Tracing the Pink Ribbon: Development of a Family Resilience Measure

Crystal Lynn Duncan Lane

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements of the degree of

Doctor of Philosophy
In
Human Development

Peggy S. Meszaros, Chair
Katherine R. Allen
April L. Few-Demo
Fred P. Piercy
Jyoti S. Savla

April 4, 2011
Blacksburg, VA

Keywords: family resilience, instrument, feminist, family health, breast cancer

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ABSTRACT

Resilience is one of the most important biopsychosocial concepts in contemporary social science. It may mediate the impact of adversity on family health, and be a potential location for intervention. There is a need for conceiving of the mechanisms within families that impact their health throughout the life cycle, including the investigation of how they handle illness. One framework that may assist in this is Walsh's family resilience framework. Previous attempts to create an empirical measure of this framework have serious issues with validity. The purpose of this study is to create a reliable and valid instrument that investigates Walsh's framework from the view of women who have been diagnosed with breast cancer. The study uses feminist theory to emphasize a pluralistic application of family systems theory in the understanding and promotion of the experience of women, the promotion of all families over one family type, and the concept of intersectionality.

A non-experimental quantitative design is used to develop a reliable and valid instrument that investigates Walsh's framework. A pilot study addressed the creation and revision of the Family Resilience Assessment (FRA), and a main study tested the revised FRA for emergent factors and model fit. Results indicate excellent reliability and beginning content, construct, and convergent validity. Analyses produced a better fitting model that replaces three latent variables with one and correlates two of the nine framework indicators.

These preliminary analyses demonstrate that the FRA may be a valuable instrument with replication with larger samples and further revisions needed. Results further indicate that

Walsh's framework is a sound method for conceiving of and better understanding family resilience. The framework may also be one way to study the mediating impact of family resilience on family health.

Dedication

This dissertation is dedicated to my beloved and my best friend: James Patrick Lane. For over 13 years he has been my constant and unfailing source of love, support, strength, grace, and patience. He has encouraged me, held me up, and kept me going when the end was too far away. His presence in my life gives my work meaning, and without him this process would not have started.

Beyond providing encouragement, support, love, reflection, joy, and patience, he has also done all of our laundry, and managed our finances. He has washed my car and kept it clean, cleaned the house, and at times ordered me to stay home and not work. He has taken me to the Bahamas and Jamaica, and cooked me breakfast on Sundays. He found and gave me a sweet little grey cat that has filled our home with exuberance, joy, and humor. And unlike so many men in this world, he has told me that he will follow me anywhere I want to go with my career, and been strong enough to never feel threatened by it.

While I may soon be Dr. Duncan Lane to the world, for him I am proud to be Mrs. Lane.

Acknowledgements

I am very grateful for the financial support of the Department of Human Development for providing funding for this project ($350). I also would like to acknowledge those who have provided funding that has helped further my professional development: the Peggy S. Meszaros Scholarship (2008, $2500), Alexander L. Meszaros Leadership Award (2008/2009, $2000/$1000), Shang-Ling and Chen-Te Fu Scholarship (2009, $500), and the Graduate Student Assembly Travel Award (2010, $200).

I also want to acknowledge the support of my major professor, assistantship supervisor, and mentor, Dr. Peggy S. Meszaros. Research in our field shows the great importance of having a person in our lives who provides both challenge and support to our growth and development, and whom we can also trust. Dr. Meszaros has absolutely been that person for me for the past four years. I will continue to be grateful to Dr. M. for her mentoring, guidance, support, patience, encouragement, and above all, her continued belief in me.

I want to also acknowledge the wonderful support that I have received from each of the members of my committee. Dr. Katherine Allen, whom I came to when I started thinking about applying to Virginia Tech, and who never allowed me to "get away with," anything in my writing. I am a better scholar because I know I will have to defend everything that I say to her, and also that standing up for what I believe does not mean I am a "bad" person. Dr. Tina Savla taught me the art of Structural Equation Modeling, empowered me to go for my dream dissertation instead of what felt safe, and who helped me find confidence in being a quantitative researcher. Dr. April Few-Demo offered support for my ideas and my identity as a feminist: through her empowerment I found the strength to stand on feminist theory alone for this dissertation. Dr. Fred Piercy, who always asked how my dissertation was going even before he

joined my committee and who helped me believe in my hybrid identity as a Family Studies Scholar and Marriage and Family Therapist. Though she was not on my committee, I would also like to thank Dr. Barbara Ellen Smith for giving the space in her class for me to wrestle with feminist theory and family resilience concepts. The theoretical foundation for this study began in her class, and I am so grateful for her support of what initially felt like crazy ideas.

Other Human Development faculty have supported me in the process of this study. Dr. Rosemary Blieszner introduced me to the need for advocating for older women, and was always available to discuss research ideas and questions. Dr. Christine Kaestle provided encouragement and empowerment for my experience as a female graduate student. I would also like to thank Ms. Kathy Surface for all of her support, assistance, and patience with all of my many questions. Thank you so very much to Ms. Rhea Epstein for all of her encouragement and excitement about my journey. Through nicknaming me "Sunshine," and "Crystal Sue," to always looking pleased to see me, making sure that my assistantship was correct, and helping me get a better grasp on the mechanics of the English language, she has been an irreplaceable part of this process.

I want to thank Dr. Gary Skaggs, Dr. Janet Johnson, and Dr. Froma Walsh for agreeing to be members of my expert panel, who spent time reviewing my instrument, and gave me invaluable advice and guidance. Thank you especially to Dr. Skaggs for introducing me to instrument design, to Dr. Walsh for taking the time to talk with me about this idea, and to Dr. Johnson for her enthusiasm for my study.

I would be remiss if I did not acknowledge Dr. Sandra Schneider for all of her support and time that she spent with me during my graduate study. In one moment in particular where darkness was closing in and I was seriously thinking about quitting, it was Dr. Schneider's firm "Don't you quit! You've come too far to give up now! You finish!" that kept me sane and made

me stay. In this same vein, I am sincerely grateful to Mr. Bradford Wiles for convincing me that I am a good scholar with something to offer Academia. He walked with me through this dark time as well and never allowed me to get away with demeaning myself or thinking about quitting: Brad really is the man for his time and place.

I must also acknowledge the support, encouragement, enthusiasm, and humor that I received from the Appalachian Information Technology and Extension Services (AITES) research team: Dr. Peggy S. Meszaros, Dr. Elizabeth Creamer, Dr. Sandra Schneider, Dr. Barbara Lockee, Dr. Lydia Marek, Dr. Nancy Bodenhorn, Ms. Donna Brock, Ms. Judy Compton, Ms. Deborah Owens, and Ms. Mary-Jac Brennan. Through our many trips together I have had the ability to get to know each one of these inspiring women, and each of them has provided me with wisdom and encouragement.

My Dad, Mr. Billy Joe Duncan started this process by standing by me as a child and making sure I knew he would never leave. He worked hard to provide for me and saved money throughout my youth to make sure I would be able to go to college, and made sure I knew that *not* going to college was not an option. He taught me that math was not as scary as I thought, and through his guidance I did my first Algebra problem at age eight. For all of the uncertainties in this world, I have never doubted his love or his presence, and in that I am a very wealthy woman. My stepmother, Ms. Vicki Jo Naff Duncan has always tried to be a mother to me and teach me all the things I would have learned from a biological mother. She has looked after me and encouraged me in life. She has helped me see what it is like to have an involved mother who cares, and I am especially grateful to her for that.

There are colleagues and friends to whom I would not have made it to this point without and to whom I am especially grateful: Dr. Brandy McCann, Ms. Kelly Munly, Ms. Monica

Kimbrell, Ms. Zhang Jing, Ms. Andrea Mendes, and Ms. Betsy Levine Brown. These women have patiently listened to my many thoughts and ideas, and helped me believe I would finish. I must acknowledge the support of four beloved friends who have helped me stand up and walk forward when I was too tired to do anything but sit down and complain. Ms. Leslie Thornton-O'Brien found a space for me to study and take my preliminary exams and put encouraging posters up on the walls on the day that I began. She is my cheerleader. Ms. Clara Stone-Henry has supported and encouraged me in this process: through sharing her journey to motherhood and the birth of her daughter Savvy, I am reminded of why I want to do this work. Along with them I must acknowledge Ms. Melissa Albrecht and her powerful grounding influence in my life. She has been a constant source of support and encouragement, and helped me to not lose myself in the process. Finally, I submit my heartfelt thanks to Ms. Jesica Felton. She has honored me by sharing her wonderful ideas, powerful words, and passion for bringing healing to women. I am so privileged to know her and all of these women. They are the wise women in my life who sing over my bones and empower me to run free and laugh like the great Wolf Women of old.

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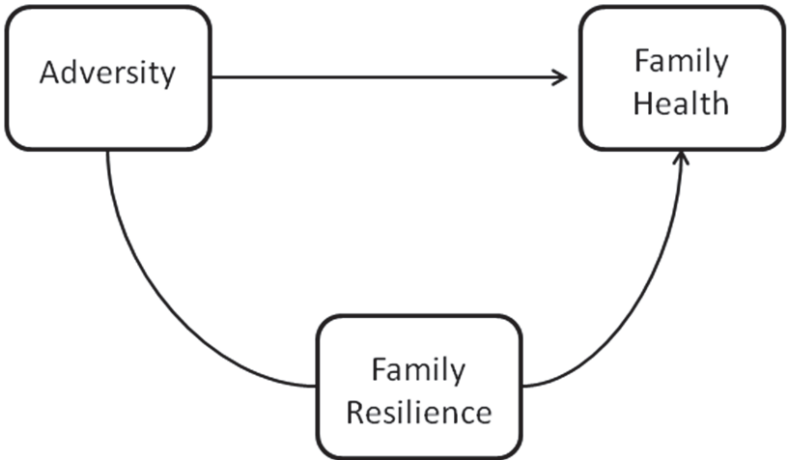
CHAPTER ONE: INTRODUCTION

Resilience, or the ability to bounce forward in response to crisis, is one of the most important concepts in contemporary social sciences (Liebenberg & Ungar, 2009; von Eye & Schuster, 2000). Applicable at individual and relational levels in social systems, it can refer to the mutual influences of biological, psychological, and sociological responses to adversity and in that is a biopsychosocial construct (Engel, 1977; McDaniel, Hepworth, & Doherty, 1992; Walsh, 2003) that impacts family health. It is argued here that resilience at the family level acts as a mediating process on family health. (See Figure 1).

Figure 1: Mediating effect of family resilience on family health.



Conceptualizing family resilience as a criterion for family health opens the possibility of it serving as a location for theorizing the impact of adversity on family health. It further demonstrates a location for intervention where increasing family resilience may increase family health.

Problem Statement

There is a problem in health care in the United States (U.S.). The biomedical model, or as some view it, the "dogma" of allopathic medicine (Engel, 1977) continues to focus only at the biochemical level of individuals, meaning that the origins of illness and recovery are all located

within individuals. The biopsychosocial view, introduced by Engel in 1977, offers a more realistic way to view health and treatment of illness. Here, biology/biochemistry is important, but is not the only component in health and illness. The patient's perceptions of their health (psychology), as well as the impact of their relationships (sociology) on their health are equally viewed as crucial components of treatment, health, and wellness; hence a *bio-psycho-social* view. A major location of important relationships is in one's family, meaning that this is a valid and necessary area for attending to health, wellness, illness, and treatment (McDaniel et al., 1992).

Rolland (1987, 1999) addresses the need for a framework that conceptualizes a patient's family as a location for treatment. His family systems-illness model is utilized by medical family therapists (McDaniel, et al. 1992) in their work with health care providers and families of patients. This model is indicated for use at the moment illness begins however, and focuses more on what the family can do to increase wellness in the patient at that time.

At issue is the need for increased understanding of mechanisms within families that impact family health throughout the life cycle, including unanticipated adversities such as illness. Along with asking what families can do to face the illness as Rolland does, a framework is needed that investigates the question of why some families handle illness better than others. This approach would focus on health and wellness throughout time, and may offer another way to address issues of health, wellness, and illness in individuals, as well as in families.

One framework that may answer this need is Walsh's (1996, 2002a, 2002b, 2003, 2006) family resilience framework, which thus far has no empirical measure that has been successfully validated. It is therefore important to address the need for an instrument that empirically investigates Walsh's family resilience framework. Walsh herself agrees with this need, stating

that “if I were not retired, this (creating an instrument) would be the next step I would take in the development of this framework,” (personal communication, March 2, 2010).

Purpose

The purpose of this study is to create a reliable and valid instrument that investigates Walsh’s family resilience framework from the view of an individual family member, with women who have been diagnosed with breast cancer as the population chosen for study. The following sections briefly outline the family resilience and breast cancer literature.

Family Resilience. Conceptualizations of resilience abound. Researchers such as Werner and Smith (1977, 1982, & 1992) view it as an individual trait that along with protective factors such as support, positively balance risk factors such as parental substance abuse and vulnerability. This well known view is reflected by the work of Garmezy (1987, 1991) and Rutter (1987, 1999) who emphasize the clinical application of this view of resilience in their work. Luthar (1991; Luthar, Cicchetti, & Becker, 2000) utilizes an individual focus as well. Her work goes further however, as she conceives of resilience as a process rather than an individual trait. The conception of resilience as a family trait emerged in the work on family stress research pioneered by Hill, (1949) and furthered by M. A. McCubbin and McCubbin, (1993). Their complex model, the resiliency model of family adjustment and adaptation (RMFAA), conceives of resilience as a process influenced by variables such as stressors, preexisting vulnerability, family resources, family appraisal, adjustment, and adaptation. As will be expanded further in Chapter 2, a conception of resilience like those just mentioned posits the construct in a binary way, so that the population of interest must either be resilient or not. This lens is critiqued by both Jordan (2006) and Ungar (2005).

In her relational cultural theory, Jordan (2006) states that binary views of resilience leave out the impact of the dominant discourse of society meaning that the impact of gender, power, race, and other hierarchies on resilience and the way that those hierarchies are conceived by the dominant discourse are not considered. Though her view situates resilience within relationships, and deconstructs it as an innate trait, Jordan's application of resilience is specifically on youth. This is the case with Ungar (2005) who also conceives of resilience as a systemic trait. While he does note the importance of family in resilience, his focus is on how family resilience specifically impacts adolescent family members.

In order to investigate family resilience as a mediator of family health, an inclusive (Allen, 2000) and postmodern stance is necessary with application at the family level. Walsh's postmodern view is revealed when she states that "no single model (of resilience) fits all families or their situations," (2003. p. 405). Further, in her family resilience framework (see Appendix A), Walsh (2006) defines resilience as "the capacity to rebound from adversity strengthened and more resourceful. It is an active process of endurance, self-righting, and growth in response to crisis and challenge," (p. 4). Rather than bouncing back to pre-crisis form, resilience is better described by "bouncing forward," (p. 84). This emphasis on the power of crisis and adversity to play a role in a new construction of reality is unique to this framework, as is its postmodern lens and inclusion of time.

Breast Cancer. Women who have been diagnosed with breast cancer are chosen as the population for this study because there is a large dispersed population in the U.S. Breast cancer is the most common cancer in women (Centers for Disease Control and Prevention Division of Cancer Prevention and Control, 2010). As of January 1, 2007, approximately 2,591,855 women in the U.S. with a prior history of breast cancer (National Cancer Institute, 2010) were alive.

Along with these numbers, research regarding resilience in families of women who have been diagnosed with breast cancer is sparse. The findings of this study may contribute to two bodies of literature: family resilience/family health and families experiencing breast cancer. The likelihood of this appears promising, as themes in Walsh's family resilience framework permeate the literature on families experiencing breast cancer. These themes include social support and survivorship, benefit finding, meaning making, optimism/positivity, the presence of children, race/ethnicity, age at first diagnosis, and spirituality. The Family Resilience Assessment (FRA) is presented here as a way to investigate this framework using the perspective of individual women who have been diagnosed with breast cancer.

Synopsis of Research Methods

The FRA is created to quantitatively measure family resilience from the perspective of women who have been diagnosed with breast cancer. This means it is an individual's perspective on their family's resilience. The research questions guiding this study reflect this:

RQ1: Does the instrument have demonstrated reliability?

RQ2: Does the instrument have demonstrated content validity?

RQ3: Does the instrument have demonstrated construct validity?

RQ4: To what extent does the instrument and its' subscales correlate with measures of theoretically related (convergent validity) variables?

Significance of study

This is the first known study to empirically investigate Walsh's family resilience framework through the creation of an instrument and the use of a population experiencing the same type of adversity. Sixbey (2005) created a measure for the framework, but as will be described in the next chapter, she did not limit her population to people experiencing the same

type of adversity. This makes the validity of her measure questionable as well as all studies that have used it. Lum (2008) used Sixbey's measure, but not only did he condense it, his sample size of nine people is too limited for conclusions to be drawn regarding reliability and validity. Further, Coyle (2006) claims to have empirically tested Walsh's framework, but he used the Family Assessment Measure (Skineer, Steinhauer, & Sitarenios, 2000) which was created to measure the process model of family functioning which is not only different from Walsh's framework, but it is not a model of family resilience.

Along with being the first known study to empirically investigate Walsh's framework using a population experiencing the same type of adversity, this is also the first known study to investigate family resilience from the individual perspective of women who have been diagnosed with breast cancer. Along with this, there are no known studies that view family resilience from a feminist theoretical foundation.

Key terms

The Family. Also called the Standard North American Family (Smith, 1993) or the ideological notion of the nuclear family (Osmond & Thorne, 1993). Legally married couple with an adult male head of household who is employed and an adult female whose primary role is to care for the family members and household. According to Smith, "the universalizing of the schema locates its function as an ideological code. It is not identifiable with any particular family; it applies to any," (1993, p. 52).

Families. Deconstructed notion of *the family* that is reconstructed both as "contested sites of power," and places that have "revolutionary potential as sources of resistance, empowerment, and change," (Allen, Lloyd, & Few, 2009, p. 3).

Resilience. "The capacity to rebound from adversity strengthened and more resourceful. It is an active process of endurance, self-righting, and growth in response to crisis and challenge," (Walsh, 2006, p. 4).

Family resilience. "Coping and adaptational processes in the family as a functional unit," (Walsh, 2006, p. 15). Individual members of the family may reflect on their perceptions of the resilience in their family.

Women diagnosed with breast cancer. The population chosen for this study. Women who have been diagnosed with cancer that began in their breast tissue (Centers for Disease control and Prevention Division of Cancer Prevention and Control, 2010). They may be in Stage I, II, III, or IV.

Binary. Interpretation of a social structure in categorical terms, such as White/Black where one part of the dichotomy is granted more power than the *other* (Allen, 2000).

Inclusive. The viewing of social structures in a way that recognizes and does not penalize for diversity, (Allen, 2000).

Overview of following chapters

In the following Chapter 2, the theoretical foundation of the study is addressed, literature regarding family resilience is reviewed, and a rationale is built for the creation of the Family Resilience Assessment. Methods are detailed in Chapter 3. Analysis of research findings are presented in Chapter 4, with Chapter 5 discussing the findings, providing recommendations for future research, and addressing limitations.

CHAPTER TWO: LITERATURE REVIEW

In this chapter the theoretical foundation that frames the study is presented and discussed. The literature regarding Walsh's family resilience framework is explored, as well as literature on families experiencing breast cancer. These reviews build a foundation for the Family Resilience Assessment, and the resulting creation and analysis of it.

Theoretical Foundation

Overview of Feminism in Family Studies

Feminist theory is chosen as the theoretical foundation for this study. Specifically, the understanding and promotion of the experience of women, the promotion of all families over any one family type, and the concept of intersectionality, which are central to feminist theory are emphasized.

A feminist lens in Family Studies argues that understanding the experience of women is crucial to understanding families (Allen & Baber, 1992; Osmond & Thorne, 1993; Thompson & Walker, 1995; Walker & Thompson, 1984). Reasons for this are ensconced in the first written article on feminism in family studies where Walker and Thompson state that "women are exploited, devalued, and oppressed," and the need for "a commitment to change in the conditions of women (and) the adoption of a perspective critical of intellectual traditions," (1984, p. 546) was declared. The authors situated feminism as a lens for not only viewing women and families, but the world as well and discussed ways in which feminism can be utilized as a theory within family studies. Some of these ways include: acknowledging bias in scientific work (reflexivity), the need for the inclusion of sociohistorical context in scholarship, the inclusion of gender as a category of analysis, a belief in the construction of life by gender, a need to emphasize "intragroup heterogeneity," (p. 551), the recognition and acceptance of complexity, an emphasis

on pluralism, and the provision of research that is useful beyond the walls of academia.

Feree (1990) extends this work in her deconstruction of families as phenomena existing apart from the world. She asserts that families are instead "linked with other social institutions," (p. 866) which mutually construct gender. In other words, Feree rewrites families as a location for the construction of hierarchies such as gender, race, and class among others.

Given that families are a location for the construction and deconstruction of hierarchies, and thus a location for social justice, it is important to attend to the way they are constructed. Osmond and Thorne (1993) argue that using the term *the family* is inadequate and is not inclusive of all families, as it carries the meaning of one particular structural type of family (nuclear). Indeed, using the term *families* removes the notion of a nuclear family as a point of comparison for all others, and is much more inclusive of this social institution.

Intersectionality. According to feminist family scholars (Allen, Lloyd, & Few, 2009; Walker & Thompson, 1984) the deconstruction of the family from a binary definition (e.g., the nuclear family) less focused on structure to an inclusive one with a greater focus on process is an example of the importance of sociohistorical context. The issue with the construction of categories is the tendency to attribute traits (stereotypes) universally to all people and families with a presence in a particular category (e. g., woman) or categories (e.g., Black woman), and to ignore context and history. These stereotypes become naturalized as reasons for treating people with presence in particular categories differently than others, and in doing so, differentially ascribing power.

Further, a feminist lens maintains that every person experiences reality differently and there is no normal story to speak for the group. Like the deconstruction of the family to families, a feminist lens can also deconstruct other traditionally binary structures such as race (Barkley

Brown, 1995/ 1997; Collins, 1998; 2009), class (Bakker, 2004; Braedley, 2000; Hartmann, 1981/ 1997; Nicholson, 1985/ 1997; Wittig, 1981/ 1997), gender (including sexual orientation), (Anzaldua, 1987; Butler, 1991, 2004; Butler & Scott, 1992), and nation, (Mohanty, 2003; Yuval-Davis, 1997). This deconstruction confronts the dominant discourse stating that binary structures specifying male/ female, white/black, heterosexual/homosexual, First World/ Third World, middle/ lower class, and for the purposes of this study, resilient/not resilient are not normal or natural, and are instead constructed as those things.

At issue with deconstruction however is finding a new way to analyze and discuss these various phenomena, without deconstructing them down into so many pieces that there is no meaning. One solution is looking beyond the categories in a person's life to the intersections of those categories to help bring context to lived experience. Collins (1998), states that "intersectionality references the ability of social phenomena such as race, class, and gender to mutually construct one another," (p. 105). She discusses the power of intersectionality as a tool for assessing the overlapping location of structures. The position at which these structures overlap then becomes a location for discourse and understanding.

Since they are a location that maintains and/or challenges dominant discourses in society, families can be viewed as a location for social justice. This potentiality illustrates the power of using feminism as a theoretical lens in the study of families, as well as the importance of family studies in general.

Locating Feminism in this Study

Feminist theory forms the backbone of this study. This is evident in several ways. First, the population chosen is women who have been diagnosed with breast cancer. In this, women are the category of analysis, rather than an object for comparison with men. Beyond the importance

of studying women, the reason for excluding men in this analysis is because breast cancer invades the bodies of women in a manner that influences the way they perceive their gender. In this society, breasts are socially constructed differently for women and men, and the meaning that is made of the illness is contingent upon the gender of the person experiencing it.

Because they are constructed as an outward sign of female gender, when female breasts are invaded by cancer, it can be constructed as a loss of womanhood. Therefore the way that a woman who has been diagnosed with breast cancer and her family make meaning of the cancer impacts the way she feels about her identity. This meaning making is influenced by the way women who are diagnosed with breast cancer view their family's resilience. Thus, when studying family resilience with this population it is important that a theoretical framework that is not predicated upon binary notions of family or society is utilized.

Further, it is important to view family resilience from the perspective of the individual, so that the voice of the woman who is diagnosed with breast cancer is not obscured. This is known as taking a pluralistic view of family systems. According to Osborne (1983) this perception of family systems allows for the viewing of a family as an emergent system without obscuring the voices of the subsystems and individuals within them who may have differing levels of power.

Though her framework is not overtly specified as feminist, Walsh shows a preference for inclusive views of families which allows her framework to be connected to feminism. Walsh's statement that no framework can fit all families (2003, 2006) makes it clear that she rejects binary and pathogenic views of families in favor of a more inclusive stance. Further, the variables in Walsh's framework will likely not be as fully present in families where there is oppression, and that lack shared power and respect for individual differences. This hypothesis is

in need of further investigation, which will be possible only after the framework is tested for reliability and validity.

Although Walsh uses Family Systems Theory (Bateson, Jackson, Haley, & Weakland, 1956; Broderick, 1993; Haley, 1959; Von Bertalanffy, 1952, 1968) in her framework, she transcends a major critique of this lens by feminist family therapists such as Goldner, (1985) and Hare-Mustin, (1978). This critique states that family problems are defined as an attempt to balance the family system, meaning that fault for all problems including things like intimate partner violence is equally distributed. Because of this, the potential for empowerment and power differentials cannot be attended to by a classic interpretation of family systems theory. Walsh deconstructs this by primarily focusing at the family level, but by also attending to individual difference, and addressing the need for equality and mutual respect between and among individual members as traits of family resilience. This is important for three reasons. First, it distinguishes Walsh's framework from others with a focus on family resilience. Second, it specifically differentiates Walsh's understanding of family systems as pluralistic, which Osborne (1983) states as an acceptable and necessary manner of applying family systems theory. Third, it characterizes her work as emergent from the family process and health models that her framework is founded upon.

