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FACTORS INFLUENCING WOMEN'S PSYCHOLOGICAL WELL-BEING WITHIN A POSITIVE FUNCTIONING FRAMEWORK

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Education
at the University of Kentucky

By
Krista Moe

Lexington, Kentucky

Co- Directors: Dr. Rory Remer, Professor of Counseling Psychology
and : Dr. Pam Remer, Associate Professor of Counseling Psychology

Lexington, Kentucky

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ABSTRACT OF DISSERTATION

FACTORS INFLUENCING WOMEN'S PSYCHOLOGICAL WELL-BEING WITHIN A POSITIVE FUNCTIONING FRAMEWORK

Women suffer a high prevalence rate of several mental disorders. National U.S. data (*N* = 9,282) shows that 23.4% of women meet the criteria for an anxiety disorder, 8.6% for depression, and 11.6% for a mood disorder (Kessler et al., 2005). Compared to men, women are two times more likely to be depressed (Lewinsohn, Rhode, Seeley, & Baldwin, 2001) and two to three times more likely to suffer from anxiety disorders such as panic disorders, phobias, obsessive compulsive disorders, and Posttraumatic Stress (Kessler et al., 2005). Due to experiencing a high number of mental disorders, women's psychological well-being (PWB) has been questioned (OWH, 2009).

Considerable research describes the negative influence psychological distress has on women's lives, but little is understood of what constitutes PWB. Ryff (1989) proposed that existing models of mental health too often focus on illness and disorders, neglecting important aspects of positive functioning. This study was based on Ryff's (1989) conceptualization that improved PWB would reflect the perception of functioning well in life (Ryff, 1989).

The purpose of the present study was to identify factors important in women's PWB. Factors included: age, household income, education, marital status, race/ethnicity, perceived social support, psychological distress, and PWB. The design of the study was a secondary data analysis based on an existing study, "The Psychological Well-Being of Women Pre- and Post- a Breast Cancer Diagnosis." Women recalled for a diagnostic mammogram, but not diagnosed, were included in the study (*N* = 2,746). Measures used included: a demographic questionnaire, Scales of psychological well-being (Ryff, 1989); Depression, Anxiety, and Stress Scales (Lovibond & Lovibond, 1995); and a Visual Analog Scale of Perceived Social Support. Findings showed that income, education, and perceived social support showed statistically significant different PWB scores in the positive direction. Married women scored higher PWB scores than women of other types of marital status, but neither age nor race/ethnicity showed differences in outcome scores. Psychological distress and PWB were strongly and inversely correlated, suggesting that the constructs are more directly related than previously identified. Implications for therapeutic practice and future research are discussed.

KEYWORDS: Psychological well-being, women, positive functioning, important factors, mental health

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FACTORS INFLUENCING WOMEN'S PSYCHOLOGICAL WELL-BEING
WITHIN A POSITIVE FUNCTIONING FRAMEWORK

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Chapter 1: Introduction and Selective Literature Review

"When women thrive, all of society benefits, and succeeding generations are given a better start in life," - Kofi Annan

Psychological well-being has been described as the cornerstone of mental health. According to the World Health Organization (2011), mental health is, "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (par. 1). While traditionally, psychological well-being has been defined by a lack of symptom distress (i.e., lack of depression, anxiety, and other symptoms of mental disorders), over time, the term has taken on a more positive definition (Keyes & Magyar-Moe, 2003). That is, psychological well-being has become increasingly recognized as more than just an absence of distressful symptoms, but now includes positive qualities individuals possess that can lead to mental health. Recent models of positive functioning have been designed that explain key aspects of psychological well-being. Major concepts include empowerment; recovery-oriented elements such as hope, self-initiation, and purpose in life; individual, environmental, and systems based sources of psychological well-being; and subjectively perceived dimensions of positive functioning (Autonomy, Environmental Mastery, Self-Acceptance, etc.).

Models of positive functioning are based on the notion that cultivating and promoting an individual's strengths and capabilities can potentially enhance one's psychological well-being as well as protect individuals from symptoms of psychological distress (Office of the Surgeon General, 1999). For instance, in feminist theories,

researchers have designed empowerment models outlining key issues that promote the psychological well-being of women. Incorporated in these models are gender-specific behaviors and practices that can better equip women to deal with life's challenges: self-nurturing behaviors, assertiveness training, and consciousness-raising on how gender and culture influence mental health outcomes (Worell & Remer, 2003). These skills are not only identified to help women cope with psychological distress, but also to build on resilience factors that help women deal with problems from a point of strength. Thus, the feminist empowerment model is a strength based approach to mental health, and proposed to be a more effective way to enhance mental health than would treating distress symptoms alone.

Similar to an empowerment approach, recovery-oriented approaches operate in a similar manner, for both men and women dealing with mental illness. Recovery oriented approaches have received increasing attention over the years, primarily in psychiatric hospital settings. The theory is that, instead of assuming that individuals will suffer lifelong problems associated with their mental illnesses, individuals are encouraged to rely on their strengths, hopes, and self-determination in order to overcome obstacles. Thus, therapeutic treatments are focused on positive change, moving beyond a state of acceptance that distressful symptoms will continue, but that skills can be learned to promote psychological well-being (Office of the Surgeon General, 1999). Issues addressed in the recovery-oriented model include: instilling hope, obtaining a stable living situation (i.e., positive, growth-producing environment), focusing on the self (i.e., taking on an active role in one's recovery from mental illness), cultivating supportive relationships, developing a sense of empowerment, learning different coping strategies to

manage symptoms, and developing meaning and purpose in the recovery process (Jacobson & Greenley, 2001). Theoretically, integrating these issues into treatment plans with individuals dealing with mental illness would potentially help them move from a state of surviving in life, to thriving in life.

Leaders in the U.S. Department of Health and Human Services, Office on Women's Health (OWH, 2009), have also recently developed a model of recovery for women. They called into question existing difficulties women face in dealing with mental illness, as they suffer a disproportionate number of mental disorders compared to men (e.g., depression, anxiety disorders, and phobic disorders, OWH, 2009). They designed a conceptual framework to include a comprehensive list of issues affecting women at the individual, environmental, and systems based levels. Issues particularly salient to women's psychological well-being include specific mental disorders (e.g., depression, anxiety disorders, and phobic disorders); trauma, violence, and abuse; social stress and stigma; biological and developmental factors (e.g., sex differences in the course of treatment); health system issues (e.g., lack of evidence based practice on women); treatment access and insurance; identification and intervention issues; and protective and resilience factors (OWH, 2009). Theoretically, addressing issues at each of the levels, rectifying unmet needs, improving access to resources, and cultivating resilience factors would help both to diminish women's psychological distress and enhance their psychological well-being.

In recent years, new models of psychological well-being have been designed and components have been outlined. However, the term of psychological well-being has remained somewhat of an elusive concept (Guindon, O'Rourke, & Cappeliez, 2004).

Some investigators refer to psychological well-being as a lack of symptom distress, others a balance of positive and negative affect, satisfaction with life, or quality of life. Further, some investigators define psychological well-being as positive functioning only. Variations in definitions of this construct have made measuring and interpreting outcomes difficult. Until only a couple of decades ago, in fact, psychological well-being was not clearly and comprehensively defined nor measured based on theory (Ryff, 1989). Ryff noted this issue and reviewed existing theories for commonalities in ideas. Going back several decades to those described by Jung, Allport, Erikson, and Neugarten, she identified several themes within the frameworks and designed a new model of positive functioning incorporating six ideas: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance (Ryff, 1989). Thus, she developed a new model of positive functioning and defined it as a multidimensional construct as well as the degree to which individuals perceive themselves to be functioning well in these six major areas of life (Ryff, 1989). Since the development of this framework, this positive psychological well-being construct has been studied in numerous contexts and found to have influence on important aspects of mental, emotional, and physical states.

Diminished positive psychological well-being has been associated with difficulties in coping with major transitions in life (Abbot et al., 2008; Kwan, Love, & Ryff, 2003); an increase in distress symptoms (Rafanelli et al., 2000; Simon, 2002), an increase in negative self-evaluations, impaired work productivity, and neuroticism (Lindfors, Berntsson, & Lundberg, 2006). Alternatively, enhanced psychological well-being has been shown to predict successful identity formation (Vleioras & Bosma, 2005),

serve as a buffer to stress, and improve coping with trauma (Ryff & Singer, 1998; Schnyder, Büchi, Morgeli, Sensky, & Klaghofer 1999; Showers & Ryff, 1996). Additional benefits of enhanced psychological well-being include an improvement in physical health (Keyes, 2005a; Lindfors & Lundberg, 2002), sleep quality (Friedman et al., 2005), and a decreased vulnerability to psychological damage from adverse events (Ryff & Singer, 2003). That is, enhanced psychological well-being has been shown to serve as a protective factor to various types of psychological distress and to enhance one's ability to "bounce back" after hardships (Ryff & Singer, 1998; Ryff, Singer, Love, & Essex, 1998). While it has been well-documented that men and women experience several different types of challenges to mental health, gender has not been a focus of these studies. At the same time, women have been described to be at particular risk for diminished psychological well-being (OWH, 2009).

Historically, women in the United States have been oppressed, discriminated against, and devalued (Worell & Remer, 2003). As a result, societal sexism has been theorized and researched as the cause of women's higher rates of depression and other mental health outcomes (Keith, Jackson, & Gary, 2003). Women are two times more likely to be depressed than men (Lewinsohn, Rhode, Seeley, & Baldwin, 2001). Also, women are two to three times more likely to suffer from anxiety disorders such as, panic disorders, phobias, obsessive compulsive disorders, and Posttraumatic Stress (PTSD) than men (Kessler et al., 2005). Women are two times more likely to suffer from bipolar disorders, and nine times more likely to suffer from eating disorders than men (U.S. Department of Health and Human Services, Office on Women's Health, 2009). Women alone suffer a high prevalence rate of mental disorders. In a large nationally

representative sample of men and women (*N* = 9,282), 23.4% of women met the criteria for an anxiety disorder (14.3% of men). A total of 8.6% of women met the criteria for major depressive disorder (4.9% for men), and 11.6% of women met criteria for a mood disorder (7.7% for men) (Kessler et al., 2005). Due to experiencing a high number of mental disorders, women's psychological well-being has been questioned (OWH, 2009).

National organizations such as the Office on Women's Health (OWH) and joint task forces of division 17 (counseling psychology) and 35 of American Psychological Association (APA), have responded to the need to address challenges women face regarding their mental health. Leaders in these organizations have put forth initiatives in order to not only help diminish women's symptoms of psychological distress, but to also promote positive functioning. Initiatives relevant to researchers, educators, and mental health practitioners include calls to: (a) research and report on the current status of women's psychological well-being, (b) design recovery-oriented approaches and interventions to enhance and promote women's psychological well-being, and (c) translate findings into practice with women in therapeutic, educational, and community-based settings (OWH, 2009).

Overview of the Purpose of the Present Study

While a concern for women's mental health at the national level is clear, we do not have an in-depth understanding on how different individualized factors influence women's positive functioning. For example, how different sociodemographic factors (e.g., age, household income, education, marital status, and race/ethnicity) and psychological factors (e.g., psychological distress and perceived social support) influence women's positive psychological well-being have been understudied, despite research to

support potential influence (see Review of Psychological Well-Being Literature). Thus, if women's positive functioning is to be better understood, and interventions are to be designed to help promote women's mental health, a deeper understanding of how these factors operate is warranted. Given the gaps in knowledge and the importance for studying women's positive psychological well-being, the following research questions were raised: (a) How do age, household income, education level, marital status, and race/ethnicity influence women's overall psychological well-being? (b) How do different sociodemographic variables such as household income, education, and marital status, influence the individual scale scores on the subscales of psychological well-being: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance? and (c) To what extent do perceived social support and psychological distress influence women's overall psychological well-being?

Theoretical Framework

In the following section I describe in detail, two major existing theories of psychological well-being. I compare the more traditional interpretation of psychological well-being (i.e., lack of symptom distress) and the more recent theory of positive psychological well-being. Definitions of relevant terms are included. Ryff's (1989) theoretical framework of positive functioning served to guide the research conducted in the present study.

Whether subscribing to the traditional view or the positive functioning view of psychological well-being, investigators in psychological well-being research generally support the notion that psychological well-being is a multidimensional construct (Keyes & Magyar-Moe, 2003). Thus, psychological well-being is typically measured by using

multiple instruments, or by administering instruments that contain multiple subscales. Investigators of psychological well-being research abide by one of two major theoretical frameworks, the theory of emotional well-being, or the theory of positive functioning (Keyes & Magyar-Moe, 2003).

The two major theories of psychological well-being are similar in that they both represent approaches to understanding mental health. However, underlying constructs differ (Ryff, Singer, & Love, 2004). According to the theory of emotional well-being, psychological well-being represents satisfaction with life and a lack of psychological distress (i.e., lack of negative affect). Under the theory of positive functioning, however, psychological well-being refers more to aspects of human development and existential life challenges (Keyes et al., 2002). Another way to understand psychological well-being is that there are basically two types. Psychological well-being is either eudaimonic, the well-being of feelings associated with the perception of living up to one's potential, or it is hedonic, the psychological well-being demonstrated by feelings of happiness and life satisfaction. In a larger scheme, emotional well-being, positive functioning, combined with social well-being (perception of functioning well in immediate and extended relationships), form the definition of general subjective well-being, otherwise known as "complete mental health" (Keyes, 1998; Keyes & Magyar-Moe, 2003).

Emotional well-being (hedonic well-being). The concept of emotional well-being emerged from quality of life (QOL) research. Findings from this body of research demonstrated that one's subjective evaluation of life satisfaction and experience with positive and negative affect are important to one's sense of psychological well-being

(Diener, Sue, Lucas, & Smith, 1999). The balance of positive and negative affect has also traditionally been equated with "happiness" (Bradburn, 1969).

According to the emotional well-being theory, mental health is defined as a multidimensional construct made up of (a) a cognitive component (i.e., general satisfaction with life), and (b) an affective component (states of positive and negative affect) (Keyes & Magyar-Moe, 2003). When evaluating emotional well-being, however, consensus has been lacking as to how the construct should be measured. A number of instruments such as, the Centre for Epidemiological Studies of Depression Scale (CES-D; Radloff, 1977), the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1992), Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), and the Affect Balance Scale (ABS; Bradburn, 1969) have been used to measure psychological well-being according to this framework. Within the body of research on emotional well-being, psychological well-being has been defined primarily as a lack of symptom distress. For example, a decrease in depressive or anxiety symptoms, would be equated with improved psychological well-being. Also within this framework, affect is conceptualized to function on a continuum, with positive affect on one end and negative affect on the other. Thus, positive and negative affect are typically described as highly inversely correlated with one another. With an improvement in positive affect, negative affect is assumed to decrease. In recent years, a newer theory of psychological well-being has emerged that focuses on subjective perceptions of positive functioning.

Positive functioning (eudemonic well-being). Traditional notions of psychological well-being have focused primarily on a lack of symptom distress to indicate improved mental health (Bierman, Fazio, & Milkie, 2006; García, Ramírez, &

Jariego, 2002; Simon, 2002), thereby neglecting aspects of positive functioning (Ryff, 1989). According to the positive functioning domain, psychological well-being is thought to be more than a presence of positive affect and absence of negative affect. Instead, positive and negative affect are described to function independently and are moderately correlated with one another. Investigators have drawn this conclusion and state that lack of psychological distress does not necessarily lead to enhanced psychological well-being (Fava, 1997; Keyes, 2005b; Rafanelli et al., 2000; Ruini et al., 2003; Ryff et al., 2006).

The perspective of positive functioning emerged from humanistic and developmental psychological theories, as well as existential philosophy (Ryff & Singer, 1998). According to this perspective, psychological well-being (sometimes referred to as *eudemonia*), is defined as a reflection of one's perception to be able to face and deal with life's challenges (i.e., positive functioning). This meaning given to a multitude of aspects of positive functioning, often described as "dimensions." More specifically, psychological well-being reflects the subjective perspective that one is functioning well in six major areas of life: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance (Ryff, 1989). Prior definitions of psychological well-being had, up until Ryff's model of psychological well-being, possessed little theoretical rationale, lacked clearly defined constructs, and lacked consistency in the use of empirically tested instruments.

Ryff (1989) asserted that several dimensions of positive functioning could be integrated into one multidimensional model of psychological well-being. She included descriptions of positive psychological functioning by Maslow (1968), Rogers (1961),

Jung (1933), and Allport (1961); life span developmental perspectives of Erikson (1959), Buhler (1935), and Neugarten (1968); and positive criteria of psychological well-being (Jahoda, 1958) in her theoretical framework in order to justify her constructed notion of psychological well-being. She performed a comprehensive analysis of prior theories of positive functioning and identified themes at points where the ideas converged. These points of convergence comprised the newly formed dimensions of positive functioning and were operationalized as: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance. Each dimension formed one of the six subscales on the instrument entitled, the Scales of Psychological Well-Being (SPWB; Ryff, 1989).

Definitions of terms. According to Ryff (1989) psychological well-being is active engagement in a number of existential challenges. Psychological well-being is a multidimensional construct comprised of six areas of positive functioning: Autonomy, Positive Relations with Others, Purpose in Life, Personal Growth, Environmental Mastery, and Self-Acceptance. Thriving in life depends on the degree one sees himself or herself competently functioning in these areas. Definitions of the six constructs of positive functioning are:

- *Autonomy* stands for the degree to which someone is, "self-determining and independent; able to resist social pressures to think and act in certain ways; regulate behavior from within; and evaluate self by personal standards" (Ryff, 1989, p. 1072).
- *Purpose in Life* stands for the degree to which someone, "has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs

that give life purpose; and has aims and objectives for living" (Ryff, 1989, p. 1072).

- *Positive Relations with Others* stands for the degree to which someone, "has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; is capable of strong empathy, affection, and intimacy; and understands the give and take of human relationships" (Ryff, 1989, p. 1072).
- *Personal Growth* stands for the degree to which someone, "has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing his or her potential; sees improvement in self and behavior over time; and is changing in ways that reflect more self-knowledge and effectiveness" (Ryff, 1989, p. 1072).
- *Environmental Mastery* stands for the degree to which someone, "has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; and is able to choose or create contexts suitable to personal needs and values" (Ryff, 1989, p. 1072).
- *Self-Acceptance* stands for the degree to which someone, "possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self including good and bad qualities; and feels positive about past life" (Ryff, 1989, p. 1072).

Review of Literature on Positive Psychological Well-Being

The following section contains a critical review of selected relevant literature on psychological well-being as defined by Ryff (1989). A detailed review focused on the

variables under study is included in this section. Thus, I reviewed the literature based on sociodemographic variables (age, household income, education, marital status, race/ethnicity) and psychological factors (perceived social support and psychological distress), in order to better understand how such factors influence women's psychological well-being. Selection of factors was based on positive psychological well-being theory, documented findings. Syntheses of findings are presented at the end of this literature review.

After reviewing more than 68 research articles on Ryff's notion of psychological well-being, 22 were selected, based on relevance to the present study. Search criteria of inclusion were based on studies where investigators: (a) focused on women, (b) reported on the potential influence of sociodemographic variables, and/or (c) reported on the potential influence of psychological factors, such as perceived social support or psychological distress, on women's psychological well-being. Due to the limited number of studies focused on women's psychological well-being, most studies described in this section include samples of both men and women. Where possible, the gender-specific experiences women have with psychological well-being were discussed. A synthesis of findings is presented at the end of this literature review.

Much of the psychological well-being research has been conducted based on the use of a large database, the National Survey of Midlife Development in the U.S. (MIDUS 1995-1996) by Brim et al. (1996). Therefore, existing findings described in the following literature review frequently reflect the experiences of individuals from the same sample, may not capture phenomenon otherwise occurring in more diverse groups, and the data

was now collected 17 years ago. Details of research procedures and sample characteristics in the MIDUS follow.

The MIDUS initiatives involved participation of 3,032 English speaking, non-institutionalized individuals, living in the 48 contiguous United States. A probability sample was recruited using random digit telephone dialing and participants were asked to complete a 30 minute telephone interview and answer a series of questions. The purpose of the survey was to investigate how and why mental health varies with human development (i.e., age). Interview questions pertained to participants' psychological well-being, psychological distress, physical wellness, and health risk behaviors. For the purposes of saving time and cost of a national survey, only three of the original 20 items per subscale were selected; thus an 18-item version of the Scales of Psychological Well-Being (SPWB) was used in the MIDUS. The three items selected were chosen based those that maximized the conceptual breadth of the shortened scales. Subscale correlation coefficients ranged from .70 to .89 with their corresponding 20-item parent subscales (Ryff & Keyes, 1995).

Conducted between the years of 1995 and 1996, the data from the MIDUS have served as a foundational resource for a multitude of studies. Topics ranged from the influence of age and personality types, to the biological make-up of variations in scores of psychological well-being. Subsequent studies have been conducted using this database, resulting in findings that may now be somewhat outdated. Nevertheless, MIDUS-based studies, in combination with more current studies, provide insight into how different factors of sociodemographic and psychological factors may influence women's psychological well-being.

Age. The initial reason for studying positive psychological well-being and developing an instrument to measure the construct was to reach a better understanding of what "aging successfully" means (Ryff, 1989). Thus, Ryff and other investigators have studied and reported psychological well-being findings related to age more than any other sociodemographic or psychological variable. Most often, age is treated as a categorical variable, in essence, by age group. The psychological well-being of individuals in age groups of younger adults (18 to 29 years), middle-aged adult (30 to 64 years), and older adults (age 65 and older) have been compared in cross-sectional and longitudinal studies. Differences have been demonstrated among these age groups via scores on the six Scales of Psychological Well-Being (SPWB).

In Ryff's (1989) seminal study, she reported on initial findings related to age. She compared psychological well-being scores of young adults (n = 133; M = 19.53 years old; SD = 1.57; *range* = 18 to 29), middle-aged adults (n = 108; M = 49.85 years old; SD = 9.35; *range* = 30 to 64), and older adults (n = 80; M = 74.96 years old; SD = 7.11; *range* = 65 and older). Total sample size was 321 participants (60% women and 40% men). Results showed a significant effect of age, F (2, 315) = 6.52, $p < .01$, on psychological well-being. Specifically, middle-aged adults scored significantly higher on Autonomy and Environmental Mastery, compared to young adults. Older adults scored significantly higher on Environmental Mastery than their younger counterparts, significantly lower on Purpose in Life than middle aged adults, and significantly lower on Personal Growth than their younger counterparts. While these findings were statistically significant, mean differences were small, ranging from 2 to 8 points per subscale. (Total possible scores per subscale range from 20 to 120). No interactions between age and gender were found.

However, women scored significantly higher on the Positive Relations with Others subscale compared to men.

Similar age patterns have been replicated in studies based on data from national and community samples (Ryff, 1991; Ryff & Keyes, 1995). Ryff and Keyes (1995) were the first to report findings on data analyzed from the MIDUS dataset, a national representation of adults' psychological well-being. They assessed the psychological well-being scores of 1,108 participants (60% were women) from the dataset. These researchers investigated differences in psychological well-being scores according to three age groups: young adults (*n* = 133, *range* = 25 to 39), midlife adults (*n* = 805, *range* = 40 to 59), and older adults (*n* = 160, *range* = 60 to 74). The average age for the sample was 45.6 years old (*SD* = 14.8). Results showed a number of significant findings: (a) midlife and older adults scored significantly higher on Environmental Mastery than the younger group; (b) older adults scored significantly lower on Purpose in Life and Personal Growth subscales compared to the two younger groups; and (c) middle-aged adults scored significantly higher on the Autonomy subscale than the younger adults. Unlike in previous studies, older adults also scored significantly higher on the Positive Relations with Others subscale, compare to their younger counterparts. While differences reported in this study were statistically significant, the mean differences were small. That is, older adults on average scored three points higher than younger adults on the Purpose in Life subscale. No average differences in mean scores per subscale exceed this difference of three points. Scores per subscale could range from a minimum of 3 to a maximum of 18. Thus, age did not appear to have a strong influence on psychological well-being; however, women's scores were not assessed apart from men's scores.

Over the years, investigators have replicated similar age patterns in samples of men and women (Ryff, Singer, Wing, & Love, 2001; Ryff & Singer, 2002). In 2001, Ryff et al. also found that older adults scored significantly lower on the subscales of Purpose in Life and Personal Growth, and significantly higher on the Environmental Mastery subscale compared to their younger counterparts. While significant, these differences were small: two point difference, half a point difference, and half a point difference respectively. Subscales scores had a possible range of 3 to 18. Despite the studies to support these patterns of differences, a smaller and more recent body of evidence demonstrates different outcomes.

In Sweedon; Lindfors, Berntsson, and Lundberg (2006) reported findings related to age, but patterns did not entirely replicate those observed in U.S. samples. Older adults scored significantly lower on the Purpose in Life and Personal Growth subscales, but they scored significantly lower on the Self-Acceptance subscale, compared to their younger counterparts. Age groups in this study were defined differently than previous studies, which may have led to the difference in findings. Groups were determined by a median split, 50% were older than 46, and 50% were younger than 46. Ages ranged from 35 to 58, and averaged 45.3 years (SD = 7.2). The sample was comprised of 1,260 Swedish men and women (55% were women). Unlike earlier studies, gender had an influence on more than one subscale. Earlier findings showed only a gender difference on the Positive Relations with Others subscale on which women scored higher. In this study, women (n = 743) not only scored significantly higher than men (n = 595) on the Positive Relations with Others subscale, but also on the Purpose in Life and Personal Growth subscales. Men scored significantly higher than women on the Environmental

Mastery subscale. Mean differences were small, 0.5 to 1 points per subscale on a range of 3 to 18. No interactions between age and gender were reported. Given that the sample was Swedish, generalizing findings to women living in the United States may be difficult. Also, due to the somewhat restricted age range (35 to 58 years old), generalizing findings to individuals who are younger and older (e.g., 18 – 35 and 59 – 90) may also be difficult.

Also, more recently, Springer, Pudrovska, and Hauser (2011) challenged existing views that psychological well-being varies according to age group. Results in their longitudinal study showed only small mean differences between groups (younger, middle-aged, and older adults). These investigators also found more variation within groups than between groups, suggesting that other factors more strongly influence psychological well-being than age. Gender was not the focus of this study nor investigated as such.

Income. While limited, a small body of research focuses on the influence of income on psychological well-being. Clarke, Marshall, Ryff, and Rosenthal (2000) revisited data from the Canadian Study on Health and Aging conducted in 1995-1996. A total of 4,960 older adults (mean age = 75.5; *SD* = 5.2), participated in this study. Income was recorded in 12 different levels, each with a range of $5000. The lowest category was "less than $10,000" and the highest category was "more than $70,000." The sample distribution was as follows: 25,000 (45% of the sample); $25,000-35,000 (20% of the sample); $35,000-45,000 (13% of the sample); and $45-70,000 (11% of the sample). In data analyses, income level was treated as a continuous variable, ranging from level 1 to level 12. Results of linear regression modeling showed that income was statistically and significantly associated with all subscales of psychological well-being.

