNIVERSITY OF NEW YORK

Office of the Vice President for Research
Research Compliance

TO: **Charles Robbins**

FROM: **Office of Research Compliance**

SUBJECT: **Amendment Approval**

DATE: **2/12/2009**

MEMORANDUM

The proposed amendment(s) to the CORIHS - approved project, both referenced below, was reviewed by the Committee on Research Involving Human Subjects (CORIHSFederalwide Assurance #00000125) in accordance with federal regulations governing expedited review procedures and was approved on **2/12/2009** .

Description of the Approved Amendment(s):

Per e-mail request dated 2/3/09, approval to include telephone interviews for distant study participants and change in PI to Dr. Charles Robbins with revisions to recruitment flyer and consent letter and use of a newly implemented telephone script.

Revisions to the consent/form(s) for the study were approved. The new version(s) are attached, with CORIHS approval date-stamped **2/12/2009** .

Your approval period continues to be:

1/15/2008 - 1/14/2011

Description of Project:

CORIHS #: 20076966
PROJECT TITLE:
Breast Cancer Survivors' Perceptions of Yoga Practice for Different Spans of Time

STONY BROOK, NEW YORK 11794-3368 TEL: 631-632-9036 FAX: 631-632-9839

APPENDIX B - CORIHS approval

STONY BROOK
STATE UNIVERSITY OF NEW YORK

Office of the Vice President for Research
Research Compliance

TO: **Candyce Berger**

FROM: **Office of Research Compliance**

SUBJECT: **Amendment Approval**

DATE **7/24/2008**

MEMORANDUM

The proposed amendment(s) to the CORIHS - approved project, both referenced below, was reviewed by the Committee on Research Involving Human Subjects; (Federalwide Assurance # 00000125) in accordance with federal regulations governing expedited review procedures and was approved on **7/24/2008** .

Description of the Approved Amendment(s):

Per e-mail request dated 7/23/08, approval to change inclusion criteria for subject participation to 45 years and older.

Your approval period continues to be **1/15/2008** -

Description of Project:

CORIHS #: 20076966

PROJECT TITLE:

Breast Cancer Survivors' Perceptions of Yoga Practice for Differnet Spans of Time

Thank you for notifying CORIHS of the changes to your protocol and/or consent/assent form(s). If you have any questions, or require additional information, please feel free to call contact me.

STONY BROOK, NEW YORK 11794-3368 TEL: 631-632-9036 FAX: 631-632-9839

APPENDIX C – Outreach Letter

Karyn Cohen Kirschbaum
SUNY Stony Brook Health Sciences Center
School of Social Welfare – HSC, Level 2, Rm 093
Stony Brook, NY 11794-8231
(631) 335-6888 (c) - (631) 669-2629 (h)
Karyn.Kirschbaum@gmail.com

June 18, 2008

Dear friend,

I am currently a doctoral candidate at SUNY Stony Brook's School of Social Welfare working on my dissertation. Over the next six months I plan on interviewing breast cancer survivors who practice yoga and hope that you can help me publicize this project to women who might be interested in participating.

Enclosed you will find a description of the project, an announcement flyer, and a consent form. I was wondering if you could post and/or include my solicitation for participants in any print or web-based communications that you think might be appropriate. Permission has already been granted from SUNY Stony Brook to conduct this study and complete anonymity is guaranteed.

Please let me know if there is anything else I can provide for you. Do not hesitate to contact me if you have any specific questions about the study.

I thank you in advance for your help.

Respectfully,

Karyn Cohen Kirschbaum, L.M.S.W.

APPENDIX D – Project Description

Project Overview

This study consists of one in-depth, ninety-minute interview with breast cancer survivors who currently practice yoga, are at least 45 years of age, between one and four years post completion of treatment, and who did not practice yoga consistently five years prior to diagnosis.