Walsh's Family Resilience Framework

Theoretical Foundation

Walsh utilizes several classic models of family process to underscore her framework. These are the circumplex model of marital and family systems, (Olson, 1986; Olson & Gorall, 2003), the Beavers systems model (Beavers & Hampson, 2003; Beavers & Voeller, 1983), the McMaster model of family functioning, (Epstein, Bishop, & Levin, 1978; Epstein, Ryan, Bishop,

Miller, & Keitner, 2003) and the family systems-illness model, (Rolland, 1984, 1987, 1999; Rolland & Walsh, 2006; Rolland & Williams, 2005). A critique of each of these models follows.

Circumplex Model. The circumplex model of marital and family systems (Olson, 1986; Olson & Gorall, 2003) consists of three key constructs (family cohesion, flexibility, and communication) from which the "Couple and Family Map" (Olson & Gorall, 2003, p. 517) is constructed. The location of a family on the Couple and Family Map is determined by scores on the Family Adaptability and Cohesion Evaluation Scales (FACES), (Olson, in press) as well as the Clinical Rating Scale (CRS) which are assessed by multiple family members (the insider view) taking the FACES, as well as the clinician or therapist (the outsider view). This provides multiple viewpoints from which family functionality is assessed. It is not being balanced at one point in time that signifies health, but the process of moving away from it and back towards it after crisis.

According to Olson and Gorrall (2003), the FACES are used in over 700 studies, and the model is used across "diverse couple and family systems," (p. 514). This includes ethnicity/race, marital status, family structure, sexual orientation, family life cycle stage, social class, and education level. While it does not attend to power, inequity, the potential for oppression within families, or intersectionality (Allen et al., 2009), this model has been tested with diverse families, meaning that its contribution to Walsh's framework is more representative than those that only emphasize the family.

Beavers Systems Model. This attention to cultural diversity is also present in the Beavers systems model (Beavers & Voeller, 1983; Beavers & Hampson, 2003). This model offers a systemic view of family functioning and views it as a process, describing families on a continuum from healthy to less healthy instead of a binary structure of healthy and not healthy.

The main constructs in this model are family functioning, family competence, family behavioral styles, family assessment of events (as viewed by at least one insider and one outsider), and family competence in small tasks.

Like the circumplex model, family functioning in the Beavers systems model is determined by their scores on the Beavers Interactional Style Scales (Beavers & Hampson, 1990), and the Self-Report Family Inventory, (Beavers & Hampson, 1990). Like the FACES, these scales are to be completed by multiple family members (insider view), as well as a therapist/clinician (outsider view).

Though it emphasizes different processes, the Beavers systems model provides a similar contribution to Walsh's framework as the circumplex model. That is, it is more representative of diverse families than models that draw conclusions on all families based on data from a nuclear family structure. Further, the Beavers systems model emphasizes health on a continuum rather than a binary structure, meaning that health is viewed as a process that all families possess.

McMaster Model. The McMaster model (Epstein et al., 1978; Epstein, et al., 2003) resembles the Beavers systems model as well as the circumplex model as it views health and normality as processes instead of binary categories in which to purchase entry. Epstein et al. (2003) state "to attempt to arrive at a definition of a healthy or normal family may seem to be- or indeed may actually be- a fool's errand," and further state that "Normality is an ill-defined concept," (pp. 581-582). They address the problems with current definitions of normal families describing a search of the literature resulting in the term really meaning that a family does not display particular problems and that *normal* is a pathogenic term. They further argue that *healthy* should be used instead of *normal* with that term being defined on a continuum and as a process. Epstein et al., (2003) state that families demonstrate health through the dimensions of problem

solving, communication, roles, affective responsiveness, affective involvement, and behavior control.

A number of instruments exist to assess family functioning using the McMaster model. The Family Assessment Device (Epstein, Baldwin, & Bishop, 1983) is the most popular instrument and is translated into 16 different languages. It is a self-report instrument with the purpose of providing an insider-view of the family in question. The McMaster Clinical Rating Scale (Epstein, Baldwin, & Bishop, 1982) is an interview conducted by a therapist or clinician with the purpose of giving an outsider-view of the family in question.

As previously mentioned, the McMaster model, the Beavers systems model, and the circumplex model of marital and family systems are all a part of the theoretical foundation of Walsh's family resilience framework. Each focuses on family processes over structure, emphasizes characteristics of resilience on a continuum instead of discrete binary categories, and focuses on progression through time such that health is not defined by momentary reactions to one crisis. All three also have instruments assessing where a family in question might locate itself within the model, and for each there is at least one insider and one outsider instrument providing various systemic views. The last model contributing to Walsh's framework is also a process model, though it is more specialized in its focus on how families handle the specific adversity of illness.

Family Systems-Illness Model. The contributing frame to Walsh's framework specific to illness is the work of Rolland, (1984, 1987, 1999, 2003; Rolland & Walsh, 2006; Rolland & Williams, 2005). In his work, Rolland focuses on the biopsychosocial processes underscoring chronic illness and the lifecycle, resulting in the family systems-illness model. According to Rolland, "the model casts the disorder itself in systems terms according to its pattern of

psychosocial demands over time," (1999, p. 243). Here, Rolland positions the family in question at the center of discussion and focuses developmentally at the levels of the illness, the individual, and family life cycles. The model utilizes a salutogenic or wellness-focused lens (Antonovsky, 1979, 1987; Antonovsky & Sourani, 1988/2003), emphasizes family relationships as a resource, and "emphasiz (es) the possibilities for resilience and growth, not just their liabilities and risks," (p. 244). How the individual and family make meaning of adversity, whether they have a positive outlook, and what lenses are used to view these two things such as transcendence and spirituality are all a part of Rolland's model. While this model also does not focus on power, oppression, or heterogeneity within families, Rolland's emphasis at both the individual and family levels does leave room for advocacy, and also demonstrates a pluralistic use of family systems theory. This is an important distinction, as these three variables are all a part of the construct of belief systems in Walsh's family resilience framework.

It is important to review the circumplex model, Beavers systems model, McMaster model, and family systems-illness model because they are all building blocks of Walsh's family resilience framework. These models are all empirically validated and well known models. They are reviewed here to demonstrate that Walsh's model has a strong theoretical underpinning.

Walsh's Family Resilience Framework

In Walsh's framework, resilience is conceived of as an emergent property of a family existing together through time. Beyond this ecological focus, the idea of not only rebounding in the face of adversity but bouncing forward (Walsh, 2002b) as well is a unique contribution. Walsh considers resilience across the lifecycle, making it a lifelong process as opposed to an event-specific response.

Using the previously reviewed models of family process Walsh cites nine variables that comprise her family resilience framework (Appendix A). These variables are housed under three themes and are: belief systems (including making meaning of adversity, having a positive outlook, and transcendence and spirituality), organizational patterns (including flexibility, connectedness, and social and economic resources), and communication/ problem solving (including clarity, open emotional expression, and collaborative problem solving). Walsh argues for a family strengths perspective for applying this framework, emphasizing family process over family structure, thus studying how families *do resilience* versus how resilient they appear in comparison to others.

Conceiving of family resilience in this fashion allows it to be made open to all families, not just those fitting a particular hypothesized structure or specific definition, and also deconstructs the previously mentioned binary notion of a normal or nuclear family. The comprehensive nature of Walsh's framework as well as its division into nine variables makes it ideal for the creation of an instrument.

Belief systems. The first three variables in Walsh's framework come under the theme of belief systems and are; making meaning of adversity, positive outlook, and transcendence and spirituality. Walsh states that making meaning of adversity is the "most crucial," (2006, p. 56), variable in this theme and with regards to family resilience as a whole. As marriage and family therapists have found (M. Epstein & White, 1990) making meaning can be found in the narrative or story that families tell themselves and others regarding stressful circumstances such as having a family member diagnosed with breast cancer. Meaning is not made in a vacuum however, and is created at the relational level through interactions between people, thus attesting to the relational basis for resilience that Walsh advocates. This variable also illustrates the importance

of a family life cycle orientation and viewing resilience as a process rather than a temporary reaction. The meaning that families make of life transitions (the story they tell regarding a child becoming an adolescent for example), and how they normalize and contextualize distress at those points directly impacts how resilient they are in the face of adversities that are not life-cycle dependent, such as the experience of breast cancer and stories that are told regarding it.

The tone of family narratives regarding adversity is where the second variable in the belief systems theme termed positive outlook is located. This is described by tones of hope, optimism, confidence, courage, focusing on strengths, perseverance, and also accepting what cannot be changed (Walsh, 2006). These tones will be reflected for example in the way the family in question talks about the fear that the cancer will return (it is imminent, versus we will face it together when it happens), as well as life in general.

The third variable under the theme of belief systems influences both how families make meaning of adversity and the type of outlook or tone they use in writing the narrative(s) about it. This variable is transcendence and spirituality. Walsh states that spiritual beliefs give "meaning, purpose, and connection beyond ourselves, our families, and our troubles. They provide continuity with the past and into the future, with generations before us and those that will come after us," (2006, p. 73). Having a larger purpose for existing, taking part in rituals, and being inspired by our spiritual views are all parts of this variable. Being able to use our spiritual views as a lens through which to view an adversity like breast cancer (tell the family story) and thus be transformed and made better by it (bouncing forward) is also a part of this variable.

A family's sense of coherence, impacting their belief systems, and thus their overall resilience will mediate how an adversity such as breast cancer impacts their health and the health of the woman as well. This can also be done with the remaining themes of Walsh's framework.

Organizational patterns. The three variables under this theme, flexibility, connectedness, and social and economic resources, all deal with the way families approach the structures making up their world. Walsh describes these patterns as "family shock absorbers," (2006, p. 83). This focus on structures does not negate the claim that Walsh's frame is a process model and is different from the structural underpinning of the theories of resilience which will be overviewed later. While those authors focus on structure as part of what defines resilience, it can be said that the focus in this model is on how families do resilience. One way this is illustrated is in the fourth variable in the framework, which is flexibility.

Flexibility best encompasses Walsh's unique view on resilience regarding bouncing forward which she terms as "adaptive change," (2006, p. 84). In other words, families exhibiting flexibility are willing and able to deconstruct and rewrite parts of their narratives to fit the adversity at hand, as opposed to being rigid in their responses. This rewriting is done in the context of stability and dependability throughout the time of crisis. Through being flexible and willing to adapt their narrative to novel situations and circumstances ("we are a healthy family" becomes "we are a healthy family who is fighting breast cancer"), families are more open to being connected to others and receiving social (and economic) support. Thus, the variable of flexibility helps to facilitate the other two variables under this theme: connectedness and social and economic resources.

Walsh defines connectedness as "cohesion," and "the emotional and structural bonding among family members," (2006, p. 94). She discusses traits of this variable as collaboration, respecting individual needs and differences, protection and nurturance of vulnerable family members (e.g., the woman experiencing breast cancer), and seeking reconnection when relationships become strained. Walsh does not locate the connectivity of family resilience in a

particular family structure; rather she validates the variety of family forms in existence and discusses connectivity in terms of processes such as cooperative parenting, and equal partnership. The context of the relationship (e. g., married, divorced, heterosexual, single parent, young parents, culturally diverse parents) that is so often used to qualify its legitimacy or if it conforms to the norms of society is not a part of Walsh's framework, and in that is a major strength of it.

As previously discussed, focusing on connectivity in a context of equality and mutual respect for difference in family members with this being viewed as evidence of family resilience is important. An emphasis on a family-level variable like family resilience without consideration of difference in individual family members increases the potential for the emergent family narrative to only reflect the dominant family voice. By focusing on family resilience with an eye towards individual differences, Walsh simultaneously focuses at the family level while also advocating for the voices of individual family members as well.

This is especially important where families dealing with breast cancer are concerned. For while the family may be focusing its effort on fighting breast cancer in the mother for example, it is important that the fears of an adolescent daughter who is afraid she may get breast cancer at some point in her life be heard, validated, and raised to the same level of importance as the dominant story of breast cancer in the mother.

At first glance, emphasizing social and economic resources could appear as a potential weakness of Walsh's framework as it can give the impression that financial wealth is a variable contributing to family resilience. This potential lack of attention to macrosystemic issues of poverty is not the case and indeed this variable may be the most macro systemically focused one of all. Though she admits the importance of financial security, Walsh emphasizes the importance

of social wealth. She states that "extended kin and social networks provide practical assistance, emotional support, and vital community connection," (2006, p. 99). This variable is reflected in the importance of the health care provider in the lives of families dealing with breast cancer.

Walsh goes on to discuss the need for building community networks, and building financial security through finding work-family balance. In this discussion however, Walsh calls on the United States (U.S.) government to assist in the resilience of all families by giving a "national commitment to affordable, high-quality child and elder care, universal health care, and more flexible job structures and schedules, in order to support healthy family functioning," (p. 102). Given that the time for this call for assistance occurred in 2006, it may also be interpreted as a call for a macrosystemic shift in the way health and families are viewed as well. Thus, if a family struggles with finding work-family balance, poverty, or other issues with having adequate resources, the blame is not theirs, it is not their fault, and the location of the problem is external. In this Walsh avoids the false dichotomy created by other resilience frameworks (e.g., Werner & Smith, 1992) such that a discussion of *the resilient* automatically creates a negative space (Daly, 2003) inhabited by *the not resilient*.

The variables of connectedness and social and economic resources can be broadly defined as support. A part of gaining and maintaining this support is effective communication processes, which is the third theme in Walsh's framework.

Communication processes. The three variables under this theme, clarity, open emotional sharing, and collaborative problem solving are all involved with how family members convey information with one another and the outside world, or the method they use to narrate their story. Walsh describes this theme as "facilitating mutual support and problem solving," (2006, p. 106). Clarity is the first variable in this theme and not only refers to how family members converse

with one another, but how family rules are portrayed, and what is conveyed in communication. Families who "say what they mean and mean what they say," (p. 107), who communicate family rules clearly and unambiguously, and who do so truthfully will have clarity in their communication.

In line with being truthful and unambiguous is the second variable of open and emotional sharing. This variable refers to the presence of empathy, tolerance for differences among members, and the ability to share a wide range of both positive and negative emotions with one another. Along with this is the presence of humor, as well as the avoidance of blame and scapegoating and the owning of individual feelings and actions. Walsh states that "in a crisis situation, the unacknowledged or ambivalent feelings within individual family members can become split between partners, siblings, or branches of a family," (p.112). These two variables make it possible for family members to trust one another and come together in times of a crisis such as breast cancer diagnosis. Further, they allow families to mobilize and address the adversity as a team. Walsh calls this collaborative problem solving and it is the third variable under this theme.

Collaborative problem solving is the variable most directly involved in addressing adversity. It includes the ability to brainstorm solutions, sharing the decision making for resolving the conflict, as well as the traits of fairness and reciprocity. Resilient families focus on goals and learn from failures in addressing crisis. They are also proactive instead of reactionary such that they actively try to prevent problems and also prepare for the potential of future challenges. These families do not wait to be hit with a crisis. They understand that crisis is an inevitable and normal part of life, not a sign of weakness, and that preparing for it is not going to cause it to occur.

Comparing Walsh to Established Models of Resilience

Families whose belief systems, organizational patterns, and communication processes reflect this framework will theoretically be more likely to demonstrate resilience not only in times of crisis or adversity, but throughout the lifecycle as well. The word *theoretically* is used here because even though this framework rests upon empirically tested and validated models, it has not in itself been validated with a population who is experiencing the same kind of adversity. While attempts have been made to validate this framework, as will be discussed below, they all have serious issues with validity.

Sixbey (2005) created a measure with good reliability, but used the entire U.S. population to derive her sample, without attention to adversity. This approach assumes that all people in the U.S. regardless of hierarchy (e.g., gender, race, class) respond to all adversities in a similar way. Sixbey states "This study found women, older adults, white individuals, and higher educated individuals to have statistically significant levels of family resilience on certain subscales" (p. x). There are multiple flaws in these findings. First, "higher educated individuals," and "white individuals," both signify that class is a factor in these findings. Second, viewing family resilience as an emergent or second-order variable as Walsh intended makes these findings irrelevant: If the dependent variable in this study is a family-level construct, then results cannot be stated across groups of individuals. Third, the term "older adults," presumes that all people past a certain (non-stated) age cease to have different experiences with regards to gender, race, or class. There are many reasons why "older adults," might demonstrate more resilience than younger adults, with the largest being that the two groups are qualitatively different and should not be compared to one another. Finally, Sixbey states that the purpose of her study was to "develop an instrument capable of measuring Walsh's (1998) conceptual model of family

resilience," (p. 5). In the context of instrument development, even the most perfect results of reliability and validity run the risk of being a chance occurrence, which is why replication is so important in the creation of a good instrument. Yet, Sixbey goes beyond statements of reliability and validity with regards to the creation of her instrument, and draws conclusions about the U.S. population from her sample. Before generalizations can be made, an instrument must first be proven to be reliable and valid, and doing so requires more than one (or two) studies.

Lum (2008) also investigated Walsh's framework. His population of interest was families with a parent who was chemically dependent using Sixbey's (2005) measure and qualitative interviewing. This was hardly a validation study however, as the sample size was nine people, and Lum condensed Sixbey's measure as well.

Coyle (2006) claims to have tested Walsh's framework as well, using the Family Assessment Measure (FAM), (Skinner, Steinhauer, & Sitarenios, 2000). The issue with this study is that the FAM was created to test the process model of family functioning (Steinhauer, 1987). This model focuses on how communication, affective expression, involvement, values and norms, control, role performance, and task accomplishment contribute to family functioning when there is a crisis. While it may signify family resilience, family functioning is not the same thing, nor does Walsh or Skinner et al. mention a connection between the two models. It is unclear then why Coyle used the FAM to test Walsh's framework. Further, Coyle conceives of the variables in Walsh's framework as protective factors, when their purpose is much more multifaceted than this simple definition. Given these studies of resilience, it is important to compare Walsh's framework so that the contribution of a valid and reliable instrument is made clear.

Werner and Smith. In their classic longitudinal study with children (and now adults) on Kauai from 1955 forward, Werner and Smith (Werner, Bierman, & French, 1971; Werner & Smith, 1977, 1982, 1992) discuss resilience and protective factors as constructs that positively balance risk factors and vulnerability. Though their focus shifted to resilience, the authors began with a pathogenic or problem-focused approach by seeking to study why people fail, and were surprised at the resilience that they witnessed. The children they studied were all born into poverty, and experienced "moderate to severe degrees of stress," (1992, p. 2) such as parental abandonment, divorce, parental substance abuse and/or mental illness (defined as risk factors).

Yet one third of these children developed into a "competent, confident, and caring young adult by age 18," (Werner & Smith, 1992, p. 2). This third of the population was deemed resilient, and the authors discussed protective factors or entities that "modify (ameliorate, buffer) a person's reaction to a situation that in ordinary circumstances leads to maladaptive outcomes," (p. 5) as reasons for this resilience. These protective factors buffered the vulnerability to negative outcomes that these adults had as children. Here, resilience and vulnerability are dynamic and intrinsic processes within individuals which are influenced and balanced by protective and risk factors, both of which are extrinsic and environmental. More specifically, vulnerability alludes to how likely someone is to fall prey to a disorder/ repeat a family pattern such as divorce, whereas resilience represents the likelihood that the person will overcome it. Similarly, protective and risk factors are entities which influence both vulnerability and resilience in a positive and/or negative manner, respectively. This view of the operation of resilience is reflected and furthered in the work of Garmezy (1987, 1991) and Rutter, (1987, 1999), who emphasize these processes academically and clinically apply them.

Critique. While it may be a classic study of resilience, the unacknowledged bias in Werner and Smith's work in comparison to Walsh's framework makes it fall short. While any focus on resilience is in a sense salutogenic (or focused on health as opposed to disease) (Antonovsky, 1979, 1987; Antonovksy & Sourani, 1988/2003), the authors' binary focus which sorts people into a dichotomy of resilient or not resilient sends the message that resilience is something that is not possible for everyone and that it is a structure (and thus a resource) to be possessed, rather than a process available to all. This is a dangerous assertion, for if resilience can be possessed, then it becomes possible to blame those that do not have it for the circumstances in their lives, and resilience becomes a scapegoat for ignoring social injustices.

What is not mentioned is why a minority race living in poverty and experiencing factors associated with this reality are repeating the patterns in their life, and why their disadvantaged position in life is viewed as normative. When this lack of success is constructed as normative in this minority race and not questioned, while wealthy white youth who are successful are also viewed as normative, the power of the dominant discourse in defining resilience is demonstrated. If the presence or absence of this conception of resilience can be traced to position in society, then it makes sense to conceptualize these phenomena using the theoretical foundation of this study, which is feminist theory.

Using the argument that one is not born and is instead constructed as a woman (DeBeauvoir, 1953/ 1997; Wittig, 1981/ 1997), it is argued that one is not born resilient, but is constructed as such. In other words, resilience, just like gender, is socially constructed. Further, it is argued that the discourse pervading the literature stemming from Werner and Smith serves to "naturalize the social phenomena which express oppression, making change impossible," (Wittig, 1981/1997, p. 266). While Wittig's argument deals with the oppression of women, she

does so in terms of the construction of men and women as separate classes. This argument is applicable to the resilience binary of resilient and not resilient as well.

In the context of Werner and Smith, being *at-risk* is to have factors in one's life that do not reflect the dominant discourse (such as not being wealthy, white, heterosexual, or male) with protective factors being those aspects of one's life that are reflections of the dominant discourse. Examples of this are: A supportive teacher (who is not living in poverty), a community center (to shelter from one's non-white family and/or community), a scholarship to college (which poverty cannot provide), or a grandparent who provides encouragement (to become more than their circumstances). It is a pessimistic fallacy to state that these things (like a woman giving birth) are inherently bad in and of themselves. The argument here is that in the appropriation and definition of these things as protective factors that constructs them in terms of the dominant discourse (giving birth is what defines a woman), a shift in the meaning of resilience occurs. In this sense, resilience becomes something other than flourishing in the face of challenge: It becomes having more aspects of the dominant discourse in one's life than not. Thus, to be resilient is to successfully reflect the dominant discourse in one's life.

A second aspect of this resilience discourse in need of critique is in the construction of resilience (like gender) as something innate or natural which is in reality, constructed. This construction of resilience supports the first argument. For if resilience is an inborn willingness to reflect the dominant discourse in one's life in more ways than not, then it is an inborn rejection of the marginalized hierarchies in one's life in favor of the dominant discourse. This naturalized rejection of the non-dominant aspects of one's life in essence then, naturalizes the power of the dominant discourse. If this argument about this resilience narrative is true, then it would seem that to not be resilient in these terms may very well be an act of resistance.

While Walsh's framework utilizes the four terms associated with Werner and Smith's pioneering work (resilience, risk and protective factors, and vulnerability) she transcends the resilient/non-resilient dichotomy by acknowledging the impact of society and its dominant discourses. It is here that she says "no single model fits all families or their situations," (2003, p. 405) and emphasizes the importance of including culture and the narratives of the family in question. Walsh's framework promotes families, deconstructs the resilience binary, and opens resilience as a potential strength for all. Though it is conceived as a family-level construct and macrosystemic themes such as culture and diversity are alluded to, the binary lens utilized in family stress research causes it to also fall short of Walsh's framework.

Family stress research. The body of work known as family stress research began with Hill's (1949) classic study involving the immediate family (wives and children) of men serving in World War II that were missing in action. This resulted in the ABC-X Model. In this model, a stressor event (*A)* interacts with the resources a family has to deal with a crisis (*B*) which then interact with the meaning made by the family (*C)* of the stressor event. Altogether, (*ABC)* influences the way the family responds to the crisis (*X*). Hill attributes the process of dealing with the crisis to that of a rollercoaster: a crisis occurs (coaster is at the very top of the plunge), there is a time of disorganization (moving down the plunge), recovery begins as a function of moving down the plunge, and reorganization occurs (moving up and away from the plunge and leveling off). Hill describes recovery as a return to pre-crisis family routines.

Hill's (1949) model is the basis for the resiliency model of family adjustment and adaptation, (RMFAA) (M. A. McCubbin & McCubbin, 1993), which is the current conceptualization of the process of resilience at the point of crisis and immediately thereafter by authors of family stress research. This work is based on the replication of Hill's study using the

immediate families of men who were missing in action in Vietnam, and adds variables and processes to the original ABC-X model. This resulted in the development of the Double ABC-X model (H. I. McCubbin & Patterson, 1983a), evolved into the family adjustment and adaptation response (FAAR) model (H. I. McCubbin & Patterson, 1983b), changed into the T-double ABC-X model (M. A. McCubbin & McCubbin, 1989) which was then combined with the FAAR model and resulted in the current model, which is the RMFAA, (M. A. McCubbin & McCubbin, 1993). Factors involved in the process as it is currently demonstrated in the RMFAA include: the stressor or stressors, preexisting vulnerability, family resources, family appraisal of the stressor, established patterns of functioning, adjustment, and adaptation. Depending on the circumstances, any of these constructs can be written as risks or protective factors. Taken together, all of these constructs function in a cyclical process ending in the location on a continuum between bonadjustment and maladjustment, and bonadaptation and maladaptation. Where a family will fall on these continua depends on their *type* (H. I. McCubbin & McCubbin, 1988) which H. I. McCubbin and colleagues created measures for assessing and predicting, (H. I. McCubbin, Thompson, & McCubbin, 1996). Thus, family type is used to predict how resilient a family may be in response to a crisis, if at all. It is here in the assessment and prediction of typologies that H. I. McCubbin and McCubbin, (1988) offer a definition of resilience: "characteristics, dimensions, and properties of families which help families be resistant to disruption in the face of change and adaptive in the face of crisis situations," (p. 247). Though this definition sounds promising, and indeed the work of Hill and H. I. McCubbin and colleagues is extremely well known in Family Studies, there are both methodological and theoretical issues with this work in need of discussion.