Higher income levels predicted higher psychological well-being scores. The strongest prediction was for Purpose in Life. Income accounted for nearly 10% of the variance in scores on the Purpose in Life subscale. The influence of gender on the relationship between income and psychological well-being was not reported.

Further investigation is warranted in order to understand how household income influences one's psychological well-being. This issue is of particular importance to women as the majority of those in poverty in the United States are women older than 60 (U.S. Census Bureau, 2008). Thus, women may be at risk for diminished psychological well-being in their later years of life if financial security is not obtained.

Education. Over the past two decades, education has been a theme throughout psychological well-being research. Marmot et al. (1998); and Marmot, Ryff, Bumpass Shipley, and Marks (1997); analyzed data from the MIDUS and found that individuals with more education experienced higher overall psychological well-being. Ryff, Magee, Kling, and Wing (1999) also studied the influence of education on the different dimensions of psychological well-being in their Wisconsin Longitudinal Study (WLS). Data in the WLS were based on a large sample of adults similar in age (approximately 53 years old; N = 6,306). Like the MIDUS, participants were asked to report on their psychological well-being by completing the 18-item Scales of Psychological Well-Being (SPWB) as well as demographic questionnaires and additional instruments related to their study. These investigators treated psychological well-being as an independent variable and found that higher scores on the Scales of Psychological Well-Being (SPWB) predicted higher number of years of education.

Keyes et al. (2002) reported similar findings on psychological well-being scores and education. Their data were derived from the 1995 MIDUS database as well, and thus reflected information on 3,032 participants, ages 25 to 74. Education was recorded as number of years ranging from 1 to 25. Using logistic regression, findings showed that education strongly predicted high vs. low total psychological well-being scores. For instance, higher education levels predicted high total psychological well-being scores; lower levels predicted low total psychological well-being scores. Levels of psychological well-being were determined by tertiles, or one of three levels of scores on the entire 18-item instrument. Low psychological well-being was defined as scores that fell in the bottom third of observed scores; moderate psychological well-being was defined by scores in the middle third of observed scores, and high psychological well-being was defined by scores in the top third of observed scores on the SPWB.

Clarke et al. (2000) also evaluated the influence of education on scores for the six subscales of psychological well-being. The sample included 4,960 Canadian seniors. The average number of years of education completed was 10.7 (*SD* = 38); the majority of participants reported having at least 8 to 13 years of education completed. Linear regression modeling showed that number of years of education significantly predicted scores on all six subscales of psychological well-being, all except Self-Acceptance. Also, education accounted for more variance on the Purpose in Life subscale (12%), than for the other five subscales. To be noted, the combination of age, education, and income accounted for 17% of the variance in Purpose in Life scores. The influence of gender on relationships between these three variables and psychological well-being were not reported.

Chrouser Ahrens and Ryff (2006) found years of education to be a mediator between number of roles in life (parent, spouse, employee, etc.) and scores on the six Scales of Psychological Well-Being (SPWB). Their sample included 2,634 individuals, 51% women, with an average age of 47 (*SD* =13.13). Education was evaluated both as a continuous variable (in the mediation model) and by groups: less than high school education (*n* = 220), high school degree or GED (*n* = 768), some college or 2-year degree (*n* = 836), and at least a 4-year college degree (*n* = 808). With respect to gender, only the well-educated women with multiple roles scored significantly higher on the Autonomy subscale. Therefore, with an increase in education level, women may be more apt to view themselves as functioning independently, despite having to balance a number of roles in life. A detailed explanatory investigation of women's psychological well-being across a broad range of education levels (elementary/high school, college/university, to graduate school) has not been conducted in the past decade or longer; an updated view is needed.

Marital status. While limited, existing research highlights the importance of studying the influence of marital status on psychological well-being. No studies include references to the influence of marital status on total psychological well-being scores; however, scores for individual subscales have been assessed. Bierman et al. (2006) addressed only a single dimension of psychological well-being, Purpose in Life. These investigators found that individuals reporting themselves as married, scored significantly higher on this subscale than those who reported not being married. Data for this study were derived from the MIDUS (*N* = 3,032) and marital status was treated as a nominal variable. Participants were classified as either consistently married (*n* = 1,570),

remarried (n = 494), separated or divorced (n = 477), widowed (n = 140), or never married (n = 349). Gender differences were not found in this study. Further investigation is warranted in order to understand the influence of marital status on individual dimensions of psychological well-being (Autonomy, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance).

Clarke et al. (2000) also found that marital status influenced psychological well-being in Canadian seniors (age 65 and older). Marital status was treated as a nominal variable: married, widowed, divorced/separated, and never married. Married seniors scored significantly higher than non-married groups on a number of psychological well-being subscales. Married individuals scored significantly higher on the Purpose in Life subscale (compared to the widowed and never married), the Self-Acceptance subscale (compared to the divorced and separated), and Positive Relations with Others (compared to the divorced, separated, and never married groups). While findings were significant ($p < .02$), marital status only accounted for a small amount of variance in scores, ranging from 0.4% to 2.2% per subscale. No other significant findings were reported on marital status.

Due to the nature of the sample (seniors in Canada, age 65 and older), findings in this study may be difficult to generalize to younger individuals living in the United States. Further investigation of the influence of marital status on psychological well-being is warranted. Specifically, the influence of marital status on women's psychological well-being has largely been overlooked. At the same time, and like in many other countries, women in the U.S. are more often widowed and more disadvantaged financially after a divorce, compared to men (Bierman et al., 2006). These

issues may in turn, be influencing women's psychological well-being. More research is warranted in order to understand not just the influence of marital status on overall psychological well-being, but on each subscale as well. For instance, do married women fare better in regards to overall psychological well-being than women who are not married? Do married women fare better on each of the six subscales of psychological well-being than non-married women, or only on subscales such as Positive Relations with Others, or, like in Bierman et al. (2006), Purpose in Life?

Race/ethnicity. Limited research addresses how race/ethnicity influences psychological well-being within a positive framework. In one study, investigators examined relationships between minority status and eudemonic well-being, or psychological well-being (Ryff, Keyes, & Hughes, 2003). They evaluated four groups of individuals in the United States: 339 African-Americans living in New York City, 235 Mexican Americans living in the city of Chicago, and two groups from the MIDUS (2,485 Caucasians and 339 African-Americans living in the 48 contiguous United States). Results showed that African-Americans and Mexican Americans had higher levels of overall psychological well-being than Caucasians and African-Americans in the national sample. While significant, mean differences were small. Caucasians scored an average of 98.9; African-Americans scored M = 103.6; and Mexican Americans scored M = 101.8, on the total scale of psychological well-being on a possible range of 18 to 108.

Separate regression models were run for each of the subscales of psychological well-being. A number of predictors related to race/ethnicity were identified. Self-Acceptance was predicted by race as well as gender. All three minority groups had more positive scores than Caucasians, however, women in the minority groups had lower

scores than their male counterparts. Minority status was a positive predictor of Environmental Mastery. Being female was a negative predictor of Environmental Mastery. For Purpose in Life, only Mexican Americans were more likely to have lower levels of scores on this subscale compared to Caucasians. Race/ethnicity, along with gender, predicted scores on the Positive Relations with Others subscale. Caucasian women had higher Positive Relations with Others scores than Caucasian men; African-American women had higher Positive Relation with Others scores than African-American men; and Mexican women had lower scores on this subscale than the Mexican men. For the Personal Growth subscale, African-Americans in the national survey (MIDUS) had significantly higher scores on this subscale, compared to Caucasians. African-Americans also scored significantly higher than Caucasians on the Autonomy subscale.

To note, while several predictors were identified, variance in scores on every subscale of psychological well-being did not exceed 10%, even in combination with other demographic variables (age and education). Despite the low variance scores in each subscale, investigators concluded that minority status positively predicts overall psychological well-being (Ryff et al., 2003). Further stated, minority status positively predicted scores on each subscale, with the exceptions of Autonomy and Purpose in Life. Lacking in this area of research is a more in-depth look on how minority and Caucasian women's psychological well-being differs according to their racial/ethnic group. Does being a women, in addition to being in a racial/ethnic minority, negatively impact psychological well-being?

Perceived social support. Two major approaches to assessing social support exist, perceived social support and received social support. Perceived Social Support

refers to one's subjective opinion of how much support is available when needed (i.e., quality of support). Alternatively, received support refers to the number of individuals in one's life, supportive or otherwise (i.e., quantity of individuals with the potential to show support) (Wills & Shinar, 2000). None of the reviewed studying incorporated the influence of received social support on scores of psychological well-being. However, one study addressed the influence of perception of social support.

Bierman et al. (2006) assessed the influence of perceived social support from friends and perceived social support from family on psychological well-being. While only one aspect of psychological well-being was addressed (Purpose in Life), these investigators found a positive relationship between perceived social support and Purpose in Life scores. In this study, investigators evaluated data on the 3,032 males and females from the MIDUS database (Brim et al., 1996). Investigators selected items from the MIDUS database and assessed perceived social support by two indices: perceived social support from family and perceived social support from friends. Both measures had strong internal consistency reliability, $\alpha = .96$ for perceived family support, and $\alpha = .97$ for perceived friends support. Perceived family support was addressed by asking participants four questions: "Not including your spouse or partner, how much do members of your family really care about you?" "How much do they understand the way you feel about things?" "How much can you rely on them for help if you have a serious problem?" and "How much can you open up to them if you need to talk about your worries?" Answers to these questions were rated on a scale of 1 to 4 (1 = *a lot*, and 4 = *not at* all). Responses were inversely coded so that higher scores indicated higher perceived social support. Perceived support from friends was assessed in a similar

manner. That is, the same four items were used, only altering words in order to assess participants' perception of support from friends, instead of family. Ordinary Least Squares regression was conducted in order to test the influence of both types of perceived support on Purpose in Life scores. Results showed that, while perceived family support significantly and positively predicted Purpose in Life scores ($\beta = .11$, $p < .001$), perceived social support from friends did not. Thus, perceived support from family may be affecting one's life on a deep level, giving one life meaning, direction, and a reason for living. Even though women often rely on social relationships to endure stress and difficult times in their lives, relationships between women's perception of social support and psychological well-being were not addressed.

To date, researchers have defined perceived social support in a number of ways. One manner is the examination of perceived social support from individual groups: spouse, family member, friend, nurse and physician (Northouse, 1988). Another examines relationships among constructs of guidance, reliable alliance, reassurance of work, the opportunity of nurturance, attachment and social integration (Weiss, 1974). A third is describing social support in terms of emotional and instrumental support, social integration and existence of a confidant (Sommer & Fydrich, 1989). A fourth is describing social support as perceived availability of emotional support, actual received emotional support, and satisfaction with received emotional support (Schroevers, Helgeson, Sanderman, & Ranchor, 2010). Regardless of conceptual and operational definitions of the construct, there is some evidence to suggest perceived social support may positively influence psychological well-being (Bierman et al., 2006). Further research is needed in order to examine dynamics between perceived social support and

psychological well-being. Questions may include: (a) Does a global perception of social support influence women's psychological well-being? (b) How do women's level of perceived social support relate to different dimensions of their psychological well-being?

Psychological distress. Conceptually, psychological distress refers to the combination of negative emotional symptoms, such as depression, anxiety, and stress (Lovibond & Lovibond, 1995). While relationships between psychological distress and psychological well-being are complex, two contending theories have emerged in order to explain underlying dynamics. One theory is the mirrored hypothesis, suggesting that the relationship between psychological well-being and psychological distress highly correlate with one another; as psychological distress worsens, psychological well-being is expected to decrease. The other theory is the distinct hypothesis (Ryff et al., 2006). The distinct hypothesis offers the notion that psychological well-being and psychological distress only moderately correlate with one another; when psychological distress worsens (e.g., symptoms of depression are treated), psychological well-being does not necessarily decrease (Keyes, 2002; Ryff et al., 2006). To date, investigators have reported findings supporting both the mirrored and distinct hypotheses.

Ryff et al. (2006) examined whether or not psychological well-being and psychological distress comprise opposite ends of a continuum or are distinct from one another. These investigators assessed psychological distress via physiological responses (i.e., biomarkers), comparing the responses to variation in psychological well-being scores. The sample was comprised of 135 older women, ages 61 to 91 (M = 74 years old, SD = 7.08). Findings from this study showed support for the distinct hypothesis.

Seven biomarkers correlated with either psychological well-being, or psychological distress, but not both (thus showing distinction). Two biomarkers correlated with both constructs, positively with one, and negatively with the other (thus showing a mirrored relationship). Investigators selected biomarkers previously identified to be associated with psychological well-being and psychological distress, and correlated the constructs with one another. Biomarkers were comprised of neuroendocrine (salivary cortisol, epinephrine, norepinephrine, DHEA-S) and cardiovascular factors (weight, waist-hip ratio, systolic and diastolic blood pressure, HDL cholesterol, total/HDL cholesterol, glycosylated hemoglobin). Distress was defined by negative affect (measured by the PANAS Inventory); depressive symptoms (measured by the CES-D Scale); trait Anxiety (measured by the State-Trait Anxiety Inventory), and trait anger (by the State-Trait Anxiety Inventory). Psychological well-being was defined by Ryff's (1989) six factor model and measured with the 84-item version of the Scales of Psychological Well-Being (SPWB).

Seven biomarkers supported the distinct hypothesis. They included: cortisol (higher with stress), norepinephrine (body's natural hormone that produces a calming effect), DHEA-S (body's natural hormone associated with reducing fatigue and increasing clarity of thought), waist-hip ratio (higher ratio indicates direction towards obesity), systolic blood pressure (higher with stress), HDL cholesterol (healthy cholesterol), and total/HDL cholesterol (ratio of unhealthy to healthy cholesterol level). For instance, higher HDL levels were positively associated with scores on Purpose in Life and Personal Growth, but not correlated with distress. Also, DHEA-S levels were positively correlated to depressive symptoms, but not correlated with any well-being

dimension. The two biomarkers that supported the mirrored hypothesis were weight and glycosylated hemoglobin (an indicator of blood sugar, elevated in diabetics). That is, higher scores on Positive Relations with Others were correlated with lower weight, and higher scores of depression were correlated with higher weight. While significant ($p < 0.05$), no correlations exceeded |0.41|. Overall, correlations sizes ranged from small to medium, r = |0.17| to r = |.41|, (Cohen,1988).

While limited, existing physiological research provides some insight into relationships between women's psychological well-being and psychological stress. At least on a biological level, some evidence suggests stress is an important aspect to study relative to psychological well-being outcomes. For example, biomarkers from the neuroendocrine and immune systems have been analyzed in relation to women's scores on the Scales of Psychological Well-Being in Friedman et al. (2005). They evaluated levels of Interleukin-6 (IL-6), a type of blood plasma that increases with psychological stress, and found that higher levels of IL-6 predicted lower scores for Positive Relations with Others in these women. Other dimensions of psychological well-being were not assessed (e.g., Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance). The sample was also somewhat restricted in age range (61 to 90; M = 73.4). Ryff, Singer, and Love (2004) also assessed indicators of stress in a sample of older women (N = 135), age 61 to 91. While the age range was restricted to older women, they assessed all six subscales of psychological well-being. Findings showed that higher levels of salivary cortisol and pro-inflammatory Cytokines such as IL-6 (both of which are inflated with stress), were associated with lower psychological well-being scores.

Psychological well-being and psychological distress may operate independently of one another, or on a continuum. However, insufficient evidence exists to support either view (Keyes, 2002; Keyes et al., 2002; Ruini et al., 2003). Further investigation is warranted in order to clarify relationships between psychological well-being, psychological distress, and the different components (i.e., subscales) of each.

Ruini et al. (2003) conducted a study in Italy, for the purpose of understanding relationships between psychological distress and psychological well-being. Their sample included 450 Italian individuals, 57% women, ranging in age from 15 to 85 (*M* = 50 years of age). These investigators used the longer, 84-item version, of the SPWB in their study. Psychological distress measured by four subscales from the 92-item symptom questionnaire (SQ; Kellner, 1987): anxiety, depression, somatization, and hostility-irritability. Results showed that women scored significantly lower than men on all six Scales of Psychological Well-Being (SPWB) except Positive Relations with Others, in which they scored significantly higher. The Italian women also scored significantly lower on all six SPWB than women in the U.S. sample (Ruini et al., 2003). Investigators proposed that the lower psychological well-being scores for the Italian women may be due to relatively high levels of psychological distress. Strengths of the correlations, however, varied depending on the subscale. For example, these investigators found small negative correlations between the scores on the subscales of Autonomy, Personal Growth, Positive Relations with Others, and scores for psychological distress (alpha correlations ranging from -0.15 to -0.30). In this study, psychological distress was defined by degree of combined symptoms of depression and anxiety. Also, findings showed moderate negative correlations between Environmental Mastery, Purpose in Life,

and psychological distress, ranging from r = -0.40 to r = -0.49. Last, they found strong inverse relationships between scores on the Self-Acceptance subscale and anxiety (r = -0.54) and depression (r = -0.63). In conclusion, these investigators suggested that the relationship of psychological well-being and psychological distress is complex and calls for future research in this area. Also, stress, another aspect of psychological distress was not included in this study, and may also have an influence on psychological well-being. Therefore, more research is needed in order to understand how a more comprehensive construct of psychological distress (i.e., depression, anxiety, and stress in combination) relates to psychological well-being.

Even though women continue to suffer from several types of depression, anxiety, and phobic disorders, (DHHS, 2009; Simon, 2002), little is known about the influence of psychological distress on women's psychological well-being. For example, whether psychological distress correlates strongly with psychological well-being, or the two constructs function independently from one another remains unclear. One of the problems in assessing psychological distress, thus far, may be based on the various ways the construct is defined: depression, anger, "sick soul," ill-being, negative affect, and anxiety. Perhaps relationships between psychological distress and psychological well-being remain unclear due to the various uses of different definitions of psychological distress and various measures used. Therefore, findings in existing studies may be difficult to generalize.

Summary of Findings and Limitations of Prior Research

The purpose of the literature review was to gain a deeper understanding of how a number of sociodemographic and psychological factors influence women's psychological

well-being. In turn, research questions in the present study were designed to address knowledge gaps in this area as well as limitations of prior research. While a number of sociodemographic (age, household income, education, marital status, and race/ethnicity) and psychological factors (perceived social support and psychological distress) appear to influence psychological well-being scores, studies are limited in number, findings are now relatively outdated, the shorter, less reliable version of the Scales of Psychological Well-Being have been used more often than not, and studies using the longer, more reliable version of the measures are based on samples outside the United States. The largest gap in this body of research is a detailed understanding of women's experience with psychological well-being. In the following sections I synthesize findings, specify gaps in knowledge relative to women's psychological well-being, and describe limitations of prior work.

Age summary. Findings on age have been replicated in a number of studies, showing incremental patterns for Environmental Mastery and Autonomy, and decremental patterns for Purpose in Life across age groups (i.e., younger, middle-aged, and older adults). While a smaller body of evidence, Ryff (1989) found scores of Personal Growth to also decline with age. A recent study, however, little variation was found in psychological well-being scores on all six subscales according to age (Springer et al., 2011). These inconsistent findings demonstrate that, not only more research is needed in order to understand relationships between age and psychological well-being, but that little is known about women's experience, in particular.

Income summary. The influence of income on psychological well-being has largely been understudied. However, income has been shown to predict outcome scores,

accounting for a small amount of the variance in psychological well-being scores (less than 10%; Clarke et al., 2000). Income predicted more variance for Purpose in Life scores than for any other subscale (approximately 10%). Income in this study was treated as a continuous variable which may not capture the different living conditions and experiences that otherwise income brackets might show. Psychological well-being may be lower for those with less household income if there is less monetary means to obtain resources (e.g., healthcare needs, food, better living conditions, etc.) Also, the influence of gender remains unclear. How different levels of income influence women's psychological well-being may differ from the findings based on samples of both men and women. Further, the influence of income on women's different dimensions of psychological well-being has yet to be reported.

Education summary. Education has been shown to positively influence psychological well-being scores in both national and community samples. Findings showed positive correlations between years of education and overall psychological well-being. Findings also showed positive relationships between years of education and scores on each of the individual subscales. However, results published thus far have been based on data collected in the mid nineties, and may now be relatively outdated. Also, studies have not been focused on gender. Further, over the past decade women's graduation rates from college have risen and now more women graduate from college than men (National Bureau of Economic Research, 2007). How much education currently influences women's psychological well-being, not just at the college level, but at graduate level as well, remains unclear.

Marital status summary. Marital status shows potential for influencing women's psychological well-being. At least in older populations, the married fared better on each of the subscales of psychological well-being compared to the unmarried group. The sample was comprised of older Canadian seniors, age 65 and older (Clarke et al., 2000). Bierman et al. (2006) assessed the psychological well-being of individuals ages 18 to 78. They found that married individuals fared better than the unmarried on the Purpose in Life subscale. Other subscales were not evaluated. Thus, more research is needed in order to better understand how marital status influences the other aspects of psychological well-being (e.g., Autonomy, Environmental Mastery, Personal Growth, etc.). The influence of marital status on women's psychological well-being, for instance, remains unclear.

Race/ethnicity summary. The influence of race/ethnicity on psychological well-being has largely been understudied and the area is a gap in the research literature. In the one study on race/ethnicity and psychological well-being, positive relationships were evident. That is, "minority status" positively influenced psychological well-being and did so for scores on all individual subscales with the exception of Purpose in Life. When gender was taken into account, however, minority women's scores were significantly lower than women in the majority group (Whites). Thus, more research on women's psychological well-being based on different racial/ethnic groups is warranted. Women have been oppressed and discriminated against historically, not only based on gender, but on race/ethnicity as well. Specifically, the influence of race/ethnicity on women's psychological well-being has largely been overlooked. However, the category of race/ethnicity may merely be a proxy for amount of racism experienced.

Perceived social support summary. Like household income and race/ethnicity, perceived social support has received little attention for possibly being a factor influencing women's psychological well-being. At the same time, strong family and interpersonal connections may help women build resilience and protect them from mental illness (OWH, 2009). One study has been has addressed the influence of perceived social support on psychological well-being, however, only for the dimensions of Purpose in Life (Bierman et al., 2006). These investigators divided perceived social support into two types and found that, while perceived social support from family positively influenced Purpose in Life scores, perceived social support from friends did not have a significant effect. More research is warranted regarding the influence of perceived social support on women's psychological well-being overall and on each subscale. A limitation in previous assessment may be the definition of perceived social support. A global perception of social support has the potential to capture not just potential support available from family and friends, but also from other groups of people who may be just as, or even more, important to the individual (co-workers, supervisors, "church family" members, support group members, neighbors, and so on).

Psychological distress summary. Not surprisingly, psychological distress and psychological well-being scores have been shown to be inversely related. *How* the two factors are related, however, remains a matter of contention. Two theories have emerged in effort to explain this relationship. One is the mirrored hypothesis, and the other is the distinct hypotheses. As previously stated, the mirrored hypothesis claims that psychological distress and psychological well-being are inversely related. The distinct hypothesis suggests the idea that, while psychological distress and psychological well-

being are inversely related, they are not necessarily strongly related. For instance, as psychological distress decreases, psychological well-being does not necessarily increase. To date, insufficient evidence substantiates the validity of one theory over the other.

A number of gaps and inconsistent findings exist in this area of research. While women suffer a disproportionate amount of psychological distress (i.e., depression and anxiety related disorders) compared to men, little research has been conducted on the influence of psychological distress on women's psychological well-being. Also, the inconsistent use of definitions of psychological distress and inconsistent use of the corresponding instruments may threaten external validity of results and thus, make generalizing existing findings difficult. Perhaps a global assessment of women's psychological distress could help highlight the current status of women's mental health. Relating women's overall psychological distress to their psychological well-being could not only help explain how the two factors relate, but also the degree. Thus, findings obtained in this study may lend more support for either the mirrored or the distinct hypothesis.

Conclusions. Overall, several sociodemographic and psychological factors appear to potentially influence women's psychological well-being (household income, education, marital status, perceived social support, etc.). At the same time, studies focused on women remain largely absent from the area psychological well-being research. Also in existing work, the shorter, less reliable form of the Scales of Psychological Well-Being have been used. Thus, findings based on the use of the shorter form (18-item SPWB) may not be as valid as those based on the use of the longer form (84-item SPWB). Last, the majority of studies in this literature review were based on

MIDUS data that were collected in the years of 1995 and1996. Findings based on the MIDUS may now be relatively outdated.

The Present Study and Specific Aims

The purpose of the present study was to assess the influence of several research-based sociodemographic and psychological variables (age, household income, education, marital status, race/ethnicity, perceived social support, and psychological distress), on women's psychological well-being. Based on prior work and the present initiative to understand women's psychological well-being today, a number of aims were developed. Specific aims were developed to evaluate: (a) differences in women's overall psychological well-being scores according to age, household income level, education level, and marital status; (b) relationships among women's age, perceived social support, psychological distress, and psychological well-being scores; and (c) differences in women's subscale scores of psychological well-being based on different demographic variables (e.g., household income level, education level, and marital status).

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Chapter 2: Research Methods

In this chapter, I describe the research methods used in the present study. First I describe the data source, which was an existing dataset, then the characteristics of the sample used in the present study. I present measures used in the present study, their psychometric properties, and the scoring procedure for each measure. Operational definitions of the variables are also included. Then I present the research hypotheses, rationale for inclusion, and the corresponding statistical hypotheses. Analyses for each hypothesis tested are described. To note, procedures were those followed in the original study and outlined in this chapter as well. See Table 3.1 for a summary of the research hypotheses, statistical hypotheses, type of statistical test applied, and results.

Research methods for the study were based on those conducted in the original study, findings in the literature review, positive psychological well-being theory, and research questions in the present study. The purpose of the study was to examine how various research-based factors influence women's psychological well-being. Factors include five demographic characteristics (age, household income, education, marital status, race/ethnicity) and two psychological factors (Perceived Social Support and psychological distress).

Data Source and Sample Characteristics

Data for this study were drawn from an existing multi-year, IRB approved project entitled, "The Psychological Well-Being of Women Pre- and Post- Breast Cancer Diagnosis." Specifically, all data were derived from responses in the participant questionnaire packets of this existing study. Thus, the research design of this dissertation was an explanatory secondary data analysis. To note, questions and measures not

relevant to the purpose of the present study were excluded from data analyses. Questions related to religious affiliation, living situation, occupation status, whether or not the participant was the wage earner of the household, cancer history, care-giving responsibilities, perceived health, and spirituality were not evaluated in the present study. See Appendix A for the complete participant questionnaire packet used in the original study.