The objectives of the study are: 1) to present breast cancer survivors' perceptions of the experience and utility of yoga by the duration of time practiced; 2) to describe the transformation that does or does not occur associated with the length of time practicing yoga; 3) to develop a narrative account of common themes and exemplars and identify possible transitional stages of the progression of and adherence to the yoga practice. The study will focus on the individual, lived experience and will rely on in-depth interview strategies to capture the subjects' perception of the experience of practicing yoga for varying lengths of time through the recovery process.

The purpose of this study is to offer a more complete understanding and reflection on how the breast cancer survivor experiences yoga. The study will examine the transformational process of yoga as it conceptualizes transitions and stages that women experience through this dynamic process. Existing research in this area is limited, short term, quantitative, and comprised of small samples. What is missing is an in-depth, qualitative narrative that can capture the nuances, perceptions, and experiences of women with breast cancer who may well provide new meaning to their yoga experience. No extensive, in depth research has been done in this area.

The data generated may offer insights into one's experience and sensations that occur as one practices yoga over time. Although theories have been applied frequently to stages of health promotion and physical activity, they may not fully express and represent the experience of yoga. Factors that draw women in to the practice of yoga, motivate them to continue to practice, and possibly lead to commitment and adherence may be reflected more accurately by another theory.

Complete anonymity will be guaranteed. Individuals will be assigned a fictitious name which will be used throughout the interview and analysis process. There are no anticipated risks to this study. If however, at any point during the interview she feels uncomfortable, she will have the opportunity to terminate participation.

Women who are interested in participating or would like more information can contact Karyn Kirschbaum by telephone at *631/335-6888* or email at *karyn.kirschbaum@gmail.com.*

APPENDIX E - Consent Form

STONY BROOK
STATE UNIVERSITY OF NEW YORK
COMMITTEES ON RESEARCH INVOLVING HUMAN SUBJECTS
Established 1971

CONSENT FORM FOR INTERVIEW

Investigators: Charles L. Robbins, D.S.W., L.C.S.W.-R
Associate Dean / Associate Professor
SUNY at Stony Brook - School of Social Welfare

Karyn Kirschbaum, L.M.S.W.
SUNY at Stony Brook – School of Social Welfare

Project Title: Breast Cancer Survivors' Perceptions of Yoga Practice for Different Durations of Time.

You are being asked to be a volunteer in a study.

Purpose: This qualitative research study is attempting to describe the experience of practicing yoga through the eyes of a breast cancer survivor. The investigator will examine ones' perceptions, observations, and experiences as one transitions through recovery while practicing yoga. A maximum of forty five individuals will be interviewed.

Procedures: If you agree to be part of this study, your participation will involve one brief telephone conversation to ascertain if you meet the criteria for the study, and one face-to-face or telephone interview, lasting no more than two hours.

During the interview you will be asked a series of broad questions relating to your observations and perceptions practicing yoga, including physical, emotional, and social experiences. Responses are voluntary, and while your fullest participation is hoped for, you are not required to answer any questions that you choose not to. The interview will be audio taped; all identifying information (i.e. your name, home town) will be replaced with fictitious names. Once the tape is transcribed and checked for accuracy, it will be destroyed.

Risks/Discomforts: There should not be any risk or discomfort expected from participation in this study.

Benefits: There is no direct benefit to you from participation in this study, nor is there any cost to you or payment for participating in the study. The information you share, however, may contribute to our understanding of the transformation and stages of change over time that a breast cancer survivor experiences practicing yoga.

APPENDIX E - Consent Form

Confidentiality: The following procedures will be followed in this study to keep your personal information and identity confidential. You will be provided a code name prior to the interview taping. The audiotape will be transcribed using only the assigned code name. Any identifying information regarding your identity will be replaced with your assigned fictitious name. Once the transcript is checked for accuracy, the audiotape will be destroyed. There will be no way to link your name to any specific transcript. Audiotapes will be kept in a secured location with access limited to the research team. There is no identifying information recorded, even temporarily, for research purposes.