Methodological issues. In describing the study that Hill's (1949) model is based on and further built upon by H. I. McCubbin and colleagues, Hill discusses the influence of the status of World War II at the time of the study. He explains the ending of the war in Europe and the predicted ending in Japan. He states, "If we were to collect our data while the crises of separation and reunion still had meaning for the families…we would have to cut all corners possible," (p. 368). He goes on to state that "The crudity of some of the tools we fashioned ourselves is explained, if not justified, on the ground of expediency." In light of this expediency, Hill created measures to fill in gaps where validated instruments were not available. Hill attempted to validate one such instrument, the Adjustments of Family to Separation Scale twice ($r = 0.34$, $p<0.05$ and $r = 0.37$, $p<0.05$). He states that "Perfectionists would undoubtedly have had us drop the idea of continuing the study at this point…the reader will judge whether we should have followed such a course," (p. 374). As is clear, Hill did use the scale "for what it was worth," because it was "the best available index of family adjustment we knew about." Though he acknowledges this scale is the "weakest link," of the study, he goes on to admit that the variable it measured was one of the two dependent variables in the study.

While reacting to the restriction of time is understandable, it is a common issue in most social science research and does not excuse or justify a lack of rigor in methodology. At the very least, this work needed to be replicated before it was used as the basis for the work of H. I. McCubbin and colleagues.

H. I. McCubbin, Dahl, Lester, Benson, & Robertson (1976) did not have the same kind of time restriction as Hill when they conducted a similar study of adjustment to husbands/fathers that were missing in action in Vietnam. Rather, they created an instrument (the Coping with Separation Inventory) which they proceeded to validate. While this lends credibility to Hill's

study, it must be pointed out that the authors then utilized these findings by creating the double ABC-X model (H. I. McCubbin & Patterson, 1983a) which is founded upon Hill's (1949), ABC-X model, without discussing the previously mentioned methodological issues. Given the power of the RMFAA as a model of family resilience, these issues *must* be taken into account.

Theoretical issues. While they use the term family when describing their work, H. I. McCubbin and colleagues do not view resilience in the same systemic manner as Walsh. Rather, resilience is purchased by progressing through a structured process; with the way a family does this being judged as good/bad and sorting them into a particular typology. There is one way to attain resilience: the successful navigation through the RMFAA in a manner prescribed by the authors.

Like the non resilient youth in Werner and Smith's study, there is negative space (Daly, 2004) in this model. Negative space is in those families who do not respond to crisis in a manner consistent with the RMFAA, those who do not fit into one of the typologies, or both. The RMFAA is situated upon the assumption of one naturalized/normalized family form (the nuclear family) dealing with one particular type of crisis (a glamorized story of war): The binary focus of the RMFAA leaves out a lot of families. Not only does this leave families out of the equation, it pathologizes them for their difference or lack of fit, and in that these authors may unintentionally *do harm* by advocating this model for use in supporting the normal/not normal binary.

Allen et al., (2009) argue that those families experiencing intersections of race, class, gender, sexuality, and family status that do not follow the pattern of the idealized nuclear family "challenge normative structures by their very existence," (p. 4). Not only do the authors of the RMFAA leave out these other families, they provide even more structures and thus binaries with

which to measure and pathologize them. This structural view of families is argued against by feminist family scholars.

De Reus, Few, and Balter Blume (2005) discuss the "intersectionality paradigm as one of the most important recent intellectual contribution(s) made by feminist scholars," (p. 10). Thus, instead of constructing typologies and sorting families into preconceived molds or to assimilate pre-written narratives, an inclusive lens such as that used by Walsh removes the binary system and gives space for families to narrate their own story of resilience. This inclusive notion is supported by Ungar.

Ungar. According to Ungar, resilience must be understood in "a more ecologically fluid, historically sensitive, and culturally anchored way," (2005, p. 90), and it must be grasped that the construct is influenced beyond the individual level. In essence, resilience is a systemic construct that is influenced by the support system surrounding the individual along with the culture of that individual, and the manner in which they story their life.

This *storying* of resilience is unique to Ungar's view, and is shared by this researcher as well. He discusses the potential for resilience being "applied in ways that reproduce social norms," or "define a person's life as successful in whatever way one's culture and historical period says is acceptable," (2005, p. 91). Further, Ungar critiques the potential for the term resilient to be applied in a manner that may be the celebration of conformity to social norms, and the possibility for blaming the victim for marginalization and having an othered status.

Like Walsh, Ungar's lens is inclusive. Unlike Walsh however, Ungar's application is at the individual level with youth/ adolescents, while Walsh's is at the family level, with an emphasis on individual difference. Further, as pointed out in this chapter, there is a strong theoretical foundation to Walsh's framework, something that is not made specific by Ungar.

Thus, while his lens is a strong contribution to the resilience literature, Ungar's application does not fit with a family level application, as Walsh's does.

All of these things distinguish Walsh's model as unique from other major conceptualizations of resilience and support its further investigation. The purpose of this study then, is to create a reliable and valid instrument that investigates Walsh's family resilience framework from the individual view of women who have been diagnosed with breast cancer. Reasons for choosing this population include Walsh's framework being theoretically founded on health research, the need for a population with a common adversity, and a large distribution of the population for adequate sampling.

The Adversity of Breast Cancer

Breast cancer is the most common cancer in women, with only 1% of it occurring in men (Centers for Disease Control and Prevention Division of Cancer Prevention and Control (CDC), 2010). In 2006 (the most recent statistics given by the CDC), 191,410 women in the U.S. were diagnosed with breast cancer, and 40,820 women died because of it. Between 2003 and 2007 in the U.S., the median age for first diagnosis was 61, with women between 55 and 64 years of age being diagnosed the most (National Cancer Institute (NCI), 2010, as cited in Altekruse et al., 2010). Breast Cancer is defined by the NCI as "Cancer that forms in tissues of the breast, usually the ducts (tubes that carry milk to the nipple) and lobules (glands that make milk)." As of January 1, 2007, approximately 2,591,855 women were alive in the U.S. that had a prior history of breast cancer (NCI, 2010).

Risk Factors and Prevention

Risk factors for breast cancer include a variety of things. According to the CDC (2010), age, age at first menstrual period, late menopause, age at birth of first child, and not bearing

children are all potential risk factors of breast cancer. Along with this is not breastfeeding, having a family history of breast cancer, and having a history of radiation to the breast or chest. Risk factors associated with lifestyle include being overweight, participating in hormone replacement therapy (HRT), using oral contraceptives, consuming more than one alcoholic drink per day, and not exercising. The CDC (2010) states that risk for breast cancer can be reduced by having regular screenings in the form of monthly breast self exams, annual clinical breast exams, and mammograms for women over 40 years of age. Beyond this, controlling weight and exercising, knowing family history, and avoiding hormone replacement therapy also reduce the risk.

Symptoms, Diagnosis, Staging and Treatment

Symptoms of breast cancer may include any breast changes, lumps in the breast or armpit, thickening or swelling of breast tissue, redness/flaky skin on the nipple, discharge from the nipple, puckering of breast skin, or pain in the breast or armpit (CDC, 2010). Diagnosis of breast cancer is usually made through clinical pictures such as breast ultrasounds, a diagnostic mammogram, or magnetic resonance imaging (MRI), with a biopsy sometimes being necessary to test for the presence of cancer cells.

There are nine progressively more serious stages of breast cancer that are used to communicate the state of the cancer and assist with treatment planning. According to the CDC (2010), stages range from zero to four, with qualifying levels of each stage. As a brief overview, stage zero is assigned when there are cancer cells but no tumor is present. Stages I-III indicate tumors of progressive size and the increasing presence of cancer in lymph nodes. Stage IV indicates metastasis or the spreading of cancer to other locations in the body. Breast cancer usually spreads to the bones, lungs, liver or brain. This stage has no cure and is fatal.

Treatment for breast cancer depends on the type (where it is located within the breast and body) and how far it has spread. Most people will be given more than one type of treatment. These treatments include surgery, chemotherapy, radiation, hormonal therapy, biological therapy, clinical trials, and complementary medications (CDC, 2010). Beyond the trauma of experiencing and fighting the cancer itself, the individual must deal with secondary effects such as hair loss from chemotherapy, tattoos remaining from radiation, and disfiguration resulting from surgery. There is fear of future recurrence and sometimes death. For women experiencing breast cancer, there is the threat of lymphedema as well, which is fluid buildup in the arm on the same side of the body that experienced the breast cancer. This buildup causes pain and problems with using the limb.

Women must also deal with the impact of their illness on family and friends. Family members must face the impact of the cancer on themselves as individuals, as well as on their loved one, and on the family as a whole. Though it is not mentioned here, complementary treatment for breast cancer most certainly includes psychotherapy as well, including family therapy.

Breast Cancer and Families

Research regarding resilience in families who are experiencing/ have experienced breast cancer is sparse, with only two studies (Skerett, 1998, 2003) specifically mentioning Walsh's framework. While discussing their qualitative study, Spira and Kenemore (2000) talk about resilience as a response in adolescent daughters to breast cancer in their mothers while Bowen, Morasca, and Meischke (2003) studied traits of resilience in women with a family history of breast cancer with the purpose being to understand the way "resilient women," respond to health risks. Here resilience was measured quantitatively as a combination of thriving, optimism, and

social support, with no specific definition of resilience. Similarly, Deshields, Tibbs, Fan, and Taylor (2006) give no definition of resilience, though it may be inferred from their study of depression in women who have experienced breast cancer that resilience is a binary trait that has depression on the opposite end. Still, like Bonanno (2004), the authors found that resilience is a much more common response to trauma (e.g., breast cancer) than previously thought. Of these studies, only one (Spira & Kenemore, 2000) utilizes a systemic view (e.g., Rolland, 1987). Two of the studies view resilience as a binary individual trait (Bonanno, 2004; Deshields et al., 2006), and the last study (Bowen et al., 2003) concludes with the assumption that resilience can be broadly defined as optimism. The authors in these studies define resilience in their own terms, without citing known studies of resilience, be it at the individual or family levels.

With no standard definition being used in these studies, it is not possible to truly determine *what* is really being studied, or to be able to compare and contrast results and generalize them to an understanding of resilience in these particular families. The presence of multiple definitions of resilience, along with the lack of a standard in how resilience is defined is a noted issue in the resilience literature. Hawley and Dehaan, (1996) discuss the various ways family resilience is defined, pointing out that family is sometimes viewed as a protective factor, while being defined as a risk at other times. Hawley furthered this discussion in 2000 by critiquing the manner in which the construct is operationalized. Luthar, Cicchetti, and Becker note this as well, stating that "this diversity in measurement has led some scholars to question whether resilience researchers are dealing with the same entity or with fundamentally different phenomena," (2000, p. 545).

These issues are compounded in this instance however, by the intention of and need for deriving treatment for increasing resilience in families experiencing breast cancer, among other

adversities. The argument for a particular definition or framework of resilience being established as a standard in the treatment of these families may not only increase their wellness, but possibly extend the lives of the women experiencing breast cancer as well.

Family resilience themes. Though research specifically addressing resilience in families dealing with breast cancer is minimal, themes found in research on the adversity of breast cancer in terms of families can be extrapolated and are reflective of family resilience themes. These themes include social support and survivorship, benefit finding, meaning making, optimism/ positivity, the presence of children and adolescent daughters in particular, race/ethnicity, age at first diagnosis, and spirituality. Though it is not specifically addressed, it is important to point out that this research is saturated with the variables discussed in Walsh's family resilience framework.

Social support and survivorship. Of the many factors impacting the resilience in families dealing with breast cancer, social support may be the most important. This social support may occur in the form of individual support, family support, couple support, and support from larger systems.

Survivor support. In their randomized trial Maunsell, Brisson, and Deschenes, (1995) found that social support can increase life expectancy/ survivorship in women who have experienced breast cancer. This support is important not only during cancer treatment, but afterwards as well. Ozer, Best, Lipsey, and Weiss, (2003) found similar results in their large scale quantitative study in which they demonstrated that social support can serve as a protective factor against post-traumatic stress disorder, which often results from the woman's experience with breast cancer and compounds healing.

Couple and family support. Regarding the impact of breast cancer on the couple/family, quality of life is experienced as better when family members are given not only social support, but psychoeducation as well. Further, when quality of life is increased for the family, survivorship in the woman experiencing breast cancer is also increased (Awadalla et al., 2007).

Along with support of the family overall, researchers indicate that the relationship-status of the woman and the quality of that relationship are both crucial factors in survivorship. The positive health impacts of being in a long-term committed relationship (often but not always indicated by the presence of marriage) are well known with Kamp Dush and Kroeger, (2008), and LaPierre, (2009) specifically finding a negative impact on depression. Further, the relationship status of the woman may very well serve to predict survivorship in women experiencing breast cancer as Carver et al, (2005) found.

The quality of this relationship is a powerful factor in not only survivorship, but in the impact of breast cancer on that relationship, and the family as a whole. Utilizing qualitative methodology, Skerrett found that optimally functioning couples support one another through the experience of breast cancer through defining the disease as "our problem," (1998, p. 281). She further found that supporting the use of the definition of "we," (2003, p. 69) in the experience of breast cancer is one way that couples can increase survivorship and also enhance their relationship. While this reconstruction of the meaning of breast cancer is also a form of meaning making which will be discussed later, the impact of how a spouse/ partner can impact not only survivorship but their relationship and family through this particular form of support is the focus here.

Larger systems support. The support from larger systems is another type of social support that is crucial in families experiencing breast cancer. The term larger systems is defined here as

any source of support external to the family in question. Examples include physicians/ health care providers, support groups, and the impact of friends. Support from a spiritual or religious institution is also a form of larger system support, but as spirituality can play such a large role in families experiencing breast cancer; this will be discussed later in its own section.

One of the most important sources of larger systems support in families experiencing breast cancer comes from physicians/ health care providers. Specifically, health care providers who refer women experiencing breast cancer and families for therapy and help support family functioning and survivorship. In their quantitative study of breast, ovarian, and cervical cancer patients and their caregivers, Awadalla, et al., (2007) found that those families of cancer patients with both psychosocial support and psychoeducation reported a higher quality of life. Further, they recommend that the health care provider be a part of this family treatment, with the provider and patient being viewed as a legitimate dyad for treatment. Crooks (2001) supports this through her finding that effective patient-health care professional relationships are marked by warmth, sincerity, empowerment, and above all time spent together. In a randomized clinical trial with women who had survived for 7 years after experiencing breast cancer, those with a "confidant," who was a health care professional, had a significantly lower hazard ratio (Maunsell et al., 1995). In other words, the death rate of those women who felt able to confide in their health care providers was lower than those who did not.

This importance of social support from larger systems is reflected in "a turning point in psychosocial oncology," (Goodwin, 2005, p. 2596), in which Spiegel, Bloom, Kraemer, and Gottheil (1989) demonstrated survival benefits in a group of women with metastatic breast cancer who were randomized into a support group (versus those without a support group). Those women randomized into the support group lived significantly longer than those who were

not. Since that study, five randomized trials on the influence of support groups on breast cancer have been published with survival benefits in four of those, and demonstrated psychosocial benefits in all of them (Goodwin, 2005).

Meaning making. Part of the psychosocial benefit that comes from being in a supportive group may be attributed to the influence that the group has on the meaning that the woman makes of their situation. According to Fife, (1995) social support can predict the meaning that is made of illness. Walsh states that families who are "high-functioning," (2003, p. 407) have a strong group-orientation, particularly with regards to adversity. In other words, adversity in one person is viewed as a shared challenge by the entire family rather than a crisis. This relational view greatly influences the meaning that the woman experiencing breast cancer and the rest of the family (or group) make of the challenge being faced. Thus, instead of breast cancer being viewed as "her" problem, it is instead viewed as "our" problem. The importance of this affiliative orientation is addressed in the previously mentioned work by Skerrett (1998, 2003). According to her, with regards to facing breast cancer, "The meaning the couple made of the experience proved critical; the meaning lent coherence and provided direction to the couple's coping efforts," (1998, p. 281). Further, she states that "Optimal couple functioning depended on the couple's ability to define the experience as 'our problem.'"

This sense of coherence (Antonovsky, 1979, 1987; Antonovky & Sourani, 1988/2003) is crucial in how people make meaning of difficult situations. For breast cancer in families, gaining a sense of coherence in the way a family makes meaning indicates the deconstruction of breast cancer as a crisis which is by definition uncontrollable, and rewriting it as a challenge which can then be overcome. While this may seem simple, it is proven over and over as absolutely crucial in healing (Carpenter, Brocksopp, & Andrykowski, 1999; Fife, 1995; Northouse et al., 2002).

Another facet of meaning making with a positive impact on healing from breast cancer and cancer in general is benefit finding, which is defined by Sears, Stanton, and Danoff-Burg, (2003) as the identification of benefits in an adversity, and is thus a special form of meaning making. Carver and Antoni (2004) found that the ability to locate positive meaning in breast cancer can predict lower depression and suffering for up to seven years after the disease experience. Along with this, benefit finding is found to predict optimism, the ability to positively reframe, and a higher likelihood of coping involving spirituality (Lechner, Boyers, Carver, & Antoni, 2005). In their study of benefit finding in breast cancer patients, Urcuyo, Boyers, Carver, & Antoni (2005) found that optimism was significantly related to benefit finding. In other words, not only is meaning making important, the way meaning is made is crucial. Indeed, positivity and optimism is another theme in the literature on breast cancer with regards to families.

Positivity/ optimism. Whereas benefit finding focuses on the reaction of women experiencing breast cancer and their families after the disease event, literature surrounding positivity/optimism tends to focus at that point and prior to the event as well. Both Carver et al., (2005) and Lechner et al., (2005) found that initial optimism and positive affect prior to diagnosis can predict health outcomes after the disease event is over. With regards to positivity after the disease event, Crooks (2001) found that those women who are able to "get perspective," (p. 104) and (eventually) look at the experience of having breast cancer positively, as well as viewing their prognosis with hope seemed healthier overall. She further found that these women also have "mindful," (p. 105) spiritual connections that influence their point of view, and thus the way they make meaning. The connection between positive/ optimistic meaning making and spirituality are echoed in other studies as well.

Spirituality. As previously mentioned, benefit finding, which is a special type of positive meaning making can indicate the use of religious coping (Gall & Cornblat, 2002). According to Gall (2000), having a relationship with a higher power as well as "religious coping behavior," (p. 167) relate to positive meaning making in women who are experiencing breast cancer.

An interesting twist in this literature is found when race/ ethnicity is taken into account. According to Urcuyo et al., (2005), benefit finding is more prevalent in women who are members of a minority race. Bowen et al., (2007) however, found that race/ ethnicity influence psychosocial functioning of women experiencing breast cancer such that being a member of a minority race (i.e., the discrimination experienced by members of minority races such as receiving substandard health care or not being able to afford treatment until cancer is more advanced) negatively impacts functioning. Yet, when race/ethnicity is explored beyond the lumping of all structural inequalities into one category, these authors found that African American women actually have higher psychosocial functioning and post-traumatic growth, which is an increase in functioning after the trauma of breast cancer, is past. They postulate that these women have "increased spirituality and social support," (p. 91) and that this is a potential reason for the difference.

If this truly is a reason however, it is only a partially understood one. Given the experience of racism by minority races in the U.S., as well as the compounding of being a female member of a minority race, it is likely that African American women are not somehow made more spiritual by their race: It seems more plausible that spirituality and social support are long term coping mechanisms for the life-long experience of racism. According to Walsh (2003) the resilience demonstrated in response to past experiences with trauma are often translated to future experiences with it (whether it is the same trauma or not). When Bowen et al., (2007) combine

all women who are members of a minority race together, they fail to delineate the unique experience of African American women with the experience of those women from other minority races who are not as likely to be U.S. citizens. This is an important distinction, for those women who are from other countries where they were more likely to be members of the dominant race are likely to just be learning how to cope with racism as immigrants, along with being diagnosed with breast cancer.

Age at first diagnosis. Along with these differences in response to breast cancer with regards to race/ ethnicity are differences with regards to age. According to Compas et al., (1999), younger women tend to react more poorly to a diagnosis of breast cancer. Older women in their study had better psychological adjustment and better coping behaviors. The authors suggest that chronological age might be viewed as a "source of resilience in response to the initial (breast cancer) diagnosis," (p. 202).

While the use of chronological age to suggest a trait in an entire category of people assumes homogeneity in that group and is potentially discriminatory, when compared to some of the results of Crooks' (2001) study, it is possible to postulate a secondary reason for this phenomena: Sense of coherence. In her qualitative study of twenty women age 66-94 years old, Crooks found what she calls a "hint of ageist bias," (p. 109). Specifically, the withholding of information by physicians, not providing treatment that is standard (such as sampling lymph nodes or examining puckered breasts), and not providing all of the treatment that is routinely given to a particular stage of cancer. An example of this is the provision of a lumpectomy without radiation to further eradicate microscopic cancer cells that remain. Though this is a qualitative study which cannot then be generalized, the results do point to the possibility of older women having better coping behaviors when diagnosed with breast cancer because those older

women who have experienced breast cancer that did not die as a result of it might have been forced to advocate for themselves. Thus, age would not be the factor of resilience here. A more likely reason is having a sense of coherence and control over one's life such that substandard treatment is refused.

Another possible reason for the finding of Compas et al., (1999) is that younger women are more likely to have children at home, and researchers find that the presence of children is negatively related to psychological well being in women with breast cancer (S. Walsh, Manuel, & Avis, 2005). While those findings are with regards to the presence of young children in the home, studies suggest that adolescents and in particular teenage daughters are most affected by breast cancer in their mothers (Spira & Kenemore, 2000; Zapka, Fisher, Lemon, Clemow, & Fletcher, 2006). Thus, while young children are more physically needy and thus take a toll on the psychological functioning of mothers with breast cancer, the question becomes how much the emotional neediness and fear of getting breast cancer themselves (Spira & Kenemore, 2000) impacts teenage daughters of women with breast cancer, and in turn negatively impacts the women themselves.

Critique. While it is clear that the previously reviewed variables all play a crucial role in the well being of women who have been diagnosed with breast cancer and their families, it is important to remember that these are all pieces of family resilience being viewed independently of one another. It is necessary to independently review these variables because as previously mentioned; literature specifically looking at the relationship between family resilience and women who have been diagnosed with breast cancer are sparse. Indeed, most of the literature reviewed in this section does not come from the family studies field, as is clear in the reliance on quantitative methods in a majority of the studies, and a lack of attention to participant context.

Further, little attention is paid to how the information gleaned in this literature can be directly applied. Beyond this, theory is missing from most of these studies. Creating an instrument to examine how these variables relate to one another such that family resilience is increased in the lives of people experiencing health adversities may be one way to better utilize this literature.

Summary

This chapter reviewed the theoretical foundation and literature supporting this study. Feminist theory influences the emphasis on the experience of women who have been diagnosed with breast cancer and their (individual) perception of their family's resilience. It also influences the interpretation of Walsh's family resilience framework and the promotion of it over preexisting theories of resilience. The importance of this framework and the serious validity issues of prior attempts at creating an instrument to measure it illustrate the need for the creation of a reliable and valid instrument. That is the purpose of this study and the methods used in creating the Family Resilience Assessment are presented in the following chapter.

CHAPTER THREE: METHOD

A non-experimental quantitative design is used to develop a reliable and valid instrument that investigates Walsh's family resilience framework (Walsh, 1996, 2002a, 2002b, 2003, 2006) from the perspective of an individual. Women who have been diagnosed with breast cancer are the population chosen for validation. The following research questions guide the study:

RQ_1: Does the instrument have demonstrated reliability?

RQ_2: Does the instrument have demonstrated content validity?

RQ_3: Does the instrument have demonstrated construct validity?

RQ_4: To what extent does the instrument and its' subscales correlate with measures of theoretically related (convergent validity)?

The work of Colton and Covert (2007) is used as a guide for instrument development, its administration, and testing reliability and validity. Dillman, Smyth, and Christian's (2009) work is also used for sampling, as well as for administering a survey via the Internet.

This study is divided into two parts: a Pilot and a Main study. In the pilot, the initial item pool for the measure is created and the instrument is tested with 41 participants to fine tune it for further testing. In the main study, the measure is tested with 113 participants to check for reliability, validity, model fit, and factor analysis. The pilot took place in fall 2010 and spring 2011, with the main directly following in spring 2011. The focus of this chapter is on the development of the Family Resilience Assessment (FRA), its administration, and the data analyses used. Because structural equation modeling (SEM) is utilized to analyze the data in this study, the language associated with it is utilized throughout. Thus, constructs are described as *latent variables* or variables that are not directly observed, and scale variables are described as *indicators*, or variables that are directly observed (Kline, 2005).

Pilot Study

Measurement Development

The FRA used in the pilot is divided into two sections: family resilience content and demographic information. Because it is already theoretically divided into constructs/ latent variables and variables/ indicators creating a structure for the family resilience portion was straightforward. Literature was reviewed in terms of the constructs/latent variables and variables/ indicators listed in the hypotheses below, and draft items were created. The FRA (see Figure 2) includes the constructs/latent variables of belief systems, organizational patterns, and communication processes. These three constructs/ latent variables have three variables/indicators each. The figure demonstrates the following 15 hypotheses.