The data collection in the original study took place at the breast imaging clinic within a large community-based hospital in central Kentucky. Data collection began January, 2009 and concluded December, 2010. A total of 2,955 women participated in the study and approximately 1% of these women were diagnosed with breast cancer (n = 45). Women who were diagnosed with breast cancer were removed from the dataset, resulting in a sample size of 2,910 relatively healthy women. Then, because of errors and missing values, another 164 were removed (see Chapter 4 for details). Thus, the data of a total of 2,746 relatively healthy women were retained in the dataset and were analyzed in the present study. All subsequent descriptive and inferential statistics reflect this sample size.

Instrumentation

The purpose of the present study was to investigate how a number of factors influence women's psychological well-being. Therefore, data on age, household income, education, marital status, race/ethnicity, perceived social support, and psychological distress were selected and analyzed for their influence on women's psychological well-being scores. Five instruments were used in the present study.

The following section includes descriptions of the format and psychometric properties of the instruments used in the present study: a demographic questionnaire; the Depression, Anxiety, and Stress Scales (DASS; Lovibond & Lovibond, 1995); a Visual Analog Scale (VAS) of Perceived Social Support; and the Scales of Psychological Well-Being (SPWB, Ryff, 1989). See Appendix A for measures administered to participants in the complete participant questionnaire packet.

Demographic questionnaire. The demographic questionnaire was derived from the existing study entitled, The Psychological Well-Being of Women Pre- and Post-Diagnosis of Breast Cancer. Five demographic items were selected based on relevance to the present study. If items on the existing demographic form were not relevant to either the research purpose or research hypotheses, they were not included nor evaluated in the present study. In turn, demographic items selected for the present study included: age, household income, education, marital status, and race/ethnicity (See Appendix A for the complete demographic from which data were derived).

Perceived social support. The Visual Analog Scale (VAS) of Perceived Social Support was adapted from the Self-Anchoring Striving Scale by Cantril (1963) to measure a global perception of the construct. The type of Perceived Social Support measured in this study was a subject and global perception of social support available from family, friends, and healthcare personnel at the time of completing the measure. Participants circle a number on the scale, 0 reflecting *poor* perceived social support and 10 reflecting *excellent* perceived social support. Answers other than numbers ranging from 0 to 10 were designated as error or missing, unless the participant endorsed a response precisely between two numbers on the scale. In such a case, the value plus 0.5

was recorded in the dataset. See Appendix A for the measure as it was used in the participant questionnaire packet.

The adapted Visual Analog Scale of Perceived Social Support that was used in the study has not yet been validated, however, similar scales have been shown to be an effective way of assessing global and subjective phenomenon in a variety of settings. In addition to pain, which has been the most common use, Visual Analog Scales have been used to assess fatigue, dyspnea, mood, and anxiety (Frank-Stromborg & Olsen, 2004; Kindler, Harms, Amsler, Ihde-Scholl, & Scheidegger, 2000). Visual Analog scales have a number of advantages such as simplicity of format, ease of administration, efficiency, and sensitivity to change over time (Sloan et al., 2002). Alternate form reliability has ranged from 0.65 (Cantril's [1963]Self-Anchoring Striving Scale), to 0.97 (VAS/ pain). The test-retest reliability of the VAS used in the present study was calculated on a small sample size ($n = 8$) and found to be strong ($\alpha = .99$). Time between test administrations was two weeks.

Psychological distress. The Depression, Anxiety, and Stress Scales (DASS) instrument was designed to measure different negative emotional states and overall psychological distress experienced over the past two weeks (Lovibond & Lovibond, 1995). The instrument is comprised of 42 items with each item ranging from 0 to 3, and total scores ranging from 0 to 126. Higher scores indicate more severe psychological distress and lower scores indicate what is considered a more normal range of functioning. Total psychological distress for this instrument was conceptually defined as "negative affectivity," a term originally developed by Watson and Clark (1984). Negative affectivity (NA) is a comprehensive subjective perception of distressful symptoms

experienced by a person at a given time. High NA can be manifested in a variety of emotional experiences such as guilt, anger and nervousness, while low NA reflects an absence of these feelings (Watson & Clark, 1984). Items incorporated in the DASS represent the comprehensive experience of Negative Affectivity (Crawford & Henry, 2003). See Appendix B for items included in the DASS.

Participants completing the DASS were asked to respond to each item as it pertained to their experiences over the past 2 weeks. They were asked to rate each of the items on a 4-point Likert scale ranging from 0 to 3, where 0 represents *did not apply to me at all*, and 3 represents *applied to me very much, or most of the time*. Results in this study were compared to the normative sample on which the instrument was developed.

The DASS has been reported to have strong psychometric properties. The reliabilities (internal consistencies) of the subscales anxiety, depression, stress and total score were estimated using Cronbach's alpha. Results showed an alpha of .90 for the anxiety scale, .95 for the depression scale, .93 for the stress scale, and .97 for the total score (Crawford & Henry, 2003). The normative sample included men (n = 806) and women (n = 965), totaling in 1,771 members of the general adult population. Participant ages ranged from 15 to 91 with an average age of 40.90 (SD = 15.). Complete DASS data were collected from participants in a wide variety of settings including commercial and public service organizations, community centers and recreational clubs. Women in the normative sample scored an average of 19.9 (SD = 20.82) for the total score on the DASS. Gamma coefficients representing the loading of each scale on the total score are .71 for depression, .86 for anxiety and .88 for stress. Scale reliability for the total score

was computed in the present study and found to be the same as previously identified (α = .97).

Scales of psychological well-being (SPWB, Ryff, 1989). The Scales of Psychological Well-Being (SPWB) is an 84-item instrument designed to assess the six theoretically-based dimensions of positive functioning. Subscales include 14 items each and are titled: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance. Participants are asked to rate their responses to each item that best describes their experience with the given statement. Participants rate their responses on a 6-point Likert scale ranging from 1 *strongly disagree*, to 6, *strongly agree.* Negatively worded items are reversed scored so that higher scores on each subscale represent higher perceived positive functioning in the corresponding area. Also, higher scores for all 84 items indicate higher overall psychological well-being. Total scores per subscale can range from 14 to 84 and total scores for the entire instrument can range from 84 to 504. See Appendix C for items on the SPWB.

The psychometric properties of the SPWB have been demonstrated as strong. For example, coefficients for internal consistency range from 0.83 to 0.91 per subscale: Autonomy (α = .83), Purpose in Life (α = .88), Positive Relations with Others (α = .88), Personal Growth (α = .85), Environmental Mastery (α = .86), and Self-Acceptance (α = .91). Correlations between the 14-item subscales and their own 20-item original subscale range from 0.97 to 0.99, demonstrating consistent testing of the constructs despite the decrease in test items. Test-retest coefficients for the 84-item instrument range from .81 to .88 for each subscale (Ryff, 1989). The normative sample used to develop the SPWB

consisted of 321 men and women with the following reported age information: young adults (n = 133, M = 19.53, SD = 1.57), middle-aged adults (n = 108, M = 49.85), and older adults (n = 80; M = 74.96, SD = 7.11). Results of evaluating the normative sample showed that the vast majority of participants were well-educated (i.e., completed a college/university level education or higher), perceived themselves to be financially comfortable, and perceived themselves to be relatively healthy (Ryff, 1989). Total psychological well-being scores for a normative group are not available. However, total scores have been described as high, moderate, or low depending on if they fall in the top third, middle third, or lowest third of possible responses (Keyes et al., 2002) Reliability scores for the entire 84-item instrument have been shown to be strong in a past study (α = .97) (Urry et al., 2004) as well as in the present study (α = .89).

Operational Definitions

This section includes descriptions of the variables measured in the study and operational definitions of each. The purpose of this section is to provide a detailed summary of how variables were measured and coded in the dataset. All demographic variables were categorical, except for age which was analyzed as both a categorical and continuous. Perceived social support and psychological well-being were treated as ordinal variables.

Age. Age was operationalized as both a categorical and a continuous variable in the present study. Age as a continuous value, was measured with one item on the demographic questionnaire, "Age ___." Also, for some analyses, I collapsed the continuous values of age into three groups: *young adults* (18-29), *middle-aged adults* (30-64), and *older adults* (65 and older). Groups were designated based on those presented in

the research so that comparisons between results in this study and prior work could be made. Each participant score was coded in the database as belonging to one of three groups (a) *young adult*, (b) *middle-aged adult*, or (c) *older adult*.

Household income. Household income was operationalized by the use of one demographic item. Participants were asked to describe their household income according to one of four levels, thus categorically. Each participant response was coded in the dataset as falling into one of four groups: (a) *less than or equal to $20,000*, (b) *$20,001-$40,000*, (c) *$40,001 - $80,000*, or (d) *more than $80,001*.

Education. Education was operationalized by the use of one item on the demographic questionnaire. Participants were asked to circle the highest level of education completed to date. Each level was coded in the dataset as (a) *elementary school*, (b) *high school*, (c) *college/university*, and (d) *graduate school.* Categories of college and university were collapsed into one level of college/university due to commonality therein. Also, categories of elementary school and high school were later collapsed into one category of elementary/high school, due to a small sample size in the elementary school group (n = 7). Thus, after collapsing categories, participants' education levels were coded in the dataset as falling into one of three groups: (a) *elementary/high school*, (b) *college/university*, or (c) *graduate school.*

Marital status. Marital status was operationalized by the use of one item in the demographic questionnaire. Participants are asked to circle their marital status according to one of five groups. Marital status responses were coded in the database as belonging to one of five groups: (a) *married*, (b) *divorced*, (c) *separated*, (d) *single*, or (e) *widowed*.

Race/ethnicity. Race/ethnicity was operationalized by one demographic item. Participants were asked to describe their race/ethnicity according to one of five groups. A blank space was provided for participants to record their own response not otherwise listed. Participants' responses were coded in the database as falling into one of five groups: (a) *Caucasian*, (b) *African-American*, (c) *Hispanic*, (d) *Asian*, or (e) *Other*.

Perceived social support. Perceived Social Support was operationalized by use of a Visual Analog Scale. Participants were asked to rate their Perceived Social Support from various individuals in their lives including friends, family, and health care personnel on a scale of 0 to 10, 0 being *poor* perceived social support, and 10 being *excellent* perceived social support. Data were entered in the database according to the number endorsed by the participant.

Psychological distress. Psychological distress was operationalized by obtaining a total score from the Depression, Anxiety, and Stress Scales (DASS; Lovibond & Lovibond, 1995). Participants rated each item on a scale of 0 to 3: 0 *did not apply to me at* all, 1 *applied to me to some degree, or some of the time*, 2 *applied to me to a considerable degree, or a good part of time*, or 3 *applied to me much of the time*. Total psychological distress scores were obtained by summing all responses from the 42-item instrument; and scores could potentially range from 0 to 142. A syntax was designed and run in the statistics software (SPSS 17.0) in order to obtain the total score for each participant.

Psychological well-being. Psychological well-being was operationalized using Ryff's (1989) Scales of Psychological Well-Being (SPWB). Each dimension of psychological well-being was measured by the use of a subscale (Autonomy, Purpose in

Life, Positive Relations with Others, Personal Growth, Environmental Mastery, or Self-Acceptance). Each subscale contains 14 items and total subscale scores can range from 14 to 84. The total instrument contains 84 items and total scores can range from 84 to 504. While cutoff scores are not available, levels have been outlined in previous research. Scores were considered high if scores fell in the top third, moderate if they fell in the middle third, and low if they fell in the bottom third of observed responses (Keyes et al., 2002). Participants rated each item according on a 6-point Likert scale: 1 *strongly disagree*, 2 *disagree somewhat*, 3 *disagree slightly*, 4 *agree slightly*, 5 *agree somewhat*, or 6 *strongly agree.* Negatively worded items were reversed coded using a syntax code in the statistical program (SPSS 17.0). Also, syntax codes were designed and run to obtain total scores for the instrument and each subscale.

Research and Statistical Hypotheses

Drawing on the reviewed literature, national concerns for women's psychological well-being, and tenets of the positive psychological well-being framework, a number of research hypotheses were developed. In cases where literature and theory provided an adequate basis, directional hypotheses were designated. In cases where literature and theory did not provide an adequate basis, exploratory hypotheses were constructed. See Table 3.1 for an overall summary of both research and statistical hypotheses. In the following section, I describe the twenty-two research hypotheses tested in the present study and a rationale for inclusion of each.

Hypothesis 1. Total psychological well-being scores will differ for women in different sociodemographic groups: age (young adult, middle-aged adults, older adults), highest education level completed (elementary school, high school, college/university, or

graduate school), household income level (less than $20,000; $20,001 - $40,000; $40,001 - $80,000; and more than $80,000), marital status (married, divorced, separated, single, and widowed), and racial/ethnic groups (Caucasian, African-American, Hispanic, Asian, and Other).

Hypothesis 1a. Women will have significantly different total psychological well-being scores based on age. Theoretically, as individuals age, they are faced with different developmental challenges. If met successfully, individuals acquire skills and abilities that improve their positive functioning in life. While most individuals successfully pass through the stages of development, the process is not necessarily linear (Erikson, 1959). Findings in positive psychological well-being studies are conflicting. Some studies show an increase in areas of functioning and a decline in others. A more recent study shows that age does not relate to positive functioning. Gender was not the focus of these studies, and thus, the influence of age on women's psychological well-being remains unclear. In the following statistical hypothesis subscripts are defined as: Y = younger adults (age 18 – 29), M = middle-aged adults (age 30 – 64), and O = older adults (age 65 and older).

H_1: $\mu_Y \neq \mu_M \neq \mu_O$

(H_0: $\mu_Y = \mu_M = \mu_O$)

Hypothesis 1b. Women will have significantly different total psychological well-being scores based on household income levels. Theoretically, income is a basic need that if met, provides individuals the means to resources that in turn, improve positive functioning (Maslow, 1968). Studies support a positive relationship between income and positive psychological well-being (Clarke et al., 2000), but this relationship may not be

linear. Income may positively influence psychological well-being to a certain extent, then at higher levels no longer have an effect (Kahneman & Deaton, 2010). The influence of income on women's psychological well-being has remained an understudied area of research. In the following statistical hypothesis subscripts are defined as: 10K = an income less than $20,000; 20K = an income between $20,001 and $40,000; 40K = an income between $40,001 and $80,000; and 80K = an income greater than $80,000.

H_1: $\mu_{10K} \neq \mu_{20K} \neq \mu_{40K} \neq \mu_{80K}$

(H_0: $\mu_{10K} = \mu_{20K} = \mu_{40K} = \mu_{80K}$)

Hypothesis 1c. Women will have significantly different total psychological well-being scores based on education level. Education has been shown to positively influence areas of positive functioning such as self-esteem, purpose in life, and autonomy (WHO, 2011). Findings in positive psychological well-being research support this claim (Chrouser Ahrens & Ryff, 2006). While education appears to positively influence psychological well-being, graduate school and college/university level education have not yet been compared. Thus, whether or not obtaining a graduate level education influences women's psychological well-being remains unclear. In the follow statistical hypothesis subscripts are defined as: H = high school level education, C = college/university level education, and G = graduate level education completed.

H_1: $\mu_H \neq \mu_C \neq \mu_G$

(H_0: $\mu_H = \mu_C = \mu_G$)

Hypothesis 1d. Women with different marital statuses will have significantly different total psychological well-being scores. Theoretically, being married brings difference resources, such as the potential of social support, higher income, and having a

family that may enhance positive functioning (Simon, 2002). Studies are limited in this area, however, being married has been positively associated with scores on the Purpose in Life subscale (Simon, 2002). Scores for the other subscales and total psychological well-being have not been reported. Thus, influence of marital status on women's psychological well-being remains unclear. In the following statistical hypothesis subscripts are defined as: M = married, D = divorced, Sep = Separated, S = Single, and W = widowed marital status.

H_1: $\mu_M \neq \mu_D \neq \mu_{Sep} \neq \mu_S \neq \mu_W$

(H_0: $\mu_M = \mu_D = \mu_{Sep} = \mu_S = \mu_W$)

Hypothesis 1e. Caucasian women will have significantly higher total psychological well-being scores than African-American women. While women in the U.S. are discriminated against based on gender, they are also often discriminated for belonging to minority racial/ethnic groups (Keith et al., 2003). This instance of "double jeopardy" places women of ethnic/racial minorities, such as African-American women, at more of a risk for diminished psychological well-being, compared to Caucasian women. This area of research is largely understudied, but existing evidence supports this claim (Ryff et al., 2003). In the following statistical hypothesis subscripts are defined as: C = Caucasian and AA = African-American women.

H_1: $\mu_C > \mu_{AA}$

(H_0: $\mu_C = \mu_{AA}$)

Hypothesis 2. Significant relationships will be evidenced between Perceived Social Support and total psychological well-being, as well as between psychological distress and psychological well-being.

Hypothesis 2a. A significant relationship will be evidenced between Perceived Social Support and total psychological well-being scores. Evidence supports this claim for degree of perception of support from family and scores on the Purpose in Life subscale (Bierman et al., 2006). Perception of support from friends did not significantly influence scores on the Purpose in Life subscale. The influence of a global assessment of Perceived Social Support on psychological well-being has not been studied. Therefore, the influence of women's Perceived Social Support on scores of psychological well-being remains unclear. Also, determining a relationship may be difficult due different definitions of the construct in existing research. In the following statistical hypothesis subscripts are defined as: SS = perceived social support and PWB = total psychological well-being score.

H_1: $\rho_{SS/PWB} \neq 0$

(H_0: $\rho_{SS/PWB} = 0$)

Hypothesis 2b. A significant relationship will be evidenced between psychological distress and total psychological well-being scores. Women suffer from a high number of mental disorders including depression, anxiety-related disorders, and mood disorders (Kessler et al., 2005; OWH, 2009). Based on these findings, women have been identified to be at risk for diminished psychological well-being. Studies support this claim (Greenfield & Marks, 2004; Ruini et al., 2003; Ryff, 1989; Ryff & Singer, 2006; Simon, 2002). Evidence throughout the research conflicts, however, how these constructs relate to one another (e.g., strong correlation, moderate correlation, etc.). Further, a more comprehensive definition of distress, combining depression, anxiety, and stress has not been evaluated for influence on women's psychological well-being. Thus,

the nature of the relationship remains unclear. In the following statistical hypothesis subscripts are defined as: DASS = total score on the Depression, Anxiety, and Stress Scales (i.e., psychological distress) and PWB = total psychological well-being score.

H_1: $\rho_{DASS/PWB} \neq 0$

(H_0: $\rho_{DASS/PWB} = 0$)

Hypothesis 3. A significant relationship will be evidenced between age and scores on the six subscales: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery. Findings in several studies support these claims (An & Cooney, 2006; Clarke et al., 2000; Clarke, Marshall, & Ryff, 2001; Heidrich & Ryff, 1993, 1995). However, conflicting evidence exists, such as in findings obtained in a recent study where investigators did not find significant relationships between age and scores on any of the six subscales (Springer et al., 2011). Gender was not the focus of existing studies, thus the influence of women's age on scores for the six subscales remains unclear.

Hypothesis 3a. A significant relationship will be evidenced between age and Autonomy. In the following statistical hypothesis subscripts are defined as: A = age and Au = Autonomy score.

H_1: $\rho_{A,Au} \neq 0$

(H_0: $\rho_{A,Au} = 0$)

Hypothesis 3b. A significant relationship will be evidenced between age and Purpose in Life. In the following statistical hypothesis subscripts are defined as: A = age and Pu = Purpose in Life score.

H_1: $\rho_{A,Pu} \neq 0$

(H_0: $\rho_{A,Pu} = 0$)

Hypothesis 3c. A significant relationship will be evidenced between age and Positive Relations with Others. In the following statistical hypothesis subscripts are defined as: A = age and Po = Positive Relations with Others score.

H_1: $\rho_{A,Po} \neq 0$

(H_0: $\rho_{A,Po} = 0$)

Hypothesis 3d. A significant relationship will be evidenced between age and Personal Growth. In the following statistical hypothesis subscripts are defined as: A = age and Pe = Personal Growth score.

H_1: $\rho_{A,Pe} \neq 0$

(H_0: $\rho_{A,Pe} = 0$)

Hypothesis 3e. A significant relationship will be evidenced between age and Environmental Mastery. In the following statistical hypothesis subscripts are defined as: A = age and E = Environmental Mastery score.

H_1: $\rho_{A,E} \neq 0$

(H_0: $\rho_{A,E} = 0$)

Hypothesis 3f. A significant relationship will be evidenced between age and Self-Acceptance. In the following statistical hypothesis subscripts are defined as: A = age and SA = Self-Acceptance score.

H_1: $\rho_{A,SA} \neq 0$

(H_0: $\rho_{A,SA} = 0$)

Hypothesis 4. A significant relationship will be evidenced between Perceived Social Support and each of the six subscales: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance. Studies are limited in this area of study. Further, existing evidence is conflicting as perceived support from family was positively associated with Purpose in Life scores, but perceived support from friends was not. Relationships between women's global perception of social support available (from family, friends, and healthcare personnel) and psychological well-being have not been addressed. The definition of perceived social support reflects that used in the original study, "The psychological well-being of women pre- and post- a breast cancer diagnosis," and deviates from previous definitions of the construct. Thus, relationships between perceived social support and psychological well-being of relatively healthy women may be difficult to discern.

Hypothesis 4a. A significant relationship will be evidenced between Perceived Social Support and Autonomy. In the following statistical hypothesis subscripts are defined as: SS = Perceived Social Support and Au = Autonomy score.

H_1: $\rho_{SS,Au} \neq 0$

(H_0: $\rho_{SS,Au} = 0$)

Hypothesis 4b. A significant relationship will be evidenced between Perceived Social Support and Purpose in Life. In the following statistical hypothesis subscripts are defined as: SS = Perceived Social Support and Pu = Purpose in Life score.

H_1: $\rho_{SS,Pu} \neq 0$

(H_0: $\rho_{SS,Pu} = 0$)

Hypothesis 4c. A significant relationship will be evidenced between Perceived Social Support and Positive Relations with Others. In the following statistical hypothesis subscripts are defined as: SS = Perceived Social Support and Po = Positive Relations with Others score.

H_1: $\rho_{SS,Po} \neq 0$

(H_0: $\rho_{SS,Po} = 0$)

Hypothesis 4d. A significant relationship will be evidenced between Perceived Social Support and Personal Growth. In the following statistical hypothesis subscripts are defined as: SS = Perceived Social Support and Pe = Personal Growth score.

H_1: $\rho_{SS,Pe} \neq 0$

(H_0: $\rho_{SS,Pe} = 0$)

Hypothesis 4e. A significant relationship will be evidenced between Perceived Social Support and Environmental Mastery. In the following statistical hypothesis subscripts are defined as: SS = Perceived Social Support and E = Environmental Mastery score.

H_1: $\rho_{SS,E} \neq 0$

(H_0: $\rho_{SS,E} = 0$)

Hypothesis 4f. A significant relationship will be evidenced between Perceived Social Support and Self-Acceptance. In the following statistical hypothesis subscripts are defined as: SS = Perceived Social Support and SA = Self-Acceptance score.

H_1: $\rho_{SS,SA} \neq 0$

(H_0: $\rho_{SS,SA} = 0$)

Hypothesis 5. Different levels of income will result in significantly different Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance scores. Evidence supports this claim (Clarke et al., 2000; Kahneman & Deaton, 2010). However, the relationship between income and psychological well-being is not linear and may only increase to a certain extent. Thus, while some income brackets may correspond to higher psychological well-being, the highest level of income may not significantly differ. Only cursory attention has been given to this area of research. Further research is warranted in order to obtain clarification on how women's income level influences different dimensions of psychological well-being. In the following statistical hypothesis subscripts are defined as: 10K = an income less than $20,000; 20K = an income between $20,001 and $40,000; 40K = an income between $40,001 and $80,000; and 80K = an income greater than $80,000.

H_1: $\mu_{10K} \neq \mu_{20K} \neq \mu_{40K} \neq \mu_{80K}$

(H_0: $\mu_{10K} = \mu_{20K} = \mu_{40K} = \mu_{80K}$)

Hypothesis 6. Different levels of education will result in significantly different Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance scores. Evidence supports this claim. Education has been positively associated with subscale scores of psychological well-being in women, particularly on the dimension of Autonomy (Chrouser Ahrens & Ryff, 2006). Comparing women's subscale scores based on graduate versus lower levels of education have not yet been reported. Thus, whether or not a graduate level education influences women's psychological well-being remains unclear. In the follow statistical

hypothesis subscripts are defined as: H = high school level education, C = college/university level education, and G = graduate level education completed.

H_1: $\mu_H \neq \mu_C \neq \mu_G$

(H_0: $\mu_H = \mu_C = \mu_G$)

Hypothesis 7. Different types of marital status will result in significantly different Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance scores. Research is limited in this area, however, existing evidence supports that being married positively influences Purpose in Life scores (Bierman et al., 2006). Outcomes for the other five subscales were not reported. Thus, the influence of women's marital status on different dimensions of psychological well-being remains unclear. In the following statistical hypothesis subscripts are defined as: M = married, D = divorced, Sep = Separated, S = Single, and W = widowed marital status.

H_1: $\mu_W \neq \mu_{Si} \neq \mu_S \neq \mu_D \neq \mu_M$

(H_0: $\mu_W = \mu_{Si} = \mu_S = \mu_D = \mu_M$)

Research Design

The research design for this dissertation was an explanatory secondary data analysis. The existing study involved collection of cross-sectional data from a convenience sample of women at a breast imaging center. The participants were those who were recalled for a secondary mammogram, or "diagnostic mammogram" (an X-ray of the breasts used to check for breast cancer after a lump or other sign or symptom of breast cancer has been found, National Cancer Institute, 2010). Women eventually diagnosed with breast cancer were excluded from the dataset in the present study. Thus,

the study's participants were women who had some initial symptoms possibly related to breast cancer who took the instrument while waiting for their follow-up assessment.

Procedure

The procedure for data collection took place in the waiting room at a breast imaging clinic at a large community-based hospital in Kentucky. Women recalled for a diagnostic mammogram, who were at least 18 years of age, English literate, with no prior history of any type of cancer, were eligible to participate in the study. Women who did not meet these criteria or were unable to complete the study requirements without help from another person, were excluded from the study. While potential participants waited for their doctor's appointments, a research assistant made an announcement to invite individuals to participate in the study. She said, "Hello, my name is _____. I am running the Psychological Well-Being of Women study today and we are looking for women to participate in our study if you are here for a diagnostic, or recall, mammogram. If you choose to participate in the study, we ask that you fill out a consent form (See Appendix D) and a questionnaire packet (See Appendix A). Total participation time will take 15-20 minutes. For your time and effort, we are offering a small gift, which is a pink and white coffee mug. Is anyone interested in participating?"