To ensure that this research activity is being conducted properly, Stony Brook University's Committee on Research Involving Human Subjects and/or applicable officials of SBU and OHRP (Office for Human Research Protections), have the right to review study records, but confidentiality will be maintained as allowed by law.

Subject's Rights:

- Your participation in this study is voluntary. You do not have to be in this study if you do not wish.
- One alternative you have is to choose not participate in the study.
- You have the right to change your mind and leave the study at any time without giving any reason, and without penalty.
- Any new information that may make you change your mind about being in this study will be given to you.
- You will be given a copy of this consent form to keep.
- You do not waive any of your legal rights by agreeing to be in this study.

Questions about the Study or your Rights as a Research Subject:

- If you have any questions about this study, you may contact Dr. Charles Robbins at (631) 444-3164.
- If you have any questions about your rights as a research subject, you may contact Ms. Judy Matuk, Committee on Research Involving Human Subjects at (631) 632-9036.

If you wish to participate:
If you would like to participate in this research project, please contact Karyn Kirschbaum at (631) 335-6888 to schedule an interview. The time and/or place of the interview will be at your convenience.

If you agree to participate in this interview, it means that you have read (or have had read to you) the information contained in this letter, and would like to be a volunteer in this research study.

Thank you,

Charles L. Robbins, D.S.W., L.C.S.W.-R

Karyn Kirschbaum, L.M.S.W.

APPENDIX F – Announcement Flyer

Wanted: Breast Cancer Survivors who practice Yoga

(women – 45 yrs & up)
(1 - 4 years beyond completion of treatment)
(any style and level yoga – beginner to advanced)
(did not practice yoga with consistency 5 years prior to diagnosis)

To: Participate in a Research Study on Yoga

Participation in study will involve:

- One 90 minute face-to-face or telephone interview
- Complete Anonymity

Please contact:

- Karyn Kirschbaum, L.M.S.W.
- (631) 335-6888
- karyn.kirschbaum@gmail.com
- SUNY Stony Brook, School of Social Welfare

APPENDIX G – Criteria Questionnaire

Criteria Questionnaire
Preliminary Telephone Questions to Determine Eligibility

1. Your age?

2. Do you practice yoga?

3. How often and what kind?

4. How long have you practiced yoga?

5. Did you practice yoga up to five years prior to your diagnosis and if so, how often?

6. Diagnosis – (stage I, II, III)? Did you have Metastatic disease at diagnosis?

7. Did you have a history of breast cancer prior to this most recent diagnosis?

8. When did you complete treatment?

9. Did you have high-dose chemotherapy with bone marrow or stem cell rescue?

10. Are you under any current treatment besides tamoxifen?

11. Are you able to sit for a 90 minute interview?

12. (ability to speak English)

13. Have you been informed of the study and do you give consent?

Telephone Script for Phone Interviews

K – I thank you for taking this time to allow me to interview you for my study. The call should take between one and 1 ½ hours. If for any reason you have to get off, I can pause the tape recorder and we can resume at a later time. As I explained in our initial conversation, I will be tape recording all your responses. This is completely voluntary and you can refrain from answering any questions that make you feel uncomfortable. I will be using a pseudo name throughout the interview. After I complete the transcription and have checked for accuracy, I will destroy the tape. Any identifying information that is revealed during the interview will be changed to protect your anonymity.

There are two parts to this interview. The first part is more descriptive, including demographic, family, health issues. The second part is more of a reflection of your experience practicing yoga over time.

Do you have any questions? If not, then let's begin.