H_1: Belief systems are a latent variable of family resilience.

H_2: Organizational patterns are a latent variable of family resilience.

H_3: Communication patterns are a latent variable of family resilience.

H_4: Making meaning of adversity (A1) is an indicator of belief systems.

H_5: Positive outlook (A2) is an indicator of belief systems.

H_6: Transcendence and spirituality (A3) is an indicator of belief systems.

H_7: Flexibility (B4) is an indicator of organizational patterns.

H_8: Connectedness (B5) is an indicator of organizational patterns.

H_9: Social and economic resources (B6) is an indicator of organizational patterns.

H_{10}: Clarity (C7) is an indicator of communication processes.

$H1_{11}$: Open emotional sharing (C8) is an indicator of communication processes.

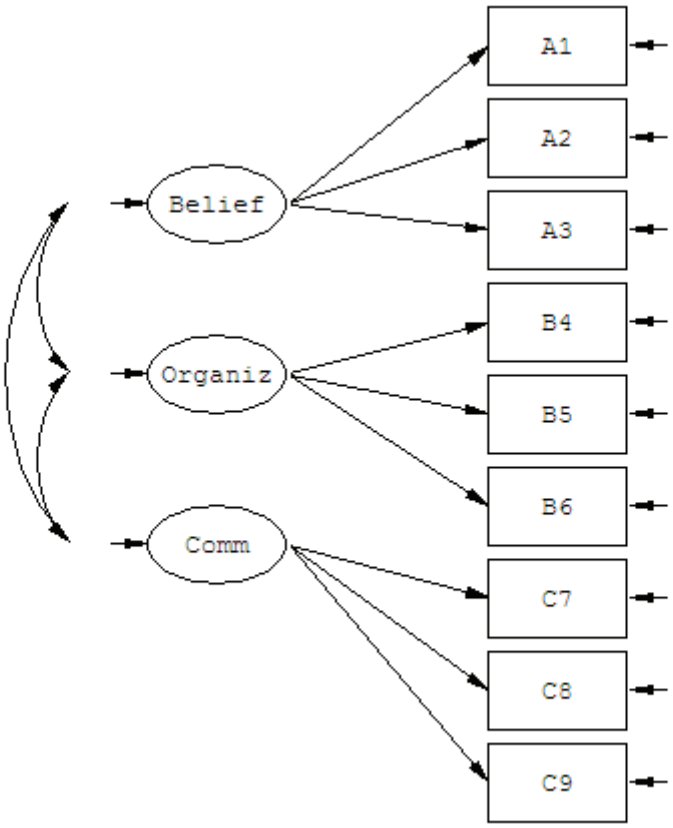
H_{12}: Collaborative problem solving (C9) is an indicator of communication processes.

H_{13}: Belief systems correlate with organizational patterns.

H_{14}: Belief systems correlate with communication patterns.

H_{15}: Organizational patterns correlate with communication patterns.

Figure 2: Specified model of the FRA



Initial Item Pool. The initial item pool came from the reviewed literature regarding the three latent variables and nine indicators of Walsh's family resilience framework and breast cancer with regards to families, as well as consultation with the committee chair and an expert panel. Walsh's framework was coded (See Appendix B) for ease of reference into constructs, variables, and variable parts. Each item was cross-referenced with Walsh's (coded) framework and the literature (see Appendices C and D) with at least two items written for each coded piece of the framework. This resulted in 50 items. Once the item pool was reviewed by the committee chair, it and the demographic questions were sent to the expert panel.

Expert Panel. The expert panel included Dr. Froma Walsh, Dr. Gary Skaggs, and Dr. Janet Johnson. Dr. Walsh is the author of the family resilience framework and is the Mose and Sylvia Firestone Professor Emerita of Clinical Social Work in the Social Service Administration and the Department of Psychiatry, as well as the Co-Director of the Center for Family Health at the University of Chicago. She is a recognized expert in family systems and family therapy. Dr. Walsh was asked to review the FRA for content.

Dr. Walsh recommended changes in instruction and scale wording. She noted overlap between items, as well as similarity of items. Item similarity was purposely created, with those items compared during pilot analysis for the best item. The five-item Likert scale was changed in direction and stem from "Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree" to "Not at all, Very little, Sometimes, A lot, All the time." Dr. Walsh also discussed variables that appeared not to be represented such as "hope," (coded as A2a) and "mastering the possible," (coded as A2d). These items were changed to more explicitly represent those variable parts.

Dr. Gary Skaggs is an Associate Professor in Educational Leadership and Policy Studies in the School of Education at Virginia Tech. Dr. Skaggs specializes in psychometrics, item response theory, test equating and scaling, standard setting, and validity studies. He was asked to review the FRA for instrument development.

Dr. Skaggs critiqued the use of "My family and I," as being too holistic. This wording was kept because it is central to the theoretical premise of the FRA being an individual perception of family resilience. He also suggested removing "Undecided" from being an item response within the scale, and placing it at the end instead. Thus, "Neutral" is used to replace "Undecided," and "Undecided" is placed at the end after "Strongly Disagree," and italicized. Dr. Skaggs made further item-specific comments, pointing out when more than one idea was being

tested by an item, when an item was too vague, and when there was terminology that was confusing. These items were reviewed with the committee chair, and decisions were made to keep or change them. Dr. Skaggs also suggested a question asking respondents whom they were referring to when they thought about their family. This item was added.

Dr. Janet Johnson is a retired faculty member from Virginia Tech's department of Human Nutrition, Foods, and Exercise and former dean of the College of Human Resources and Education. She is also a woman who has been diagnosed with breast cancer, and served on this panel as an expert in the experience of the illness. She was asked to review the FRA and demographic questionnaire from the perspective of someone who has been diagnosed and treated for breast cancer, and to also take the survey and record response time.

Dr. Johnson completed the survey in 20 minutes. She gave positive feedback on the FRA and made the suggestion of adding an item that asks the stage of cancer the participant experienced. This suggestion was later incorporated into the main study.

The suggestions of the expert panel were reviewed with the committee chair, and decisions were made regarding keeping, dropping, or rewording items. This resulted in a Pilot FRA with 44 items in the content section and 10 demographic items.

Survey content. The pilot FRA is a self-report measure completed by women who have been diagnosed with breast cancer. A simple measurement model was employed with the assumption that each question carried equal weight. In the content section there are nine scales measuring the nine variables/ indicators: making meaning of adversity (8 items), positive outlook (5 items), spirituality (6 items), flexibility (2 items), connectedness (3 items), social and economic resources (8 items), clarity (3 items), open emotional sharing (4 items), and collaborative problem solving (5 items). An open ended item was placed after the 44 items for

the purpose of giving participants an opportunity to use their voice and discuss their experience in their own words: "What else would you like to say about the experience you and your family had with breast cancer and how you coped with it?"

The demographic questionnaire consisted of ten demographic items (See Appendix D). The first three were for the purposes of control and asked if the participant was a survivor of breast cancer, if they were female, and when they received their last treatment for breast cancer. Participants were also asked for the year of their birth (age), their race, age of daughters, partner status, and family history of breast cancer. These questions came from the literature on breast cancer and families. Finally, participants were asked if they wanted to receive the study results. This option was offered as a way to further involve participants in the study.

Response format. Item formats for the FRA were presented with a 5-point Likert response scale and response alternatives using a summative frame. A five-item scale was chosen so that participants were not forced to agree or disagree, and could choose to be neutral (Colton & Covert, 2007). On the recommendation of a committee member, an undecided category was placed at the end to give participants the ability to opt out of an item while minimizing skipped questions. Participants could thus choose "not at all," "very little," "sometimes," "a lot," "all the time," or "undecided" in response to the items. For the demographic section, responses included binary yes/no options, as well as a list of alternatives for race, and fill in the blank responses for items such as "In what year were you born?"

Sample

The top 18 organizations specifically targeting those diagnosed with breast cancer that came up in a basic Google search were sent an email requesting the survey link be posted on their website, sent to their members, or both. While three sites expressed interest, most were

unable to fulfill the request due to the number of requests they receive for this type of service (i.e., the Susan G. Komen for the Cure Organization) or because of guidelines regarding solicitation (i.e., the National Breast Cancer Foundation). Three organizations, Breast Cancer Support (Survive, 2009), Breast Friends (2010), and Pink-Link (2010) responded favorably and granted permission.

It was decided that these three websites would be preserved for the main study, with a similar population found for the pilot. Members of breast cancer awareness groups on Facebook, (2010) were chosen (see Appendix E). Due to issues with low response rates and time constriction, additional websites whose focus was on breast cancer support were located, with the link posted there as well. Those websites included The Breast Cancer Mailing List (n.d.), Her2Support (2011), Metastatic Breast Cancer Information and Support (Bevin, n.d.), and Friends of the Breast Cancer Listserv, Inc., (n.d.). Along with this, face-to-face breast cancer support groups in Virginia (VA) and North Carolina (NC) were contacted, and the survey link sent out to those groups that agreed to participate (See Appendix F).

Administration

The pilot study received IRB Approval on November 19, 2010, with all changes to the study being subsequently approved via amendments. The pilot took place in fall 2010 and spring 2011. The online service Surveymonkey.com, (SurvkeyMonkey.com, 2010) was utilized as the method for distribution. Due to issues with data collection, pilot data were collected in two phases.

Phase I. Using an anonymous user identity (Delaney Allen), the link to the survey along with a brief introduction was posted on the walls of 45 Facebook (2010) groups whose focus was

breast cancer awareness. Reminders were posted once a week for six weeks. Due to a low rate of 20 responses, this part of the pilot ceased and a second phase was implemented.

Incentives. A note was placed in the consent form for the pilot stating that a donation would be made to the Susan G. Komen for the Cure (2011) organization for every survey that was completed. This incentive did not seem to have an impact in increasing participation.

Phase II. Initial pilot responses from Phase I were reviewed by the committee chair and methodologist, and the decision was made that 20 more responses were needed so that appropriate analyses could be completed. Instead of trying to find another population like the one reserved for the main study, it was decided that the reserved websites would be used, with the first 20 responses counting as the rest of the data for the pilot, and responses from the 21st forward counting as the main study data. It was at this point that the previously described websites were located, and face-to-face breast cancer support groups in VA and NC were contacted. Data from 41 responses were analyzed using Cronbach's Alpha for reliability and item statistics, summary item statistics, item total statistics, and scale statistics to see how well the items related to one another. Changes to the FRA and demographic questions were then made, and the main study began.

Main Study

Measurement Development

After the pilot was complete, the data were analyzed and based on the results item decisions were made (See Appendix G). This resulted in 15 items being dropped, and a total of 29 items in the family resilience content portion of the FRA. Due to the participation of women who were in Stage IV breast cancer and their feedback that they reject the term "survivor," the demographic question regarding whether the participant was a breast cancer survivor was

removed. A question was substituted and asked where the participant learned of the survey. Because items were dropped or kept and no changes to actual item wording were made, the FRA and demographic questionnaire were not sent back to the expert panel. As will be further explained in the section on reliability and validity, a section title *Family Perceptions* was also added to measure convergent validity.

Administration

The link to the revised survey was posted on websites that focus on breast cancer awareness, as well as being emailed to listservs found online, sent to face-to-face breast cancer support groups in VA and NC, and the Families and Health section of the National Council on Family Relations (NCFR) listserv. The researcher visited one group as well and provided a pencil and paper version of the survey. Because of time restriction in this group, the members asked to mail their surveys to the researcher at their own cost and risk (this possibility was previously approved by the IRB). The researcher agreed and all six group members returned their surveys. After this, the data were analyzed using Cronbach's Alpha for reliability, and item statistics, summary item statistics, item total statistics, and scale statistics to see how well the items relate to one another. Exploratory Factor Analysis (EFA) was utilized to determine how many factors emerged from the data (Pedhazur & Pedhazur Schmelkin, 1991) and Confirmatory Factor Analysis (CFA) was used to test how well the hypothesized model fit the data. Using the results of those analyses, changes to the FRA and demographic questionnaire were made (See Appendix H).

Sample size. According to Schreiber (2008), when using structural equation modeling (SEM), 5-10 observations are needed for every parameter that is freely estimated, as well as at least three indicators per latent variable. In this model, 21 parameters are estimated (see Figure

2), meaning that a minimum sample of 105-120 is needed. Including the mailed surveys, a total of 113 women diagnosed with breast cancer filled out the survey.

Reliability, Validity, and Reflexivity

Reliability. When an instrument yields the same or similar results time after time, it is said to be internally consistent or reliable (Colton & Covert, 2007; Pedhazur & Pedhazur Schmelkin, 1991). Consistently producing high reliability is an important characteristic of social science instruments. Various ways to test reliability exist, but the most accepted measure (Pedhazur & Schmelkin, 1991) is Cronbach's Alpha (Cronbach, 1951) which is also referred to as the Alpha level or the coefficient Alpha. Cronbach's Alpha utilizes a formula that includes the number of items, sum of the variances of the items, and the composite score. Cronbach's Alpha is measured on a scale of zero to one, with reliability of 0.70 or higher being the accepted cutoff (Nunnally, 1978).

Split-half reliability is another method for assessing reliability which uses Cronbach's Alpha (Colton & Covert, 2007). This method splits the measure in half and measure the reliability of each half. If both parts have good reliability, the measure is internally consistent.

Validity. In order to ensure that the FRA measures what it is intended to measure, five types of validity advocated by Colton and Covert (2007) are addressed: face, construct, content, convergent, and multicultural. Each of the types of validity are defined and discussed below.

Face validity refers to how much the instrument looks like it is appropriate for getting the desired information. It is addressed in this study by having the words "Family Resilience" in the title of the instrument, and asking questions about the participant and their family.

Content validity refers to how much the FRA truly represents family resilience. It is addressed through the inclusion of items for all nine variables, as well as the cross-referencing of

each item to not only Walsh's coded framework (Appendix C), but to the literature (Appendix D) as well. Along with this, having the FRA reviewed by the creator of the family resilience framework (Dr. Froma Walsh), is another way to ensure content validity of the FRA.

Construct validity is the extent to which the instrument in question addresses the abstract concepts (or latent variables) of interest. Belief systems, organizational patterns, and communication processes cannot be directly measured. Construct validity is addressed through the operationalization of these constructs into the nine variables specifically mentioned in Walsh's framework and can be directly measured through the writing of items. The use of EFA to test what factors emerge from the data and the use of CFA to test model fit is another way that construct validity is addressed.

Convergent validity compares the instrument in question to an established external standard. To assess this, 12 items were added in a section titled *Family Perceptions* (See Appendix I). These items were chosen from the Family Assessment Device (FAD): Version 3 (Ryan, Epstein, Keitner, Miller, & Bishop, 2005) and the Self-Report Family Inventory (SFI): Version II, (Hampson & Beavers, 1989). The FAD is one of the instruments created to measure components of the McMaster model of family functioning (Epstein, Bishop, & Levin, 1978; Epstein, Ryan, Bishop, Miller, & Keitner, 2003), and the SFI is one of the instruments created to measure components of the Beavers systems model (Beavers & Hampson, 2003; Beavers & Voeller, 1983). As previously mentioned in Chapter 2, both of these models are a part of the theoretical foundation of Walsh's family resilience framework.

Responses from both measures were separately correlated with the FRA, with convergent validity being demonstrated if a positive correlation is present. The results of these analyses are included in Chapter 4.

Multicultural validity is defined as when "an instrument measures what it purports to measure as understood by a particular audience," (Colton & Covert, 2007, p. 69). The FRA is created with an 8th grade reading level in English, and attention was paid to keeping the instrument free of language indicating a bias towards a particular social hierarchy.

More specifically, the researcher listened to objections of participants taking the pilot FRA with regards to the term "survivor," the use of the color pink, and the presence of a pink ribbon in the design of the survey. These particular participants are women diagnosed with Stage IV breast cancer, also known as metastatic or terminal breast cancer. Unbeknownst to the researcher, the committee, and not apparent in the reviewed literature, most women with Stage IV breast cancer feel left out of the United States (U.S.) movement that uses a pink ribbon, the term "survivor," and advocates for a cure (see Susan G. Komen for the Cure, 2011 for an example of this movement). Terms such as "the forgotten," and "the lost sisters," were used in emails to the researcher about using the term "survivors of breast cancer," to define the population of interest. In response to this the population was redefined as "women who have been diagnosed with breast cancer," the word "survivor," removed from the survey, and the color purple used instead of pink. This inclusion of the voice and desires of the participants is not only necessary for multicultural validity, but along with reflexivity, is a mark of feminist research as well.

Reflexivity: The Third Piece. Along with testing reliability and validity, which are crucial in the development of a successful instrument there is a third piece that is just as important: locating the researcher in the work. Along with her argument that there is no feminist method, Harding (1987) discusses the importance of placing the researcher "in the same critical plane as the overt subject matter," (p. 9). Further, she states that "we need to avoid the

'objectivist' stance that attempts to make the researcher's cultural beliefs and practices invisible while simultaneously skewering the research objects beliefs and practices to the display board," (p. 9). She states that "it is features such as these…not a 'feminist method' which are responsible for producing the best of the new feminist research and scholarship" (p. 9). Echoing Harding, Allen (2000) discusses the importance of stating one's biases in scholarly work. She discusses the importance of making "assumptions, standpoints, and biases" clear and "grappl(ing) with their inconsistencies, their ambiguities, and their effect on others" (p. 8). The following reflexive statement and selected field notes (Appendix J) are an attempt at doing these things.

Reflexive Statement. I locate myself in various hierarchies. I am a 32 year old white, U.S. citizen, who is legally married to a 33 year old white U.S. citizen and Information Technology Specialist and will soon have a terminal degree. I have excellent health care, a dual income, and live without the fear of violence or poverty. I have never been diagnosed with breast cancer, and cancer (of any kind) is not an illness that anyone in my biological family has faced. Thus, I live without the fear of carrying a gene for breast cancer, and though I fear it like most women, rationally I know that I will likely never deal with it on a biological level. I am admittedly removed from the lived experience of most people, including those that participate in my research.

As a medical family therapy intern, I collaborated with a breast cancer surgeon, a nurse practitioner, and an Episcopal priest to build what was going to be a holistic health practice. While doing this work, the surgeon was diagnosed with breast cancer herself, and passed away after three months of treatment. Because of my many clients with breast cancer and this painfully ironic experience, my interest and passion for understanding breast cancer and finding better ways to deal with it is personal, and as a feminist I believe this means it is also political.

Summary

The methods and analyses for creating the FRA are detailed in this chapter. Methods used in both the pilot and main studies are discussed as well as the creation of and methods for revision of the FRA. Methods for addressing each of the research questions are also discussed. The results of the analyses described in this chapter are presented in Chapter 4, and those analyses are discussed in Chapter 5.

CHAPTER FOUR: RESULTS

This chapter presents the results of the analyses conducted for this study. It begins with the pilot results with a description of the participants, the item analyses, and item decisions. The results of the main study follow with a description of the participants, and results per research question. Confirmatory factor analyses (CFA) were conducted using Scientific Software International (SSI) Lisrel 8.80 Student Edition. All other analyses were conducted using the Statistical Package for Social Sciences (SPSS) Student Version 16.0 and Predictive Analysis Software (PASW) SPSS Student Version 18.0.

Pilot

Participants

A total of 41 women who had been diagnosed with breast cancer filled out the pilot Family Resilience Assessment (FRA). They ranged in age from 34-69 years. Of these women there were 31 Caucasians, one American Indian or Alaska Native, one African American, and one Hispanic or Latino, with seven missing responses. Twenty eight of the women reported that they had a partner, and 18 of the women had family members with a diagnosis of breast cancer. Twenty two of the women had daughters who ranged in age from 7-53 years of age.

Pilot Analysis

Analyses were conducted on the 44 items of the content section of the pilot FRA. They included Cronbach's Alpha, item statistics, summary item statistics, item-total statistics, scale statistics, and inter-item correlation. Cronbach's Alpha for the pilot was 0.97. While having an Alpha level above 0.70 is the goal in instrument design (Nunnally, 1978), a very high Alpha level usually points to too much similarity among items, and is also a sign that the instrument can be shortened. As previously mentioned in Chapter 3, item similarity was purposely written into

the pilot FRA, with similar items compared and only the best item among them kept. Item statistics give the mean and standard deviation per item (Table 1).

Table 1

Pilot Item Statistics

Item	M	SD	Item	M	SD
Q1	3.65	1.18	Q23	4.75	1.21
Q2	4.55	0.83	Q24	4.75	1.37
Q3	4.80	1.24	Q25	3.95	1.15
Q4	4.45	1.43	Q26	4.30	1.22
Q5	5.10	1.02	Q27	3.75	1.25
Q6	5.15	0.99	Q28	2.95	1.00
Q7	4.50	1.24	Q29	3.05	1.00
Q8	4.60	0.99	Q30	4.70	1.30
Q9	4.50	0.89	Q31	4.60	1.05
Q10	5.25	0.85	Q32	4.70	0.98
Q11	5.25	0.72	Q33	3.60	1.14
Q12	4.85	1.18	Q34	4.80	1.28
Q13	4.85	1.18	Q35	4.75	1.25
Q14	4.70	1.30	Q36	4.70	1.66
Q15	4.65	1.18	Q37	4.45	1.19
Q16	4.30	1.08	Q38	4.55	1.23
Q17	4.30	1.30	Q39	4.60	1.82
Q18	4.25	1.07	Q40	4.70	1.13
Q19	4.10	1.37	Q41	3.95	1.28
Q20	4.20	1.15	Q42	4.25	1.25
Q21	5.15	0.67	Q43	5.05	1.05
Q22	4.85	0.88	Q44	4.95	1.43

Items are then viewed in comparison to the summary item statistics (Table 2) to see how the item compares to the total instrument. Summary item statistics give the average mean, variance, and inter-item correlation for all 44 items of the pilot FRA. Scale statistics give the mean (M= 197.85, SD= 34.24), variance (1172.35), and standard deviation for the 44 items as a whole. Item-total statistics (Table 3) state the scale mean and variance for each item if it is deleted.

Table 2

Pilot Summary Item Statistics

	M	Min	Max	Range	Min/Max.	Variance	N
Item Means	4.50	2.95	5.25	2.30	1.78	0.27	44
Item Variances	1.39	0.45	3.31	2.86	7.35	0.28	44
Inter-Item Correlations	0.42	-0.63	0.93	1.56	-1.47	0.09	44

Pilot item decisions. After all of the above analyses were run, results of each item were compared, and item decisions were made (Appendix G). According to Balian, (1994), item analysis "evaluates each test item in terms of its response pattern within the group tested," (p. 109). The process included five steps. The first step involved comparing the item mean (Table 1) with the average mean (Table 2) of the entire FRA. In the second step, the scale mean if the item is deleted (Table 3) was compared with the scale mean. In step 3 the corrected item total of each item was compared. In step 4 the Cronbach's Alpha if the item is deleted (Table 3) was compared. Finally for step 5 the inter-item correlations (Appendix K) of each item were compared. This resulted in 15 items being dropped, none rewritten, and one questionable item (item 33).

The mean of item 33 (M= 3.60, SD= 1.14) "My family and I felt financially secure during the breast cancer experience is much lower than the average item mean (M= 4.49, SD= 1.18). This points to the possibility of this item either needing to be rewritten/ dropped, or of there being a theoretical reason for the low performance of the item. The corrected item-correlation of -0.31 further demonstrates that this item is measuring something different than the rest of the instrument. The Cronbach's Alpha if item 33 is deleted is 0.973 which is a small

increase in the overall Alpha of 0.970, and a sign that this item is taking away from the reliability of the FRA. Further, 39 of the 44 items negatively correlate with item 33

Table 3

Pilot Item-total Statistics

Item	M if del.	Var. if del.	Item-total r	Alpha if del	Item	M if del.	Var. if del.	Item-total r	Alpha if del
Q1	194.20	1148.27	0.28	0.97	Q23	193.10	1101.67	0.86	0.97
Q2	193.30	1136.33	0.64	0.97	Q24	193.10	1085.46	0.94	0.97
Q3	193.05	1096.79	0.90	0.97	Q25	193.90	1123.36	0.62	0.97
Q4	193.40	1088.57	0.87	0.97	Q26	193.55	1110.26	0.75	0.97
Q5	192.75	1123.57	0.70	0.97	Q27	194.10	1150.10	0.24	0.97
Q6	192.70	1128.85	0.64	0.97	Q28	194.90	1160.73	0.16	0.97
Q7	193.35	1104.98	0.80	0.97	Q29	194.80	1157.12	0.21	0.97
Q8	193.25	1119.15	0.78	0.97	Q30	193.15	1166.77	0.04	0.97
Q9	193.35	1126.98	0.75	0.97	Q31	193.25	1161.78	0.13	0.97
Q10	192.60	1141.94	0.52	0.97	Q32	193.15	1130.56	0.62	0.97
Q11	192.60	1145.20	0.55	0.97	Q33	194.25	1195.46	-0.31	0.97
Q12	193.00	1110.11	0.77	0.97	Q34	193.05	1099.84	0.83	0.97
Q13	193.00	1104.00	0.85	0.97	Q35	193.10	1096.52	0.90	0.97
Q14	193.15	1103.50	0.78	0.97	Q36	193.15	1092.03	0.71	0.97
Q15	193.20	1108.27	0.80	0.97	Q37	193.40	1103.73	0.85	0.97
Q16	193.55	1118.79	0.73	0.97	Q38	193.30	1103.27	0.82	0.97
Q17	193.55	1096.26	0.86	0.97	Q39	193.25	1095.15	0.61	0.97
Q18	193.60	1125.52	0.64	0.97	Q40	193.15	1110.03	0.81	0.97
Q19	193.75	1091.36	0.87	0.97	Q41	193.90	1101.57	0.82	0.97
Q20	193.65	1107.82	0.82	0.97	Q42	193.60	1119.62	0.61	0.97
Q21	192.70	1155.80	0.35	0.97	Q43	192.80	1111.85	0.85	0.97
Q22	193.00	1148.53	0.39	0.97	Q44	192.90	1092.20	0.83	0.97

Because this is a pilot version of the FRA, this is the only item written to measure financial security, and a better way to write it is not apparent; it cannot be clear whether this item is poorly written, or if the results are showing that financial security is not an indicator. To accurately assess this, the results need to be replicated. Due to this the item was kept.