If interested, participant(s) were taken aside into in a quiet, confidential room that was adjacent to the waiting room, and provided both the informed consent and questionnaire packet. The research assistant gave an overview of the consent form and described what the study would entail. As part of this introductory portion of the study, individuals were asked if they had ever been diagnosed with a type of cancer in the past. If so, then they were asked not to continue participating in the study. Then participants'

name, address, phone number, and date of birth were recorded on a separate form. This identifying information was recorded for the purpose of the original study and no identifying information was used in the present study.

Then each participant was asked to read and sign the consent form (see Appendix D). During this time, the research assistant was available to answer any questions. Once the consent form was signed, a copy was made for the participant to keep and the original was retained by the research assistant. Immediately following completion of the consent form, participants were provided the questionnaire packet (see Appendix A). As patients' appointments take anywhere from one to three hours (most of their time is waiting for procedures), participants had ample time to complete the packets. Once packets were completed, participants turned them in to the research assistant and received a small gift in return (a pink and white ceramic coffee mug). At the end of the day, the research assistant collected all the participant packets, consent forms, and information sheets (containing names, addresses, phone numbers, etc.), and stored them in a locked and secure file in the research office at the hospital.

The breast cancer navigator was provided the identifying information in order to follow up with women diagnosed with breast cancer. As part of her role on the study, she contacted them by mail and asked women diagnosed with breast cancer to complete the questionnaire packet a second time. The breast cancer navigator was responsible for tracking which participants received a diagnosis according to their packet number. Women diagnosed with breast cancer were identified in the dataset in the original study and coded as such (1 = *diagnosed*, 2 = *not diagnosed*). All women coded as diagnosed were removed from the dataset for purposes of the present study. Thus, evaluations and

analyses of women in the present study reflect entirely, relatively healthy individuals (*N* = 2,746).

Data Analysis

First, preliminary analyses were conducted in order to assess for errors, missing data, and outliers in the dataset. Normality of distributions was computed, but due to having a large sample size, data were not transformed. Skewness and kurtosis scores were obtained. Due to limited amount of research available on women and psychological well-being, the research design was explanatory.

Total psychological well-being scores were compared based on a number of categorical demographic variables. In order to test for the presence of difference between total psychological well-being scores per demographic variable (age group, household income level, education level, marital status, and racial/ethnic group), several one-way analyses of variance (ANOVAs) and one independent *t*-test were conducted. In each ANOVA, the demographic variable served as the independent variable and total psychological well-being served as the dependent variable (Hypotheses 1a-1d). In order to guard against the possibility of an increased Type 1 error and to determine how outcomes of independent variables differ, a Scheffe' MCP post hoc comparison test was calculated. Psychological well-being scores were also compared based on race/ethnicity (Hypothesis 1e), however, only between Caucasian and African-American women. Data on other groups were collected, but sample sizes were too small to draw meaningful comparisons.

Two psychological variables, Perceived Social Support, and psychological distress were evaluated in relation to total psychological well-being scores. Two tests

were conducted using Pearson Product Moment correlations to evaluate the direction and strength of relationships between Perceived Social Support and psychological well-being, and psychological distress and psychological well-being (Hypothesis 2a-2b).

To test the influence of age on each dimension of psychological well-being, Pearson Product Moment correlations were computed between the independent variable (age) and six dependent variables (each of the six subscales of psychological well-being). The direction and strength of the relationships between age and the following were tested: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance (Hypothesis 3a – 3f).

To test the influence of Perceived Social Support on each dimension of psychological well-being, Pearson Product Moment correlations were computed between the independent variable (Perceived Social Support) and six dependent variables (each of the six subscales of psychological well-being). The direction and strength of the relationships between Perceived Social Support and the following were tested: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance (Hypothesis 4a – 4f).

In order to test the influence of household income on women's psychological well-being subscale scores, a multivariate analysis of variance (MANOVA) was conducted. Household income was the independent variable and the six scales of psychological well-being served as the dependent variables (Hypothesis 5).

The influence of education and marital status on scores of the six subscales of psychological well-being, were tested in the same manner, conducting a multivariate analysis of variance (MANOVA) for each separate demographic variable. Income served

as the independent variable and scores on the six subscales served as the dependent variables (Hypothesis 6). Subsequently, marital status served as the independent variable and scores on the six subscales served as the dependent variables (Hypothesis 7).

Preliminary assumption testing was conducted for Hypotheses 5-7 in order to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, to ensure that no serious violations were noted. Follow-up pos hoc ANOVA tests were conducted in order to further investigate where and how subscale scores differed based on each of the demographic variables. Where ANOVA tests resulted in significant differences, Scheffe' post hoc tests were computed and used to identify significant differences in subscale scores of psychological well-being based on the demographic variable. See Table 3.1 for a summary of results of hypotheses testing and Tables 3.11-3.40 for details results per hypothesis tested.

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Chapter 3: Results

The high prevalence rate of women suffering from mental disorders is a continuing social and public health concern. Given the literature on the influence of sociodemographic variables in question and other psychological factors on women's psychological well-being with attention to the gaps therein, clearly further research in this area is needed. The purpose of the present study was to examine factors that have been hypothesized to impact women's psychological well-being. Specifically, the present study was designed in order to examine how age, household income, education, marital status, race/ethnicity, perceived social support, and psychological distress, influence women's psychological well-being. In order to address gaps in previous research, I evaluated relationships between these variables and psychological well-being scores in a large database comprised entirely of women (N = 2,746). In this chapter I describe the details regarding screening/cleaning the dataset, running the preliminary analyses, and the findings relevant to the research hypotheses.

Screening and Cleaning the Dataset

A total of 2,910 relatively healthy women were included in the present study before cases with errors or missing data were removed. First, I identified and corrected errors in the dataset. Errors were found by running descriptives and evaluating the observed range of scores per item; any score falling outside a possible range of scores was designated an error (n = 8). Participant packets with errors (n = 8) were removed from the dataset. Individuals with incomplete participant packets (missing at least one demographic response or missing more than ten items on an instrument) were also

removed from the dataset (n = 156). In turn, a total of 164 participants were removed from the dataset and the remaining 2,746 participants were analyzed in the present study.

Errors for continuous variables were substituted with the mean score of all other scores obtained on that item for the total 2,746 participants. Missing continuous data were replaced with mean substitutions as well, as recommended by van Ginkel, van der Ark, and Sijtsma (2007) and Hawthorne and Elliott (2005). Also, according to Tabachnick and Fidell (2007), having less than 5% missing or erroneous data in a large dataset will likely not produce any serious problems. In the present dataset, less than 2% of the cases per item were missing or erroneous, and mean substitutions were made for these values.

Preliminary Analyses

Preliminary analyses allow for exploration of the nature of the variables in the dataset (Pallant, 2005). Preliminary analyses included: descriptive statistics (e.g., evaluating categorical data, evaluating continuous data, assessing normality, and checking for outliers), data manipulations, and tests of scale reliability. Each process is discussed in this section. Also, see Tables 3.2 to 3.5 for summaries of the preliminary findings.

Normality. The shape of each distribution of scores was tested for normality. Results showed that scores for each measure and corresponding subscales violated the assumption of normality. For example, the Kolmogorov-Smirnov tests significance at the $p < .001$ level. The distribution of scores for Perceived Social Support were negatively skewed (-2.07) and platykurtic (4.84). The distribution of scores for total psychological distress were positively skewed (2.11) and was also platykurtic (4.84). These types of

violations of normality are common in larger samples (Pallant 2005). However, violations of assumptions of normality should not have serious consequences on the validity of the probability of findings due to the large sample size (Glass, Peckham, & Sanders, 1972). Therefore, data were not transformed into normal distributions. See Table 3.3 for a summary of descriptive statistics per measure.

Outliers. The dataset contained a number of univariate outliers (n = 318). Scores falling outside the critical value of $z = |3.29|$ were identified as outliers (Tabachnick & Fidell, 2007). Each of these cases were reviewed in order to determine whether or not the values were valid or errors. All outlying values appeared to be valid (e.g., no evidence of random answering or mistake in entering data). Five percent trimmed means were evaluated in order to observe if means drastically changed after extreme scores were removed. Trimmed mean scores showed that extreme values did not have much of an impact on the original mean. The trimmed means and original means did not differ by more than two points on any continuous variable (Perceived Social Support, total psychological well-being, or subscale scores of psychological well-being), except for total psychological distress scores. The original mean of the DASS score was 17.64 (SD = 19.26) and the trimmed mean was 15.21. This mean difference of 2.43 was considered small as total DASS scores potentially range from 0 to 126. In general, removing all the extreme scores (i.e., 5% trimmed mean) from the dataset did not change the mean score enough to warrant removal of outliers or extreme scores. Therefore, no scores were removed from the dataset.

Data manipulation. I performed a number of data manipulations for the purpose of hypothesis testing. First, I designed and ran syntax to reverse negatively worded items

on the Scales of Psychological Well-Being. Thus, higher scores indicated higher psychological well-being. Then, I summed the scores of the items for the Depression, Anxiety, and Stress Scales (DASS) as well as for the Scales of Psychological Well-Being (SPWB) by running a syntax to total the scores. Included in this syntax, items for individual subscales were also summed per subscale (Depression, Anxiety, Stress, Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance). Further, levels of psychological distress were determined as those outlined in the DASS manual (Lovibond & Lovibond, 1995) and a syntax was run in order to obtain frequencies of scores per level of symptom severity.

In regards to demographic and categorical variables, age, was collapsed into a categorical variable (younger adult, middle-aged adult, and older adult). Also, the four education levels were collapsed to three due to a small sample size in the elementary school category (n = 13). Education levels became: high school and lower, college/university, and graduate school. Each level then contained at least 252 participants per category, providing a sufficient amount of power (.90) to detect meaningful differences.

The alpha level was adjusted using a Bonferroni correction. Due to having a large sample size, a large number of statistical tests, and high interrelatedness between variables, a conservative alpha adjustment like Bonferroni was considered appropriate. Therefore, the standard alpha level of .05 was divided by the total number of tests conducted (22 in total), decreasing the alpha level to .002. All subsequent findings

described as significant or not significant, were determined based on the adjusted alpha level.

Internal Consistency Reliability of Measures Used

Alpha coefficient values for each measure in the study demonstrated strong internal consistency reliability. For example, alpha coefficients for the Depression, Anxiety, and Stress Scales (DASS) were .95, .90, and .94, respectively. The overall reliability coefficient for the DASS was .97. Alpha coefficients for the subscales of Scales of Psychological Well-Being (SPWB) were also high. Scores ranged from .80 to .90 per subscale. Overall, the correlation coefficient for the entire 84-item instrument was .97. See Table 3.5 for all the internal consistency reliability scores per measure and corresponding subscales.

Results of Descriptive Statistics

First, I evaluated the frequencies of scores for each of the categorical variables in the study. All the categorical variables represented different demographic characteristics of the sample, collected with the demographic questionnaire (See Appendix A). Demographic variables included: age, household income, education level, marital status, and race/ethnicity. Age was the only demographic variable to be treated as both a continuous variable (M = 49.88 years, SD = 10.61) and categorical variable (e.g., young adult, middle-aged adult, and older adult). After evaluating categorical data, I evaluated the continuous data (including age), determining means, standard deviations, ranges of scores, skewness values, and kurtosis for the entire sample (N = 2,746). Continuous data were derived from three measures: Perceived Social Support scale; Depression, Anxiety, and Stress Scales (DASS; Lovibond & Lovibond, 1995); and the Scales of Psychological

Well-Being (SPWB; Ryff, 1989). See Tables 3.2 to 3.3 for summary statistics for the demographic variables and scores on each measure for the entire sample.

Demographic variables. Age was grouped according to three categories: younger adults (ages 18 to 39), middle-aged adults (ages 40 to 64), and older adults (age 65 and older). Age ranged from 19 to 87 years. Results showed that most of the participants were middle-aged (89% of the sample, n = 2,443; M = 47.96; SD = 8.19). A large percentage was expected to be middle-aged, considering the source of the sample. That is, women returning for a diagnostic mammogram are typically middle-aged (The smallest age group percentage-wise, was the young adults (1% of the sample, or n = 33, M = 26.03, SD = 2.81). Older adults comprised the remaining ten percent of the sample (n = 270, M = 70.19 SD = 4.68).

Information on household income was gathered according to four levels: less than $20,000; $20,001 - $40,000; $40,001 - $80,000; and more than $80,000. Results demonstrated that the majority of participants (72%, or n = 2,000) have a household income greater than $40,000. Therefore, the majority of the sample appeared to be relatively financially comfortable. Only nine percent of the sample (n = 9) reported a household income of $20,000 or less. The remaining eighteen percent (n = 490) reported a household income that fell in the range of $20,000 - $40,000.

Information on education was collected according to the highest level completed at the time of participating in the study. Possible responses included: elementary school, high school, college or university, and graduate school. The majority of the sample appeared to be well educated as 71% of the participants (n = 1,926) reported having completed a college/university education level, or higher. A total of 289 participants

reported completed a graduate level education (11%). The smallest group of participants was those who completed elementary school, but not beyond (1%, or *n* = 13). The remaining 29% (*n* = 807) reported that they did not complete a level of education beyond high school.

Information on marital status was collected according to five categories: married, divorced, separated, single, or widowed. The majority of women (71%, or *n* = 1,954) reported being married. The next largest participant group were women who were divorced (15%, or *n* = 407). The remaining 14% of the participants (*n* = 394) were either separated, single, or widowed.

Information on race/ethnicity was collected according to the following groups: Caucasian, African-American, Hispanic, Asian, and Other. In regards to racial/ethnic makeup, the sample was predominantly Caucasian (92%, *n* = 2,527). The second largest racial/ethnic group was comprised of African-American women (6% of the sample, *n* = 165). The remaining 2% of the participants (*n* = 54) were identified as Hispanic, Asian, or Other.

In sum, demographic characteristics of the sample (*N* = 2,746) demonstrated that participants were generally financially comfortable, well-educated, married, and predominantly Caucasian. For example, most women (72%, or *n* = 2,000), reported a household income of more than $40,000. Ninety percent of the participants (*n* = 2,457) reported having completed a college/university level education or higher and seventy-one percent (*n* = 1,954) reported being married. The sample was also predominantly Caucasian (92%, or *n* = 2,527), while African-American women comprised the next

largest group (6%, or *n* = 54). In combination, groups of Hispanic, Asian, and "Other" comprised the remaining two percent of the sample (*n* = 54).

Psychological variables. Continuous data resulted from participants' responses on the following measures: a Visual Analog Scale (VAS) of Perceived Social Support; the Depression, Anxiety, and Stress Scales (DASS; Lovibond & Lovibond, 1995); and the Scales of Psychological Well-Being (SPWB; Ryff, 1989). The DASS contains three subscales that can be used independently or summed for total psychological distress: Depression, Anxiety, and Stress. Similarly, the SPWB contains six subscales that can be used independently, or summed for total psychological well-being: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance.

Perceived Social Support, was a one-item measure with a possible range of scores from 0 (*poor social support)* to 10 (*excellent social support*). The mean for the sample was 8.92 (*SD* = 1.63). Thus, participants in this sample scored relatively high as the mean was greater than the top 30% of the possible responses.

Participants displayed relatively low total psychological distress scores and low Depression, Anxiety, and Stress scores. Participants' scores for Depression, Anxiety, and Stress were within normal ranges of functioning (Lovibond & Lovibond, 1995). See Table 3.3 for descriptives on all continuous data. See Table 3.4 for the number of participants who scored at each level of symptom severity (i.e., Depression, Anxiety, and Stress severity levels).

The mean psychological distress score was measured with the Depression, Anxiety, and Stress Scales (DASS). Results showed a relatively low participant mean of

17.64 (*SD* = 19.26), on a possible range of 0 to 126. Scores on the subscales of Depression, Anxiety, and Stress were also low. The mean for Depression was 4.72, with a standard deviation of 6.96. The mean for Anxiety was 4.32 (*SD* = 5.98), and the mean for Stress was 8.61 (*SD* = 7.98). The mean scores per subscale fit the criteria for normal range functioning. Few participants scored at clinically high levels (Lovibond & Lovibond, 1995). While psychological distress was expected to be higher in this sample due to the situation of being recalled for a diagnostic mammogram, scores were largely in the normal range of functioning. See Table 3.4 for all the frequencies of scores per level of symptom severity.

Overall psychological well-being was measured with the Scales of Psychological Well-Being (SPWB; Ryff, 1989). The overall mean score was 404.09 (*SD* = 55.65), on an 84 to 504 point scale. Overall mean scores showed high psychological well-being in the sample (in the top third of possible responses). Mean scores on each subscale (Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance) showed similar patterns (See Table 3.3 for further detail). Overall, participants scored the highest on the Positive Relations with Others Subscale (*M* = 70.21, *SD* = 11.42), and the lowest on the Autonomy subscale (*M* = 64.55, *SD* = 10.24). Scores for each subscale reflect a possible range of 14 to 84.

Results of Hypothesis Testing

Hypothesis 1a was tested: women will have significantly different total psychological well-being scores based on age. A one-way between groups analyses of variance was conducted in order to investigate the influence of age on total psychological well-being scores, as measured by the Scales of Psychological Well-Being (SPWB).

Participants were divided into three groups according to age (Group 1: women age 18 - 29; Group 2: women age 30 to 64; Group 3: women age 65 and older). There were no statistically significant differences found between age groups and effect size was very small [$F(2, 2743) = 2.84$, $\eta^2 = .01$, $p = .06$]. Total means scores per age group: Group 1 = 401.34 (*SD* = 59.20), Group 2 = 404.04 (*SD* = 55.56), and Group 3 = 412.33 (*SD* = 48.44). See Table 3.6 for descriptives on age and Table 3.7 for results of this one-way ANOVA test.

Hypothesis 1b was tested: women will have significantly different total psychological well-being scores based on household income level. A one-way between groups analyses of variance was conducted in order to investigate the influence of household income on total psychological well-being scores, as measured by the Scales of Psychological Well-Being (SPWB). Participants were divided into four groups according to household income level (Group 1: less than $20,000; Group 2: $20,001 - $40,000; Group 3: $40,001 - $80,000; Group 4: more than $80,000). A statistically significant difference was evaluated in total psychological well-being scores between the four groups and the effect size was moderate [$F(3, 2742) = 61.33$, $\eta^2 = .06$, $p < .001$]. Post-hoc comparisons using the Scheffe' test indicated each group was significantly different from one another ($p < .001$). Total psychological well-being scores were higher at higher household income levels: Group 1 (*M* = 372.32, *SD* = 63.44), Group 2 (*M* = 391.39, *SD* = 58.85), Group 3 (*M* = 406.75, *SD* = 52.22), Group 4 (*M* = 416.96, *SD* = 48.63). See Table 3.8 for descriptives on household income and Tables 3.9 – 3.10 for results of the one-way ANOVA and post-hoc tests.

Hypothesis 1c was tested: women will have significantly different total psychological well-being scores based on education level. A one-way between groups analyses of variance was conducted in order to investigate the influence of level of education completed on total psychological well-being, as measured by the Scales of Psychological Well-Being (SPWB). Participants were divided into three groups according to their highest level of education completed (Group 1: high school or lower; Group 2: college/university; Group 3: graduate school). A statistically significant difference in total psychological well-being scores was evaluated for the three education groups, but the effect size was small [$F(2, 2743) = 35.11$, $\eta^2 = .03$, $p < .001$]. Post hoc comparisons using the Scheffe' test indicated that the mean score for Group 1 (M = 392.06, SD = 60.23) was significantly lower than Group 2 (college/university, M = 409.03, SD = 52.18, $p < .001$) and Group 3 (graduate school, M = 417.22, SD = 48.08, $p < .001$). Group 2 was not significantly different from Group 3. In sum, total psychological well-being scores were higher for women with a college/university education or higher, compared to women who have not completed a college/university education. See Table 3.11 for further detail on descriptives per education level and Tables 3.12 – 3.13 for results of the one-way ANOVA and post-hoc tests.

Hypothesis 1d was tested: women with different marital statuses will have significantly different total psychological well-being scores. A one-way between groups analyses of variance was conducted in order to investigate the influence of marital status on total psychological well-being scores, as measured by the Scales of Psychological Well-Being (SPWB). Participants were divided into five groups according to marital status (Group 1: married; Group 2: divorced; Group 3: separated; Group 4: single; Group

5: widowed). A statistically significant difference in total psychological well-being scores were evaluated between the groups, but the effect size was small [$F(4, 2741) = 13.09$, $\eta^2 = .02$, $p < .001$]. Post hoc comparisons using the Scheffe' test showed that Group 1 (married, $M = 408.93$, $SD = 52.49$) scored significantly higher than two other Groups, Group 2 (divorced, $M = 406.90$, $SD = 55.42$, $p < .001$) and Group 3 (separated, $M = 368.17$, $SD = 65.08$, $p = .001$). No other significant differences were found. See Table 3.14 for further detail on descriptives per type of marital status. See Tables 3.15-16 for results of the one-way ANOVA and post-hoc tests.

Hypothesis 1e was tested: Caucasian women will have significantly higher psychological well-being scores than African-American Women. An independent-samples *t*-test was conducted in order to compare the psychological well-being scores of Caucasian and African-American women, as measured by the total score on the Scales of Psychological Well-Being (SPWB). (Comparisons between other racial/ethnic groups were not conducted because sample sizes for Hispanic, Asian, and Other were too small in order to provide the level of power needed to detect meaningful differences.) Descriptives, however, were obtained and reported per racial/ethnic group. See Table 3.17 for descriptives of all racial groups. The results of the test showed no significant difference in total psychological well-being scores between Caucasian ($M = 405.15$, $SD = 55.06$) and African-American women, and the effect size was very small [$M = 405.49$, $SD = 55.03$; $t(2690) = -.08$, $r^2 < .01$, $p = .94$). See Table 3.18 for results of this independent *t*-test.

Hypothesis 2a was tested: a significant relationship will be evidenced between Perceived Social Support and total psychological well-being scores. The relationship

between Perceived Social Support and psychological well-being was investigated using Pearson product-moment correlation coefficient. There was a medium sized correlation between the two variables (r = .43, n = 2,746, p < .001) and higher Perceived Social Support scores were associated with higher scores of total psychological well-being. Also, the coefficient of determination (r^2) showed that Perceived Social Support and psychological well-being shared a large amount of variance (18%). See table 3.19 for results of the Pearson product-moment correlations of all the study's major and continuous variables including Perceived Social Support.

Hypothesis 2b was tested: a significant relationship will be evidenced between psychological distress and total psychological well-being scores. A Pearson product-moment correlation coefficient was computed in order to investigate the relationship between psychological well-being, (as measured by the Scales of Psychological Well-Being, or SPWB), and psychological distress, (as measured by the Depression, Anxiety, and Stress Scales, or DASS). A large negative correlation between the two variables (r = -.63, n = 2,746, p < .001) were evaluated. That is, higher psychological well-being being was associated with lower scores of psychological distress. Also, the coefficient of determination (r^2) showed that psychological distress and psychological well-being shared a large amount of variance (40%).

Hypotheses 3a-3f were tested: a significant relationship will be evidenced between age and scores for Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance. The relationships between age and scores for Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance, were investigated by

computing Pearson product-moment correlation coefficients. Small significant correlations and small effect sizes were observed between age and: Positive Relations with Others (r = .078, r^2 = .01, p < .001), Environmental Mastery (r = .12, r^2 = .01, p < .001), and Self-Acceptance (r = .08, r^2 = .01, p < .001). No significant correlations were found between age and Autonomy (r = .06, r^2 < .01, p = .003), Purpose in Life (r = .02, r^2 < .01, p = .42), and Personal Growth (r = -.02, r^2 < .01, p = .20). See Table 3.19 for Pearson product-moment correlations of all the study's major and continuous variables.

Hypotheses 4a-4f were tested: a significant relationship will be evidenced between Perceived Social Support and scores on the: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance subscales. The relationships between Perceived Social Support and scores on: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance subscales, were investigated using Pearson product moment correlation coefficients. Medium correlations and a range of small to large effect sizes were observed between Perceived Social Support and the following: Purpose in Life (r = .39, r^2 = .01, p < .001), Positive Relations with Others (r = .49, r^2 = .01, p < .001), Environmental Mastery (r = .39, r^2 = .01, p < .001), and Self-Acceptance(r = .39, r^2 = .01, p < .001). Small correlations were evidenced between Perceived Social Support and: Autonomy (r = .19, r^2 = .01, p < .001) and Personal Growth (r = .25, r^2 = .01, p < .001). See Table 3.19 for Pearson product-moment correlations of all the study's major and continuous variables, including Perceived Social Support and subscale scores of psychological well-being.

Hypotheses 5a-5f were tested: participants' Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance scores will significantly differ based on income level. A one-way between-groups multivariate analysis of variance was performed in order to investigate differences in scores on the Scales of Psychological Well-Being based on household income level. Participants were divided into four groups according to household income level (Group 1: less than $20,000; Group 2: $20,001 - $40,000; Group 3: $40,001 - $80,000; Group 4: more than $80,000). Six dependent variables were evaluated: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance according to the independent variable (household income level).

There was a statistically significant difference between household income levels on the combined dependent variables: $F(18; 8{,}217) = 15.88$, $p < .001$; Pillai's Trace = .10; partial eta squared = .03. When the results for the dependent variables were considered separately, significant differences were found between each of the six subscales, at an alpha level of $p < .001$ and effect sizes were small to moderate: Autonomy [$F(3; 2{,}742) = 9.25$, partial $\eta^2 = .01$], Purpose in Life [$F(3; 2{,}742) = 76.89$, partial $\eta^2 = .08$], Positive Relations with Others [$F(3; 2{,}742) = 51.86$, partial $\eta^2 = .04$], Personal Growth [$F(3; 2{,}742) = 31.27$, partial $\eta^2 = .03$], Environmental Mastery [$F(3; 2{,}742) = 33.20$, partial $\eta^2 = .04$], and Self-Acceptance [$F(3; 2{,}742) = 70.76$, partial $\eta^2 = .07$]. Follow up tests were conducted in order to further investigate the influence of household income on the dependent variables. In general, results showed scores for the six subscales of psychological well-being were significantly higher at each higher level of

household income. Mean differences, however, were moderate. See Tables 3.20 – 3.27 for results of the MANOVA, follow-up ANOVAs, and subsequent post-hoc tests.

Post hoc test: Autonomy. A one-way between groups analyses of variance was conducted in order to investigate the influence of household income on total Autonomy scores, as measured by the 14-itemAutonomy subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Autonomy scores based on household income level at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test indicated a significant difference between Group 1 (less than $20,000; $M = 62.19$; $SD = 11.18$) and Group 4 (more than $80,000; $M = 65.55$; $SD = 9.90$) only. The mean difference between Groups 1 and 4 was small (3.36, on a possible range of 14 to 84).