APPENDIX I - Semi Structured Interview

Open-Ended Questions

SECTION I

1 - How old are you?
2 - What ethnic group do you identify with?
3 - Do you have children & if so what are the gender & ages? Marital Status?
4 - What is your occupation/profession?
5 - What is the highest level of education completed? Have you experienced financial issues since diagnosis?
6 - Questions about Breast Cancer – Family History of Breast Cancer? – Other health issues?
Treatment – Chemo, Radiation, Surgery, Medication, Alternative Therapies
Side Effects – Nausea/Vomiting, Fatigue, Anemia, Hair Loss, Digestive Problems, Loss of Flexibility, Weight Loss/Gain, Skin Changes, Edema, Pain
7 - Do you use any other forms of complementary alternative therapies (i.e. accupuncture, massage, reflexology, herbs?)
8 - Does anyone else in your family practice yoga? Are family members supportive of you doing yoga?
9 - What other physical activities do you participate in now and in the past?
10 - How long have you been practicing yoga? What type of yoga do you practice? Please explain
11 - How often do you practice? For how long each time? In a studio or home? If in a studio, how much does it cost? Is it easy to get to?
12 – Have you begun other new activities into your life since your illness?
13 – What is your general current state of health?

SECTION II – Shut eyes, take a few deep breaths

1 - Tell me how does yoga make you feel? Walk me through the experience – you come to class, sit on mat….
Tell me about each phase – before you come to class, you start out, through the movements, shavasana (closing rest), after class
2 - Think back & tell me about when you first started practicing yoga? those first classes
(physically hard, painful, frustrating, boring, discouraging, relaxing, soothing?)
Did someone recommend that you do yoga and if yes, who? And under what circumstances?
Was it a result of your diagnosis?
Did a doctor, nurse, or other health care provider recommend yoga?
Was it a specific event that led you to it?
Was it unexpected, unplanned?
Were you influenced by someone?
3 - What keeps you coming back? What is it about the class, the teacher, other women?

4 - Have there been times when you took off from yoga and then returned? Talk about it.

5 – How has yoga changed your attitude/outlook/philosophy/perspective on breast cancer? Explain

6 – What kind of power or control do you feel you have to improve the quality of your life? Explain

7 - How do you cope with everyday stress and the effects of your illness and treatment?

8 - Describe any changes that you notice have taken place since practicing yoga – and when these changes took place
(physical, emotional, psychological, spiritual etc.)

9 - What physical, social, spiritual, or psychological needs do you feel are being met or not being met?

10 - Is there anything else about yoga that you would like to talk about?

APPENDIX J – Post-Interview Impression

Post-Interview Impressions

Respondent's Affect

Respondent's Body Language

Respondent's Dress

Respondent's Nonverbal Expression and Tone

Respondent's Demeanor

Researcher's Reactions

Researcher's Ideas

Researcher's Questions

Researcher's Insights

Table 1 *Characteristics of Respondents, page 1*

Respondents	Age	Age at Diagnosis	Treatments	Education	Profession	Family
1 Alana (C)	65	53	L,R,H	MS +60	Retired Teacher	Divorced
2 Theresa (B)	54	44	M	BS	Retired Stock Trader	Married with child
3 Therapy (T)	66	47	M	MS – 6 cr	Retired Teacher	Widow – 2 adult children
4 Josie (T)	56	42	M,C,Rec	BS + cr	Intake Coordinator	Married – 2 young adult children
5 Laura (T)	53	47	L,C,R,H	MS	Yoga Teacher	Divorced - Boyfriend
6 Lotus (B)	58	35 56	2M,C,R,S	MS + 75	Retired Teacher	Divorced – Boyfriend adult children
7 Galaxy (E)	66	60	L,R,H.	MS	Retired Teacher	Married – adult children
8 Melissa (B)	51	48	L,N,C,R,H	BS	Medical Coordinator	Married – young adult son
9 Constance (T)	52	48,49	L,R,M,Rec,H,O	Law	Attorney	Married – young adult daughters
10 Linda (C)	62	61	2L,C,R,H,T	MSW	Social Worker	Divorced with Boyfriend adult daughter
11 Nancy (B)	64	63	L	BA	Child Advocate	Divorced – adult daughters
12 Sam (C)	71	68	L,C,R	MS	Retired Marketing and Secretary	Single
13 Trudy (T)	52	50	L,R	BS	Human Resources and Yoga Teacher	Single