This procedure for assessing items was undertaken for each of the 44 items. Of the 44 items, 15 were dropped and none were rewritten. All but 5 of the 29 items had the highest corrected item-total correlations (0.70-0.94) with the15 dropped items having the lowest corrected item-total correlations (-0.31-0.64). Five items (11, 21, 25, 27, 32) had low corrected item-total correlations, but were included in the revised FRA to test for replication of the results. The 29 items were combined with items measuring convergent validity, and along with the demographic portion of the FRA formed the instrument packet (Appendix H) that was utilized in the main study.

Main Study with Revised FRA

Participants

One hundred and thirteen women who had been diagnosed with breast cancer filled out the FRA. They ranged in age from 29-80 years. Of these women, 98 were Caucasian, five were Hispanic or Latino, four were African American, two were American Indian or Alaska Native, and there were two missing responses. Eighty six of the women reported having a partner, and 52 reported having a family member who had been diagnosed with breast cancer. Seventy four reported having daughters who ranged in age from 3-60 years old.

Nineteen of the women were still receiving treatment for breast cancer, with eight of those admitting a diagnosis of Stage IV breast cancer. Seventy three women received their last treatment for breast cancer in the past five years, and 21 received it in the past fifteen.

Research Questions

RQ1: Does the instrument have demonstrated reliability? Cronbach's Alpha for the FRA is 0.929. Since 0.70 is the accepted cutoff for good reliability, a score of 0.929 demonstrates good reliability in the FRA. A test of split-half reliability was also conducted with

the FRA being divided by odd (0.86) and even numbers (0.87) and Cronbach's Alpha calculated for each. The high levels of correlation for both halves of the FRA further demonstrate that it is internally consistent.

RQ2: Does the instrument have demonstrated content validity? As mentioned in Chapter 3, items were written specifically for the three constructs/latent variables and nine variables/ indicators in Walsh's family resilience framework (Appendix A). These items were cross-referenced with a specific construct/variable/variable part in the framework (Appendix B and C) and the literature on family resilience and families experiencing breast cancer (Appendix D). This demonstrates theoretical content validity.

Content validity is demonstrated statistically as well using the same analyses conducted in the pilot, resulting in main item decisions (Appendix L): item statistics (Table 4), summary item statistics (Table 5), scale statistics (M= 108.89, SD= 19.85), item-total statistics (Table 6), and inter-item correlation (Appendix M).

With regards to item statistics, only one item stands out as being exceptionally different from the total item mean (M= 3.75, SD=1.18). Item 18 (M=2.85, SD= 1.54) "My family and I sought reconnection after the breast cancer experience," has the largest difference. This difference is reflected in the item-total correlation of 0.39. While this trend is also reflected in the presence of negative inter-item correlations, the items that correlate negatively with item 18 (4, 15) make theoretical sense. Item 18 is written to measure connectedness, while item 4, "I felt encouraged by my health care provider to face the challenge of breast cancer," is written to measure meaning making, and item 15, "My family and I continued with family rituals, traditions, and activities in spite of the breast cancer," is written to measure flexibility.

Corrected item-total correlations point to the need for further review of items 4 and 7 "My family and I struggled well against the breast cancer," 15 and 19 "My family and I found support from extended family and friends," and 21, "My family and I sought out support groups to assist with the breast cancer experience," (see Table 6).

Table 4

Main Item Statistics

Item	M	SD	Item	M	SD
FRA1	4.13	1.03	FRA16	4.15	0.96
FRA2	3.94	1.13	FRA17	4.02	1.11
FRA3	3.56	1.29	FRA18	2.58	1.55
FRA4	4.10	0.88	FRA19	3.58	1.12
FRA5	3.71	1.19	FRA20	4.02	0.98
FRA6	4.23	1.00	FRA21	3.45	1.29
FRA7	3.84	1.24	FRA22	3.90	1.07
FRA8	3.66	1.24	FRA23	3.85	1.07
FRA9	3.48	1.52	FRA24	3.40	1.12
FRA10	3.42	1.40	FRA25	3.23	1.57
FRA11	3.35	1.33	FRA26	3.76	1.07
FRA12	3.06	1.41	FRA27	3.08	1.21
FRA13	2.85	1.20	FRA28	4.15	1.13
FRA14	3.16	1.10	FRA29	3.47	1.45
FRA15	4.34	0.77			

Table 5

Main Summary Item Statistics

	M	Min	Max	Range	Min/Max	Var.	N of Items
Item Means	3.64	2.58	4.34	1.76	1.68	0.19	29
Item Variances	1.45	0.59	2.47	1.88	4.20	0.23	29
Inter-Item Covariances	0.46	-0.15	1.84	1.99	-12.28	0.07	29
Inter-Item Correlations	0.33	-0.14	0.87	1.01	-6.16	0.03	29

Table 6

Main Item-Total Statistics

Item	M if del.	Var. if del.	Item-total r	Alpha if del	Item	M if del.	Var. if del.	Item-total r	Alpha if del
FRA1	101.34	387.01	0.77	0.93	FRA16	101.32	388.78	0.78	0.90
FRA2	101.53	388.15	0.67	0.81	FRA17	101.45	385.53	0.74	0.92
FRA3	101.90	384.71	0.65	0.83	FRA18	102.89	391.87	0.40	0.59
FRA4	101.37	413.65	0.13	0.70	FRA19	101.89	406.40	0.25	0.53
FRA5	101.76	393.83	0.51	0.81	FRA20	101.45	396.32	0.56	0.76
FRA6	101.24	396.42	0.55	0.70	FRA21	102.02	407.62	0.19	0.57
FRA7	101.63	388.70	0.59	0.80	FRA22	101.56	392.12	0.61	0.85
FRA8	101.81	387.60	0.61	0.83	FRA23	101.61	390.93	0.64	0.89
FRA9	101.98	388.25	0.48	0.87	FRA24	102.06	388.16	0.67	0.84
FRA10	102.05	385.13	0.59	0.72	FRA25	102.24	386.78	0.48	0.66
FRA11	102.11	384.82	0.62	0.73	FRA26	101.71	395.42	0.53	0.58
FRA12	102.40	392.83	0.43	0.86	FRA27	102.39	389.88	0.58	0.74
FRA13	102.61	388.18	0.63	0.88	FRA28	101.32	388.58	0.66	0.83
FRA14	102.31	386.77	0.72	0.84	FRA29	102.00	383.48	0.59	0.77
FRA15	101.13	401.69	0.55	0.58					

These items have the lowest corrected item-total correlations of all the items. Yet Cronbach's Alpha when deleted stays the same or decreases for items 4, 7, and 15, meaning that they are contributing to the reliability of the FRA. Item 4 has low inter-item correlations, with items 7 and 15 having medium inter-item correlations. Considering that item 4 attempts to measure meaning making through reflection on health care providers, it is possible that the role of health care providers may not play as large a role in the meaning making of family resilience as the literature currently demonstrates. Item 7 may need further clarity and thus rewriting. Since item 15 is the only item to attempt to measure flexibility through asking about family rituals, it is possible that continuing with family rituals does not measure flexibility, or that the item is poorly worded.

Unlike those just discussed, items 19 "My family and I found support from extended family and friends," and 21 "My family and I felt financially secure during the breast cancer

experience," not only have low corrected item-total correlations, but the Cronbach's Alpha if deleted increases. This means that these items detract from the internal consistency of the instrument. Further, they have low and negative inter-item correlations.

When viewed in terms of the sample, which is women who have been diagnosed with breast cancer, item 19 makes potential sense. It could be that most of these women either do not have extended family, or do not have extended family that they feel they can ask for support. This may have lead them to seek support outside of their family in the form of online/ face to face support groups. It could also be that extended family does not play a large role in the support of women who have been diagnosed with breast cancer, and thus may not add to the family resilience in their lives.

As previously mentioned, it was unclear if the poor performance of item 21 in the pilot was because it was poorly written or because financial security is not an indicator of family resilience. While this item performed better in the main study with fewer negative inter-item correlations and an acceptable mean (M=3.48, SD=1.26), it had the lowest item-total correlation of 0.14. Further, Cronbach's Alpha if deleted goes up if this item is deleted. In reviewing this item however, it does not appear to be written in a confusing or misleading manner. It seems more likely that financial security may not be an indicator of family resilience from the perspective of an individual family member.

RQ3: Does the instrument have demonstrated construct validity? Two techniques are utilized to measure construct validity for the FRA: Exploratory Factor Analysis (EFA) and CFA. The purpose of EFA is to explore what factors emerge from the data. More specifically, the goal is "to achieve parsimony by using the smallest number of explanatory concepts to explain the

maximum amount of common variance in a correlation matrix," (Tinsley & Tinsley, 1982, p. 414).

Prior to EFA, the data were analyzed to test the appropriateness of using factor analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (Kaiser, 1974) tests the pattern of correlations on a scale of 0-1. Scores closer to 0 indicate a dispersed pattern, whereas scores closer to 1 indicate a more compact pattern. A compact pattern indicates that the emergence of separate factors is likely, and thus factor analysis is appropriate. The score for these data was 0.83 and Kaiser, (1974), states that values between 0.80 and 0.90 are "meritorious," (p. 35). Along with this measure, Bartlett's Test of Sphericity tests the null hypothesis that the correlation matrix is an identity matrix, meaning that all correlation coefficients are zero (Tobias & Carlson, 1969). Significant results of this test indicate that this null hypothesis can be rejected. For these data, the Bartlett's Test of Sphericity demonstrated significance ($p = 0.00$). The results of these two tests indicate that factor analysis is indeed appropriate for these data.

Though controversy exists regarding the use of PCA versus common factor analysis (Pedhazur & Pedhazur Schmelkin, 1991; Snook & Gorsuch, 1989), according to Widaman, (1993), the two analyses are similar and "equally generalizable," (p. 263). Further, though the Kaiser criterion is the most popular form for extracting factors (Pedhazur & Pedhazur Schmelkin, 1991), it runs the risk of leaving out those eigenvalues that are close to 1.00. To account for this, PCA can be run in such a way that the number of factors to be extracted is fixed. Because there are nine hypothesized indicators in the FRA, principal component analyses (PCA) were run such that nine factors were extracted (Table 7). This resulted in a minimum eigenvalue for extraction being 0.86.

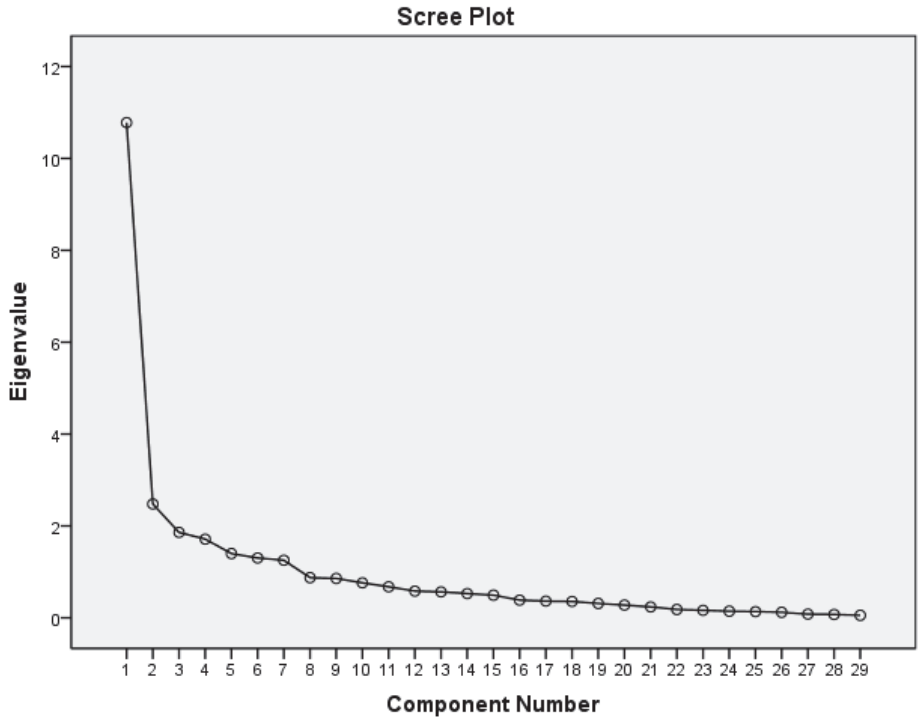
Table 7

Total Variances Explained

C	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	T	% Variance	Cumulative %	T	% Variance	Cumulative %
1	10.78	37.17	37.17	5.47	18.85	18.85
2	2.48	8.54	45.71	3.58	12.36	31.21
3	1.86	6.41	52.12	2.96	10.22	41.43
4	1.71	5.91	58.03	2.87	9.91	51.34
5	1.40	4.82	62.85	1.85	6.37	57.71
6	1.30	4.49	67.34	1.83	6.30	64.01
7	1.25	4.32	71.66	1.42	4.89	68.90
8	0.87	3.02	74.68	1.30	4.49	73.39
9	0.86	2.96	77.63	1.23	4.24	77.63
10	0.76	2.62	80.26			
11	0.67	2.33	82.58			
12	0.58	2.01	84.59			
13	0.56	1.94	86.53			
14	0.53	1.82	88.35			
15	0.49	1.70	90.06			
16	0.39	1.33	91.39			
17	0.36	1.25	92.64			
18	0.36	1.23	93.87			
19	0.31	1.08	94.95			
20	0.28	0.95	95.90			
21	0.24	0.82	96.72			
22	0.18	0.62	97.35			
23	0.16	0.56	97.91			
24	0.14	0.50	98.40			
25	0.14	0.47	98.87			
26	0.12	0.41	99.29			
27	0.08	0.28	99.56			
28	0.07	0.25	99.81			
29	0.05	0.19	100.00			

Figure 3

Scree test



Communalities. Prior to extraction, it is assumed that all variance in the model is shared or common. Thus, *communalities* or the amount of variance in each item explained by the factors are all considered to be 1.00 (Pedhazur & Pedhazur Schmelkin, 1991). During extraction, the smallest factors are discarded, and the amount of variance in each item explained by the remaining factors is given by the communalities. Table 8 shows the communalities for the FRA after extraction. According to Costello and Osborne (2005), communalities are high if they are 0.80 or greater and low if they are 0.40 or less. For most items, at least 60% of the variance continues to be explained after extraction. The mean communality is 0.71, with the lowest communalities being for item 19 (0.46), item 3 (0.51), item 7 (0.56) and item 29 (0.58). Costello and Osborne state that items with communalities less than 0.40 may either not be related to the other items, or be explained by an unexplored factor (p. 4).

Table 8

Communalities

Item	Extraction	Item	Extraction
FRA1	0.81	FRA16	0.81
FRA2	0.74	FRA17	0.81
FRA3	0.51	FRA18	0.71
FRA4	0.81	FRA19	0.46
FRA5	0.75	FRA20	0.81
FRA6	0.72	FRA21	0.73
FRA7	0.56	FRA22	0.84
FRA8	0.72	FRA23	0.84
FRA9	0.80	FRA24	0.82
FRA10	0.63	FRA25	0.61
FRA11	0.66	FRA26	0.67
FRA12	0.80	FRA27	0.60
FRA13	0.72	FRA28	0.76
FRA14	0.69	FRA29	0.58
FRA15	0.61		

Rotation. In order to analyze the extracted factors further, it is necessary to first rotate them. The reason for this is to make results more meaningful (Pedhazur & Pedhazur Schmelkin, 1991) and easier to interpret. There are two ways to rotate factors: orthogonal and oblique.

Originally, oblique rotation was chosen for this study because it was known (via the literature) that at least some of the variables/indicators in the model would correlate with one another. It thus made sense to allow for this in the factor rotation. However, upon further examination, it seems that for the purposes of this study, orthogonal rotation is a better choice. The reasons for this are because orthogonal rotation not only generates the most parsimonious model, but the more easily replicated one (Kieffer, 1998). Because the FRA will need to be further studied and fine tuned via replication, an orthogonal rotation is chosen. The analysis in SPSS for this is termed *Varimax Rotation*.

The rotated component matrix is given in Table 9. Costello and Osborne (2005) state that 0.32 is the minimum loading for an item on a factor. They state that "this equates to approximately 10% overlapping variance with the other items in that factor," (p. 4). The item with the smallest loading is 24 with 0.40. However, this item also crossloads onto 3 factors. Costello and Osborne recommend the dropping or rewriting of items that have "strong" loading (0.50 or higher) on each factor. Item 24 "My family and I shared our feelings associated with the breast cancer with one another," crossloads onto factor 1 (0.40), factor 4 (0.67) and factor 5 (0.40). Items 7 "My family and I struggled well against the breast cancer," 13 "My family and I developed creative ways of dealing with the breast cancer," 18 "My family and I sought reconnection after the breast cancer experience," and 27 "My family and I worked together as a team to brainstorm solutions about the breast cancer," all have strong crossloadings on two factors. In looking at these items, it seems that Item 24 should be dropped, while the rest of the items need to be rewritten, and tested again via replication.

Costello and Osborne (2005) also state that factors with less than three items are "weak and unstable," and that a factor with "5 or more strongly loading items (.50 or better) are desirable and indicate a solid factor," (p. 5). Factors 1, 2, and 3 fit these guidelines, with factors 4 and 5 having four items strongly loading onto them. Factor 6 has two items loading strongly onto it, with 7 and 8 both having only one strongly loading item, and factor 9 having two strongly loading items.

In looking at item loadings, the following factor themes emerge: The theme across items in factor 1 can be called *support and cohesion*. Factor 2 can be termed *optimism*. The biggest theme for factor 3 seems to be *spirituality and transcendence*. *Clarity* seems to be the biggest theme emerging from factor 4, with *mutual respect* emerging for Factor 5. The theme for factor 6

can be *health care system*, with *financial security* as factor 7, *extended support* for factor 8, and *struggling well* for factor 9.

While factors with less than three items are "weak and unstable" according to Costello and Osborne, (2005), the loadings on factors 6 through 9 are very strong. In particular, item 21 loads onto its own factor (factor 7) at 0.87. This item was discussed in the previous section with regards to content validity as the poorest performing item. Considering the very strong loading however, and the admonishment from Costello and Osborne that "more is better," (2005, p. 5) regarding sample size and EFA: these results need to be replicated before this item is dropped. While the possibility exists that financial security is loading onto its own factor because it does not theoretically fit into Walsh's framework, again replication with a larger sample is needed before conclusions can be drawn. This need is also the case before conclusions can be drawn for factors 6, 8, and 9.

Confirmatory Factor Analysis. While EFA investigates or explores what factors emerge from the data, the purpose of CFA is to test or confirm the structure of the hypothesized model (Schumacker & Lomax, 2010). In this instance, CFA is used to test the belief that family resilience from the perspective of a female who has been diagnosed with breast cancer is measured with three latent variables and nine indicators (see Figure 2), with the 15 hypothesized relationships between the variables listed below:

H_1: Belief systems (Belief) are a latent variable of family resilience.

H_2: Organizational patterns (Organiz) are a latent variable of family resilience.

H_3: Communication patterns (Comm) are a latent variable of family resilience.

H_4: Making meaning of adversity (A1) is an indicator of belief systems.

H_5: Positive outlook (A2) is an indicator of belief systems

Table 9

Rotated Component Matrix

	Component								
	1	2	3	4	5	6	7	8	9
FRA1	0.77								
FRA2	0.82								
FRA3	0.61								
FRA4						0.90			
FRA5		0.77							
FRA6		0.76							
FRA7	0.40								0.74
FRA8	0.63								0.47
FRA9			0.89						
FRA10			0.55						
FRA11		0.43							
FRA12			0.91						
FRA13	0.43		0.44						
FRA14	0.53								
FRA15	0.57								
FRA16	0.75								
FRA17	0.79								
FRA18			0.49	0.47					
FRA19								0.78	
FRA20						0.72			
FRA21							0.87		
FRA22				0.85					
FRA23				0.81					
FRA24	0.40			0.67	0.40				
FRA25					0.77				
FRA26					0.60				
FRA27	0.61				0.45				
FRA28		0.81							
FRA29		0.61							

H_6: Transcendence and spirituality (A3) is an indicator of belief systems.

H_7: Flexibility (B4) is an indicator of organizational patterns.

H_8: Connectedness (B5) is an indicator of organizational patterns.

H_9: Social and economic resources (B6) is an indicator of organizational patterns.

H_{10}: Clarity (C7) is an indicator of communication processes.

H_{11}: Open emotional sharing (C8) is an indicator of communication processes.

H_{12}: Collaborative problem solving (C9) is an indicator of communication processes.

H_{13}: Belief systems correlate with organizational patterns.

H_{14}: Belief systems correlate with communication patterns.

H_{15}: Organizational patterns correlate with communication patterns.

The EM Algorithm (Dempster, Laird, & Rubin, 1977) was used to impute missing values with the LISREL generated covariance matrix and maximum likelihood estimation used for analysis (see Appendix N for syntax).

Table 10

Correlation Matrix with Standard Deviations

	A1	A2	A3	B4	B5	B6	C7	C8	C9
A1	1.00								
A2	0.65	1.00							
A3	0.48	0.55	1.00						
B4	0.64	0.52	0.55	1.00					
B5	0.68	0.58	0.61	0.51	1.00				
B6	0.40	0.31	0.29	0.31	0.40	1.00			
C7	0.47	0.48	0.36	0.39	0.52	0.29	1.00		
C8	0.43	0.43	0.46	0.52	0.46	0.26	0.60	1.00	
C9	0.65	0.71	0.63	0.65	0.61	0.32	0.53	0.56	1.00
SD	*3.17*	*3.38*	*5.41*	*1.72*	*2.81*	*2.12*	*2.02*	*3.10*	*2.71*

The chi-square (x^2), comparative fit index (CFI), root mean square error approximation (RMSEA), standardized root mean square residual (SRMR), and incremental fit index (IFI) values were used to evaluate model fit. A nonsignificant ($p > 0.05$) x^2 suggests the model is an adequate representation of the data. CFI and IFI are both sensitive to complex model misspecification and are recommended when sample size is small (> 250) (Hu & Bentler, 1998).

Both CFI (type 3 index) and IFI (type 2 index) can range from 0-1, with a score of 0.90 or greater indicating a good fit. SRMR is sensitive to simple mode misspecification and is recommended when sample size is small. A score of 0 is perfect, with scores less than 0.05 indicating a good fit. RMSEA is sensitive to complex model specifications as well and is recommended for small sample sizes (Hu and Bentler, 1998) with scores less than 0.05 indicating a good fit. Figure 4 and Table 11 present the standardized path values, t values, standard errors, and squared multiple correlations for the hypothesized model. Table 12 presents fit indices.

Figure 4

Hypothesized Model

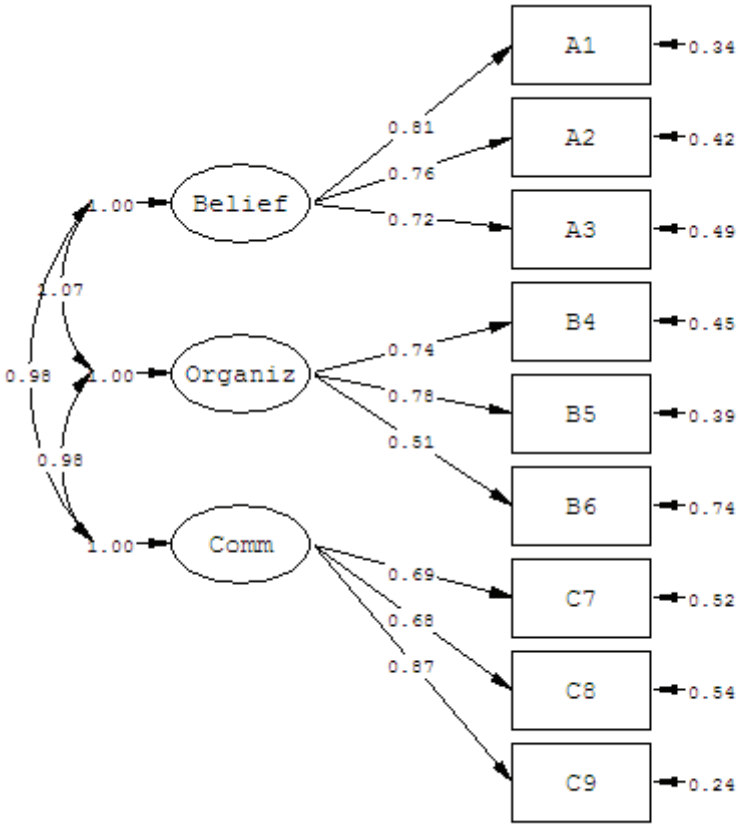


Table 11

Standardized path values, t values, standard errors, and squared multiple correlations for the hypothesized model

Variable	Standardized path value	*t*	SE	SMC
Belief Systems				
(A1) Meaning making	0.81	6.23	0.34	0.66
(A2) Positive outlook	0.76	6.69	0.42	0.58
(A3) Spirituality	0.72	6.93	0.49	0.51
Organizational Patterns				
(B4) Flexibility	0.74	6.56	0.45	0.55
(B5) Connectedness	0.78	6.16	0.39	0.61
(B6) Social/ Economic Resources	0.51	7.36	0.74	0.26
Communication Processes				
(C7) Clarity	0.69	6.73	0.52	0.48
(C8) Open Emotional Sharing	0.68	6.78	0.54	0.46
(C9) Collaborative Problem Solving	0.87	4.44	0.24	0.76

Note. t values higher than 1.96 are significant; SMC = squared multiple correlation

The significance of the chi-square (p = 0.03), along with the RMSEA indicate an adequate fit of this model. All of the completely standardized paths in this model are significant ($t > 1.96$) and range from 0.51 to 0.81. The error terms for these items range from 0.24 to 0.74. The high correlations between the latent variables indicate that they are likely measuring the same thing, and modification indices suggest the correlation of C7 and C8. Figure 5 and Table 13 indicate the results of this new model, with Table 12 presenting fit indices.