Post hoc test: Purpose in Life. A one-way between groups analyses of variance was conducted in order to investigate the influence of household income on total Purpose in Life scores, as measured by the 14-item Purpose in Life subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Purpose in Life scores based on household income level at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Purpose in Life scores at every level of household income. Women with higher levels of household income scored significantly higher on the subscale. The largest mean difference was between Group 1 and Group 4. That is, women with household income greater than $80,000 scored on average, 9.68 points higher on the Purpose in Life subscale than women with a household income of less than $20,000.

Post hoc test: Positive Relations with Others. A one-way between groups analyses of variance was conducted in order to investigate the influence of household income on total Purpose in Life scores, as measured by the 14-item Purpose in Life subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Purpose in Life scores based on household income level at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Purpose in Life scores at every level of household income. Women with higher levels of household income scored significantly higher on the subscale. The largest mean difference was between Group 1 and Group 4. That is, women with household income greater than $80,000 scored on average, 7.04 points higher on the Positive Relations with Others subscale than women with a household income less than $20,000. See Table 3.6 for further details on Positive Relations with Others scores per level of household income.

Post hoc test: Personal Growth. A one-way between groups analyses of variance was conducted in order to investigate the influence of household income on total Personal Growth scores, as measured by the 14-item Personal Growth subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Personal Growth scores based on household income level at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Personal Growth scores at nearly every level of household income. Women with higher levels of household income generally scored significantly higher on the subscale. The largest mean difference was between Group 1 and Group 4. That is, women with household income greater than $80,000 scored on average, 5.00

points higher on the Personal Growth subscale than women with a household income less than $20,000.

Post hoc test: Environmental Mastery. A one-way between groups analyses of variance was conducted in order to investigate the influence of household income on total Environmental Mastery scores, as measured by the 14-item Environmental Mastery subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Environmental Mastery scores based on household income level at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Environmental Mastery scores at nearly every level of household income. Women with higher levels of household income scored significantly higher on the subscale. The largest mean difference was between Group 1 and Group 4. That is, women with household income greater than $80,000 scored on average, 7.04 points higher on the Environmental Mastery subscale than women with a household income less than $20,000.

Post hoc test: Self-Acceptance. A one-way between groups analyses of variance was conducted in order to investigate the influence of household income on total Self-Acceptance scores, as measured by the 14-item Self-Acceptance subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Self-Acceptance scores based on household income level at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Self-Acceptance scores at every level of household income. Women with higher levels of household income scored significantly higher on this subscale. The largest mean difference was between Group 1 and Group 4. That is, women with household income

greater than $80,000 scored on average, 10.77 points higher on the Self-Acceptance subscale than women with a household income less than $20,000.

In sum, different levels of household income appeared to result in significantly different subscale scores. The largest mean differences occurred on the Self-Acceptance subscale, while the smallest mean differences occurred on the Autonomy subscale. Overall, from largest to smallest mean differences, different household income levels resulted in significantly different scores on Self-Acceptance, Purpose in Life, Positive Relations with Others, Environmental Mastery, Personal Growth, and Autonomy.

Hypotheses 6a-6f were tested: participants' Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance will significantly differ based on education level. A one-way between-groups multivariate analysis of variance was performed in order to investigate differences in scores on the Scales of Psychological Well-Being based on education level. Six dependent variables were used: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance. The independent variable was highest education level completed. A statistically significant difference between education levels on the combined dependent variables was found: $F(12; 5{,}478) = 15.49$, $p < .001$; Pillai's Trace = .07; partial eta squared = .03. When the results for the dependent variables were considered separately, significant differences were found between five subscales, but effect sizes were small: Purpose in Life [$F(2; 2{,}743) = 58.13$, partial $\eta^2 = .04$, $p < .001$], Positive Relations with Others [$F(2; 2{,}743) = 18.01$, partial $\eta^2 = .01$, $p < .001$], Personal Growth [$F(2; 2{,}743) = 52.14$, partial $\eta^2 = .04$, $p < .001$], Environmental Mastery [$F(2; 2{,}743) = 10.05$, partial $\eta^2 = .01$, $p < .001$], and Self-

Acceptance [$F(2; 2,743) = 35.31$, partial $\eta^2 = .03$, $p < .001$]. In regards to Autonomy, differences were not significant according to education level [$F(2; 2,743) = 3.81$, partial $\eta^2 < .01$, $p = .02$]. Thus findings based on all of the dependent variables were assessed further with a post hoc test except for Autonomy. See Tables 3.28 – 3.34 for results of the MANOVA, follow-up ANOVAs, and subsequent post-hoc tests.

Post hoc test: Purpose in Life. A one-way between groups analyses of variance was conducted in order to investigate the influence of education on total Purpose in Life scores, as measured by the 14-item Purpose in Life subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Purpose in Life scores based on education at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Purpose in Life scores at every level of education (Group 1: high school and lower, Group 2: college/university and Group 3: graduate school). That is, women with higher levels of education scored significantly higher on each of the subscales. The largest mean difference was between Group 1 and Group 3. That is, women who have completed a graduate level education scored on average, 6.69 points higher than women with a high school education level (or lower education level).

Post hoc tests: Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance. Post hoc tests were reported for these four dependent variables as outcomes patterns were similar. One-way between groups analyses of variance were conducted in order to investigate the influence of education on each subscale, as measured by their corresponding14-item subscale of the Scales of Psychological Well-Being (SPWB). As stated previously, significant

differences were found between each subscale based on education at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in scores for these subscales. That is, women with a college/university education or higher, scored significantly higher on all four subscales than women with less education. Women with a graduate level education versus a college/university level education, however, did not score significantly differently on any of the four subscales. The largest mean difference was between Group 1 (high school) and Group 3 (graduate school). That is, women who completed a graduate level education scored on average, 6.01 points higher than women with a high school education level (or lower) for Self-Acceptance.

In sum education level showed the largest difference on Purpose in Life and Self-Acceptance scores than for any other subscale of psychological well-being. While positive, the influence appeared rather small as having a graduate level education versus less than a college/university level education, showed a difference of approximately 6 points on both the Purpose in Life and Self-Acceptance subscales. Possible scores per subscale range from 14 to 84.

Hypotheses 7a-7f were tested: participants' Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance will significantly differ based on marital status. A one-way between-groups multivariate analysis of variance was performed in order to investigate differences in the scores on the Scales of Psychological Well-Being based on marital status. Six dependent variables were used: Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance. The independent variable was marital status. There was a statistically significant difference between types of marital status on

the combined dependent variables: $F(24; 10{,}956) = 8.18$, $p < .001$; Pillai's Trace = .07, partial eta squared = .02. When the results for the dependent variables were considered separately, significant differences were found between scores on the four subscales, but effect sizes were small: Purpose in Life [$F(3; 2{,}707) = 19.62$, partial $\eta^2 = .03$, $p < .001$], Positive Relations with Others [$F(3; 2{,}707) = 13.02$, partial $\eta^2 = .02$, $p < .001$], Environmental Mastery [$F(3; 2{,}707) = 6.68$, partial $\eta^2 = .02$, $p < .001$], and Self-Acceptance [$F(3; 2{,}707) = 24.12$, partial $\eta^2 = .03$, $p < .001$]. Thus, follow up tests for only these four subscales were conducted. No other significant differences were found. See Tables 3.35 – 3.40 for results of MANOVA, follow-up ANOVAs, and subsequent post-hoc tests.

Post hoc test: Purpose in Life. A one-way between groups analyses of variance was conducted in order to investigate the influence of marital status on Purpose in Life scores, as measured by the 14-item Purpose in Life subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Purpose in Life scores based on marital status at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Purpose in Life scores between married, divorced, and single women. That is, women who were married ($M = 69.58$, $SD = 10.32$) scored significantly higher than both divorced ($M = 65.70$, $SD = 12.15$) and single women ($M = 66.21$, $SD = 11.36$). Mean differences of Purpose in Life scores, however, were only approximately 3.5 points on a scale of 14 to 84. No other significant differences were found.

Post hoc test: Positive Relations with Others. A one-way between groups analyses of variance was conducted in order to investigate the influence of marital status

on Positive Relations with Others scores, as measured by the 14-item Positive Relations with Others subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Positive Relations with Others scores based on marital status at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Positive Relations with Others scores only between married and single women. That is, women who were married ($M = 71.01$, $SD = 11.00$) scored significantly higher than single women ($M = 67.11$, $SD = 12.91$). The mean difference was relatively small ($M = 3.91$). See Table 3.8 for further details on Positive Relationships with Others scores per type of marital status.

Post hoc test: Environmental Mastery. A one-way between groups analyses of variance was conducted in order to investigate the influence of marital status on Environmental Mastery scores, as measured by the 14-item Environmental Mastery subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Environmental Mastery scores based on marital status at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Environmental Mastery scores between married, separated, and widowed women. That is, women who were married ($M = 65.77$, $SD = 11.15$) scored significantly higher than women who were separated ($M = 56.15$, $SD = 14.33$). At the same time, women who were widowed ($M = 66.04$, $SD = 12.30$), scored significantly higher than women who were separated. Mean differences were relatively modest, approximately 9.7 points difference on a scale of 14 to 84. No other significant differences were found.

Post hoc test: Self-Acceptance. A one-way between groups analyses of variance was conducted in order to investigate the influence of marital status on Self-Acceptance scores, as measured by the 14-item Self-Acceptance subscale of the Scales of Psychological Well-Being (SPWB). As previously stated; significant differences were found between Self-Acceptance scores based on marital status at the level of $p < .001$. Post-hoc comparisons using the Scheffe' test showed significant differences in Self-Acceptance scores between married, divorced, separated, and single women. That is, women who were married ($M = 67.55$, $SD = 11.70$) scored significantly higher than divorced ($M = 62.68$, $SD = 13.62$), separated ($M = 56.92$, $SD = 16.84$), and single women ($M = 63.13$, $SD = 13.20$). Mean differences were largest between married and separated women ($M = 10.63$). No other significant differences were found.

In sum, married women tended to have significantly higher scores on four subscales of psychological well-being: Purpose in Life, Positive Relations with Others, Environmental Mastery, and Self-Acceptance. Also, the largest difference in scores was for married women (versus other types of marital status) on the Self-Acceptance subscale.

Table 3.1

Test Approaches and Results of Hypothesis Testing (N = 2,746)

Research Hypotheses	Statistical Hypotheses	Instrumentation	Analyses	Results
1a. Women will have significantly different total psychological well-being scores based on age.	H_1: $\mu_Y \neq \mu_M \neq \mu_O$ (H_0: $\mu_Y = \mu_M = \mu_O$)	Demographic question – item 1 3 = older adult, 65 and older (O) 2 = middle-aged, 30 – 64 years (M) 1 = younger adult, 18 – 29 years (Y)	a. Fixed effects ANOVA (Omnibus F – test)	Not supported
1b. Women will have significantly different total psychological well-being scores based on income level.	H_1: $\mu_{10K} \neq \mu_{20K} \neq \mu_{40K} \neq \mu_{80K}$ (H_0: $\mu_{10K} = \mu_{20K} = \mu_{40K} = \mu_{80K}$)	Demographic question – item 6 4 = more than $80,000 (80K) 3 = $40,001 - $80,000 (40K) 2 = $20,001 - $40,000 (20K) 1 = less than $20,000 (10K)	a. Fixed effects ANOVA (Omnibus F – test) b. Scheffe' MCP	Supported
1c. Women will have significantly different total psychological well-being scores based on education level.	H_1: $\mu_H \neq \mu_C \neq \mu_G$ (H_0: $\mu_H = \mu_C = \mu_G$)	Demographic question – item 4 3 = graduate school (G) 2 = college/university (C) 1 = high school or lower (H)	a. Fixed effects ANOVA (Omnibus F – test) b. Scheffe' MCP	Supported
1d. Women with different marital statuses will have significantly different total psychological well-being scores.	H_1: $\mu_M \neq \mu_D \neq \mu_{Sep} \neq \mu_S \neq \mu_W$ (H_0: $\mu_M = \mu_D = \mu_{Sep} = \mu_S = \mu_W$)	Demographic question – item 3 5 = widowed (W) 4 = single (S) 3 = separated (Sep) 2 = divorced (D) 1 = married (M)	a. Fixed effects ANOVA (Omnibus F – test) b. Scheffe' MCP	Supported

Table 3.1 (Continued)

1e. Caucasian women will have significantly higher total psychological well-being scores than African-American women.	H_1: $\mu_C > \mu_{AA}$ (H_0: $\mu_A = \mu_C$)	Demographic question – item 2 2 = African-American (AA) 1 = Caucasian (C)	Independent samples t-test	Not supported
2a. A significant relationship will be evidenced between Perceived Social Support and total psychological well-being scores.	H_1: $\rho_{SS/PWB} \neq 0$ (H_0: $\rho_{SS/PWB} = 0$)	Perceived Social Support = (SS). Total score on the Scales of Psychological Well-Being = (PWB)	Pearson Product Moment Correlation	Supported (Positive relationship)
2b. A significant relationship will be evidenced between psychological distress and total psychological well-being scores.	H_1: $\rho_{DASS/PWB} \neq 0$ (H_0: $\rho_{DASS/PWB} = 0$)	Psychological distress = total score on the Depression, Anxiety, and Stress Scales (DASS). Total score on the Scales of Psychological Well-Being = (PWB)	Pearson Product Moment Correlation	Supported (Negative relationship)
3a. A significant relationship will be evidenced between age and Autonomy.	H_1: $\rho_{A,Au} \neq 0$ (H_0: $\rho_{A,Au} = 0$)	Age = years (A) Autonomy = total score on the Autonomy subscale (Au) of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Not supported
3b. A significant relationship will be evidenced between age and Purpose in Life.	H_1: $\rho_{A,Pu} \neq 0$ (H_0: $\rho_{A,Pu} = 0$)	Purpose in Life = total score on the Purpose in Life subscale (Pu) of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Not supported

Table 3.1 (Continued)

3c. A significant relationship will be evidenced between age and Positive Relations with Others.	H_1: $\rho_{A,Po} \neq 0$ (H_0: $\rho_{A,Po} = 0$)	Positive Relations with Others = total score on Positive Relations with Others subscale (Po) of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Supported (Positive relationship)
3d. A significant relationship will be evidenced between age and Personal Growth.	H_1: $\rho_{A,Pe} \neq 0$ (H_0: $\rho_{A,Pe} = 0$)	Personal Growth = total score on the Personal Growth subscale (Pe) of the Scales of Psychological Well-being	Pearson Product Moment Correlation	Not supported
3e. A significant relationship will be evidenced between age and Environmental Mastery.	H_1: $\rho_{A,E} \neq 0$ (H_0: $\rho_{A,E} = 0$)	Environmental Mastery = total score on the subscale of Environmental Mastery (E) of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Supported (Positive relationship)
3f. A significant relationship will be evidenced between age and Self-Acceptance.	H_1: $\rho_{A,SA} \neq 0$ (H_0: $\rho_{A,SA} = 0$)	Self-Acceptance = total score on the subscale (SA) Self-Acceptance of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Supported (Positive relationship)
4a. A significant relationship will be evidenced between Perceived Social Support and Autonomy.	H_1: $\rho_{SS,Au} \neq 0$ (H_0: $\rho_{SS,Au} = 0$)	Perceived Social Support = (SS) Autonomy = total score on the Autonomy subscale (Au) of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Supported (Positive relationship)

Table 3.1 (Continued)

4b. A significant relationship will be evidenced between Perceived Social Support and Purpose in Life.	H_1: $\rho_{SS,Pu} \neq 0$ (H_0: $\rho_{SS,Pu} = 0$)	Purpose in Life = total score on the Purpose in Life subscale (Pu) of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Supported (Positive relationship)
4c. A significant relationship will be evidenced between Perceived Social Support and Positive Relations with Others	H_1: $\rho_{SS,Po} \neq 0$ (H_0: $\rho_{SS,Po} = 0$)	Positive Relations with Others = total score on positive relations with other subscale (Po) of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Supported (Positive relationship)
4d. A significant relationship will be evidenced between Perceived Social Support and Personal Growth.	H_1: $\rho_{SS,Pe} \neq 0$ (H_0: $\rho_{SS,Pe} = 0$)	Personal Growth = total score on the Personal Growth subscale (Pe) of the Scales of Psychological Well-being	Pearson Product Moment Correlation	Supported (Positive relationship)
4e. A significant relationship will be evidenced between Perceived Social Support and Environmental Mastery.	H_1: $\rho_{SS,E} \neq 0$ (H_0: $\rho_{SS,E} = 0$)	Environmental Mastery = total score on the subscale of Environmental Mastery (E) of the Scales of Psychological Well-Being.	Pearson Product Moment Correlation	Supported (Positive relationship)

Table 3.1 (Continued)

4f. A significant relationship will be evidenced between Perceived Social Support and Self-Acceptance.	H_1: $\rho_{SS,SA} \neq 0$ (H_0: $\rho_{SS,SA} = 0$)	Self-Acceptance = total score on the subscale (SA) Self-Acceptance of the Scales of Psychological Well-Being	Pearson Product Moment Correlation	Supported (Positive relationship)
5. Different levels of income will result in significantly different Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance scores.	H_1: $\mu_{10K} \neq \mu_{20K} \neq \mu_{40K} \neq \mu_{80K}$ (H_0: $\mu_{10K} = \mu_{20K} = \mu_{40K} = \mu_{80K}$)	Demographic question – item 6 4 = more than $80,000 (80K) 3 = $40,001 - $80,000 (40K) 2 = $20,001 - $40,000 (20K) 1 = less than $20,000 (10K)	a. MANOVA b. ANOVA c. Scheffe' MCP	Supported
6. Different levels of education will result in significantly different Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance scores.	H_1: $\mu_H \neq \mu_C \neq \mu_G$ (H_0: $\mu_H = \mu_C = \mu_G$)	Demographic question – item 4 3 = graduate school (G) 2 = college/University (C) 1 = high school and lower (H)	a. MANOVA b. ANOVA c. Scheffe' MCP	Supported

Table 3.1 (Continued)

7. Different types of marital status will result in significantly different Autonomy, Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance scores.	H_1: $\mu_M \neq \mu_D \neq \mu_{Sep} \neq \mu_S \neq \mu_W$ (H_0: $\mu_M = \mu_D = \mu_{Sep} = \mu_S = \mu_W$)	Demographic question – item 3 5 = widowed (W) 4 = single (S) 3 = separated (Sep) 2 = divorced (D) 1 = married (M)	a. MANOVA b. ANOVA c. Scheffe' MCP	Supported

Table 3.2

Descriptive Statistics: Demographics of the Sample (N = 2,746)

Category	Frequency	Percent	Category	Frequency	Percent
Age (years)*			Education completed		
18 – 29	33	1	Elementary school	13	1
30 – 64	2443	89	High school	807	29
65 – 87	270	10	College/University	1637	60
			Graduate school	289	11
Race/ethnicity			Marital Status		
Caucasian	2527	92	Married	1954	71
African-American	165	6	Divorced	407	15
Hispanic	18	[a]	Separated	35	1
Asian	15	[b]	Single	237	9
Other	21	[c]	Widowed	122	4
Household income					
≤ $20,000	256	9			
$20,000 - $40,000	490	18			
$40,001- $80,000	917	33			
> $80,001	1083	39			

* The average age for the sample was 49.88 years old (*SD* = 10.61). Age was non-normally distributed with a skewness of .38 (*SE* = 0.05) and kurtosis of -.04 (*SE* = 0.09).
[a – c] Values were < 1% (0.7, 0.5, 0.8, respectively).
Note. Total percentage of participants' education levels equaled 101 and total percentage of income levels was 99; the discrepancies were due to rounding error.

Table 3.3

Descriptive Statistics: Perceived Social Support, DASS, and PSWB (N = 2,746)

			Range			
Measure	*M*	*SD*	Potential	Actual	Skew	Kurtosis
Perceived Social Support	8.92	1.63	0 – 10	0 – 10	-2.07	4.84
Depression, Anxiety, and Stress Scales (DASS)	17.64	19.26	0 – 126	0 – 126	2.11	5.23
Depression	4.72	6.96	0 – 42	0 – 42	2.48	6.87
Anxiety	4.32	5.98	0 – 42	0 – 42	2.52	7.60
Stress	8.61	7.98	0 – 42	0 – 42	1.42	1.98
Scales of Psychological Well-Being (SPWB)	405.09	55.65	84 – 504	174 – 504	-.78	.27
Autonomy	64.55	10.24	14 – 84	24 – 84	-.34	-.22
Purpose in Life	68.53	10.90	14 – 84	22 – 84	-.91	.55
Positive Relations with Others	70.21	11.42	14 – 84	25 – 84	-.87	.15
Personal Growth	70.13	9.11	14 – 84	30 – 84	-.69	.16
Environmental Mastery	65.13	11.53	14 – 84	21 – 84	-.60	-.01
Self-Acceptance	66.27	12.44	14 – 84	14 – 84	-.94	.61

Note. All measures' scores are monotone increasing.
Note. All scales and subscales violated assumptions of normality. *SE* of skew was .05. *SE* of Kurtosis was .09 for the sample.
* Lovibond and Lovibond (1995) delineated ranges of scores per level of symptom severity, also described in their *Manual for the Depression Anxiety Stress scales* (2nd ed.).

Table 3.4

Distribution of Depression, Anxiety, and Stress Scores by Level of Symptom Severity(N = 2,746)

	Depression		Anxiety		Stress	
Level*	Range	Frequency (Percent)	Range	Frequency (Percent)	Range	Frequency (Percent)
Normal	0 – 9	2334 (85)	0 – 7	2256 (82)	0 – 14	2242 (82)
Mild	10 – 13	146 (5)	8 – 9	144 (5)	15 – 18	180 (7)
Moderate	14 – 20	135 (5)	10 – 14	164 (6)	19 – 25	174 (6)
Severe	21 – 27	60 (2)	15 – 19	68 (3)	26 – 33	114 (4)
Extremely Severe	28 – 42	71 (3)	20 – 42	114 (4)	34 – 42	36 (1)

* Lovibond and Lovibond (1995) delineated ranges of scores per level of symptom severity, also described in their *Manual for the Depression Anxiety Stress scales* (2nd ed.).

Table 3.5

Internal Consistency Reliability Scores: Perceived Social Support, DASS, and PSWB (N = 2,746)

Measures	α (present study)	α (reported in literature*)
Depression, Anxiety, and Stress Scales (DASS)	.97	---
Depression	.95	.91
Anxiety	.90	.84
Stress	.94	.90
Scales of Psychological Well-Being (SPWB)	.96	---
Autonomy	.80	.83
Purpose in Life	.87	.88
Positive Relations with Others	.88	.88
Personal Growth	.82	.85
Environmental Mastery	.87	.86
Self-Acceptance	.90	.91

* Alpha scores were derived from Ryff, Lee, Essex, Schmutte (1994) and; Lovibond and Lovibond (1995). *Note.* The internal consistency reliability scores have not been reported for the total items of the Scales of Psychological Well-Being and the Depression, Anxiety, and Stress Scales in previous studies.

Table 3.6

Descriptive Statistics for Each Measure According to Age Group (N = 2,746)

	Young adults	Middle-aged adults	Older adults
Measure	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Perceived Social Support	8.61 (1.85)	8.90 (1.64)	9.14 (1.46)
Depression, Anxiety, and Stress Scales (DASS)	24.16(21.27)	17.97(19.53)	13.89(15.82)
Depression	5.88 (7.28)	4.80 (7.05)	3.85 (6.07)
Anxiety	6.55 (6.34)	4.35 (6.06)	3.77 (5.12)
Stress	11.72 (9.24)	8.83 (8.09)	6.27 (6.21)
Scales of Psychological Well-Being (SPWB)	401.34(59.20)	404.04(55.56)	412.33(48.44)
Autonomy	64.60(11.65)	64.44(10.31)	65.55 (9.32)
Purpose in Life	68.57(11.07)	68.51(11.03)	68.72 (9.68)
Positive Relations with Others	67.06(13.83)	70.04(11.55)	72.16 (9.60)
Personal Growth	72.15 (8.60)	70.20 (9.09)	69.20 (9.29)
Environmental Mastery	64.30(10.71)	64.83(11.66)	67.97 (9.93)
Self- Acceptance	64.65(13.31)	66.01(12.60)	68.73(10.45)

Note. Sample sizes included: young adults (ages 18 – 29, *n* = 33), middle-aged adults (ages 30 – 64, *n* = 2443), and older adults (age 65 and older, *n* = 270).

Table 3.7

Summary of ANOVA: Total Psychological Well-Being Scores Based on Age Groups

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	17116.88	2	8558.44	.06
Within Groups	8281378.18	2743	3019.10	
Total	8298495.07	2745		

Note. Group 1: women ages 18 - 29; Group 2: women ages 30 to 64; Group 3: women age 65 and older. Results were not significant.