Note. Treatment Abreviations: M – Mastectomy, L – Lumpectomy, C – Chemotherapy, R, Radiation, H- Hormones, N- Lymph Node Dissection, Hy – Hysterectomy, Rec – Reconstruction, O – Oophorectomy, T – Thyroidectomy
Yoga Stages: (T) – Transformed, (B) – Believers, (E) – Enthusiasts, (C) – Casual Users

Table 1 *Characteristics of Respondents, page 2*

Respondents	Age at Age	Diagnosis	Treatments	Education	Profession	Family
14 Robin (E)	50	48	L,R,H	MBA	Technical Sales	Married – young adult daughters
15 Gladys (E)	58	57	L,R,H	BA	School Secretary	Married – adult sons
16 Joy (T)	54	47	L,M,C,Rec,H	RN	Nurse	Married 3X – adult children
17 Jane (B)	55	52	L,R.H	BS	Art Agent	Separated – two daughters
18 Zena (B)	47	45	2L,M,C,N,H,Hy	BS	Project Manager	Divorced – adult daughter
19 Michelle (T)	51	44,47	2L,M	some college	Administrative Assistant	Divorced – adult daughter
20 Victoria (B)	53	51	L,C.R.H	2 yr college	Ret Secretary	Married
21 Roberta (T)	65	41	L,N	BS	Yoga Teacher	Single
22 Norma (T)	61	49	L,N,R,C	HS	Ret Retail	Married – 2 adult daughters
23 Tracey (E)	62	58	2L,C,R,H	MS +	Teacher	Married
24 Susan (E)	49	44	L,R,H	MS	Industrial Hygienist	Married – one daughter
25 Sara (B)	51	50	L,N,C,R	MA	College Instructor	Married – daughters
26 Carol (T)	54	30,52	L,R.Rec,M	MS	Teacher and Sales	Married
27 Linda II (T)	55	44	L,C.R,H,Hy,O	MS + 75	Teacher	Married
28 Suzanne (T)	60	57	2L,C,R	BS	CEO	Divorced – adult sons

Note. Treatment Abreviations: M – Mastectomy, L – Lumpectomy, C – Chemotherapy, R, Radiation, H- Hormones, N- Lymph Node Dissection, Hy – Hysterectomy, Rec – Reconstruction, O – Oophorectomy, T - Thyroidectomy
Yoga Stages: (T) – Transformed, (B) – Believers, (E) – Enthusiasts, (C) – Casual Users

Table 1 *Characteristics of Respondents, page 3*

Respondents	Age	Age at Diagnosis	Treatments	Education	Profession	Family
29 Ann (B)	49	44	N,L,C,R,H	BS	Office Manager	Married
30 Carrie (B)	58	41,45	L,R,M,C	MSW	Social Worker	Married
31 Lisa (B)	53	48	L,C,R,H	MSW	Property Appraiser	Divorced – young adult children
32 Dot (B)	62	50	L,M,C,Rec,H	Assoc.	Ret Bookkeeper	Married – adult daughter
33 Jennifer (E)	58	54	L,R,H	MS	Ret College Professor	Married – adult children
34 Anna (E)	57	56	L,R,H	MS	CEO Not-For-Profit	Married – teenage son
35 Lynne (E)	64	57	N,M,C,H,T	MS	Nurse	Married – adult children
36 Sarah (B)	56	55	4L,N,R,H	PhD	College Professor	Married
37 Anna II (B)	46	43	L,N,M,Rec,H	BS	Senior Director	Married – two children
38 Diana (T)	63	55	L,N,R,C,H	MS	Counselor	Married
39 Frances (T)	67	57	3L,R	PhD	Govt Official	Married – adult children
40 Paula (C)	45	42	L,R,N,H	BS	Computer Consultant	Single
41 Sabrina (E)	48	45	C,M,N,R,H	MS/Law	p/t Teacher	Married – three children
42 Fran (E)	73	71	2L,R,C	HS	Ret Clerical	Widow – adult children
43 Priscilla (T)	68	45	M,Rec,2L,R,H	MS	Ret Analyst/Yoga Teacher	Married 2X – adult sons