The nonsignificance of the chi-square, along with the RMSEA indicates this model has a good fit. All paths have significant *t* values. Further, a large amount of variance is accounted for by each indicator, with B6 (social and economic resources) having the smallest path value of 0.52, and the smallest squared multiple correlation (0.27). A chi-square difference test between the two models (see Table 12) approaches significance, showing this as a better fitting model

than the hypothesized one. These results, along with the EFA results demonstrate beginning construct validity in the FRA.

Table 12

Chi-Square and Fit Indices with Difference Test

Model	x^2	df	RMSEA	SRMR	CFI	IFI
Hypothesized Model (A)	38.34	24.00	0.07	0.04	0.99	0.99
Best Fit Model (B)	34.60	26.00	0.05	0.03	0.99	0.99
x^2 Difference	3.74	2				

Figure 5

Best Fit Model

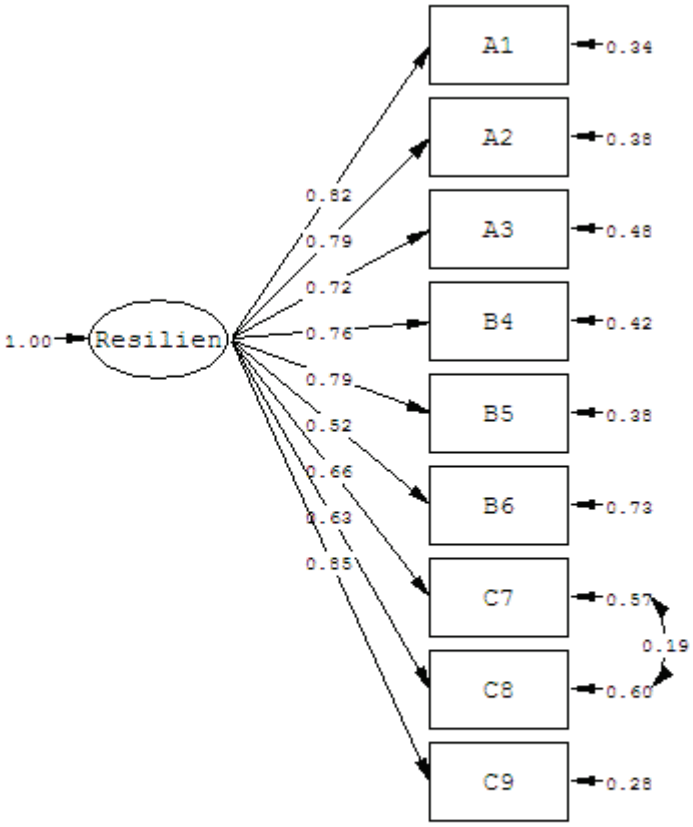


Table 13

Standardized path values, t values, standard errors, and squared multiple correlations for the new model

Variable	Standardized path value	*t*	SE	SMC
Family Resilience				
(A1) Meaning making	0.82	6.12	0.34	0.66
(A2) Positive outlook	0.79	6.36	0.38	0.62
(A3) Spirituality	0.72	6.73	0.48	0.52
(B4) Flexibility	0.76	6.56	0.42	0.58
(B5) Connectedness	0.79	6.29	0.38	0.62
(B6) Social/ Economic Resources	0.52	7.14	0.73	0.27
(C7) Clarity	0.66	6.95	0.57	0.43
(C8) Open Emotional Sharing	0.63	6.89	0.60	0.40
(C9) Collaborative Problem Solving	0.85	5.72	0.28	0.72

Note. t values higher than 1.96 are significant; SMC = squared multiple correlation

RQ4: To what extent does the instrument and its' subscales correlate with measures of theoretically related (convergent validity) variables? Convergent validity was assessed through comparing the instrument in question to an external standard (see Appendix I for items). To assess this, the results of the FRA were summed into one scale, as were those for the Family Assessment Device (FAD) (Ryan, Epstein, Keitner, Miller, & Bishop, (2006) and the Self-Report Family Inventory (SFI) (Hampson & Beavers, 1989). This resulted in three scales. Bivariate correlations were run on these scales (Table 11).

As can be seen, the FRA demonstrates a significant positive correlation with both the FAD ($r = 0.29$, $p = 0.00$) and SFI ($r = 0.43$, $p = 0.00$). These results demonstrate that the FRA has beginning convergent validity.

Table 14

Convergent Validity

		FRA	FAD	SFI
	r	1	0.292**	0.432**
FRA	Sig. (2-tailed)		0.004	0.000
	N	96	95	91
	r	0.292**	1	0.293**
FAD	Sig. (2-tailed)	0.004		0.002
	N	95	110	105
	r	0.432**	0.293**	1
SFI	Sig. (2-tailed)	0.000	0.002	
	N	91	105	106

**$p < 0.01$

Summary

This chapter details the results of this study that proposed to create a reliable and valid measure of family resilience from the point of view of a woman who had been diagnosed with breast cancer. Forty one women fitting this description filled out the pilot FRA, with the result being the elimination of 15 of the 44 items, leaving a survey of 29 content items. One hundred and thirteen women who had been diagnosed with breast cancer filled out the FRA for the main study. Results indicated that the FRA demonstrates reliability. Content validity was demonstrated theoretically through the cross-referencing of items to Walsh's coded framework and the literature. It was demonstrated statistically through the use of item, summary item, scale, and item-total statistics, as well as inter-item correlations. Construct validity was demonstrated through the use of EFA and CFA. Convergent validity was also demonstrated through the correlation of the FRA with existing external standards. These results are discussed in the following chapter.

CHAPTER FIVE: DISCUSSION

Resilience is one of the most important biopsychosocial concepts in contemporary social science. It may mediate the impact of adversity on family health, and be a potential location for intervention. There is a need for conceiving of the mechanisms within families that impact their health throughout the life cycle, including the investigation of how they handle illness. One framework that may assist in this is Walsh's family resilience framework, which conceives of resilience via three latent variables and nine indicators. Though attempts have been made to create an empirical measure of this framework, they all have serious issues with validity. Thus, while this framework appears to be one way to investigate how families handle illness, it has yet to be empirically validated. The purpose of this study is to create a reliable and valid instrument that investigates this framework from the view of women who have been diagnosed with breast cancer.

Population and Sample

As mentioned in chapter two, breast cancer is the most prevalent cancer in women in the United States (U.S.) (Centers for Disease Control and Prevention Division of Cancer Prevention and Control (CDC), 2010). The median age for first diagnosis is 61, with women between 55 and 64 years of age diagnosed the most (National Cancer Institute (NCI), 2010, as cited in Altekruse et al., 2010). The incidence rate between 2003 and 2007 was 122.9 per 100,000 women per year for all races. Of those, Caucasian women were diagnosed the most (126.5/ 100,000/ year), with African American women following (118.3/ 100,000/ year), Asian/ Pacific Islander next (90.0/ 100,000/ year), American Indian/ Alaska Native following (76.4/100,000/year) and Hispanic women last (15.3/ 100,000/ year). Death by race did not follow these proportions: More African American women died than any other race (32.4/ 100,000/year) with Caucasian women

following (23.4/ 100,000, year) (NCI, 2010, as cited in Altekruse et al. 2010). Though NCI does not postulate reasons for this discrepancy, two likely ones are class and cultural competency.

Collins discusses the "intersecting oppressions of race and class," as a "fundamental relationship of injustice," (2009, p. 55) in African American families. She describes the historic intersections of race, class, and gender for African American women in particular by discussing them as "dehumanized objects," and stating that "fully human women are less easily exploited," (p. 51). This feminist description not only illustrates the intersections of race, class, and gender in the U.S., but provides a lens for viewing cultural competency issues in the U.S. health care system faced by African American women.

Campinha-Bacote (2003) defines cultural competency as a process of continued effort by health care providers so that they are able to work effectively and ethically within the cultural reality of the patient that they are treating. Currently, this definition is more of an ideal than a reality, with broad documentation of health disparities by race in the U.S.

Geiger (2002) reviewed 17 different areas of medical care, and found nationwide disparities across racial and ethnic lines. In this work, Geiger accounted for medical care, patient age, severity of illness, health insurance status, and hospital type, and still found that African Americans were "significantly less likely than whites to receive a major therapeutic procedure" (p. 423). The American College of Physicians (2004) found similar results. According to them, even when adjustments are made for health insurance status and income, racial and ethnic minorities in the U.S. still receive lower quality care.

The presence of health disparities in the health care system and the lack of cultural competency within it likely impact patients and their families in a biopsychosocial (Engel, 1977) manner. Beyond the systemic impact of unequal health care on a person and their family, is the

impact of large-scale disparities on the prevalence of societal stereotypes regarding racial/ethnic minorities. Examples of this include the possible belief that African Americans are less healthy and weaker than Caucasians. A likely result of this stereotype may be the unethical view that Caucasians should receive higher quality care, because they are more likely to get well, thus perpetuating the cycle of unequal treatment.

While it does not in any way account for this serious ethical problem, viewing health disparities as an adversity and assessing how family resilience buffers this experience (see Figure 1) by racial/ethnic minorities may be one way to conceptualize this problem. The Family Resilience Assessment (FRA) created in this study would be instrumental in this task.

Beginnings of Reliability and Validity

A pilot study and a main study were conducted to investigate the FRA and answer the following questions:

1.) Does the instrument have demonstrated reliability
2.) Does the instrument have demonstrated content validity?
3.) Does the instrument have demonstrated construct validity as developed through factor analysis techniques?
4.) To what extent does the instrument and its' subscales correlate with measures of theoretically related (convergent validity) variables?

Findings indicate excellent reliability and beginning content, construct, and convergent validity as well. While replication with larger samples is needed to further establish the reliability and validity of the FRA, these preliminary results indicate that doing so is worthwhile.

The demonstration of the beginnings of a reliable and valid measure of Walsh's framework from an individual perspective is the most compelling finding of this study. While

attempts have been made at empirically measuring Walsh's family resilience framework (Coyle, 2006; Lum, 2008; Sixbey, 2005) none demonstrated adequate validity that would support further testing. The methods used in analyzing the FRA in this study begin to answer the need for a valid and reliable instrument.

In its present form, Walsh's framework is conceptualized in terms of three latent variables (belief systems, organizational patterns, and communication processes) and nine indicators (making meaning of adversity, positive outlook, transcendence and spirituality, flexibility, connectedness, social and economic resources, clarity, open emotional sharing, and collaborative problem solving) (See Figure 2). While social resources were supported as an indicator in this model, results of this study indicate that economic resources may not be an indicator of family resilience. One reason for this may be that economic resources are not the same type of indicator as the rest of the variables. Aside from economic resources (financial security), all of these indicators are processes in family functioning. Economic resources do not emerge as a feature of family functioning like the other indicators. In this, financial security is a qualitatively different variable from the rest of the indicators in this framework.

While it is possible that financial security may not be validated as an indicator of family resilience in the current model, it is still an important factor in the lives of those experiencing adversities, with women diagnosed with breast cancer being no exception. One way to address this may be including financial security/ economic resources as its own latent variable or theme in Walsh's family resilience framework, so that it is measured independently of the rest of the model. In this, the latent variables/ themes in this model would be: belief systems, organizational patterns, communication processes, and economic resources. Some possible indicators of economic resources included as variables under this theme could be: work-family balance

(Kostianinen, Martelin, Kestila, Martikainen, & Kostkinen, 2009), role conflict (Marshall & Tracy, 2009; McCloyd, Toyokawa, & Kaplan, 2008), poverty status (Bowen & Chapman, 1996; Garmezy, 1991; Orthner, Jones-Sanpei, & Williamson; Seccombe, 2002), and health-insurance status (Nielson & Garasky, 2008).

Along with financial security, the indicators of clarity and open emotional sharing need further discussion. Though these variables performed well as indicators of family resilience, analyses indicate that these two variables are not statistically different. Combining these two variables into one indicator was confirmed as a better fitting model. It is proposed here that for this framework, clarity is an aspect of open emotional sharing. Open emotional sharing is discussed as the presence of empathy, tolerance for differences, and the ability to share a range of emotions. For any of these aspects to be adequately interpreted however, there must be clarity in how they are communicated.

Like clarity and open emotional sharing, the latent variables (belief systems, organizational patterns, and communication processes) correlated so highly that a better fitting model was proposed. This model replaced the three latent variables with one: family resilience. One explanation for this may be that while these three latent variables may be theoretically distinct and serve as a way to organize and discuss the indicators in this framework, they are not necessary parts of the statistical model. Thus, it is not belief systems, organizational patterns, and communication processes that define family resilience, but the nine (or possibly eight) indicators. A new model might simply have family resilience and economic resources as its latent variables or themes.

Family Resilience as a Mediator of Family Health

The use of a population with an illness to successfully validate the FRA lends empirical support for using Walsh's family resilience framework to better understand those experiencing illness as an adversity. Thus, this framework may be one way to investigate the mediating impact of family resilience on family health (see Figure 1), and provide support for a biopsychosocial view of health. Grzywacz and Ganong argue that family health is central in social science and family science in particular because "one of the primary purposes of family is to ensure the health and well-being of its members," (2009, p. 373). Yet, this area of study lacks a "neatly circumscribed," literature as well as an accepted understanding for how health should be conceptualized, along with the need for a biopsychosocial conceptualization. Grzywacz and Ganong argue that the topic of health needs more conceptual clarity as well as an increase in scholarship. They go on to state that "behavioral and biological mechanisms linking families to health and health to families," (p. 377) must be investigated. As it is a criterion for family health, exploring resilience in the context of families may be one way to address this, and this study demonstrates that Walsh's family resilience framework may be a good way to answer this need.

Taking a Pluralistic View of Family Systems

This study provides an example of taking a pluralistic view of family systems (Osborne 1983) which is a feminist application of family systems theory. This view allows the conception of a family as an emergent system without obscuring the voices of subsystems or individuals who may have differing degrees of power. It is important to note that while this one individual view is being promoted, that it is still only one lens for viewing the family in question. Obtaining the stories of additional family members will add to the understanding of resilience from the different viewpoints of the family in question. The point of a pluralistic application of family

systems theory is that individual family narratives are each viewed as a valid interpretation of the family, without combining them into one family narrative. Asking women who have been diagnosed with breast cancer to reflect on their families so that a family-level construct (family resilience) is being measured from the perspective of an individual is the application of this pluralistic view.

Feminist Critique of Walsh's Framework

As previously mentioned, Walsh's framework demonstrates a pluralistic view of family systems. It does this through focusing at the family level, but making it clear that attending to individual difference is important. Also, Walsh's statement that "no single model (of resilience) fits all families or their situations," (2003. p. 405) demonstrates the inclusive (Allen, 2000) nature of her framework. While this statement sets Walsh's framework apart from those that attempt to force families into categories (e.g., M. A. McCubbin & McCubbin, 2003), care must be taken in how the statement is applied. Though this statement is an admission that the framework cannot be applied universally and is a strength: it can also be used as a way to excuse the framework from critique. This excuse could be utilized with the current study. Instead of using the results of this study to further refine the family resilience framework, the statement that "no single model (of resilience) fits all families or their situations," could be applied to the sample in this study as a way of invalidating the results.

A second critique of this framework is how it be application in studying families. The framework has a strong theoretical foundation, and provides a clear structure for the themes and indicators that may comprise family resilience. This gives a picture of how family resilience might operate in a family. The issue however is how these themes and indicators work together so that family resilience emerges, and what this may look like over time. One solution for this

may be combining Walsh's family resilience framework with a proven process model. Utilizing the FRA in the study of what process model best combines with this framework is one area of future research with this instrument.

Future Research

The most obvious need for future research from this study is to further revise and replicate the FRA. This replication is needed with populations who are dealing with other types of illness, other types of adversities, and larger samples. Specifically, studies are needed with adversities with special significance to men, such as prostate or testicular cancer. Along with testing it with other populations and adversities, attention should be given to how financial security correlates with other items in the FRA. While it consistently demonstrated poor performance in the present study, this should be replicated before recommendations are made for revising Walsh's family resilience framework. Attention should also be paid to how clarity and open emotional sharing (indicators C7 and C8) perform in future studies. If their high correlation is replicated, it is likely that they are really measuring one variable/ indicator.

Like the Family Assessment Device (Epstein, Baldwin, & Bishop, 1983) which is translated into 16 different languages, translation of the FRA is another area for future research. Considering the continuing growth of diversity in the U.S., it is particularly important to translate the FRA into Spanish and Arabic and use it to study families who have immigrated to the U.S.

While it does not relate to the creation/ testing of the FRA, the data collection sample for this study revealed the obscuring of the voices of a subgroup within the population. Potential participants in this study with a diagnosis of Stage IV/ metastatic/ terminal breast cancer objected to the use of the color pink, pink ribbons, and the presence of the term "survivor," in the FRA. While taking on the label of "survivor," participating in races to raise money for a cure for breast

cancer, wearing pink ribbons (a symbol of the movement), and supporting breast cancer research seemed extremely positive to the researcher; the receipt of many emails from participants with a Stage IV diagnosis made it clear that this movement obscures the voices of these women.

The overall impression was that a Stage IV diagnosis renders the recipient invisible. It seems that the group in the U.S. that consists of women who have been diagnosed with breast cancer is stratified within, much like the families previously described by Allen, Lloyd, and Few (2009). Further, just as Osmond and Thorne (1993) critique the use of gender with the experiences of women compared to men and "the use of these distinctions (sic) legitimize and perpetuate power relations between women and men," (p. 593), the study of women with Stage IV breast cancer in comparison to women in earlier stages is strongly argued against. Instead, studies with women who have this particular diagnosis are needed so that their voices are heard and their lived realities are better understood.

Below is one example of an email that was sent to the researcher (name changed).

> Dear Crystal,
> Promise me that one day when you are where you need to be you will open a door to the lost sisters - we are a subset who carry two burdens, I would like to think that on that day we will have our own Shero writing an abstract on the effect of not only no support but behavior that actually attacks our situation. I will not be here to see it, but if you promise, I believe you will eventually make it a part of your future study and then it will be included in what you take to others who support Stage IV, so we are not lost anymore.
> All the best, I wish you well,
> Laugh joyfully,
> Luna

This woman emailed in response to changing the instrument in an attempt at removing a degree of the marginalization of women experiencing Stage IV breast cancer from this study.

Limitations

A major limitation of this study is the lack of racial/ethnic diversity among the participants. Seventy six percent of pilot participants identified themselves as Caucasian, and

87% of participants in the main study claimed a Caucasian identity. The FRA needs to be validated with more diverse populations.

A second limitation of this study is the lack of the establishment of discriminate validity. While this was planned as a part of the study, issues with analysis rendered the results unusable. Thus discriminate validity should be included in future revisions of the FRA.

A third limitation of this study may be the focus on one specific type of adversity: breast cancer. Though breast cancer is an internationally experienced adversity, there are many other types of adversity (e.g., heart disease, substance abuse, divorce, poverty, major depression, and stressors associated with life-cycle transitions).

A fourth limitation of this study is the inability of the researcher to determine the geographic location of participants. While a question was asked regarding the place that the participant found the link to the survey, a question asking for location was not asked. Thus, while it is believed that participants came primarily from the U.S., this cannot be verified.

A fifth limitation of the study is that aside from five responses, it was done completely online. Limitations to online research include the reduction of participants to those with access to technology and the Internet, as well as to those participants who are literate (Dilman, Smith, & Christian, 2008). Internet data collection does offer protection against the mistrust of being called and asked to answer survey questions, and also removes the possibility of potential participants feeling coerced by the researcher.

A sixth limitation of this study is that data were only collected once, meaning that this study looked at family resilience from the perspective of women with breast cancer at one point in time or cross-sectionally. Replication of this study should include data collection over time.

A seventh limitation of this study is that data are the results of the self-report from participants. Because of the previously mentioned need to take an individual view of family resilience such that the voices of women experiencing breast cancer were not obscured however, this is seen as worthwhile.

Conclusion

This study developed and examined the reliability and validity of the FRA with women that had been diagnosed with breast cancer. More specifically, it analyzed face validity, multicultural validity, content validity, construct validity, and convergent validity. Results indicate beginning evidence that the FRA is a reliable and valid measure of family resilience from the perspective of an individual family member. The results also indicate a better fitting structural model for the data. Replication is necessary however before these results can be generalized beyond the participants in this study.

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APPENDIX A
WALSH'S FAMILY RESILIENCE FRAMEWORK

Walsh, F. (2002). A family resilience framework: Innovative practice applications. *Family Relations, 51,* 130-137. Used under fair use guidelines, 2011.

Belief Systems

1. Making meaning of adversity
    * Affiliative value: resilience as relationally based
    * Family life cycle orientation: normalize, contextualize adversity and distress
    * Sense of coherence: crisis as meaningful, comprehensible, manageable challenge
    * Appraisal of crisis, distress, and recovery: Facilitative vs. constraining beliefs
2. Positive outlook
    * Hope, optimistic view; confidence in overcoming odds
    * Courage and encouragement; focus on strengths and potential
    * Active initiative and perseverance (can-do spirit)
    * Master the possible; accept what cannot be changed
3. Transcendence and spirituality
    * Larger values, purpose; future goals and dreams
    * Spirituality: faith, communion, rituals
    * Inspiration: envision new possibilities; creativity
    * Transformation learning and growth from adversity

Organizational Patterns

4. Flexibility
    * Capacity to change: rebound, reorganize, adapt to fit challenges over time
    * Counterbalanced by stability: continuity, dependability through disruption
5. Connectedness
    * Mutual support, collaboration, and commitment
    * Respect individual needs, differences, and boundaries
    *Strong leadership: nurture, protect, guide children and vulnerable family members
    *Varied family forms: cooperative parenting/ caregiving teams
    * Couple/co-parental relationship equal partners
    * Seek reconnection, reconciliation of troubled relationships
6. Social and economic resources
    * Mobilize extended kin and social support; models and mentors
    * Build community networks
    * Build financial security; balance work-family strains

Communication Processes

7. Clarity
    * Clear, consistent messages (word and actions)
    * Clarify ambiguous information: truth seeking and truth speaking
8. Open emotional sharing
    * Share range of feelings (joy and pain; hopes and fears)
    * Mutual empathy; tolerance for differences
    * Responsibility for own feelings, behavior; avoid blaming
    * Pleasurable interactions; humor

9. Collaborative problem solving
    * Creative brainstorming resourcefulness
    * Shared decision making and conflict resolution: negotiation, fairness, reciprocity
    * Focus on goals; take concrete steps; build on success; learn from failure
    * Proactive stance: Prevent problems; avert crises; prepare for future challenges

APPENDIX B
WALSH'S FRAMEWORK: CODED

A	Belief Systems		
	1	Making meaning of adversity	
		a	Affiliative value: resilience as relationally based
		b	Family life cycle orientation: normalize, contextualize adversity and distress
		c	Sense of coherence: crisis as meaningful, comprehensible, manageable challenge
		d	Appraisal of crisis, distress, and recovery: Facilitative vs. constraining beliefs
	2	Positive Outlook	
		a	Hope, optimistic view: confidence in overcoming odds
		b	Courage and encouragement: focus on strengths and potential
		c	Active initiative and perseverance (can-do spirit)
		d	Master the possible; accept what cannot be changed
	3	Transcendence and spirituality	
		a	Larger values, purpose; future goals and dreams
		b	Spirituality: faith, communion, rituals
		c	Inspiration: envision new possibilities; creativity
		d	Transformation learning and growth from adversity
B	Organizational Patterns		
	4	Flexibility	
		a	Capacity to change: rebound, reorganize, adapt to fit challenges over time
		b	Counterbalanced by stability: continuity, dependability through disruption
	5	Connectedness	
		a	Mutual support, collaboration, and commitment
		b	Respect individual needs, differences, and boundaries
		c	Strong leadership: nurture, protect, guide children and vulnerable family members
		d	Varied family forms: cooperative parenting/ caregiving teams
		e	Couple/ co-parental relationship equal partners
		f	Seek reconnection, reconciliation of troubled relationships
	6	Social and economic resources	
		a	Mobilize extended kin and social support; models and mentors
		b	Build community networks
		c	Build financial security; balance work-family strains
C	Communication Processes		
	7	Clarity	
		a	Clear, consistent messages (words and actions)
		b	Clarify ambiguous information: truth seeking and truth speaking
	8	Open emotional sharing	
		a	Share range of feelings (joy and pain; hopes and fears)
		b	Mutual empathy; tolerance for differences
		c	Responsibility for own feelings, behavior; avoid blaming

		d	Pleasurable interactions; humor
	9	Collaborative problem solving	
		a	Creative brainstorming resourcefulness
		b	Shared decision making and conflict resolution: negotiation, fairness, reciprocity
		c	Focus on goals; take concrete steps; build on success; learn from failure
		d	Proactive stance: Prevent problems; avert crises; prepare for future challenges

APPENDIX C
ITEMS CODED TO WALSH'S FRAMEWORK

Key	Ref #	Items
A1c	**1**	My family and I believe that the experience of breast cancer was beneficial.
A1c	**2**	Though the experience of the breast cancer was a challenge, my family and I felt we could overcome it.
A1a	**3**	The support of my family helped me when I felt overwhelmed with the breast cancer.
A1b	**4**	My family saw the breast cancer as *our* challenge instead of just *my* challenge.
A1d	**5**	My family reminded me that women with breast cancer do survive.
A1a	**6**	My family and I felt able to talk to my health care provider about the breast cancer.
A1b	**7**	The experience of having shared past challenges helped my family and I cope with the breast cancer.
A1c	**8**	I felt encouraged by my health care provider to face the challenge of breast cancer.
A2a	**9**	In spite of the breast cancer, my family and I were optimistic about my health.
A2c	**10**	We realized that breast cancer was serious, but refused to give up on my recovery.
A2d	**11**	We realized that the breast cancer diagnosis could not be changed, but made the best of the situation.
A2c	**12**	My family and I struggled well against the breast cancer.
A2b	**13**	My family and I encouraged one another when we felt overwhelmed by the breast cancer.
A3b	**14**	Spirituality was a positive resource in the way my family and I coped with the breast cancer.
A3d	**15**	The experience of breast cancer allowed my family and I to grow closer together.
A3a	**16**	Our future goals and purpose in life helped us cope with the breast cancer.
A3b	**17**	Spiritual rituals (such as prayer, meditation, attending services, etc) helped us cope with the breast cancer.
A3c	**18**	The experience of breast cancer inspired my family and me towards a more positive vision of life.
A3c	**19**	My family and I developed creative ways of dealing with the breast cancer.
B4a	**20**	My family and I used flexible ways to deal with the breast cancer.
B4b	**21**	My family and I continued with family rituals, traditions, and activities in spite of the breast cancer.
B5a	**22**	My family and I supported one another throughout the breast cancer experience.
B5c	**23**	My family nurtured me during the breast cancer experience.
B5f	**24**	My family and I sought reconnection after the breast cancer experience
B6a	**25**	My family and I found support from extended family and friends.
B6b	**26**	My family and I sought out support groups to assist with the breast cancer experience.
B6b	**27**	My family and I sought support from our community networks (such as civic organizations, places of employment, etc).
B6a	**28**	My family and I *felt supported by* our community networks (such as civic organizations, places of employment, etc.)
B6b	**29**	My family and I sought support from Internet sources (such as Facebook, Websites, Messageboards, etc)
B6a	**30**	My family and I *felt supported by* Internet sources (such as Facebook, Websites, Messageboards, etc)

B6a	**31**	During the breast cancer experience, my family and I felt supported by health care providers.
B6c	**32**	My family and I felt financially secure during the breast cancer experience.
C7a	**33**	When my family and I communicated with one another about the breast cancer, it was clear, specific, and honest.
C7b	**34**	My family and I talked openly with one another about the breast cancer.
C7b	**35**	We did not hide the breast cancer from extended family or friends.
C8a	**36**	My family and I shared our feelings associated with the breast cancer with one another.
C8b	**37**	My family and I respected our differences of opinion about the breast cancer.
C8c	**38**	With regards to the breast cancer, my family and I did not blame one another.
C8d	**39**	My family and I were able to find humor in dealing with the difficulties of the breast cancer experience.
C9a	**40**	My family and I worked together as a team to brainstorm solutions about the breast cancer.
C9b	**41**	Everyone's thoughts about dealing with the breast cancer were heard.
C9b	**42**	My family and I focused more on living with the breast cancer that on dying from it.
C9c	**43**	My family and I are now prepared for future experiences with breast cancer.
C9d	**44**	The experience with breast cancer will help us be prepared for dealing with difficult situations in the future.