Table 3.8

Descriptive Statistics for Each Measure According to Level of Household Income (N = 2,746)

Measure	Equal/less than $20,000 *M* (*SD*)	$20,001 – $40,000 *M* (*SD*)	$40,001 – $80,000 *M* (*SD*)	More than $80,000 *M* (*SD*)
Perceived Social Support	8.01 (2.35)	8.66 (1.83)	9.04 (1.43)	9.16 (1.38)
Depression, Anxiety, and Stress Scales (DASS)	30.21(28.10)	21.69(22.43)	15.78(16.04)	14.42(15.88)
Depression	9.07 (9.98)	6.28 (8.37)	4.04 (5.74)	3.56 (5.71)
Anxiety	9.03 (9.28)	5.74 (6.97)	3.65 (4.83)	3.12 (4.55)
Stress	12.11(10.40)	9.66 (8.78)	8.09 (7.16)	7.75 (7.32)
Scales of Psychological Well-Being (SPWB)	372.32(63.44)	391.39(58.85)	406.75(52.22)	416.96(48.63)
Autonomy	62.19(11.18)	63.69(10.49)	64.50(10.08)	65.55 (9.90)
Purpose in Life	61.60(12.77)	65.42(11.81)	68.90(10.30)	71.27 (9.31)
Positive Relations with Others	63.57(13.01)	67.89(12.09)	70.77(10.72)	72.37(10.49)
Personal Growth	66.80(10.6)	68.28 (9.68)	70.07 (8.84)	71.80 (8.27)
Environ -mental Mastery	59.70(12.69)	63.12(12.07)	65.83(11.17)	66.74(10.75)
Self-Acceptance	58.46(13.95)	63.00(13.51)	66.68(11.84)	69.23(10.82)

Note. Sample sizes according to household income included: less than $20,000 (*n* = 256), $20,001 - $40,000 (*n* = 490), $40,001 - $80,000 (*n* = 917), and more than $80,000 (*n* = 1083)

Table 3.9

Summary of ANOVA: Total Psychological Well-Being Scores Based on Household Income

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	521799.63	3	173933.21	61.33*
Within Groups	7776695.43	2742	2836.14	
Total	8298495.07	2745		

Note. Group 1: Less than $20,000; Group 2: $20,001 - $40,000; Group 3: $40,001 - $80,000; Group 4: Greater than $80,000. $^{*}p < .001$

Table 3.10

Scheffe' Comparisons for Total Psychological Well-Being Scores Based on Household Income

(I) Household Income	(J) Household Income	Mean Psychological Well-Being Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Less than $20,000	$20,0001- $40,000	-19.07*	4.11	-30.56	-7.58
	$40,001- $80,000	-34.43*	3.76	-44.56	-23.90
	Greater than $80,000	-44.64*	3.70	-54.99	-34.29
$20,001 - $40,000	Less than $20,000	19.07*	4.11	7.58	30.56
	$40,001- $80,000	-15.35*	2.98	-23.69	-7.02
	Greater than $80,000	-25.57*	2.90	-33.68	-17.46
$40,001 - $80,000	Less than $20,000	34.43*	3.76	23.90	44.96
	$20,001 - $40,000	15.35*	2.98	7.02	23.69
	Greater than $80,000	-10.21*	2.39	-16.90	3.53
Greater than $80,000	Less than $20,000	44.64*	3.70	34.29	54.99
	$20,001 - $40,000	25.57*	2.90	14.46	33.68
	$40,001 - $80,000	10.21*	2.39	3.53	16.90

Note. $^{*}p < .001$

Table 3.11

Descriptive Statistics for Each Measure According to Level of Education (N = 2,746)

	Elementary or High school	College or university	Graduate school
Measure	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Perceived Social Support	8.87 (1.79)	8.91 (1.59)	9.16 (1.31)
Depression, Anxiety, and Stress Scales (DASS)	20.79(22.40)	16.71(18.15)	14.00(13.87)
Depression	5.89 (7.97)	4.36 (6.67)	3.43 (4.75)
Anxiety	5.65 (7.18)	3.89 (5.47)	2.99 (4.03)
Stress	9.25 (8.78)	8.47 (7.74)	7.58 (6.78)
Scales of Psychological Well-Being (SPWB)	392.06(60.23)	409.03(52.18)	417.22(48.08)
Autonomy	63.82(10.74)	64.74(10.09)	65.57 (9.47)
Purpose in Life	65.38(12.00)	69.49(10.25)	72.08 (8.99)
Positive Relations with Others	68.27(12.15)	70.89(11.12)	71.88(10.30)
Personal Growth	67.48 (9.78)	71.15 (8.63)	71.86 (8.18)
Environ-mental Mastery	63.66(12.16)	65.65(11.22)	66.38(11.00)
Self-Acceptance	63.44(13.19)	67.12(12.04)	69.45(10.90)

Note. Sample sizes for levels of education completed included: high school/elementary (*n* = 820), college/university (*n* = 1637), and graduate school (*n* = 289).

Table 3.12

Summary of ANOVA: Total Psychological Well-Being Scores Based on Education Level

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	207107.22	2	103553.61	35.11*
Within Groups	8091387.85	2743	2949.83	
Total	8298495.07	2745		

Note. Three groups were compared. Group 1: Elementary/high school; Group 2: College/university; Group 3: Graduate school. *$p < .001$

Table 3.13

Scheffe' Comparisons for Total Psychological Well-Being Scores Based on Education Level

(I) Education Level	(J) Education Level	Mean Psychological Well-Being Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Elementary/high school	College/university	- 16.98*	2.32	- 22.67	- 11.29
	Graduate school	- 25.17*	3.72	- 34.27	- 16.07
College/university	Elementary/high school	16.98*	2.32	11.29	22.67
	Graduate school	- 8.19	3.47	- 16.68	.30
Graduate school	Elementary school	25.17*	3.72	16.07	34.27
	College/university	8.19	3.47	- .30	16.68

Note. $^{*}p < .001$

Table 3.14

Descriptive Statistics for Each Measure According to Marital Status (N = 2,746)

Measure	Married *M* (*SD*)	Divorced *M* (*SD*)	Separated *M* (*SD*)	Single *M* (*SD*)	Widowed *M* (*SD*)
Perceived Social Support	9.10 (1.41)	8.40 (2.02)	7.89 (2.69)	8.47 (1.95)	8.92 (1.73)
Depression, Anxiety, and Stress Scales (DASS)	16.26 (17.82)	21.47 (21.43)	39.45 (33.54)	19.55 (20.72)	17.02 (19.99)
Depression	4.13 (6.31)	6.32 (8.23)	11.91 (12.55)	5.42 (7.35)	5.34 (7.52)
Anxiety	3.84 (5.45)	5.58 (6.76)	11.12 10.88	4.93 (6.51)	4.62 (6.42)
Stress	8.29 (7.71)	9.57 (8.30)	16.42 (12.46)	9.20 (8.33)	7.06 (7.43)
Scales of Psychological Well-Being (SPWB)	408.93 (52.49)	393.73 (58.81)	368.17 (65.08)	394.53 (60.64)	406.90 (55.42)
Autonomy	64.77 (10.06)	63.74 (10.77)	60.99 (12.75)	64.31 (10.80)	65.41 (9.09)
Purpose in Life	69.58 (10.32)	65.70 (12.15)	62.12 (12.87)	66.21 (11.36)	67.58 (11.19)
Positive Relations with Others	71.01 (11.00)	68.45 (11.51)	62.93 (15.05)	67.11 (12.91)	71.48 (11.25)
Personal Growth	70.25 (8.75)	69.94 (9.90)	69.05 (9.27)	69.73 (10.10)	69.88 (9.98)
Environmental Mastery	65.77 (11.15)	63.22 (12.10)	56.15 (14.33)	64.05 (11.77)	66.04 (12.30)
Self-Acceptance	67.55 (11.70)	62.68 (13.62)	56.92 (16.84)	63.13 (13.20)	66.51 (12.40)

Note. Sample sizes according to marital status included: married (*n* = 1,945), divorced (*n* = 407), separated (*n* = 35), single (*n* = 237), and widowed (*n* = 122).

Table 3.15

Summary of ANOVA: Total Psychological Well-Being Scores Based on Marital Status

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	155516.92	4	38879.23	13.09*
Within Groups	8142978.15	2741	2970.81	
Total	8298495.07	2745		

Note. Group 1: Married; Group 2: Divorced; Group 3: Separated; Group 4: Single; Group: 5: Widowed. $^{*}p < .001$

Table 3.16

Scheffe' Comparisons for Total Psychological Well-Being Scores Based on Marital Status

(I) Marital Status	(J) Marital Status	Mean Psychological Well-Being Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Married	Divorced	15.20**	2.90	6.04	24.35
	Separated	40.76*	9.30	12.11	69.41
	Single	14.40	3.75	2.84	25.96
	Widowed	2.30	5.09	-13.66	17.71
Divorced	Married	-15.20**	2.97	-24.35	-6.04
	Separated	25.56	9.60	-4.03	55.16
	Single	-.80	4.45	-14.53	12.93
	Widowed	-13.17	5.63	-30.51	4.17
Separated	Married	-40.76*	9.30	-69.41	-12.11
	Divorced	-25.56	9.60	-55.15	4.03
	Single	-26.36	4.45	-56.78	4.06
	Widowed	-38.73	5.63	-70.95	-6.52
Single	Married	-14.40	3.75	-25.96	-2.84
	Divorced	.80	4.45	-12.93	14.53
	Separated	26.36	9.87	-4.06	56.78
	Widowed	-12.37	6.07	-31.09	6.34
Widowed	Married	-2.30	5.09	-17.71	13.65
	Divorced	13.17	5.63	-4.17	30.51
	Separated	38.73	10.45	6.52	70.95
	Single	12.37	6.07	-6.35	31.09

Note. $^{*}p = .001$, $^{**}p < .001$

Table 3.17

Descriptive Statistics for Each Measure According to Race/Ethnicity (N = 2,746)

Measure	Caucasian *M* (*SD*)	African-American *M* (*SD*)	Hispanic *M* (*SD*)	Asian *M* (*SD*)	Other *M* (*SD*)
Perceived Social Support	8.95 (1.60)	8.79 (1.90)	8.72 (1.74)	7.53 (2.90)	8.29 (1.71)
Depression, Anxiety, Stress Scales (DASS)	17.33 (18.92)	19.04 (22.01)	31.59 (26.94)	24.07 (21.01)	27.75 (21.47)
Depression	4.65 (6.94)	4.78 (6.75)	8.54 (9.29)	6.67 (7.88)	7.60 (7.90)
Anxiety	4.17 (5.84)	5.52 (7.35)	8.16 (7.73)	5.67 (6.60)	8.16 (6.33)
Stress	8.51 (7.86)	8.74 (8.97)	14.89 (11.69)	11.73 (7.73)	12.00 (8.96)
Scales of Psychological Well-Being (SPWB)	405.15 (55.06)	405.49 (55.03)	390.66 (52.38)	385.46 (52.11)	386.44 (45.53)
Autonomy	64.52 (10.24)	66.46 (9.90)	61.89 (11.08)	58.54 (10.47)	60.38 (9.08)
Purpose in Life	68.59 (10.94)	68.62 (10.62)	65.52 (9.24)	64.89 (9.48)	66.34 (10.66)
Positive Relations with Others	70.43 (11.36)	67.78 (12.34)	69.94 (10.32)	66.33 (10.81)	66.10 (10.81)
Personal Growth	70.16 (9.11)	70.21 (9.50)	67.19 (9.51)	69.27 (6.47)	69.05 (7.65)
Environmental Mastery	65.14 (11.55)	66.01 (11.19)	61.83 (11.42)	63.62 (13.14)	61.61 (9.68)
Self-Acceptance	66.32 (12.47)	66.41 (12.18)	64.29 (11.58)	62.80 (14.23)	62.96 (10.12)

Note. Caucasian (n = 2,527), African-American (n = 165), Hispanic (n = 18), Asian (n = 15), and Other (n = 21).

Table 3.18

Independent t-test Comparing Caucasian and African-American Women's Total Psychological Well-Being Scores

Group	*n*	Mean	*SD*	*df*	*t*-score
Caucasian women	2,527	405.15	55.06	2690	-0.8
African-American women	165	405.49	55.03		

Note. No significant difference was obtained.

Table 3.19

Bivariate Correlations Among Study Variables (N = 2,746)

Measure	SS	DASS	PWB	Au	Pu	Po	Pe	E	SA
1. Age	.022	-.092*	.070*	.056	.015	.078*	-.024	.119*	.084*
2. SS	--	-.353*	.426*	.187*	.385*	.488*	.253*	.390*	.393*
3. DASS		--	-.626*	-.373*	-.582*	-.509*	-.436*	-.605*	-.601*
4. PWB			--	.709*	.903*	.811*	.796*	.869*	.912*
5. Au				--	.523*	.440*	.528*	.532*	.571*
6. Pu					--	.679*	.721*	.752*	.837*
7. Po						--	.569*	.659*	.685*
8. Pe							--	.591*	.649*
9. E								--	.781*

Note. SS: Perceived social support; DASS: Psychological distress; PWB: Psychological well-being; Au: Autonomy; Pu: Purpose in life; Po: Positive relations with others; Pe: Personal growth; E: Environmental mastery; SA: Self-acceptance.

*$p < .001$

Table 3.20

Multivariate Test: Household Income Levels and Six Subscales of Psychological Well-Being

Effect	Pillai's Trace	F	df_1	df_2
Household income	.10	15.88*	18	8,217

Note. * $p < .001$. Partial eta squared = .03

Table 3.21

Significant F-tests for Univariate Analysis Follow-up Tests at $p < .001$: Household Income Level

Dimension of Psychological Well-Being	Mean Squared	F	df_1	df_2
Autonomy	961.24	9.25	3	2,742
Purpose in Life	8438.20	76.89	3	2,742
Positive Relations with Others	6412.44	51.86	3	2,742
Personal Growth	2512.51	31.27	3	2,742
Environmental Mastery	4259.95	33.20	3	2,742
Self-Acceptance	10169.42	70.76	3	2,742

Table 3.22

Scheffe' Comparisons for Autonomy Scores Based on Household Income

(I) Household Income	(J) Household Income	Mean Autonomy Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Less than $20,000	$20,0001- $40,000	-1.50	.79	-3.70	.70
	$40,001- $80,000	-2.31	.72	-4.33	-.30
	Greater than $80,000	-3.36	.71	-5.35	-1.38
$20,001 - $40,000	Less than $20,000	1.50	.79	-.70	3.70
	$40,001- $80,000	-.81	.57	-2.41	.78
	Greater than $80,000	-1.87	.55	-3.42	-.31
$40,001 - $80,000	Less than $20,000	2.31	.72	.30	4.33
	$20,001 - $40,000	.81	.57	-.78	2.41
	Greater than $80,000	-1.05	.46	-2.33	.23
Greater than $80,000	Less than $20,000	3.36	.71	1.38	5.35
	$20,001 - $40,000	1.87	.55	.31	3.42
	$40,001 - $80,000	1.05	.46	-.23	2.33

Note. $^{*}p < .001$

Table 3.23

Scheffe' Comparisons for Purpose in Life Scores Based on Household Income

(I) Household Income	(J) Household Income	Mean Purpose in Life Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Less than $20,000	$20,0001- $40,000	-3.82*	.81	-6.08	-1.56
	$40,001- $80,000	-7.30*	.74	-9.38	-5.23
	Greater than $80,000	-9.68*	.73	-11.71	-7.64
$20,001 - $40,000	Less than $20,000	3.82*	.81	1.56	6.08
	$40,001- $80,000	-3.48*	.59	-5.12	-1.84
	Greater than $80,000	-5.85*	.57	-7.45	-4.26
$40,001 - $80,000	Less than $20,000	7.30*	.74	5.23	9.37
	$20,001 - $40,000	3.48*	.59	1.84	5.12
	Greater than $80,000	-2.37*	.47	-3.69	-1.06
Greater than $80,000	Less than $20,000	9.68*	.73	7.64	11.71
	$20,001 - $40,000	5.85*	.57	4.26	7.45
	$40,001 - $80,000	2.37*	.47	1.06	3.69

Note. $^{*}p < .001$

Table 3.24

Scheffe' Comparisons for Positive Relations With Others Scores Based on Household Income

(I) Household Income	(J) Household Income	Mean Positive Relations with Others Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Less than $20,000	$20,0001- $40,000	-4.32*	.86	-6.72	-1.92
	$40,001- $80,000	-7.19*	.79	-9.39	-5.00
	Greater than $80,000	-8.79*	.77	-10.96	-6.63
$20,001 - $40,000	Less than $20,000	4.32*	.86	1.92	6.72
	$40,001- $80,000	-2.88*	.62	-4.62	-1.14
	Greater than $80,000	-4.48*	.61	-6.17	-2.78
$40,001 - $80,000	Less than $20,000	7.19*	.79	5.00	9.39
	$20,001 - $40,000	2.88*	.62	1.14	4.62
	Greater than $80,000	-1.60	.50	-3.00	-.20
Greater than $80,000	Less than $20,000	8.79*	.77	6.63	10.96
	$20,001 - $40,000	4.48*	.61	2.78	6.17
	$40,001 - $80,000	1.60	.50	.20	3.00

Note. $^{*}p < .001$

Table 3.25

Scheffe' Comparisons for Personal Growth Scores Based on Household Income

(I) Household Income	(J) Household Income	Mean Personal Growth Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Less than $20,000	$20,0001- $40,000	-1.47	.69	-3.41	.46
	$40,001- $80,000	-3.27*	.63	-5.04	-1.50
	Greater than $80,000	-5.00*	.62	-6.74	-3.25
$20,001 - $40,000	Less than $20,000	1.47	.69	-.46	3.40
	$40,001- $80,000	-1.80	.50	-3.20	-.40
	Greater than $80,000	-3.52*	.49	-4.89	-2.16
$40,001 - $80,000	Less than $20,000	3.27*	.63	1.50	5.04
	$20,001 - $40,000	1.80	.50	.40	3.20
	Greater than $80,000	-1.73*	.40	-2.85	-.60
Greater than $80,000	Less than $20,000	5.00*	.62	3.25	6.74
	$20,001 - $40,000	3.52*	.49	2.16	4.89
	$40,001 - $80,000	1.73*	.40	.60	2.85

Note. $^{*}p < .001$

Table 3.26

Scheffe' Comparisons for Environmental Mastery Scores Based on Household Income

(I) Household Income	(J) Household Income	Mean Environmental Mastery Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Less than $20,000	$20,0001- $40,000	-3.42	.87	-5.86	-.97
	$40,001- $80,000	-6.13*	.80	-8.37	-3.89
	Greater than $80,000	-7.04*	.79	-9.24	-4.84
$20,001 - $40,000	Less than $20,000	3.42	.87	.97	5.86
	$40,001- $80,000	-2.71*	.63	-4.48	-.94
	Greater than $80,000	-3.62*	.62	-5.35	-1.90
$40,001 - $80,000	Less than $20,000	6.13*	.80	3.89	8.37
	$20,001 - $40,000	2.71*	.63	.94	4.48
	Greater than $80,000	-.91	.51	-2.34	.51
Greater than $80,000	Less than $20,000	7.04*	.79	4.48	9.24
	$20,001 - $40,000	3.62*	.62	1.90	5.35
	$40,001 - $80,000	.91	.51	-.51	2.34

Note. $^{*}p < .001$

Table 3.27

Scheffe' Comparisons for Self-Acceptance Scores Based on Household Income

(I) Household Income	(J) Household Income	Mean Self-Acceptance Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Less than $20,000	$20,0001- $40,000	-4.55*	.92	-7.13	-1.96
	$40,001- $80,000	-8.22*	.85	-10.59	-5.85
	Greater than $80,000	-10.77*	.83	-13.10	-8.44
$20,001 - $40,000	Less than $20,000	4.55*	.92	1.96	7.13
	$40,001- $80,000	-3.68*	.67	-5.55	-1.80
	Greater than $80,000	-6.23*	.65	-8.05	-4.40
$40,001 - $80,000	Less than $20,000	8.22*	.85	5.85	10.59
	$20,001 - $40,000	3.68*	.67	1.80	5.55
	Greater than $80,000	-2.55*	.54	-4.06	-1.05
Greater than $80,000	Less than $20,000	10.77*	.83	8.44	13.10
	$20,001 - $40,000	6.23*	.65	4.40	8.05
	$40,001 - $80,000	2.55*	.54	1.05	4.06

Note. $^{*}p < .001$

Table 3.28

Multivariate Test: Education Levels and Six Subscales of Psychological Well-Being

Effect	Pillai's Trace	F	df_1	df_2
Education Levels	.07	15.49*	12	5,478

Note. * $p < .001$. Partial eta squared = .03

Table 3.29

Significant F-tests for Univariate Analysis Follow-up Tests at $p < .001$: Education Level

Dimension of Psychological Well-Being	Mean Squared	F	df_1	df_2
Purpose in Life	6632.33	58.13	2	2,743
Positive Relations with Others	2322.56	18.01	2	2,743
Personal Growth	4172.15	52.14	2	2,743
Environmental Mastery	1326.64	10.05	2	2,743
Self-Acceptance	5328.85	35.31	2	2,743

Table 3.30

Scheffe' Comparisons for Purpose in Life Scores Based on Education Level

(I) Education Level	(J) Education Level	Mean Purpose in Life Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Elementary/high school	College/university	- 4.11**	.46	- 5.23	- 2.99
	Graduate school	- 6.69**	.73	- 8.48	- 4.91
College/university	Elementary/high school	4.11**	.46	2.99	5.23
	Graduate school	- 2.59*	.68	- 4.26	- .92
Graduate school	Elementary school	6.69**	.73	4.91	8.48
	College/university	2.59*	.68	.92	4.26

Note. * $p = .001$ ** $p < .001$

Table 3.31

Scheffe' Comparisons for Positive Relations With Others Scores Based on Education Level

(I) Education Level	(J) Education Level	Mean Positive Relations With Others Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Elementary/high school	College/university	-2.62*	.49	-3.81	-1.43
	Graduate school	-3.61*	.78	-5.51	-1.71
College/university	Elementary/high school	2.62*	.49	1.43	3.81
	Graduate school	-.99	.72	-2.77	.78
Graduate school	Elementary school	3.61*	.78	1.71	5.51
	College/university	.99	.72	-.78	2.77

Table 3.32

Scheffe' Comparisons for Personal Growth Scores Based on Education Level

(I) Education Level	(J) Education Level	Mean Personal Growth Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Elementary/high school	College/university	- 3.67*	.38	- 4.61	- 2.74
	Graduate school	- 4.38*	.61	- 5.88	- 2.88
College/university	Elementary/high school	3.67*	.38	2.74	4.61
	Graduate school	- .71	.57	- 2.11	.69
Graduate school	Elementary school	4.38*	.61	2.88	5.88
	College/university	.71	.57	- .69	2.11

Note. $^{*}p < .001$

Table 3.33

Scheffe' Comparisons for Environmental Mastery Scores Based on Education Level

(I) Education Level	(J) Education Level	Mean Environmental Mastery Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Elementary/high school	College/university	- 1.98*	.49	- 3.19	- .78
	Graduate school	- 2.72	.79	- 4.64	- .79
College/university	Elementary/high school	1.98*	.49	.78	3.19
	Graduate school	- .73	.73	- 2.53	1.06
Graduate school	Elementary school	2.72	.79	.79	4.64
	College/university	.73	.73	- 1.06	2.53

Note. $^{*}p < .001$

Table 3.34

Scheffe' Comparisons for Self-Acceptance Scores Based on Education Level

(I) Education Level	(J) Education Level	Mean Self-Acceptance Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Elementary/high school	College/university	- 3.67*	.53	- 4.96	- 2.39
	Graduate school	- 6.01*	.84	- 8.07	- 3.95
College/university	Elementary/high school	3.67*	.53	2.39	4.96
	Graduate school	- 2.34	.78	- 4.26	- .42
Graduate school	Elementary school	6.01*	.84	3.95	8.07
	College/university	2.34	.78	.42	4.26

Note. $^{*}p < .001$

Table 3.35

Multivariate Test: Marital Status and Six Subscales of Psychological Well-Being

Effect	Pillai's Trace	F	df_1	df_2
Marital Status	.07	8.18^*	24	10,956

Note. $^*p < .001$. Partial eta squared = .02

Table 3.36

Significant F-tests for Univariate Analysis Follow-up Tests at $p < .001$: Marital Status

Dimension of Psychological Well-Being	Mean Squared	F	df_1	df_2
Purpose in Life	2062.47	17.78	4	2,741
Positive Relations with Others	1709.98	13.34	4	2,741
Environmental Mastery	1366.53	10.43	4	2,741
Self-Acceptance	3454.76	23.05	4	2,741

Table 3.37

Scheffe' Comparisons for Purpose in Life Scores Based on Marital Status

(I) Marital Status	(J) Marital Status	Mean Purpose in Life Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Married	Divorced	3.88*	.59	2.08	5.69
	Separated	7.46	1.84	1.80	13.12
	Single	3.38	.74	1.09	5.66
	Widowed	2.00	1.01	-1.09	5.10
Divorced	Married	-3.88*	.59	-5.69	-2.08
	Separated	3.58	1.90	-2.27	9.43
	Single	-.51	.88	-3.22	2.21
	Widowed	-1.88	1.11	-5.31	1.55
Separated	Married	-7.46	1.84	-13.12	-1.80
	Divorced	-3.58	1.90	-9.43	2.27
	Single	-4.08	1.95	-10.10	1.93
	Widowed	-5.46	2.07	-11.82	.91
Single	Married	-3.38*	.74	-5.66	-1.09
	Divorced	.51	.88	-2.21	3.22
	Separated	4.08	1.95	-1.93	10.10
	Widowed	-1.37	1.20	-5.07	2.33
Widowed	Married	-2.00	1.01	-5.10	1.09
	Divorced	1.88	1.11	-1.55	5.31
	Separated	5.46	2.07	-.91	11.82
	Single	1.37	1.20	-2.33	5.07

Note. * $p < .001$.

Table 3.38

Scheffe' Comparisons for Positive Relations With Others Scores Based on Marital Status

(I) Marital Status	(J) Marital Status	Mean Positive Relations With Others Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Married	Divorced	2.56	.62	.66	4.46
	Separated	8.08	1.93	2.12	14.03
	Single	3.91*	.78	1.50	6.31
	Widowed	-.46	1.06	-3.72	2.79
Divorced	Married	-2.56	.62	-4.46	-.66
	Separated	5.52	1.99	-.63	11.67
	Single	1.35	.93	-1.51	4.20
	Widowed	-3.02	1.17	-6.63	.58
Separated	Married	-8.08	1.93	-14.03	-2.12
	Divorced	-5.52	1.99	-11.67	.63
	Single	-4.17	2.05	-10.49	2.15
	Widowed	-8.54	2.17	-15.23	-1.85
Single	Married	-3.91*	.78	-6.31	-1.50
	Divorced	-1.35	.93	-4.20	1.51
	Separated	4.17	2.05	-2.15	10.49
	Widowed	-4.37	1.26	-8.26	-.48
Widowed	Married	.46	1.06	-2.79	3.72
	Divorced	3.02	1.17	-.58	6.63
	Separated	8.54	2.17	1.85	15.23
	Single	4.37	1.26	.48	8.26

Note. * $p < .001$.

Table 3.39

Scheffe' Comparisons for Environmental Mastery Scores Based on Marital Status

(I) Marital Status	(J) Marital Status	Mean Environmental Mastery Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Married	Divorced	2.54	.62	.62	4.47
	Separated	9.61*	1.95	3.60	15.63
	Single	1.72	.79	-.71	4.14
	Widowed	-.28	1.07	-3.57	3.02
Divorced	Married	-2.54	.62	-4.47	-.62
	Separated	7.07	2.02	.85	13.29
	Single	-.83	.94	-3.71	2.06
	Widowed	-2.82	1.18	-6.46	.82
Separated	Married	-9.61*	1.95	-15.63	-3.60
	Divorced	-7.07	2.02	-13.29	-.85
	Single	-7.90	2.07	-14.29	-1.51
	Widowed	-9.89*	2.20	-16.66	-3.12
Single	Married	-1.72	.79	-4.14	.71
	Divorced	.83	.94	-2.06	3.71
	Separated	7.90	2.07	1.51	14.29
	Widowed	-1.99	1.28	-5.92	1.94
Widowed	Married	.28	1.07	-3.02	3.57
	Divorced	2.82	1.28	-.82	6.46
	Separated	9.89*	2.20	3.12	16.66
	Single	1.99	1.28	-1.94	5.92

Note. * $p < .001$.