Note. Treatment Abbreviation: M – Mastectomy, L – Lumpectomy, C – Chemotherapy, R, Radiation, H- Hormones, N- Lymph Node Dissection, Hy – Hysterectomy, Rec – Reconstruction, O – Oophorectomy, T - Thyroidectomy
Yoga Stages: T) – Transformed, (B) – Believers, (E) – Enthusiasts, (C) – Casual Users

Table 2 *Independent Variables for Transformed, page 1*

Transformed Time[a]	Subjective Norm	Self-Efficacy	Opportunities Resources	Positive Attitude	Restraining Forces	
					Internal Barriers	External Barriers
3 Therapy 18 years	+	+	+	-		
4 Josie 13 years	+	+	+	-	Earlier Caregiver Stress	
5 Laura 5 years	+	+	+	-	Earlier Anxiety, Loss, Internalized Stress	
9 Constance 4 years	+	+	+	-	Type A	
13 Trudy 19 months	+	+	+	+	ACOA, Caregiver Perfectionist, Internalizes Stress	
16 Joy 4 years	+	+	+	-	Internalizes Stress, Perfectionist, Caregiver	
19 Michelle 6 months	+	+	+	-	Depression, Caregiver, Panic	

Note. Four Key Constructs from TPB and SCT contribute to an understanding of prevailing themes. Subjective Norm is comprised of the following variables: referrals, triggers, instructors, yoga class, and support system. Self-Efficacy aligns with mastery. Opportunities and Resources align with time, resources and access. Positive Attitude aligns with prior experience. The presence of these variable (indicated by an +) contributes to a building yoga relationship. The absence of these variables (indicated by a -) inhibits the yoga progression. Internal and external restraining forces were identified to further inhibit or delay the progression. External Restraining Forces include: caregiver and family responsibilities, financial and time constraints, and lack of support and belonging. Length of time practicing yoga may or may not be considered a restraining force.

[a]Time indicates how long respondents have been practicing yoga.

Table 2 *Independent Variables for Transformed, page 2*

Transformed Time[a]	Subjective Norm	Self-Efficacy	Opportunities Resources	Positive Attitude	Restraining Forces	
					Internal Barriers	External Barriers
21 Roberta 24 years	+	+	+	+	Considered herself Neurotic	
22 Norma 10 years	+	+	+	-	Internalizes Stress, Energizer Bunny, Perfectionist	
26 Carol 5 years	+	+	+	-	Exercises to deal with Stress	
27 Linda II 10 years	+	-	+	+	Energizer Bunny, Exercises for Stress	
28 Suzanne 2.5 years	+	+	+	+	Type A, Internalized Stress	
38 Diana 7 years	+	+	+	-	Internalized Stress	
39 Frances 10 years	+	+	+	+	Internalized Stress	
43 Priscilla 19 years	+	+	+	+	Type A, Internalized Stress, Over-Committed	

Note. Four Key Constructs from TPB and SCT contribute to an understanding of prevailing themes. Subjective Norm is comprised of the following variables: referrals, triggers, instructors, yoga class, and support system. Self-Efficacy aligns with mastery. Opportunities and Resources align with time, resources and access. Positive Attitude aligns with prior experience. The presence of these variable (indicated by an +) contributes to a building yoga relationship. The absence of these variables (indicated by a -) inhibits the yoga progression. Internal and external restraining forces were identified to further inhibit or delay the progression. External Restraining Forces include: caregiver and family responsibilities, financial and time constraints, and lack of support and belonging. Length of time practicing yoga may or may not be considered a restraining force.