APPENDIX D
ITEMS CROSS-REFERENCED TO LITERATURE

Ref #	Items	Literature
1	My family and I believe that the experience of breast cancer was beneficial.	Crooks, 2001; Fife, 1995; Lechner, Antoni, Carver, Weaver, & Phillips, 2006; Maunsell, Brisson, & Deschenes, 1995; Sears, Stanton, & Danoff-Burg, 2003; Urcuyo, Boyers, Carver, & Antoni
2	Though the experience of the breast cancer was a challenge, my family and I felt we could overcome it.	Antonovsky, 1979, 1987; Antonovsky & Sourani, 1988; Carpenter, Brockopp, & Andryowski, 1999, Fife, 1995
3	The support of my family helped me when I felt overwhelmed with the breast cancer.	Maunsell, Brisson, & Deschenes, 1995; Fife, 1995; Northhouse et al., 2002; Skerrett, 1998, 2003
4	My family saw the breast cancer as *our* challenge instead of just *my* challenge.	Rolland, 2005; Skerrett 1998, 2003
5	My family reminded me that women with breast cancer do survive.	Maunsell, Brisson, & Deschenes, 1995; Northhouse et al., 2002
6	My family and I felt able to talk to my health care provider about the breast cancer.	Awadalla et al., 2007; Crooks, 2001; Krasner, 2004; Maunsell, Brisson, & Deschenes, 1995
7	The experience of having shared past challenges helped my family and I cope with the breast cancer.	Rolland, 2005
8	I felt encouraged by my health care provider to face the challenge of breast cancer.	Crooks, 2001; Maunsell, Brisson, & Deschenes, 1995
9	In spite of the breast cancer, my family and I were optimistic about my health.	Bowen, Morasca, & Meischke, 2003; Carver et al., 2005

10	We realized that breast cancer was serious, but refused to give up on my recovery.	Northouse et al., 2002; Urcuoyo, Boyers, Carver, & Antoni, 2005
11	We realized that the breast cancer diagnosis could not be changed, but made the best of the situation.	Urcuoyo, Boyers, Carver, & Antoni, 2005
12	My family and I struggled well against the breast cancer.	Gall & Cornblatt, 2002; Rolland, 2005
13	My family and I encouraged one another when we felt overwhelmed by the breast cancer.	Rolland, 2005
14	Spirituality was a positive resource in the way my family and I coped with the breast cancer.	Crooks, 2001; Gall, 2000; Gall & Cornblatt, 2002; Krasner, 2004; Rolland, 2005; Lechner, Antoni, Carver, Weaver, & Phillips, 2006
15	The experience of breast cancer allowed my family and I to grow closer together.	Carpenter, Brockopp, & Andrykowski, 1999; Crooks, 2001; Gall, 2000
16	Our future goals and purpose in life helped us cope with the breast cancer.	Gall & Cornblatt, 2002; Rolland, 2005
17	Spiritual rituals (such as prayer, meditation, attending services, etc) helped us cope with the breast cancer.	Gall, 2000; Krasner, 2004; Urcuoyo, Boyers, Carver, & Antoni, 2005
18	The experience of breast cancer inspired my family and me towards a more positive vision of life.	Crooks, 2001; Rolland, 2005
19	My family and I developed creative ways of dealing with the breast cancer.	Rolland, 2005
20	My family and I used flexible ways to deal with the breast cancer.	Beavers & Voeller, 1983; Epstein, Bishop, & Levin, 1978; McCubbin, Thompson, Pirner, & McCubbin, 1988; Olson, 1986, 1999;
21	My family and I continued with family rituals, traditions, and activities in spite of the breast cancer.	Antonovsky, 1979, 1987
22	My family and I supported one another throughout the breast cancer experience.	Beavers & Hampson, 1990; Olson & Gorrall, 2003; Skerett, 2003
23	My family nurtured me during the breast cancer experience.	Skerett, 1998, 2003
24	My family and I sought reconnection after the breast cancer experience	Beavers & Hampson, 1990; Skerett, 2003; Spira & Kenemore, 2000

25	My family and I found support from extended family and friends.	Carver et al., 2005; Crooks, 2001; Fife, 1995; Gall & Cornblat, 2002; Maunsell, Brisson, & Deschenes, 1995; Northouse et al., 2002; Zapka, Fisher, Lemon, Clemow, & Fletcher, 2006
26	My family and I sought out support groups to assist with the breast cancer experience.	Carver et al., 2005; Goodwin, 2005; Maunsell, Brisson, & Deschenes, 1995;
27	My family and I sought support from our community networks (such as civic organizations, places of employment, etc).	Carver et al., 2005; Crooks, 2001; Fife, 1995; Gall & Cornblat, 2002; Maunsell, Brisson, & Deschenes, 1995; Northouse et al., 2002; Knobf, 2007; Zapka, Fisher, Lemon, Clemow, & Fletcher, 2006
28	My family and I *felt supported by* our community networks (such as civic organizations, places of employment, etc.)	Carver et al., 2005; Crooks, 2001; Fife, 1995; Gall & Cornblat, 2002; Maunsell, Brisson, & Deschenes, 1995; Northouse et al., 2002; Knobf, 2007; Zapka, Fisher, Lemon, Clemow, & Fletcher, 2006
29	My family and I sought support from Internet sources (such as Facebook, Websites, Messageboards, etc)	Carver et al., 2005; Crooks, 2001; Fife, 1995; Gall & Cornblat, 2002; Maunsell, Brisson, & Deschenes, 1995; Northouse et al., 2002; Knobf, 2007; Zapka, Fisher, Lemon, Clemow, & Fletcher, 2006

30	My family and I *felt supported by* Internet sources (such as Facebook, Websites, Messageboards, etc)	Carver et al., 2005; Crooks, 2001; Fife, 1995; Gall & Cornblat, 2002; Maunsell, Brisson, & Deschenes, 1995; Northouse et al., 2002; Knobf, 2007; Zapka, Fisher, Lemon, Clemow, & Fletcher, 2006
31	During the breast cancer experience, my family and I felt supported by health care providers.	Crooks, 2001; Carver et al., 2005; Maunsell, Brisson, & Deschenes, 1995
32	My family and I felt financially secure during the breast cancer experience.	Bowen et al., 2007
33	When my family and I communicated with one another about the breast cancer, it was clear, specific, and honest.	Beavers & Hampson, 2003; Epstein, Ryan, Bishop, Miller, & Keitner,2003; Olson and Gorall, 2003; S. Walsh, Manuel, & Avis, 2005
34	My family and I talked openly with one another about the breast cancer.	Beavers & Hampson, 2003; Epstein, Ryan, Bishop, Miller, & Keitner,2003; Olson and Gorall, 2003; S. Walsh, Manuel, & Avis, 2005
35	We did not hide the breast cancer from extended family or friends.	Beavers & Hampson, 2003; Epstein, Ryan, Bishop, Miller, & Keitner,2003; Olson and Gorall, 2003; S. Walsh, Manuel, & Avis, 2005
36	My family and I shared our feelings associated with the breast cancer with one another.	Beavers & Hampson, 2003; Epstein, Ryan, Bishop, Miller, & Keitner,2003; Olson and Gorall, 2003; Spira & Kinemore, 2000; S. Walsh, Manuel, & Avis, 2005

37	My family and I respected our differences of opinion about the breast cancer.	Beavers & Hampson, 2003; Epstein, Ryan, Bishop, Miller, & Keitner,2003; Olson and Gorall, 2003; Spira & Kinemore, 2000; S. Walsh, Manuel, & Avis, 2005
38	With regards to the breast cancer, my family and I did not blame one another.	Beavers & Hampson, 2003; Epstein, Ryan, Bishop, Miller, & Keitner,2003; Olson and Gorall, 2003; Spira & Kinemore, 2000; S. Walsh, Manuel, & Avis, 2005
39	My family and I were able to find humor in dealing with the difficulties of the breast cancer experience.	Beavers & Hampson, 2003
40	My family and I worked together as a team to brainstorm solutions about the breast cancer.	Beavers & Hampson, 2003
41	Everyone's thoughts about dealing with the breast cancer were heard.	Beavers & Hampson, 2003
42	My family and I focused more on living with the breast cancer that on dying from it.	Northouse et al., 2002; Urcuoyo, Boyers, Carver, & Antoni, 2005
43	My family and I are now prepared for future experiences with breast cancer.	Beavers & Hampson, 2003; Olson & Gorall, 2003
44	The experience with breast cancer will help us be prepared for dealing with difficult situations in the future.	Beavers & Hampson, 2003; Olson & Gorall, 2003

APPENDIX E
FACEBOOK GROUPS

Site	Type
Action breast cancer in partnership with Vhi	Site
Breast cancer (Fremont, CA)	Site
Breast cancer (I had a relative die of breast cancer)	Site
Breast cancer (think pink)	Site
Breast cancer awareness	Site
Breast cancer awareness (Part of breast cancer site)	Site
Breast cancer campaign	Site
Breast cancer survivors (Baby with pink hat)	Site
Breast cancer survivors (Blue square with people)	Group
Breast cancer survivors (Ocean)	Site
Breast cancer survivors (Pink ribbon on plaque)	Group
Breast cancer survivors (Pink ribbon on white)	Group
Breast cancer survivors (Pink ribbon with sign)	Site
Breast cancer survivors (Pink ribbon on pink)	Group
Breast cancer survivors group at Lakeland	Site
Breast cancer survivors of southeast Kansas	Group
Breast cancer survivors ROCK!	Site
Breast Cancer Survivors Stronghold	Site
Breast cancer survivors! (Wings of hope)	Group
Bright Pink	Site
Families who support breast cancer survivors	Site
Fight breast cancer (Part of breast cancer site)	Site
Ford Warriors in Pink	Site
Illinois Mastectomy fitter	Site
Making strides against breast cancer	Site
Passionately Pink	Site
Pink Daisy Project	Site
Pink Heals Foundation	Site
Pink Heals tour	Site
Pink Lotus breast cancer	Site
Pink Ribbon Day	Site
Pink ribbon Girls	Site
Pink Ribbon Shop	Site
Pink Together	Site
Pink-Feet	Site
Pink-ribbon Lingerie	Site
Strength and courage: Exercises for Breast cancer Survivors	Site

Susan G. Komen for the Cure	Site
Susan G. Komen for the Cure Advocacy Alliance	Site
The breast cancer site	Site
The Breast cancer survivors network	Site
The pink-ribbon link	Site
Triple negative breast cancer survivors	Group
We are breast cancer survivors	Group
Young breast cancer survivors	Site

APPENDIX F
FACE-TO-FACE BREAST CANCER GROUPS

Name	Where
Conversations on Cancer/ Pink Broomstick	Forsyth County, NC
Breast Cancer Support Group	Henrico County, VA
Breast Cancer Support Group	Henrico County, VA
Breast Cancer Support Group	Montgomery County, VA
Breast Cancer Support Group	Montgomery County, VA
Breast Cancer Support Group	Montgomery County, VA
Breast Cancer Support Group	Pulaski County, VA
Breast Cancer Support Group	Rockingham County, VA
Breast Cancer Support Group	Rockingham County, VA
Pink Ribbon Breast Cancer Support Group	Surry County, NC

APPENDIX G
PILOT ITEM DECISIONS

Decision	Corrected item total r	Alpha if del	Key	*Q* #	Questions
Keep	0.342	0.962	A1a	***3***	The support of my family helped me when I felt overwhelmed with the breast cancer.
Drop	0.042	0.962	A1a	***6***	My family and I felt able to talk to my health care provider about the breast cancer.
Drop	0.481	0.961	A1b	***4***	My family saw the breast cancer as *our* challenge instead of just *my* challenge.
Keep	0.545	0.961	A1b	***7***	The experience of having shared past challenges helped my family and I cope with the breast cancer.
Keep	0.293	0.962	A1c	***1***	My family and I believe that the experience of breast cancer was beneficial.
Drop	0.193	0.962	A1c	***2***	Though the experience of the breast cancer was a challenge, my family and I felt we could overcome it.
Drop	0.168	0.962	A1c	***8***	I felt encouraged by my health care provider to face the challenge of breast cancer.
Keep	0.528	0.961	A1d	***5***	My family reminded me that women with breast cancer do survive.
Keep	0.206	0.962	A2a	***9***	In spite of the breast cancer, my family and I were optimistic about my health.
Keep	0.616	0.961	A2b	***13***	My family and I encouraged one another when we felt overwhelmed by the breast cancer.
Keep	0.583	0.961	A2c	***12***	My family and I struggled well against the breast cancer.
Drop	0.425	0.962	a2c	***10***	We realized that breast cancer was serious, but refused to give up on my recovery.
Drop	0.009	0.962	A2d	***11***	We realized that the breast cancer diagnosis could not be changed, but made the best of the situation.
Keep	0.729	0.96	A3a	***16***	Our future goals and purpose in life helped us cope with the breast cancer.
Keep	0.516	0.961	A3b	***14***	Spirituality was a positive resource in the way my family and I coped with the breast cancer.

Drop	0.503	0.961	A3b	***17***	Spiritual rituals (such as prayer, meditation, attending services, etc) helped us cope with the breast cancer.
Keep	0.615	0.961	A3c	***18***	The experience of breast cancer inspired my family and me towards a more positive vision of life.
Drop	0.303	0.962	A3c	***19***	My family and I developed creative ways of dealing with the breast cancer.
Keep	0.838	0.96	A3d	***15***	The experience of breast cancer allowed my family and I to grow closer together.
Keep	0.33	0.962	B4a	***20***	My family and I used flexible ways to deal with the breast cancer.
Keep	0.58	0.961	B4a	***22***	My family and I reorganized our life as necessary to deal with the breast cancer.
Keep	0.857	0.959	B4b	***21***	My family and I continued with family rituals, traditions, and activities in spite of the breast cancer.
Keep	0.926	0.959	B5a	***23***	My family and I supported one another throughout the breast cancer experience.
Keep	0.894	0.959	B5c	***24***	My family nurtured me during the breast cancer experience.
Keep	0.573	0.961	B5f	***25***	My family and I sought reconnection after the breast cancer experience
Keep	0.777	0.96	B6a	***26***	My family and I found support from extended family and friends.
Drop	0.369	0.962	B6a	***29***	My family and I *felt supported by* our community networks (such as civic organizations, places of employment, etc)
Keep	0.666	0.96	B6a	***31***	My family and I *felt supported by* Internet sources (such as Facebook, Websites, Messageboards, etc)
Keep	0.88	0.959	B6a	***32***	During the breast cancer experience, my family and I felt supported by health care providers.
Keep	0.566	0.961	B6b	***27***	My family and I sought out support groups to assist with the breast cancer experience.
Drop	0.426	0.961	B6b	***28***	My family and I sought support from our community networks (such as civic organizations, places of employment, etc).
Drop	0.472	0.961	B6b	***30***	My family and I sought support from Internet sources (such as Facebook, Websites, Messageboards, etc)
Keep	0.607	0.961	B6c	***33***	My family and I felt financially secure during the breast cancer experience.
Keep	0.906	0.959	C7a	***34***	When my family and I communicated with one another about the breast cancer, it was clear, specific, and honest.
Keep	0.935	0.959	C7b	***35***	My family and I talked openly with one another about the breast

					cancer.
Drop	0.685	0.96	C7b	***36***	We did not hide the breast cancer from extended family or friends.
Keep	0.909	0.959	C8a	***37***	My family and I shared our feelings associated with the breast cancer with one another.
Keep	0.737	0.96	C8b	***38***	My family and I respected our differences of opinion about the breast cancer.
Keep	0.677	0.96	C8c	***39***	With regards to the breast cancer, my family and I did not blame one another.
Keep	0.727	0.96	C8d	***40***	My family and I were able to find humor in dealing with the difficulties of the breast cancer experience.
Keep	0.818	0.959	C9a	***41***	My family and I worked together as a team to brainstorm solutions about the breast cancer.
Drop	0.034	0.964	C9b	***42***	Everyone's thoughts about dealing with the breast cancer were heard.
Keep	0.929	0.959	C9b	***43***	My family and I focused more on living with the breast cancer that on dying from it.
Keep	0.939	0.959	C9d	***44***	The experience with breast cancer will help us be prepared for dealing with difficult situations in the future.

APPENDIX H
MAIN FRA AND INSTRMENT PACKET

Family Resilience Assessment

These survey items focus on the experience that you and your family have had with breast cancer. Please rate how often or how much each of the following statements apply to your experience by checking the appropriate box. Thank you!

1 The support of my family helped me when I felt overwhelmed with the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

2 My family saw the breast cancer as *our* challenge instead of just *my* challenge.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

3 The experience of having shared past challenges helped my family and I cope with the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

4 I felt encouraged by my health care provider to face the challenge of breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

5 In spite of the breast cancer, my family and I were optimistic about my health.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

6 My family and I encouraged one another when we felt overwhelmed by the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

7 My family and I struggled well against the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

8 We realized that the breast cancer diagnosis could not be changed, but made the best of the situation.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

9 Our future goals and purpose in life helped us cope with the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

10 Spirituality was a positive resource in the way my family and I coped with the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

11 Spiritual rituals (such as prayer, meditation, attending services, etc) helped us cope with the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

12 My family and I developed creative ways of dealing with the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

13 The experience of breast cancer allowed my family and I to grow closer together.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

14 My family and I used flexible ways to deal with the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

15 My family and I continued with family rituals, traditions, and activities in spite of the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

16 My family and I supported one another throughout the breast cancer experience.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

17 My family nurtured me during the breast cancer experience.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

18 My family and I sought reconnection after the breast cancer experience
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

19 My family and I found support from extended family and friends.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

20 During the breast cancer experience, my family and I felt supported by health care providers.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

22 When my family and I communicated with one another about the breast cancer, it was clear, specific, and honest.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

23 My family and I talked openly with one another about the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

24 My family and I shared our feelings associated with the breast cancer with one another.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

25 My family and I respected our differences of opinion about the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

26 My family and I were able to find humor in dealing with the difficulties of the breast cancer experience.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

27 My family and I worked together as a team to brainstorm solutions about the breast cancer.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

28 My family and I focused more on living with the breast cancer than on dying from it.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

29 The experience with breast cancer will help us be prepared for dealing with difficult situations in the future.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

30 My family and I felt financially secure during the breast cancer experience.
_____Not at all _____Very little _____Sometimes _____A lot _____All the time
_____*Undecided*

31 Is there anything else you would like to say about your experience with breast cancer, or about this survey?

Family Perceptions

These survey items focus on the way that you perceive your family. Please rate how much you agree/disagree with each of the following statements.

1 Our family is proud of being close.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

2 Our family is good at solving problems together.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

3 It's okay to fight and yell in our family.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

4 We say what we think and feel.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

5 In times of crisis we can turn to each other for support.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

6 We can express feelings to each other.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

7 We try to think of different ways to solve problems.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

8 Family members put each other down.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

9 When things go wrong we blame each other.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

10 We are reluctant to show our affection for each other.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

11 We avoid discussing our fears and concerns.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

12 Making decisions is a problem for our family.
_____Strongly Disagree _____Disagree _____Agree _____Strongly Agree

Demographic Questionnaire

Instructions: Please respond to the following questions by checking the answer box that best describes you.

1 Where did you learn of this survey?
_____Bcmets.org
_____The Breast Cancer Mailing List
_____Pink-Link
_____Breast Friends
_____The Breast Cancer Support Network
Other:_____

2 In what year did you receive your last breast cancer treatment (such as chemotherapy, radiation, or surgery)?
_____

3 Are you female?
Yes
No

4 What is your race?
_____ American Indian or Alaska Native
_____ Native Hawaiian or Pacific Islander
_____ Asian
_____ African American
_____ Caucasian
_____ Hispanic or Latino
_____ Other: Please Specify_____

5 In what year were you born?

_____

6 Do you have daughters?

Yes

No

7 If yes, in what year were each of them born?

_____

8 Do you have a significant other (spouse, partner)?

Yes

No

9 Do you have family members that have had or currently have breast cancer?

Yes

No

10 When you answered the questions about your family in the Family Resilience Assessment, what people were you thinking about?

11 Would you like to receive a copy of the results of this study?

No

Yes

If yes, please provide an email address where they may be sent

_____

APPENDIX I
FAMILY PERCEPTIONS

Question	Instrument	Cite
In times of crisis we can turn to each other for support.	Family Assessment Device, Version III	Ryan, Epstein, Keitner, Miller, & Bishop, 2006
We can express feelings to each other.	Family Assessment Device, Version III	Ryan, Epstein, Keitner, Miller, & Bishop, 2006
We try to think of different ways to solve problems.	Family Assessment Device, Version III	Ryan, Epstein, Keitner, Miller, & Bishop, 2006
We are reluctant to show our affection for each other.	Family Assessment Device, Version III	Ryan, Epstein, Keitner, Miller, & Bishop, 2006
We avoid discussing our fears and concerns.	Family Assessment Device, Version III	Ryan, Epstein, Keitner, Miller, & Bishop, 2006
Making decisions is a problem for our family.	Family Assessment Device, Version III	Ryan, Epstein, Keitner, Miller, & Bishop, 2006
Our family is proud of being close.	Self-Report Family Inventory, Version II	Hampson & Beavers, 1989
Our family is good at solving problems together.	Self-Report Family Inventory, Version II	Hampson & Beavers, 1989
It's okay to fight and yell in our family.	Self-Report Family Inventory, Version II	Hampson & Beavers, 1989
We say what we think and feel.	Self-Report Family Inventory, Version II	Hampson & Beavers, 1989
Family members put each other down.	Self-Report Family Inventory, Version II	Hampson & Beavers, 1989
When things go wrong we blame each other.	Self-Report Family Inventory, Version II	Hampson & Beavers, 1989

APPENDIX J
SELECTED FIELD NOTES

October 7, 2010

1.) In an attempt at bringing feminism into my research, I am keeping field notes for the creation of this survey and this dissertation.
2.) I started writing my items today. I've coded the framework so that I know what aspects I'm reflecting in my items. I'm also trying to connect items to literature. So far I've written items for making meaning of adversity and positive outlook under Belief Systems. As I just shared with Peggy, I'm struggling with REALLY making distinctions between these variables. Because having a positive outlook is a form of meaning making. It almost seems circular between these two. I'm thinking that the factor analysis of this framework will not result in neatly packaged variables as Walsh believes family resilience can be divided. I think ultimately this will result in a few different factors, which may help us better understand what is really going on with family resilience.