Table 3.40

Scheffe' Comparisons for Self-Acceptance Scores Based on Marital Status

(I) Marital Status	(J) Marital Status	Mean Self-Acceptance Difference (I-J)	SE	95% CI Lower Bound	95% CI Upper Bound
Married	Divorced	4.86*	.67	2.81	6.92
	Separated	10.63*	2.09	4.19	17.06
	Single	4.42*	.84	1.82	7.02
	Widowed	1.04	1.14	-2.49	4.56
Divorced	Married	-4.86*	.67	-6.92	-2.81
	Separated	5.76	2.16	-.88	12.41
	Single	-.44	1.00	-3.53	2.64
	Widowed	-3.83	1.26	-7.72	.07
Separated	Married	-10.63*	2.09	-17.06	-4.19
	Divorced	-5.76	2.16	-12.41	.88
	Single	-6.21	2.22	-13.04	.63
	Widowed	-9.59	2.35	-16.83	-2.36
Single	Married	-4.42*	.84	-7.02	-1.82
	Divorced	.44	1.00	-2.64	3.53
	Separated	6.21	2.22	-.63	13.04
	Widowed	-3.38	1.36	-7.59	.82
Widowed	Married	-1.04	1.14	-4.56	2.49
	Divorced	3.83	1.26	-.07	7.72
	Separated	9.59	2.35	2.36	16.83
	Single	3.38	1.36	-.82	7.59

Note. * $p < .001$.

Chapter 4: Discussion

Results from the study provide direction about how several major sociodemographic and psychological factors influence women's psychological well-being. Findings in some instances support those presented from previous studies. Also, results conflict with prior research. In this chapter, I compare present findings to those in previous studies, interpret findings, and identify implications for future research. Findings also help to highlight areas important for practice with women in a psychotherapy setting. On a broader scheme, results found in this dissertation lend support for empowerment and recovery based approaches in promoting women's mental health. Strengths and limitations of the present study provide a context in which results are interpreted.

Findings: Sociodemographic Variables

Sociodemographic data included age, household income, education, marital status, and race/ethnicity. These variables served as the independent variables and were treated categorically, while psychological well-being served as the dependent variable and was treated as a continuous variable. Age was treated both as a categorical and continuous variable for the purpose of testing proposed research hypotheses.

Age. Findings from this study showed no significant differences in total psychological well-being scores between groups of women based on age (younger adults = ages 18 – 29, middle-aged adults = ages 30 – 64, and older adults = ages 65 and older). Mean differences of psychological well-being scores between age groups were small: middle-aged women scored an average of three points higher than younger women, and

older women scored an average of eight points higher than middle-aged women (on a scale of 84 to 504). The effect size was small (partial $\eta^2 < .01$).

Findings from the present study support those reported in existing work. Three studies assessed the influence of age and findings demonstrated no relationship between age and total psychological well-being scores (Keyes, Smotkin, & Ryff, 2002; Marmot et al., 1997; Marmot et al., 1998). Findings from existing research and the present study show support for the notion that aging may not necessarily lead to improved or diminished perception of functioning positively in life.

While statistical significance was found for relationships between age and scores for Positive Relations with Others, Environmental Mastery, and Self-Acceptance, correlations and effect sizes were small ($r = .08$, $r^2 < .01$, $p < .001$; $r = .12$, $r^2 = .01$, $p < .001$; $r = .08$, $r^2 < .01$, $p < .001$, respectively) and therefore, the relationships did not appear meaningful. No statistically significant relationships were found between age and Autonomy or Purpose in Life and effect sizes for these two subscales did not exceed a correlation of determination value of .01.

For individual subscale scores, findings from several previous studies have shown that older individuals score significantly lower on the Purpose in Life and Personal Growth subscales and significantly higher on the Environmental and Self-Acceptance subscales (Ryff, 1989,1991; Ryff & Keyes, 1995). A more recent study findings conflicts with these findings and showed age to have no effect on any of the subscale scores (Springer et al., 2011). Other factors such as successfully dealing with life's challenges, income, personality characteristics, and so forth, may have more of an influence than age. The notion that age may not be an important factor for women's

psychological well-being is further supported by age not being included/ identified in positive functioning theories: the conceptual framework of issues affecting the mental health of women and girls (OWH, 2009), feminist empowerment models (Worell & Remer, 2003), or in Jacobson and Greenley's (2001) model of the recovery approach to mental health. Future research could focus on possible changes in psychological well-being scores over time as recent and present findings are based on cross-sectional research. Even though age does not appear to be an important factor in women's psychological well-being at one point in time, conducting longitudinal studies could help clarify if women's psychological well-being changes over time (i.e., as they age).

Household income. In the present study, psychological well-being scores differed significantly based on household income. Levels included: less than $20,000; $20,001 - $40,000; $40,001- $80,000; and greater than $80,000. Findings showed that women who reported higher household income levels scored significantly higher on total psychological well-being and significantly higher on each of the well-being subscales compared to women who reported lower household income levels.

A consistent mean difference was evaluated in total psychological well-being scores across household income groups. For every increase in household income level, total scores were approximately 15 points higher and the overall effect size was moderate ($\eta^2 < .06$). (See Tables 3.8 for further detail). At the highest level, women who reported a household income greater than $80,000 scored, on average, 45 points higher than women who reported the lowest level of household income (less than $20,000). These obtained mean differences could be considered practically significant as total psychological well-being scores can range from 84 to 504. Findings from the present

study are in agreement with those reported in the only other study related to income and psychological well-being reviewed in this dissertation. Clarke et al. (2000) treated income as a continuous variable (categories ranging from 1 to 12) and found it to positively predict scores on all six subscales of psychological well-being. Although total psychological well-being scores were not reported, the combined existing and present findings demonstrate how household income is possibly an important factor in women's perception of positive functioning. Results based on subscale scores further support this claim.

Similar to total psychological well-being scores, women who reported higher household income levels scored significantly higher on each of the six subscales compared to women who reported lower household income. At each increase in income level, women scored two to three points higher on average on each subscale. Effect sizes were moderate for subscales of Purpose in Life (partial $\eta^2 = .08$), and Self-Acceptance (partial $\eta^2 = .07$) and small for Autonomy (partial $\eta^2 = .01$), Positive Relations with Others (partial $\eta^2 = .05$), Personal Growth (partial $\eta^2 = .03$), and Environmental Mastery (partial $\eta^2 = .04$). When considering extreme ends of the income spectrum, results showed that women who reported an income of $80,000 scored an average of 6 to 11 points higher than women who reported less than $20,000. These differences may be practically significant as subscale scores can range from 14 to 84.

Findings are in agreement with those previously reported in Clarke et al. (2000) where income significantly and positively predicted scores for all six subscales. The combined findings show support for income being an important factor in women's psychological well-being and results may be explained theoretically by Maslow's (1968)

hierarchy of needs. At lower income levels women may be motivated to first fulfill basic needs (physiological, or food, shelter, and water); at higher income levels, women may be motivated to meet higher order needs, first security, then social, esteem, and self-actualization needs. Meeting these needs could be facilitating personal development, the ability to achieve individual potential, and in turn, psychological well-being. Further research is needed in order to clarify how levels of income correspond to total and individual dimensions of psychological well-being. For example, does higher income buffer negative influences such as psychological distress? Future research could also serve to evaluate if the relationship between psychological distress and psychological well-being is mediated by income.

Education. In the present study, total psychological well-being scores significantly differed based on education level, although effect size was small ($\eta^2 = .03$). Groups included: graduate school, college/university, and high school/elementary school. In general, women who reported completing a higher level of education scored significantly higher on total psychological well-being than women with lower education levels. More specifically, women with a graduate level education scored, on average, 25 points higher than women with a high school/elementary school level education. Women with a college/university education scored, on average, scored 17 points higher than the lower education group. No other significant differences were found (e.g., between graduate and college/university groups).

Findings are in agreement with existing literature. Three studies focused on the influence of education on total psychological well-being scores and findings indicated that more years of education predicted higher total psychological well-being scores

(Keyes et al., 2002; Marmot et al., 1997; Marmot et al., 1998). However, no statistically significant difference was found between women who obtained a college/university level education and a graduate school level education in these studies. In previous studies, education was treated as a continuous variable (number of years of education completed) and in the present study, by educational levels. Future research could focus on the specific skills acquired at different educational levels that may influence one's perception of ability to face and deal with life's challenges. Possible receiving a college/university education instills certain skills and abilities not otherwise gained at other education levels. Similar results were obtained for the individual subscale scores.

Women who reported completing a higher level of education scored significantly higher on each of the psychological well-being subscales, except for Autonomy (M = 63.82, SD = 10.74 for elementary/high school; M = 64.74, SD = 10.09 for college/university; M = 65.57, SD = 9.47 for graduate school). (No effect sizes exceeded a partial eta squared value of .04.) Results showed that women who completed a college/university level education scored an average of six points higher on the Purpose in Life, Positive Relations with Others, Personal Growth, Environmental Mastery, and Self-Acceptance subscales than women who completed high school/elementary school only. These differences could be considered meaningful as subscale scores range from 14 to 84. No significant differences were found between the graduate and college/university groups. These findings are in agreement with those reported in the only other study comparing these factors where Clarke et al. (2000) found that number of years of education positively predicted scores on each of the six subscales. The combined results suggest that education is an important factor in women's psychological

well-being, but possibly not for functioning autonomously (i.e., resisting social pressures, regulating behaviors from within, or evaluating themselves by personal standards) (Ryff, 1989). Functioning autonomously may be a skill learned outside of education but instead, through life experiences. Theoretically, autonomy represents a sense of independence, thinking and acting differently despite acceptance by others, a concept equated with Maslow's (1968) notion of self-actualization (Ryff, 1989). According to Maslow's theory of hierarchy of needs, self-actualization is obtained by meeting all basic and higher order needs, the highest being creativity, spontaneity, morality, lack of prejudice, and so forth, needs education may not necessarily help women meet. That is, education may help women meet some higher order needs such as self-esteem, confidence, and respect by others (Maslow, 1968; New Economics Foundation, 2009), but not those of self-actualization.

Education appears to have a small, positive impact, on women's psychological well-being over all, as well as on most dimensions of positive functioning. Existing positive functioning theories such as OWH's (2009) conceptualization of women mental health and Jacobson and Greenley's (2001) recovery approach to mental health both include education as key for positive functioning. Benefits gained through education include, but are not limited to, financial gain and personal development. Learning also encourages social interactions, increases self-esteem, increases feelings of competency, and facilitates development of new skills that help individuals feel more able to deal with life's challenges (New Economics Foundation, 2009). Further research is needed in order to clarify if financial benefits and personal development peak at the college/university level or if benefits differ or diminish at the graduate school level.

Marital status. Total psychological well-being scores were not compared based on marital status in any of the reviewed studies, nor was it included as an important factor in existing positive functioning models. Present findings may be highlighting an important area in women's psychological well-being not previously identified. Findings from the present study showed that women's total psychological well-being scores differed significantly based on marital status, although the effect size was small (η^2 = .02). Married women scored significantly higher than separated women (by 41 points on average), and significantly higher than divorced women (by 15 points on average) on total psychological well-being. No other significant differences were found.

The influence of marital status on individual subscales was also investigated in the present study. Married women scored significantly higher than women of other marital groups on four of the six subscales: Purpose in Life, Positive Relations with Others, Environmental Mastery, and Self-Acceptance (though no partial eta squared value exceeded .03). Married women scored significantly higher than divorced and single women on the Purpose in Life subscale (three to four points on average); single women on the Positive Relations with Others subscale (4 points on average); separated women on the Environmental Mastery subscale (10 points on average); and divorced, separated, and single women on the Self-Acceptance subscale (4-11 points on average for respective groups). No other significant differences were found (i.e., for Autonomy and Personal Growth subscales). Findings could be considered meaningful as total scores can range from 84 to 504 and subscale scores can range from 14 to 84. Also, findings from this study were in agreement with those identified in the only reviewed study addressing the influence of marital status on all six subscales of psychological well-being.

Clarke et al. (2000) investigated these relationships in a large sample of Canadian seniors (*N* = 4,790) and found that married individuals scored higher than other marital groups on subscales of Purpose in Life, Positive Relations with Others, and Self-Acceptance subscales. Differences in scores did not exceed three points (for the shorter scales ranging from 3 to 18). Previous and present findings suggest that being married corresponds to better perceptions of positive functioning. Marital status was not identified as a key component in any of the reviewed models on positive functioning. However, the recovery approach to mental health includes strong social networks as key to mental health. Being married may allow for additional access to resources such as social ties and financial stability that may otherwise be compromised for divorced, separated, and single women. It is possible that factors such as social support and income may help explain how married women seem to benefit from a higher sense of Purpose in Life, Positive Relations with Others, Environmental Mastery, and Self-Acceptance. Future research could address the underlying dynamic between women's marital status and psychological well-being. Questions may include: (a) What factors mediate the relationship between marital status and psychological well-being in women?, (b) What factors mediate relationships between marital status and the different dimensions of psychological well-being?, (c) Why do married women score higher than non-married women on some subscales, but not others? In response to these questions, a profile of women that included their marital status, income, age, education, and the relationship of these variables to psychological well-being might provide a better understanding of those factors that influence women's perception of their ability to face and deal with life's challenges.

Significant differences were found in all subscales accept for Autonomy and Personal Growth. While study findings do not explain this phenomenon, a possible explanation is that multiple factors are involved in both functioning autonomously and personal growth that have not been examined. For example, possible factors would include gender socialization, sexism, and perceived discrimination.

Race/ethnicity. Total psychological well-being scores were compared between Caucasian and African-American women in the present study. Findings showed that African-American women and Caucasian women scored similarly (*M* = 405.15, *SD* = 55.06; *M* = 405.49, *SD* = 55.03; respectively) and the effect size value was very small $\eta^2 < .001$. Though sample sizes in other groups were too small to obtain meaningful differences across all groups (Caucasian, *n* = 2,527; African-American, *n* = 165; Hispanic, *n* = 18; Asian, *n* = 15; Other, *n* = 21), descriptive statistics showed that women in the remaining groups scored an average of 15 to 19 points lower than the Caucasian and African-American women for total psychological well-being (See Table 3.17 – 3.18 for further details). Future research could include purposeful sampling of diverse groups of women in order to more clearly describe how psychological well-being scores compare for women in different racial/ethnic groups. Findings from the present study are in agreement with those previously reported in the one other study conducted in this area. Ryff, et al. (2003) found that Caucasians (*n* = 2,485) and African-Americans (*n* = 339) scored similarly to one another for total psychological well-being (*M* = 98.9, *SD* = 14.3; and *M* = 98.5, *SD* = 14.7; respectively). Scores for other ethnic/racial groups of women were not reported.

Existing and present findings suggest that Caucasian and African-American women do not differ in their perception of their ability to face and deal with life's challenges. However, other factors such as income, perceived social support, and psychological distress help explain why total psychological well-being scores are so similar. In revisiting descriptive statistics, African-American women appeared to have equal scores with Caucasian women for psychological distress (*M* = 19.04, *SD* = 22.01 for African-Americans, *M* = 17.33, *SD* = 18.92 for Caucasians) and Perceived Social Support (*M* = 8.79, *SD* = 1.90 for African-Americans, *M* = 8.95, *SD* = 1.60 for Caucasian women). See Tables 3.17 for descriptives. A follow-up test was conducted where frequencies of levels of household income were computed for African American women and for Caucasian women. Results showed that, while 75.6% of all Caucasian women (*n* = 1,909) reported an average household income above $40,000; only 35.1% of all African-American women (*n* = 165) reported an average income at the same level. Further research, including women from diverse backgrounds, is needed in order to better understand if dynamics between negative influential factors, buffers, and psychological well-being that may exist in different racial/ethnic groups of women.

Findings: Perceived Social Support, Psychological Well-Being, and Psychological Distress

The use of a Visual Analogue Scale (VAS) to measure social support precluded an in-depth analysis of this variable. Limitations of VAS methodology include: (a) internal consistency cannot be assessed, and (b) type and extent of support cannot be examined. The decision to use the VAS in the original study was based on several factors. Modest funding for this study required that data collection be completed within a

prescribed period of time although the rate of diagnosis following diagnostic mammogram is less than 1% at the study institution. Diminishing the length of time necessary to respond to the questionnaire packet and thus increasing response rate was of major concern. Completing questionnaires related to the variables of greatest interest (psychological well-being, psychological distress, depression, anxiety, stress) took 20 minutes. Adding the consent form plus the VAS measuring perceived social support brought the time necessary to complete the packet to 30 minutes. This length of time was considered reasonable in order to have a productive response rate.

While the VAS of perceived social support is problematic in terms of providing comprehensive information, it was selected to provide an overview of a concept of minor importance given the design of the study. Another anomaly regarding the measure used to assess perceived social support was the use of healthcare personnel in the instructions: *Circle the number that best describes your social support (family, friends, healthcare personnel).* Healthcare providers are not usually included when examining social support. Given the sample studied (women recalled for mammograms and women diagnosed with breast cancer) it was deemed appropriate to include this category of individuals.

Even though there are limitations when using VAS methodology, a positive and significant relationship was evidenced between scores for Perceived Social Support and total psychological well-being. Findings from this study showed a positive and moderate correlation between Perceived Social Support and total psychological well-being scores and a large effect size ($r = .43$, $r^2 = .18$, $p < .001$). The finding suggests that the perception of existing/available social support plays a key role in women's perception of

their abilities to face and deal with life's challenges (i.e., psychological well-being, Ryff, 1989). Therefore, it may be beneficial for some women to gain perspective on their social situation and receive help in cultivating quality relationships. Both theoretical models of OWH's (2009) conceptualization of women's mental health and Jacobson's and Greenley's (2001) of the recovery approach to mental health include social support as a key factor in positive functioning which agrees with the findings in the present study. The correlation value was moderate in this study, suggesting that other influential factors may exist. Or, the correlation score could be limited and actually be lower or higher that reported due to a limitation in the measure. The definition of perceived social support included instructions of the measure was limited as participants were asked to rate their perceived level of social support relative to "family, friends, and healthcare personnel." Participants may have interpreted perceived social support as limited to only the individuals listed and thus, outcomes in the study may have been different if different/more examples were given. Further, the definition of perceived social support in this study deviates from existing definitions of perceived social support, thereby making it difficult to identify a clear relationship between the construct and psychological well-being.

Nevertheless, findings in the present study provide evidence that Perceived Social Support positively and significantly correlates with all subscale scores. Perceived Social Support moderately correlated with scores on four subscales: Purpose in Life, Positive Relations with Others, Environmental Mastery, and Self-Acceptance (correlation sizes ranged from .39 to .49) Effect sizes were large for these four subscales ($r^2 = .15$, $r^2 = .24$, $r^2 = .15$, $r^2 = .15$, respectively). Correlation and effect size were small for

Autonomy (r = .19, r^2 = .04), and while the correlation value for Personal Growth was small (r = .25), the effect size was moderate (r^2 = .06). Findings are in agreement with the one other reviewed study in this area where Bierman et al. (2006) found that perceived social support from family positively predicted Purpose in Life scores, but perceived social support from friends did not. No other subscales were evaluated in the study. Also, no other distinctions or relationships between perceived social support and different dimensions of psychological well-being were made in the reviewed research. In the present study, the measure of perceived social support included family, friends, and healthcare personnel. Bierman and colleagues (2006) study suggests that separating out different kinds of social support may reveal more complex relationships with psychological well-being.

Perceived Social Support moderately correlates with some subscale scores and not others. Reasons remain unclear, but highlight areas of potential research for the future. One issue to address could be the possibility that different aspects of psychological well-being operate according to different value systems. Purpose in Life, Positive Relations with Others, Environmental Mastery, and Self-Acceptance may be more closely tied to Perceived Social Support because they are based on the value of quality relationships or cultural approval (collectivistic view). Small relationships between Autonomy and Personal Growth may be more based on the values of independence and prioritizing personal needs above the group (individualistic view). In other words, some subscale may be based on collectivistic values, while other are based on individualistic values. Future research could address the differences in value systems, how they influence dimensions of psychological well-being, and if having both sets of values are associated

with improved positive functioning in general. Also, existing research is limited to only two studies (including the present study) addressing the concept of perceived social support and psychological well-being. Further research is needed in order to address the influence of types of perceived social support on psychological well-being. Types may include: perceived social support from different groups of people in one's social network (Northouse, 1988); dimensions of perceived support such as guidance, reliable alliance, and sense of reassurance (Weiss, 1974); or availability and satisfaction with emotional support only (Schroevers et al., 2010).

Findings from the present study showed an inverse relationship between psychological distress and psychological well-being and the effect size was moderate (r = -.63, r^2 = .13). Psychological distress, as defined by Watson and Clark (1984) include multiple types of negative affect: depression, anxiety, and stress, otherwise termed Negative Affectivity (NA). Results from the present study partially agree with those described in previous research. That is, one previous study (Ryff et al., 2006) may support the distinct hypothesis, and another (Ruini et al., 2003) may support both the mirrored and distinct hypotheses. As mentioned previously, the mirrored hypothesis supports the notion that psychological distress and psychological well-being are strongly and negatively related; when psychological distress decreases, psychological well-being is expected to increase. The distinct hypothesis supports the notion that the two constructs are related, but not necessarily directly; when psychological distress decreases, psychological well-being does not necessarily increase. For example, Ruini et al. (2003) found that psychological distress did not correlate strongly with any of the subscales of

psychological well-being, except for Self-Acceptance which was strong, showing support for the distinct hypothesis (r = -.63).

Findings from the present study showed support for the mirrored hypothesis as psychological distress and psychological well-being were strongly and inversely correlated. Differences between this study and previous studies may be explained by the ways in which psychological distress has been defined and/or how psychological well-being was evaluated. Ryff et al. (2006) defined psychological distress as the makeup of negative affect, depression, and anxiety. Ruini et al. (2003) defined psychological distress as the combination of depression and anxiety. In the present study, psychological distress was defined as the combination of depression, anxiety, and stress. Perhaps variations in definitions produced variations in correlation values. In addition, evaluating psychological well-being in terms of a total score versus subscale scores could also have produced different findings. The correlation between psychological distress and total psychological well-being showed support for the mirrored hypothesis, while correlations between psychological distress and subscales may show support for one or both of the hypotheses.

More research is needed in order to better understand how types of psychological distress relate to not only total psychological well-being, but also to different dimensions of psychological well-being, if one theory is to be supported over the other (given that both are supported across research findings). If in fact, psychological distress and psychological well-being are mirrored correlates of one another, this circumstance would suggest that therapeutic treatments should be designed to address both decreasing symptoms of psychological distress and increasing of psychological well-being. For

example, treatment to decrease psychological distress, while providing strength-based or empowerment therapy (to enhance psychological well-being), may be a more effective way to treat psychological distress than addressing only problem symptoms. If psychological distress and psychological well-being are strongly and inversely linked (i.e., the mirrored hypothesis), then treating distress and enhancing psychological well-being could be an effect approach to therapeutic practice.

Intervention studies could be conducted comparing groups of women who only have psychological distress treated and women who receive both treatment for psychological distress and strength-building or empowerment therapy (focused on enhancing psychological well-being) in order to observe which type is more effective in improving mental health. If results of treatment for distress only show that psychological distress has diminished, and psychological well-being has increased, the mirrored hypothesis would be supported. If psychological distress has diminished, and psychological well-being remains the same, then the distinct hypothesis would be supported.

Summary of Findings

Often in research studies, demographic variables are controlled. In the present study, however, demographics served as major variables and several seemed to be important factors for women's psychological well-being. In regards to subscale scores of psychological well-being, women with higher household income levels have significantly higher scores on all six subscales; and women with higher education levels have significantly higher scores on all subscales except Autonomy. Married women and women perceiving higher social support have significantly higher scores on all subscales

except for Autonomy and Personal Growth. Taken together, present findings help describe a profile of mental health for women. For example, women with higher household income levels, at least a college/university level education, who are married, have higher perceptions of social support, and lower levels of psychological distress have higher total psychological well-being scores. Age and race/ethnicity did not appear to make a difference.

Limitations of the Present Study

Limitations of the present study relate to research design, threats to internal validity, and threats to external validity. Differences in present versus prior findings may be due to a number of factors. While the sample source in the present study is regional, findings of previous work are largely based on the MIDUS dataset, a nationally representative sample. Therefore, findings may be limited to the geographic region in which the present study took place. Another limitation may be due to the homogeneity of the sample. This study included women who were primarily well-educated, financially comfortable, and predominantly Caucasian. Thus, generalizing findings from this study to those of more diverse samples may be difficult and present findings should be interpreted with caution. Further, results in this study showed high mean scores for psychological well-being (M = 405.09, SD = 55.65) and perceived social support (M = 8.92, SD = 1.63). A ceiling effect may have occurred as these scores appear restricted to a high range of possible responses and any true variations in scores could not be detected.

Internal validity. Because the study was cross-sectional and many of the analyses were correlational, no claims can be made about what causes changes in psychological well-being over time. The results should therefore, be viewed as providing

further understanding of factors influencing women's psychological well-being only at one point in time. Findings from longitudinal designs could better explain the impact sociodemographic and psychological factors may have on psychological well-being. For example, does psychological distress diminish psychological well-being, or vice versa?

"The term *internal validity* describes, the efficacy with which extraneous variables have been controlled" (McMillan & Schumacher, 1984, p. 108). Although a number of important variables were included in this study, some variables not measured may account for additional influence on women's psychological well-being scores. For example number of roles in life (i.e., partner, spouse, parent, employee, etc.), personality type, and spiritual views may influence women's psychological well-being but were not assessed in the present study. Factors such as resilience or personality may also help explain relationships between factors but could not be added due to the limitations inherent to conducting a secondary data analysis. Further, the setting and situation in which the study took place (breast imaging clinic where women are waiting to receive a diagnostic mammogram) may have led to skewed responses that might not otherwise have occurred in studies in another setting. Possibly, women being recalled for a diagnostic mammogram would have been more distressed psychologically than women not being recalled for diagnosis of a life-threatening disease.

Also, due to the design of the study (a secondary data analysis), additional measures could not have been changed, nor could item content be altered. Some of the measures in the existing study and item content may threaten the internal validity of findings in the present study. In regards to measure, a Visual Analogue Scale (VAS) of Perceived Social Support was used and instructions were specific to the participants'

perception of social support from family, friends, and healthcare personnel. One problem in using this definition/measure is that it deviates from existing definitions and makes interpreting relationships between the construct and psychological well-being difficult. Another problem is the use of VASs as they do not provide rich detail relative to underlying factors actually being measured. A global perception of perceived social support does not guarantee the type or nature of perceived social support being measured and thus, findings should be interpreted with caution.

The operational definitions of two demographic variables may threaten the internal validity of findings in this study. Household income was assessed by asking participants to record income without specification of it being before or after taxes. Thus, income reporting may have been inconsistent, and validity of findings in this study may have been compromised. Marital status was assessed by asking women to endorse one of five categories: married, single, separated, divorced, and widowed. Instructions did not specify whether or not the marital status was "current" or if it was to reflect past experiences (such as being married before, divorced before, number of marriages, etc.). Therefore, information on marital status only reflected the way participants interpreted the question and confounding information such as previous marital status was not controlled. Therefore, the internal validity of the findings based on marital status may have been compromised in the present study; findings should be interpreted with caution.