[a]Time indicates how long respondents have been practicing yoga.

Table 3 *Independent Variables for Believers, page 1*

Believer Time[a]	Subjective Norm	Self-Efficacy	Opportunities Resources	Positive Attitude	Restraining Forces Internal Barriers	Restraining Forces External Barriers
2 Theresa 6 months	+	+	+	+	Depression, Anxiety Internalized Stress	+
6 Lotus 2 years	+	+	+	+	Health Issues	+
8 Melissa 6 months	+	+	+	+		+
11 Nancy 6 months	+	+	+	+	Energizer Bunny	+
17 Jane 2.5 years	+	+	+	-	Internalizes Stress	+
18 Zena 6 months	+	+	+	+	Compulsive, Loner Mental Stress, Health	+
20 Victoria 6 months	+	+	+	+	Depression, Stress	+

Note. Four Key Constructs from TPB and SCT contribute to an understanding of prevailing themes. Subjective Norm is comprised of the following variables: referrals, triggers, instructors, yoga class, and support system. Self-Efficacy aligns with mastery. Opportunities and Resources align with time, resources and access. Positive Attitude aligns with prior experience. The presence of these variable (indicated by an +) contributes to a building yoga relationship. The absence of these variables (indicated by a -) inhibits the yoga progression. Internal and external restraining forces were identified to further inhibit or delay the progression. External Restraining Forces include: caregiver and family responsibilities, financial and time constraints, and lack of support and belonging. Length of time practicing yoga may or may not be considered a restraining force.

[a]Time indicates how long respondents have been practicing yoga.

Table 3 *Independent Variables for Believers, page 2*

Believer Time[a]	Subjective Norm	Self-Efficacy	Opportunities Resources	Positive Attitude	Restraining Forces Internal Barriers	Restraining Forces External Barriers
25 Sara 1 year	+		+	+	Internalized and Marital Stress	+
29 Ann 1.5 years	+	+	+	-	Difficulty Relaxing	+
30 Carrie 4 years	+	+	+	-	Health Issues, Extreme Stress, ADDish	+
31 Lisa 4 years	+	+	+	+	Depression, Anxiety Perfectionist, Fatigue	+
32 Dot 4 years	+	+	+	+	Caregiver Stress	+
36 Sarah 6 months	+	+	+	+	Type A, Extremely Competitive, Athletic	+
37 Anna 8 months	+	+	+	+	Internalizes Stress Depression	+

Note. Four Key Constructs from TPB and SCT contribute to an understanding of prevailing themes. Subjective Norm is comprised of the following variables: referrals, triggers, instructors, yoga class, and support system. Self-Efficacy aligns with mastery. Opportunities and Resources align with time, resources and access. Positive Attitude aligns with prior experience. The presence of these variable (indicated by an +) contributes to a building yoga relationship. The absence of these variables (indicated by a -) inhibits the yoga progression. Internal and external restraining forces were identified to further inhibit or delay the progression. External Restraining Forces include: caregiver and family responsibilities, financial and time constraints, and lack of support and belonging. Length of time practicing yoga may or may not be considered a restraining force.
[a]Time indicates how long respondents have been practicing yoga.

Table 4 *Independent Variables for Enthusiasts, page 1*

Early Adapter Time[a]	Subjective Norm	Self-Efficacy	Opportunities Resources	Positive Attitude	Restraining Forces Internal Barriers	Restraining Forces External Barriers
7 Galaxy 6 months	+	+	+	-	Type A	+
14 Robin 5 months	+	+	+	-	Type A Caregiving	+
15 Gladys 6 months			-	+	Anxiety Anger	+
23 Tracy 2 years	+		+	-	Internalizes Stress	+
24 Susan 4 years			-	+	Type A Depression	+
33 Jennifer 4 years	+		+	-	Internalizes Stress Depression, Low Energy	+
34 Anna 6 months		+		+	Depression, Stress	+