October 19, 2010

1.) I am not in agreement with part B6c of the framework. While this strategically helps with coping, I do not agree that financial security equals resilience, or that a lack of it has anything to do with family resilience.
2.) In writing items for C7a about communication clarity, it seems important to include something about health care providers and communication, but this is not a part of family resilience. Or is it in this context?
3.) The items for C7- clarity are pretty obvious. I'm not sure how to further break them down.
4.) I'm wondering about applicability to breast cancer with regards to C9- collaborative problem solving. Though breast cancer is a family problem, it is occurring in one body, and it seems that allowing the person with that body *more* say over what happens is important.

October 21, 2010

1.) Reflecting on how to define family for this instrument, and how Walsh defines family, it strikes me that how these people define family is not important. It is how they do family. This question would assume a structural component to families, and that is not what is important either to me or to Walsh. So, I am going to remove that question. I think this applies to community networks as well.

December 7, 2010

1.) Elizabeth Edwards died today.

December 8, 2010

1.) Using Facebook as a medium for research raises a lot of questions. Should I accept friend requests? If so, what do I do when my study is over? Do I reveal my real identity? I find myself wanting to post on all of these groups about Elizabeth Edwards but am not sure if that's "ethical," given my use of these sites for research. This is slippery. It seems very easy to mess this up unintentionally.

December 15, 2010

1.) In talking with an officemate yesterday it occurs to me that it may be manipulative NOT to participate in what is viewed as normal activities on Facebook. With regards to using this medium for research, what counts as legitimacy? What is ethical? What do I do about my account once I'm finished with the study? Do I reveal myself and transfer friends? What is right here?

December 30, 2010

1.) I have received more responses this week of any other. My hypothesis that people would be more willing to fill out surveys this week because it is a "lame duck work week," seems to be true.

January 24, 2011

1.) It seems that people on these forums are suffering from survey fatigue- a term used by Dr. John Church of one of the groups I'm hoping to target. I'm not quite sure what to do, beyond being discouraged.

February 1, 2011

1.) I sent my survey to an online forum for metastatic breast cancer survivors. And have discovered something hidden: There is a different reality where people dealing with metastatic breast cancer are concerned.

February 2, 2011

1.) There is an entire group of people that are obscured by the pink ribbon. They are dying and no one sees. They are not dead yet though and still no one sees.

APPENDIX K
PILOT INTER-ITEM CORRELATION MATRIX

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Q1	1.00															
Q2	-0.01	1.00														
Q3	0.27	0.63	1.00													
Q4	0.13	0.71	0.79	1.00												
Q5	0.16	0.56	0.56	0.62	1.00											
Q6	0.09	0.22	0.50	0.43	0.45	1.00										
Q7	0.05	0.65	0.72	0.82	0.75	0.45	1.00									
Q8	-0.08	0.60	0.66	0.65	0.72	0.65	0.69	1.00								
Q9	0.13	0.83	0.67	0.72	0.46	0.39	0.58	0.66	1.00							
Q10	-0.27	0.54	0.45	0.51	0.64	0.45	0.63	0.56	0.52	1.00						
Q11	-0.14	0.38	0.53	0.65	0.25	0.32	0.56	0.44	0.45	0.32	1.00					
Q12	0.11	0.79	0.80	0.82	0.41	0.25	0.63	0.62	0.83	0.30	0.67	1.00				
Q13	0.11	0.52	0.73	0.76	0.75	0.65	0.77	0.84	0.63	0.56	0.67	0.66	1.00			
Q14	0.30	0.36	0.58	0.61	0.62	0.57	0.69	0.67	0.50	0.40	0.42	0.52	0.76	1.00		
Q15	0.51	0.42	0.70	0.72	0.38	0.54	0.56	0.50	0.73	0.35	0.42	0.64	0.68	0.68	1.00	
Q16	0.17	0.51	0.60	0.79	0.50	0.50	0.71	0.51	0.71	0.54	0.71	0.61	0.78	0.59	0.79	1.00
Q17	0.35	0.43	0.69	0.77	0.69	0.58	0.79	0.67	0.55	0.45	0.42	0.58	0.75	0.93	0.76	0.64
Q18	0.49	0.43	0.48	0.61	0.60	0.21	0.62	0.40	0.58	0.33	0.12	0.49	0.53	0.74	0.74	0.57
Q19	0.18	0.65	0.72	0.83	0.71	0.69	0.74	0.72	0.65	0.56	0.45	0.66	0.76	0.67	0.67	0.65
Q20	0.02	0.82	0.73	0.87	0.70	0.53	0.81	0.72	0.72	0.64	0.51	0.76	0.72	0.64	0.60	0.67
Q21	-0.13	0.41	0.23	0.31	0.28	0.44	0.35	0.41	0.40	0.39	0.47	0.30	0.36	0.42	0.20	0.44
Q22	-0.10	0.27	0.31	0.52	0.61	0.27	0.56	0.41	0.17	0.48	0.48	0.23	0.54	0.19	0.15	0.44
Q23	0.19	0.62	0.88	0.83	0.45	0.52	0.65	0.66	0.76	0.52	0.56	0.75	0.71	0.55	0.78	0.75
Q24	0.20	0.50	0.87	0.84	0.66	0.73	0.73	0.77	0.67	0.55	0.60	0.69	0.85	0.69	0.75	0.73
Q25	0.26	0.14	0.51	0.50	0.45	0.43	0.39	0.49	0.39	0.45	0.14	0.34	0.50	0.73	0.65	0.35
Q26	0.26	0.40	0.63	0.61	0.48	0.49	0.52	0.58	0.53	0.38	0.45	0.58	0.54	0.66	0.59	0.41
Q27	0.44	-0.17	0.31	0.01	0.10	0.33	0.05	0.04	-0.17	-0.14	-0.04	0.04	0.04	0.34	0.15	-0.21

Q28	0.47	-0.28	0.16	0.02	0.21	0.27	0.11	-0.07	-0.21	-0.05	-0.06	-0.14	0.08	0.07	0.16	-0.03
Q29	0.28	-0.04	0.18	0.17	0.46	0.21	0.11	0.13	-0.03	0.11	0.06	0.10	0.32	0.17	0.15	0.03
Q30	0.17	0.31	0.12	0.05	0.10	0.00	0.03	-0.02	-0.05	-0.02	-0.14	0.11	-0.20	-0.06	-0.21	-0.34
Q31	0.01	0.21	0.10	0.06	0.04	0.47	-0.04	0.19	0.06	0.00	-0.07	0.03	0.03	0.10	-0.08	-0.12
Q32	0.09	0.28	0.60	0.51	0.19	0.59	0.35	0.57	0.48	0.35	0.49	0.46	0.46	0.34	0.54	0.44
Q33	-0.38	-0.09	-0.36	-0.24	0.08	-0.08	-0.07	-0.01	-0.16	0.00	-0.32	-0.24	-0.09	-0.05	-0.38	-0.24
Q34	0.19	0.51	0.83	0.71	0.46	0.65	0.57	0.72	0.74	0.39	0.57	0.74	0.81	0.62	0.79	0.73
Q35	0.33	0.50	0.88	0.71	0.47	0.59	0.66	0.68	0.73	0.41	0.48	0.72	0.76	0.73	0.83	0.68
Q36	0.40	0.47	0.74	0.57	0.61	0.25	0.59	0.69	0.50	0.21	0.29	0.59	0.67	0.54	0.51	0.38
Q37	0.30	0.59	0.78	0.80	0.44	0.57	0.63	0.65	0.82	0.40	0.54	0.76	0.76	0.70	0.90	0.83
Q38	0.32	0.62	0.80	0.78	0.50	0.53	0.64	0.66	0.79	0.46	0.49	0.71	0.71	0.53	0.82	0.78
Q39	0.35	0.47	0.73	0.50	0.48	0.18	0.42	0.55	0.52	0.10	0.24	0.58	0.48	0.37	0.40	0.31
Q40	0.23	0.58	0.78	0.74	0.48	0.51	0.57	0.68	0.79	0.25	0.49	0.79	0.71	0.54	0.71	0.64
Q41	0.13	0.33	0.73	0.70	0.53	0.55	0.75	0.69	0.53	0.45	0.65	0.59	0.76	0.81	0.65	0.70
Q42	0.06	0.27	0.71	0.49	0.23	0.56	0.60	0.47	0.26	0.28	0.40	0.45	0.52	0.53	0.45	0.37
Q43	0.23	0.57	0.90	0.75	0.39	0.55	0.71	0.57	0.71	0.40	0.54	0.77	0.60	0.55	0.74	0.64
Q44	0.55	0.56	0.79	0.70	0.58	0.38	0.67	0.50	0.64	0.31	0.32	0.65	0.59	0.56	0.70	0.59

	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32
Q17	1.00															
Q18	0.81	1.00														
Q19	0.78	0.56	1.00													
Q20	0.73	0.56	0.92	1.00												
Q21	0.37	0.09	0.44	0.50	1.00											
Q22	0.36	0.15	0.54	0.45	0.31	1.00										
Q23	0.65	0.46	0.75	0.72	0.37	0.36	1.00									
Q24	0.81	0.51	0.82	0.73	0.33	0.49	0.85	1.00								
Q25	0.75	0.65	0.54	0.45	0.01	0.10	0.52	0.63	1.00							
Q26	0.74	0.50	0.70	0.59	0.39	0.34	0.63	0.71	0.69	1.00						
Q27	0.37	0.13	0.23	0.07	-0.02	-0.13	0.03	0.27	0.39	0.54	1.00					
Q28	0.17	0.11	0.20	-0.04	-0.38	0.17	-0.05	0.22	0.27	0.32	0.62	1.00				

Q29	0.23	0.23	0.30	0.17	-0.33	0.31	-0.08	0.28	0.37	0.25	0.39	0.69	1.00			
Q30	-0.01	-0.13	0.19	0.22	-0.01	-0.09	-0.08	-0.01	-0.05	0.26	0.53	0.31	0.21	1.00		
Q31	0.02	-0.24	0.29	0.20	0.16	-0.18	0.08	0.15	-0.02	0.14	0.32	0.08	0.02	0.60	1.00	
Q32	0.45	0.08	0.57	0.43	0.39	0.31	0.73	0.73	0.41	0.70	0.28	0.15	-0.09	0.09	0.19	1.00
Q33	-0.16	-0.04	-0.17	-0.10	-0.19	-0.06	-0.42	-0.27	-0.14	-0.51	-0.37	-0.25	0.11	-0.19	0.08	-0.63
Q34	0.67	0.46	0.67	0.63	0.40	0.25	0.85	0.87	0.46	0.51	0.10	-0.09	0.05	-0.26	0.05	0.62
Q35	0.76	0.60	0.69	0.62	0.30	0.20	0.90	0.85	0.61	0.67	0.23	0.07	0.01	-0.15	0.08	0.62
Q36	0.58	0.49	0.48	0.42	0.00	0.29	0.64	0.66	0.41	0.49	0.16	0.12	0.14	0.05	0.02	0.43
Q37	0.76	0.65	0.71	0.70	0.44	0.22	0.89	0.81	0.52	0.55	0.01	-0.16	-0.06	-0.25	0.03	0.57
Q38	0.65	0.53	0.65	0.66	0.28	0.23	0.84	0.83	0.43	0.48	0.03	0.02	0.02	-0.06	0.02	0.67
Q39	0.43	0.35	0.35	0.34	0.09	0.13	0.65	0.59	0.29	0.46	0.16	0.02	-0.02	0.08	0.08	0.43
Q40	0.60	0.50	0.70	0.66	0.27	0.27	0.79	0.76	0.44	0.57	0.02	0.03	0.15	-0.14	0.12	0.49
Q41	0.80	0.51	0.63	0.62	0.38	0.32	0.74	0.80	0.65	0.65	0.19	0.12	0.04	-0.17	-0.02	0.58
Q42	0.53	0.19	0.54	0.51	0.14	0.08	0.60	0.62	0.34	0.33	0.38	0.14	-0.05	0.11	0.32	0.45
Q43	0.68	0.46	0.73	0.73	0.36	0.24	0.84	0.81	0.44	0.65	0.29	0.15	0.00	0.09	0.07	0.68
Q44	0.66	0.63	0.73	0.64	0.12	0.25	0.75	0.72	0.48	0.64	0.29	0.37	0.19	0.22	0.13	0.51

	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44
Q33	1.00											
Q34	-0.24	1.00										
Q35	-0.29	0.89	1.00									
Q36	-0.23	0.61	0.72	1.00								
Q37	-0.29	0.92	0.89	0.58	1.00							
Q38	-0.40	0.84	0.78	0.65	0.86	1.00						
Q39	-0.31	0.62	0.69	0.87	0.55	0.62	1.00					
Q40	-0.10	0.83	0.84	0.62	0.81	0.69	0.68	1.00				
Q41	-0.19	0.70	0.82	0.59	0.71	0.65	0.54	0.68	1.00			
Q42	-0.11	0.59	0.68	0.44	0.52	0.49	0.32	0.43	0.63	1.00		
Q43	-0.38	0.79	0.85	0.52	0.78	0.79	0.56	0.77	0.75	0.71	1.00	
Q44	-0.40	0.60	0.79	0.73	0.66	0.73	0.70	0.71	0.66	0.51	0.77	1.00

APPENDIX L
MAIN ITEM DECISIONS

Decision	Corrected Item r	Alpha if del	Key	Q #	Question
Keep	0.77	0.93	A1a	1	The support of my family helped me when I felt overwhelmed with the breast cancer.
Keep	0.67	0.81	A1b	2	My family saw the breast cancer as *our* challenge instead of just *my* challenge.
Watch	0.65	0.83	A1b	3	The experience of having shared past challenges helped my family and I cope with the breast cancer.
Keep	0.13	0.7	A1c	4	I felt encouraged by my health care provider to face the challenge of breast cancer.
Keep	0.51	0.81	A2a	5	In spite of the breast cancer, my family and I were optimistic about my health.
Keep	0.55	0.7	A2b	6	My family and I encouraged one another when we felt overwhelmed by the breast cancer.
Rewrite	0.59	0.8	A2c	7	My family and I struggled well against the breast cancer.
Keep	0.61	0.83	A2d	8	We realized that the breast cancer diagnosis could not be changed, but made the best of the situation.
Keep	0.48	0.87	A3a	9	Our future goals and purpose in life helped us cope with the breast cancer.
Keep	0.59	0.72	A3b	10	Spirituality was a positive resource in the way my family and I coped with the breast cancer.
Keep	0.62	0.73	A3b	11	Spiritual rituals (such as prayer, meditation, attending services, etc) helped us cope with the breast cancer.
Keep	0.43	0.86	A3c	12	My family and I developed creative ways of dealing with the breast cancer.
Keep	0.63	0.88	A3d	13	The experience of breast cancer allowed my family and I to grow closer together.
Keep	0.72	0.84	B4a	14	My family and I used flexible ways to deal with the breast cancer.
Rewrite	0.55	0.58	B4b	15	My family and I continued with family rituals, traditions, and activities in spite of the breast cancer.
Keep	0.78	0.9	B5a	16	My family and I supported one another throughout the breast cancer experience.
Keep	0.74	0.92	B5c	17	My family nurtured me during the breast cancer experience.
Keep	0.4	0.59	B5f	18	My family and I sought reconnection after the breast cancer experience
Rewrite	0.25	0.53	B6a	19	My family and I found support from extended family and friends.
Watch	0.56	0.76	B6a	20	During the breast cancer experience, my family and I felt supported by health care providers.
Watch	0.19	0.57	B6b	21	My family and I sought out support groups to assist with the breast cancer experience.
Keep	0.61	0.85	C7a	22	When my family and I communicated with one another about the

					breast cancer, it was clear, specific, and honest.
Keep	0.64	0.89	C7b	23	My family and I talked openly with one another about the breast cancer.
Keep	0.67	0.84	C8a	24	My family and I shared our feelings associated with the breast cancer with one another.
Keep	0.48	0.66	C8b	25	My family and I respected our differences of opinion about the breast cancer.
Keep	0.53	0.58	C8d	26	My family and I were able to find humor in dealing with the difficulties of the breast cancer experience.
Keep	0.58	0.74	C9a	27	My family and I worked together as a team to brainstorm solutions about the breast cancer.
Keep	0.66	0.83	C9b	28	My family and I focused more on living with the breast cancer that on dying from it.
Keep	0.59	0.77	C9d	29	The experience with breast cancer will help us be prepared for dealing with difficult situations in the future.

APPENDIX M
MAIN INTER-ITEM CORRELATION MATRIX

	FRA1	FRA2	FRA3	FRA4	FRA5	FRA6	FRA7	FRA8	FRA9	FRA10	FRA11	FRA12	FRA13	FRA14
FRA1	1.000													
FRA2	.655	1.000												
FRA3	.672	.454	1.00											
FRA4	.058	.138	.009	1.000										
FRA5	.271	.278	.247	.214	1.000									
FRA6	.433	.304	.345	.086	.565	1.000								
FRA7	.693	.518	.354	.059	.310	.518	1.000							
FRA8	.675	.605	.573	.015	.187	.354	.718	1.000						
FRA9	.252	.123	.276	-.023	.349	.315	.172	.097	1.000					
FRA10	.485	.288	.349	-.060	.409	.319	.370	.254	.465	1.000				
FRA11	.479	.386	.569	.054	.499	.358	.273	.312	.399	.403	1.000			
FRA12	.253	.136	.178	-.084	.293	.257	.267	.181	.854	.401	.397	1.000		
FRA13	.413	.417	.415	-.142	.463	.247	.248	.330	.560	.536	.546	.499	1.000	
FRA14	.571	.548	.465	.102	.347	.338	.425	.471	.352	.359	.540	.372	.711	1.000
FRA15	.586	.442	.434	.242	.253	.434	.367	.398	.152	.324	.314	.070	.304	.438
FRA16	.845	.723	.532	.139	.325	.480	.613	.664	.165	.457	.423	.175	.448	.614
FRA17	.872	.682	.510	.183	.239	.411	.656	.564	.316	.503	.351	.292	.470	.587
FRA18	.239	.274	.301	-.102	.101	.051	.117	.180	.364	.475	.303	.394	.425	.317
FRA19	.132	.095	.200	.257	.018	.115	.068	.085	.245	.062	.156	.286	.088	.333
FRA20	.450	.296	.368	.584	.451	.464	.324	.340	.268	.198	.321	.164	.197	.405
FRA21	.128	.223	-.008	.047	.044	.238	.077	.056	.221	.157	-.038	.128	-.031	-.017
FRA22	.503	.594	.458	.202	.197	.144	.346	.532	.029	.336	.417	.037	.335	.431
FRA23	.508	.590	.477	.102	.159	.262	.426	.568	.094	.305	.371	.028	.380	.465
FRA24	.534	.564	.486	.159	.248	.224	.411	.512	.152	.329	.385	.107	.458	.542
FRA25	.214	.276	.405	.150	.315	.238	.145	.351	.269	.165	.360	.163	.339	.394
FRA26	.476	.300	.340	.043	.318	.406	.353	.210	.336	.432	.362	.250	.318	.284

FRA27	.545	.691	.466	.070	.199	.203	.435	.556	.175	.330	.452	.209	.439	.618
FRA28	.589	.419	.439	.052	.665	.640	.496	.410	.245	.408	.543	.200	.391	.468
FRA29	.398	.350	.516	.028	.479	.493	.353	.282	.387	.518	.364	.338	.324	.445

	FRA15	FRA16	FRA17	FRA18	FRA19	FRA20	FRA21	FRA22	FRA23	FRA24	FRA25	FRA26	FRA27	FRA28	FRA29
FRA15	1.000														
FRA16	.580	1.000													
FRA17	.591	.849	1.000												
FRA18	.025	.285	.252	1.000											
FRA19	.053	.210	.190	.217	1.000										
FRA20	.449	.434	.451	.155	.258	1.000									
FRA21	.257	.185	.201	.178	.099	.266	1.000								
FRA22	.381	.577	.417	.371	.157	.377	.187	1.000							
FRA23	.401	.583	.459	.318	.208	.377	.108	.836	1.000						
FRA24	.429	.617	.495	.334	.149	.395	.008	.731	.842	1.000					
FRA25	.167	.338	.148	.207	.221	.326	.151	.463	.459	.542	1.000				
FRA26	.322	.453	.461	.116	.105	.238	.224	.282	.328	.425	.444	1.000			
FRA27	.378	.531	.539	.176	.110	.248	-.055	.401	.493	.533	.319	.220	1.000		
FRA28	.435	.588	.535	.101	.062	.441	.191	.407	.412	.419	.277	.479	.244	1.000	
FRA29	.313	.401	.415	.344	.092	.375	.096	.253	.310	.326	.306	.362	.354	.571	1.000

APPENDIX N
SYNTAX FOR HYPOTHESIZED MODEL

```
!Analysis 1 with Etas Correlated
DA NI=9 NO=113 mi=-999999
LA
A1 A2 A3 B4 B5 B6 C7 C8 C9
ra fi=LISREL_DATASET.psf
!CM
!6.238
!5.932 13.915
!3.594 3.075 28.419
!3.648 4.410 6.652 4.640
!6.799 8.958 13.460 5.043 18.782
!2.267 2.723 3.789 1.737 4.106 4.195
!5.522 8.437 7.359 4.384 10.527 3.491 18.782
!9.539 13.556 14.488 9.644 16.919 5.111 22.618 61.662
!3.633 5.661 6.946 3.353 5.728 1.895 5.553 10.959 5.219
MO NY=9 NE=3 LY=FU,FI PS=SY,FI TE=SY,FI
LE
Belief Organiz Comm
VA 1.0 LY(1,1) LY(4,2) LY(7,3)
FR LY(2,1) LY(3,1) LY(5,2) LY(6,2) LY(8,3) LY(9,3)
FR PS(1,1) PS(2,2) PS(3,3) PS(1,2) PS(1,3) PS(2,3)
FR TE(1,1) TE(2,2) TE(3,3) TE(4,4) TE(5,5) TE(6,6) TE(7,7) TE(8,8) TE(9,9)
PD
OU sc mi
```

APPENDIX O
SYNTAX FOR NEW MODEL

```
!Analysis 1 with Etas Correlated
DA NI=9 NO=113 mi=-999999
LA
A1 A2 A3 B4 B5 B6 C7 C8 C9
ra fi=LISREL_DATASET.psf
!CM
!6.238
!5.932 13.915
!3.594 3.075 28.419
!3.648 4.410 6.652 4.640
!6.799 8.958 13.460 5.043 18.782
!2.267 2.723 3.789 1.737 4.106 4.195
!5.522 8.437 7.359 4.384 10.527 3.491 18.782
!9.539 13.556 14.488 9.644 16.919 5.111 22.618 61.662
!3.633 5.661 6.946 3.353 5.728 1.895 5.553 10.959 5.219
MO NY=9 NE=1 LY=FU,FI PS=SY,FI TE=SY,FI
LE
Resilience_Fam
VA 1.0 LY(1,1)
FR LY(2,1) LY(3,1) LY(4,1) LY(5,1) LY(6,1) LY(7,1) LY(8,1) LY(9,1)
FR PS(1,1)
FR TE(1,1) TE(2,2) TE(3,3) TE(4,4) TE(5,5) TE(6,6) TE(7,7) TE(8,8) TE(9,9)
!based on modification indices
FR TE(7,8)
PD
OU sc mi
```

APPENDIX P
IRB MEMOS

VirginiaTech

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: November 19, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires June 13, 2011)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective November 19, 2010, the Virginia Tech IRB PAM, Andrea Nash, approved the new protocol for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

VirginiaTech

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: December 1, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires October 26, 2013)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective December 1, 2010, the Virginia Tech IRB Administrator, Carmen T. Green, approved the amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

VirginiaTech

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: December 3, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires October 26, 2013)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective December 3, 2010, the Virginia Tech IRB Administrator, Carmen T. Green, approved the amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

VirginiaTech

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: December 15, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires October 26, 2013)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective December 15, 2010, the Virginia Tech IRB Administrator, Carmen T. Green, approved the amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

VirginiaTech

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: November 19, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires June 13, 2011)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective November 19, 2010, the Virginia Tech IRB PAM, Andrea Nash, approved the new protocol for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Date*	OSP Number	Sponsor	Grant Comparison Conducted?

*Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.

cc: File

VirginiaTech

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: December 1, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires October 26, 2013)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective December 1, 2010, the Virginia Tech IRB Administrator, Carmen T. Green, approved the amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Date*	OSP Number	Sponsor	Grant Comparison Conducted?

*Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.

cc: File

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: December 3, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires October 26, 2013)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective December 3, 2010, the Virginia Tech IRB Administrator, Carmen T. Green, approved the amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
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*Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.

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2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: December 15, 2010

TO: Peggy S. Meszaros, Crystal Lane

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires October 26, 2013)

PROTOCOL TITLE: Tracing the Pink Ribbon: Development of a Family Resilience Measure

IRB NUMBER: 10-921

Effective December 15, 2010, the Virginia Tech IRB Administrator, Carmen T. Green, approved the amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **11/19/2010**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

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Date*	OSP Number	Sponsor	Grant Comparison Conducted?

*Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.

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