Note. Four Key Constructs from TPB and SCT contribute to an understanding of prevailing themes. Subjective Norm is comprised of the following variables: referrals, triggers, instructors, yoga class, and support system. Self-Efficacy aligns with mastery. Opportunities and Resources align with time, resources and access. Positive Attitude aligns with prior experience. The presence of these variable (indicated by an +) contributes to a building yoga relationship. The absence of these variables (indicated by a -) inhibits the yoga progression. Internal and external restraining forces were identified to further inhibit or delay the progression. External Restraining Forces include: caregiver and family responsibilities, financial and time constraints, and lack of support and belonging. Length of time practicing yoga may or may not be considered a restraining force.
[a]Time indicates how long respondents have been practicing yoga.

Table 4 *Independent Variables for Enthusiasts, Page 2*

Early Adapter Time[a]	Subjective Norm	Self-Efficacy	Opportunities Resources	Positive Attitude	Restraining Forces Internal Barriers	External Barriers
35 Lynne 6 months	+	+	+	-	Type A, Caregiver, Anxiety	+
41 Sabrina 2 years	+	+	+	-	Type A, Internalizes Stress	+
42 Fran 1 year	+	+	+	-	Caregiver Stress	+

Note. Four Key Constructs from TPB and SCT contribute to an understanding of prevailing themes. Subjective Norm is comprised of the following variables: referrals, triggers, instructors, yoga class, and support system. Self-Efficacy aligns with mastery. Opportunities and Resources align with time, resources and access. Positive Attitude aligns with prior experience. The presence of these variable (indicated by an +) contributes to a building yoga relationship. The absence of these variables (indicated by a -) inhibits the yoga progression. Internal and external restraining forces were identified to further inhibit or delay the progression. External Restraining Forces include: caregiver and family responsibilities, financial and time constraints, and lack of support and belonging. Length of time practicing yoga may or may not be considered a restraining force.
[a]Time indicates how long respondents have been practicing yoga.

Table 5 *Independent Variables for Casual Users*

Dabbler Time[a]	Subjective Norm	Self-Efficacy	Opportunities Resources	Positive Attitude	Restraining Forces	
					Internal Barriers	External Barriers
1 Alana 5 years	-		+	-	Type A	+
10 Linda 5 months	+	+	-	-	Exercises to Release Stress	+
12 Sam 2.5 years	-		-	-	Type A, Internalizes Stress	+
40 Paula 2 years	+		+	-	Internalizes Stress Depression	+

Note. Four Key Constructs from TPB and SCT contribute to an understanding of prevailing themes. Subjective Norm is comprised of the following variables: referrals, triggers, instructors, yoga class, and support system. Self-Efficacy aligns with mastery. Opportunities and Resources align with time, resources and access. Positive Attitude aligns with prior experience. The presence of these variable (indicated by an +) contributes to a building yoga relationship. The absence of these variables (indicated by a -) inhibits the yoga progression. Internal and external restraining forces were identified to further inhibit or delay the progression. External Restraining Forces include: caregiver and family responsibilities, financial and time constraints, and lack of support and belonging. Length of time practicing yoga may or may not be considered a restraining force.
[a]Time indicates how long respondents have been practicing yoga.

Table 6 *Aggregate observed physical changes displayed by Four Yoga Stages*

Observed Physical Changes	Casual Users N=4	Enthusiasts N=10	Believers N=14	Transformed N=15
Strength	3	7	8	11
Flexibility/Range of Motion	3	7	14	14
Balance/Symetry	4	7	14	14
Improved Lymphedema	1	1	2	7
Posture	2	8	12	13
Level of Fitness/Stamina	1	5	5	13
Improved Body Image	1	3	6	13
Less Stiffness/Aches	2	5	9	10
Leaner/More Toned	0	3	4	8
Improved Sleep	1	4	7	3
Coordination	0	0	0	3

Note. These common descriptors representing physical changes were volunteered by the respondents.