External validity. The term "*external validity* refers to the extent to which the results and conclusions of a study can be generalized to other people and settings." (McMillan & Schumacher, 1984, p. 108). In the present study, the context in which the study took place may pose a threat to external validity. At the time of participation,

women were waiting for a secondary mammogram at a breast imaging clinic in a large community-based hospital. Results may not be generalizable to women in other regions of the United States, or to women not undergoing diagnostic mammograms for breast cancer.

Areas for Future Research

The purpose of the present study was to investigate how different sociodemographic factors (age, income, education, marital status, and race/ethnicity) and psychological factors (perceived social support and psychological distress) influenced women's psychological well-being. The design of the present study was descriptive and exploratory. In future studies, conducting analyses of interaction effects (such as Factorial ANOVAs) could provide additional information about what it means for women to be functioning positively in life (i.e., improve psychological well-being). Potential research questions could include: (a) "Is there an interaction effect between income, education, and marital status on women's psychological well-being?",(b) "Is there an interaction effect between marital status and perceived social support?", and (c) "Is there an interaction effect between perceived social support and psychological distress?" Results related to these questions may provide additional information on a profile of what it means for women to be mentally healthy.

Since the design of the present study was a secondary data analysis, factors to be investigated were limited to only those included in the existing study. In future studies, several additional factors could be assessed. For instance, roles specific to women such as motherhood, being a single mother, or care-taking of family members (e.g., grandparents, spouse's grandparents.) may influence psychological well-being in ways

that have yet to be identified. Future studies may also focus on the influence of other factors on women's psychological well-being including: spirituality, health status, employment status, perceived discrimination (e.g., based on gender and/or race and ethnicity), types of psychological distress (depression, anxiety, and stress), or levels of psychological distress (mild to extremely severe depression, anxiety, and stress). The accumulation of results from additional studies could help delineate a profile of what it means for women to be functioning positively in life.

Implications for Practice

Outcomes in the present study have implications for working with women in a therapeutic setting. Understanding how different sociodemographic variables influence women's psychological well-being help provide a context in which women live and a background for understanding their current stati of psychological well-being. Based on the combined present and existing research findings, interventions in a therapy setting could be: (a) helping women identify healthy relationships and cultivate relationships that are perceived as supportive, (b) helping women learn about personal areas of positive functioning and use these areas as strengths to better cope with symptoms of psychological distress, (c) using the Scales of Psychological Well-Being in order to identify personal areas of strength and areas that may be enhanced, and (d) having clients practice empowerment strategies (e.g., self-nurturing behaviors, self-assertion, and consciousness raising practices) in order to help women cultivate and enhance different areas of positive functioning. Evaluating a woman's scores of psychological well-being could help highlight any lower scores (e.g., Self-Acceptance), and working to enhance this area of her life could be incorporated into goals of the therapeutic treatment plan.

Treating symptoms of psychological distress in addition to helping women understand, rely on, and cultivate areas of psychological well-being, may be more effective to help improve women's mental health than treating symptoms of distress alone.

Strengths of the Present Study

The present study had a number of strengths. Findings help expand the knowledge base on how various factors such as age, household income, and education, marital status, and race/ethnicity show differences (and do not show differences) in women's psychological well-being, where previous research typically does not focus on sociodemographic variables. Present findings also provided a more current and up-to-date profile of women's psychological well-being, advancing initiatives put forth by the OWH (2009) and APA's report on Guidelines for Psychological Practice with Girls and Women.

Psychological variables such as perceived social support and psychological distress have been understudied in positive functioning research. Findings in the present study help to not only show that perceived social support is an important factor in women's psychological well-being, supporting the inclusion of this variable in Jacobson and Greenley's (2001) recovery approach to mental health, but they also show differentiations in subscale scores leading to support or to questioning existing research findings. Another strength of the study is the result of investigating how psychological well-being and psychological distress relate. Information reported in this study helps show support for the mirrored hypothesis, thus expanding the knowledge base of how the two constructs may be related (strongly and inversely). Another strength of the study is sample size. Having a large sample size (N = 2,746) allowed for the power to detect

differences that may closer resemble the true values in the population. The alpha level was also set at a conservative level (p = .002) as well, lending credibility to the reported findings and decreasing the chance that results were due to chance.

Conclusions

Throughout positive functioning research, age has been identified as an important and influential variable in variations of psychological well-being scores. In this study, age did not seem to make a difference in either total psychological well-being or in subscale scores. Race/ethnicity was also thought to show differences in outcome scores, but did not. Instead, different levels of household income, education, marital status, perceived social support, and psychological distress resulted in different psychological well-being scores, suggesting that these factors are important in women's positive functioning. In future directions in work with women, whether in education, research, or in psychotherapy, these areas may provide a detailed profile of what it means for women to be mentally healthy and provide a context in order to understand additional aspects of positive as well as negative functioning. In sum, findings from this study lead to several conclusions: (a) sociodemographic variables (household income, education, and marital status) appear to be important variables in women's positive functioning, (b) these sociodemographics seem to provide a context in which to understand the status of women's psychological well-being, (c) a global perception of perceived social support appears to positively influence women's psychological well-being, (d) variations in women's psychological well-being scores may depend less on their ages or races/ethnicities than on other factors and, (e) women being faced with the possibility of a life-threatening disease such as breast cancer may actually be less distressed

psychologically than one would anticipate. With the right support system, the means to meet basic and advanced needs economically, an education that instills a sense of self-esteem and competence, women may be equipped to face and deal with life's challenges, even the possibility of having a diagnosis of breast cancer.

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Appendix A:

Complete Participant Questionnaire Packet

Demographic Questionnaire

Please provide the following information by writing or circling the response that best describes you.

How old are you? ____ years

Race

1) Caucasian (White)
2) African-American
3) Hispanic
4) Asian
5) Other _____

Marital Status

1) Married
2) Divorced
3) Separated
4) Single
5) Widowed

Education
Circle the highest level of education completed

1) Elementary
2) High school
3) College/University
4) Graduate school

Attending school at present? Please describe: _____

_____

Employment

1) Full time
2) Part time
3) Homemaker
4) Student
5) Unemployed
6) Retired
7) Other

Please describe: _____

Household Income

1) Less than $20,000
2) $20,001 - $40,000
3) $40,001 - $80,000
4) More than $80,001

Are you the main wage earner in your household?

1) Yes
2) No

Living Arrangements

I live:

1) Alone
2) With partner or spouse
3) With roommate(s)
4) With family Please describe: _____
5) Other Please describe: _____

Care giving

Number of children in your care:

1) 0
2) 1
3) 2
4) 3
5) 4+

If so, what are their ages? _____

Number of others in your care:

1) 0
2) 1
3) 2
4) 3
5) 4+

If so, please describe: _____

Religious Affiliation

1) None
2) Catholic
3) Protestant
4) Jewish
5) Muslim
6) Other: _____

Family History of Cancer

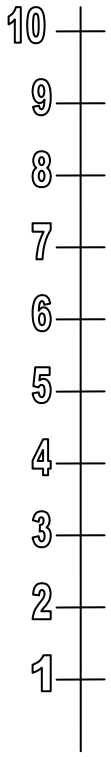
1) Yes
2) No

Relationship of family member to you: _____

Current Health Status

Circle the number that best describes your health

Excellent Health



Poor Health

Comments:

Current Social Support

Circle the number that best describes your social support (family, friends, health care personnel)

Excellent Social Support

10
9
8
7
6
5
4
3
2
1

Poor Social Support

Comments:

Spirituality Questions

Please respond to the following questions.

1.) Do you have a belief system that influences your day to day life?

Yes _____

No _____

If yes, please briefly describe.

2.) Do you rely on your belief system to help you during difficult times in your life?

Yes _____

No _____

3.) If you answered yes to question #2: To what extent do you rely on your belief system when dealing with difficult times?

Please circle the appropriate number.

Not at all	Rarely	Sometimes	Most of the time	All of the time
1	2	3	4	5

DASS

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found myself getting upset by quite trivial things	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I just couldn't seem to get going	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8	I found it difficult to relax	0	1	2	3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting upset rather easily	0	1	2	3
12	I felt that I was using a lot of nervous energy	0	1	2	3
13	I felt sad and depressed	0	1	2	3
14	I found myself getting impatient when I was delayed in any way (eg, elevators, traffic lights, being kept waiting)	0	1	2	3
15	I had a feeling of faintness	0	1	2	3
16	I felt that I had lost interest in just about everything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I perspired noticeably (eg, hands sweaty) in the absence of hightemperatures or physical exertion	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life wasn't worthwhile	0	1	2	3

Reminder of rating scale:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

22	I found it hard to wind down	0	1	2	3
23	I had difficulty in swallowing	0	1	2	3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
26	I felt down-hearted and blue	0	1	2	3
27	I found that I was very irritable	0	1	2	3
28	I felt I was close to panic	0	1	2	3
29	I found it hard to calm down after something upset me	0	1	2	3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31	I was unable to become enthusiastic about anything	0	1	2	3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
33	I was in a state of nervous tension	0	1	2	3
34	I felt I was pretty worthless	0	1	2	3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36	I felt terrified	0	1	2	3
37	I could see nothing in the future to be hopeful about	0	1	2	3
38	I felt that life was meaningless	0	1	2	3
39	I found myself getting agitated	0	1	2	3
40	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
41	I experienced trembling (eg, in the hands)	0	1	2	3
42	I found it difficult to work up the initiative to do things	0	1	2	3

Scales of Psychological Well-Being SPWB
Carol Ryff (1989)

The following set of questions deals with how you feel about yourself and your life. Please circle your response and remember that there are no right or wrong answers.

Circle the number that best describes your present agreement or disagreement with each statement.	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
1. Most people see me as loving and affectionate.	1	2	3	4	5	6
2. Sometimes I change the way I act or think to be more like those around me.	1	2	3	4	5	6
3. In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
4. I am not interested in activities that will expand my horizons.	1	2	3	4	5	6
5. I feel good when I think of what I've done in the past and what I hope to do in the future.	1	2	3	4	5	6
6. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6
7. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4	5	6
8. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	1	2	3	4	5	6
9. The demands of everyday life often get me down.	1	2	3	4	5	6
10. In general, I feel that I continue to learn more about myself as time goes by.	1	2	3	4	5	6
11. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
12. In general, I feel confident and positive about myself.	1	2	3	4	5	6
13. I often feel lonely because I have few close friends with whom to share my concerns.	1	2	3	4	5	6
14. My decisions are not usually influenced by what everyone else is doing.	1	2	3	4	5	6

Circle the number that best describes your present agreement or disagreement with each statement.	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
15. I do not fit very well with the people and the community around me.	1	2	3	4	5	6
16. I am the kind of person who likes to give new things a try.	1	2	3	4	5	6
17. I tend to focus on the present, because the future nearly always brings me problems.	1	2	3	4	5	6
18. I feel like many of the people I know have gotten more out of life than I have.	1	2	3	4	5	6
19. I enjoy personal and mutual conversations with family members or friends.	1	2	3	4	5	6
20. I tend to worry about what other people think of me.	1	2	3	4	5	6
21. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
22. I don't want to try new ways of doing things - my life is fine the way it is.	1	2	3	4	5	6
23. I have a sense of direction and purpose in life.	1	2	3	4	5	6
24. Given the opportunity, there are many things about myself that I would change.	1	2	3	4	5	6
25. It is important to me to be a good listener when close friends talk to me about their problems.	1	2	3	4	5	6
26. Being happy with myself is more important to me than having others approve of me.	1	2	3	4	5	6
27. I often feel overwhelmed by my responsibilities.	1	2	3	4	5	6
28. I think it is important to have new experiences that challenge how you think about yourself and the world.	1	2	3	4	5	6
29. My daily activities often seem trivial and unimportant to me.	1	2	3	4	5	6
30. I like most aspects of my personality.	1	2	3	4	5	6
31. I don't have many people who want to listen when I need to talk.	1	2	3	4	5	6

Circle the number that best describes your present agreement or disagreement with each statement.	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
32. I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
33. If I were unhappy with my living situation, I would take effective steps to change it.	1	2	3	4	5	6
34. When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6
35. I don't have a good sense of what it is I'm trying to accomplish in life.	1	2	3	4	5	6
36. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	1	2	3	4	5	6
37. I feel like I get a lot out of my friendships.	1	2	3	4	5	6
38. People rarely talk to me into doing things I don't want to do.	1	2	3	4	5	6
39. I generally do a good job of taking care of my personal finances and affairs.	1	2	3	4	5	6
40. In my view, people of every age are able to continue growing and developing.	1	2	3	4	5	6
41. I used to set goals for myself, but that now seems like a waste of time.	1	2	3	4	5	6
42. In many ways, I feel disappointed about my achievements in life.	1	2	3	4	5	6
43. It seems to me that most other people have more friends than I do.	1	2	3	4	5	6
44. It is more important to me to "fit in" with others than to stand alone on my principles.	1	2	3	4	5	6
45. I find it stressful that I can't keep up with all of the things I have to do each day.	1	2	3	4	5	6
46. With time, I have gained a lot of insight about life that has made me a stronger, more capable person.	1	2	3	4	5	6
47. I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6
48. For the most part, I am proud of who I am and the life I lead.	1	2	3	4	5	6

Circle the number that best describes your present agreement or disagreement with each statement.	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
49. People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
50. I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6
51. I am good at juggling my time so that I can fit everything in that needs to be done.	1	2	3	4	5	6
52. I have a sense that I have developed a lot as a person over time.	1	2	3	4	5	6
53. I am an active person in carrying out the plans I set for myself.	1	2	3	4	5	6
54. I envy many people for the lives they lead.	1	2	3	4	5	6
55. I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
56. It's difficult for me to voice my own opinions on controversial matters.	1	2	3	4	5	6
57. My daily life is busy, but I derive a sense of satisfaction from keeping up with everything.	1	2	3	4	5	6
58. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6
59. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
60. My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
61. I often feel as if I'm on the outside looking in when it comes to friendships.	1	2	3	4	5	6
62. I often change my mind about decisions if my friends or family disagree.	1	2	3	4	5	6
63. I get frustrated when trying to plan my daily activities because I never accomplish the things I set out to do.	1	2	3	4	5	6
64. For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6

Circle the number that best describes your present agreement or disagreement with each statement.	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
65. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
66. Many days I wake up feeling discouraged about how I have lived my life.	1	2	3	4	5	6
67. I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
68. I am not the kind of person who gives in to social pressures to think or act in certain ways.	1	2	3	4	5	6
69. My efforts to find the kinds of activities and relationships that I need have been quite successful.	1	2	3	4	5	6
70. I enjoy seeing how my views have changed and matured over the years.	1	2	3	4	5	6
71. My aims in life have been more a source of satisfaction than frustration to me.	1	2	3	4	5	6
72. The past had its ups and downs, but in general, I wouldn't want to change it.	1	2	3	4	5	6
73. I find it difficult to really open up when I talk with others.	1	2	3	4	5	6
74. I am concerned about how other people evaluate the choices I have made in my life.	1	2	3	4	5	6
75. I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
76. I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
77. I find it satisfying to think about what I have accomplished in life.	1	2	3	4	5	6
78. When I compare myself to friends and acquaintances, it makes me feel good about who I am.	1	2	3	4	5	6
79. My friends and I sympathize with each other's problems.	1	2	3	4	5	6
80. I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6

Circle the number that best describes your present agreement or disagreement with each statement.	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
81. I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
82. There is truth to the saying that you can't teach an old dog new tricks.	1	2	3	4	5	6
83. In the final analysis, I'm not so sure that my life adds up to much.	1	2	3	4	5	6
84. Everyone has their weaknesses, but I seem to have more than my share.	1	2	3	4	5	6

Appendix B:

Depression, Anxiety, and Stress Scales (DASS) Items Per Subscale

Major constructs per subscale are notated. Total scores for all listed items reflect total psychological distress or Negative Affectivity (NA, Lovibond & Lovibond, 1995)

DEPRESSION

A higher score on the Depression scale indicates more severe depression.

Dysphoria:
- I felt downhearted and blue.
- I felt sad and depressed.

Hopelessness:
- I could see nothing in the future to be hopeful about.
- I felt that I had nothing to look forward to.

Devaluation of life:
- I felt that life was meaningless.
- I felt that life wasn't worthwhile.

Self-deprecation:
- I felt I was pretty worthless.
- I felt I wasn't worth much as a person.

Lack of interest/involvement:
- I felt that I had lost interest in just about everything.
- I was unable to become enthusiastic about anything.

Anhedonia:
- I couldn't seem to experience any positive feeling at all.
- I couldn't seem to get any enjoyment out of the things I did.

Inertia:
- I just couldn't seem to get going.
- I found it difficult to work up the initiative to do things.

ANXIETY

A higher score on the Anxiety scale indicates more severe anxiety.

Autonomic arousal:
- I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).
- I perspired noticeably (e.g., hands sweaty) in the absence of high temperature or physical exertion.
- I was aware of dryness of my mouth.
- I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).
- I had difficulty swallowing.

Skeletal musculature effects:

I had a feeling of shakiness (e.g., legs going to give way).

I had experience trembling (e.g., in the hands).

Situational anxiety:

I was worried about situations in which I might panic and make a fool of myself.

I found myself in situations which made me so anxious I was most relieved when they ended.

I feared that I would be 'thrown' by some trivial unfamiliar task.

Subjective experience of anxious affect:

I felt I was close to panic.

I felt terrified.

I felt scared without any good reason.

I had a feeling of faintness.

STRESS

A higher score on the Stress scale indicates more severe stress.

Difficulty relaxing:

I found it hard to wind down.

I found it hard to calm down after something upset me.

I found it difficult to relax.

Nervous arousal:

I felt that I was using a lot of nervous energy.

I was in a state of nervous tension.

Easily upset/agitated:

I found myself getting upset rather easily.

I found myself getting upset by quite trivial things.

I found myself getting agitated.

Irritable/over-reactive:

I tended to over-react to situations.

I found that I was very irritable.

I felt that I was rather touchy.

Impatient:

I was intolerant of anything that kept me from getting on with what I was doing.

I found myself getting impatient when I was delayed in any way (e.g., lifts, traffic lights, being kept waiting).

I found it difficult to tolerate interruptions to what I was doing.

Appendix C:

Scales of Psychological Well-Being (SPWB) Items Per Subscale

(+) indicates positively scored items
(-) indicates negatively scored items

AUTONOMY

Definition: High Scorer: Is self-determining and independent; able to resist social pressures to think and act in certain ways; regulates behavior from within; evaluates self by personal standards.
Low Scorer: Is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways.

(-) 1. Sometimes I change the way I act or think to be more like those around me.

(+) 2. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.

(+) 3. My decisions are not usually influenced by what everyone else is doing.

(-) 4. I tend to worry about what other people think of me.

(+) 5. Being happy with myself is more important to me than having others approve of me.

(-) 6. I tend to be influenced by people with strong opinions.

(+) 7. People rarely talk me into doing things I don't want to do.

(-) 8. It is more important to me to "fit in" with others than to stand alone on my principles.

(+) 9. I have confidence in my opinions, even if they are contrary to the general consensus.

(-) 10. It's difficult for me to voice my own opinions on controversial matters.

(-) 11. I often change my mind about decisions if my friends or family disagree.

(+) 12. I am not the kind of person who gives in to social pressures to think or act in certain ways.

(-) 13. I am concerned about how other people evaluate the choices I have made in my life.

(+) 14. I judge myself by what I think is important, not by the values of what others think is important.

Internal consistency (coefficient alpha) = .83
Correlation with 20-item parent scale = .97

ENVIRONMENTAL MASTERY

Definition: High Scorer: Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.
Low Scorer: Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.

(+) 1. In general, I feel I am in charge of the situation in which I live.

(-) 2. The demands of everyday life often get me down.

(-) 3. I do not fit very well with the people and the community around me.

(+) 4. I am quite good at managing the many responsibilities of my daily life.

(-) 5. I often feel overwhelmed by my responsibilities.

(+) 6. If I were unhappy with my living situation, I would take effective steps to change it.

(+) 7. I generally do a good job of taking care of my personal finances and affairs.

(-) 8. I find it stressful that I can't keep up with all of the things I have to do each day.

(+) 9. I am good at juggling my time so that I can fit everything in that needs to get done.

(+) 10. My daily life is busy, but I derive a sense of satisfaction from keeping up with everything.

(-) 11. I get frustrated when trying to plan my daily activities because I never accomplish the things I set out to do.

(+) 12. My efforts to find the kinds of activities and relationships that I need have been quite successful.

(-) 13. I have difficulty arranging my life in a way that is satisfying to me.

(+) 14. I have been able to build a home and a lifestyle for myself that is much to my liking.

Internal consistency (coefficient alpha) = .86
Correlation with 20-item parent scale = .98

PERSONAL GROWTH

Definition: High Scorer: Has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing his or her potential; sees improvement in self and behavior over time; is changing in ways that reflect more self knowledge and effectiveness.
Low Scorer: Has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviors.

(-) 1. I am not interested in activities that will expand my horizons.

(+) 2. In general, I feel that I continue to learn more about myself as time goes by.

(+) 3. I am the kind of person who likes to give new things a try.

(-) 4. I don't want to try new ways of doing things--my life is fine the way it is.

(+) 5. I think it is important to have new experiences that challenge how you think about yourself and the world.

(-) 6. When I think about it, I haven't really improved much as a person over the years.

(+) 7. In my view, people of every age are able to continue growing and developing.

(+) 8. With time, I have gained a lot of insight about life that has made me a stronger, more capable person.

(+) 9. I have the sense that I have developed a lot as a person over time.

(-) 10. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.

(+) 11. For me, life has been a continuous process of learning, changing, and growth.

(+) 12. I enjoy seeing how my views have changed and matured over the years.

(-) 13. I gave up trying to make big improvements or changes in my life a long time ago.

(-) 14. There is truth to the saying you can't teach an old dog new tricks.

Internal consistency (coefficient alpha) = .85
Correlation with 20-item parent scale = .97

POSITIVE RELATIONS WITH OTHERS

Definition: High Scorer: Has warm satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships. Low Scorer: Has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.

(+) 1. Most people see me as loving and affectionate.

(-) 2. Maintaining close relationships has been difficult and frustrating for me

(-) 3. I often feel lonely because I have few close friends with whom to share my concerns.

(+) 4. I enjoy personal and mutual conversations with family members or friends.

(+) 5. It is important to me to be a good listener when close friends talk to me about their problems.

(-) 6. I don't have many people who want to listen when I need to talk.

(+) 7. I feel like I get a lot out of my friendships.

(-) 8. It seems to me that most other people have more friends than I do.

(+) 9. People would describe me as a giving person, willing to share my time with others.

(-) 10. I have not experienced many warm and trusting relationships with others.

(-) 11. I often feel like I'm on the outside looking in when it comes to friendships.

(+) 12. I know that I can trust my friends, and they know they can trust me.

(-) 13. I find it difficult to really open up when I talk with others.

(+) 14. My friends and I sympathize with each other's problems.

Internal consistency (coefficient alpha) = .88
Correlation with 20-item parent scale = .98

PURPOSE IN LIFE

Definition: High Scorer: Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.
Low Scorer: Lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose of past life; has no outlook or beliefs that give life meaning.

(+) 1. I feel good when I think of what I've done in the past and what I hope to do in the future.

(-) 2. I live life one day at a time and don't really think about the future.

(-) 3. I tend to focus on the present, because the future nearly always brings me problems.

(+) 4. I have a sense of direction and purpose in life.

(-) 5. My daily activities often seem trivial and unimportant to me.

(-) 6. I don't have a good sense of what it is I'm trying to accomplish in life.

(-) 7. I used to set goals for myself, but that now seems like a waste of time.

(+) 8. I enjoy making plans for the future and working to make them a reality.

(+) 9. I am an active person in carrying out the plans I set for myself.

(+) 10. Some people wander aimlessly through life, but I am not one of them.

(-) 11. I sometimes feel as if I've done all there is to do in life.

(+) 12. My aims in life have been more a source of satisfaction than frustration to me.

(+) 13. I find it satisfying to think about what I have accomplished in life.

(-) 14. In the final analysis, I'm not so sure that my life adds up to much.

Internal consistency (coefficient alpha) = .88
Correlation with 20-item parent scale = .98

SELF-ACCEPTANCE

Definition: High Scorer: Possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self including good and bad qualities; feels positive about past life.
Low Scorer: Feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain personal qualities; wishes to be different than what he or she is.

(+) 1. When I look at the story of my life, I am pleased with how things have turned out.

(+) 2. In general, I feel confident and positive about myself.

(-) 3. I feel like many of the people I know have gotten more out of life than I have.

(-) 4. Given the opportunity, there are many things about myself that I would change.

(+) 5. I like most aspects of my personality.

(+) 6. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.

(-) 7. In many ways, I feel disappointed about my achievements in life.

(+) 8. For the most part, I am proud of who I am and the life I lead.

(-) 9. I envy many people for the lives they lead.

(-) 10. My attitude about myself is probably not as positive as most people feel about themselves.

(-) 11. Many days I wake up feeling discouraged about how I have lived my life.

(+) 12. The past had its ups and downs, but in general, I wouldn't want to change it.

(+) 13. When I compare myself to friends and acquaintances, it makes me feel good about who I am.

(-) 14. Everyone has their weaknesses, but I seem to have more than my share.

Internal consistency (coefficient alpha) = .91
Correlation with 20-item parent scale = .99

Appendix D:

Consent Form

CONSENT TO TAKE PART IN A RESEARCH STUDY
Psychological Well-Being of Women Pre and Post-Breast Cancer Diagnosis

Principal Investigator: Dorothy Brockopp, RN, PhD
University of Kentucky
315G College of Nursing Building
Lexington, KY, 40532

Sub-Investigators: Susan Yackzan, RN, MSN,
Judy Schreiber MSN, PhD (c),
Krista Moe, MS
Judith Hatch RN, BSN

Purpose

This is a research study. Research studies involve only those who choose to take part. This consent form may contain words that you do not understand. Please ask the Principal Investigator or the research staff to explain any words or information that you do not clearly understand. Before you decide to take part in this study, you need to understand why the research is being done, what it will involve, any risks to you, and what is expected of you. If you choose to take part, you must sign this form before you can be enrolled in the study. This process is known as informed consent.

You are being invited to take part in a research study about women's well-being and breast cancer. You are being invited to take part in this research study because you are having a diagnostic mammogram. The purpose of this study is to find out how a diagnosis of breast cancer affects women's psychological well-being. This research study is being sponsored by the University of Kentucky. About 1300 patients are expected to take part in this study.

Procedure

In order to participate in this study, we ask that you read and sign the consent form. You will be given a survey to complete while you wait for your mammogram. A research assistant will be present to answer any questions. Completing the survey will take place in a small waiting room at the Mammography Center at Central Baptist Hospital while you are waiting for your mammogram. Completion of the survey will take approximately

20 minutes. If you are asked to complete the survey a second time, you will spend a total of 40 minutes on this project. If you are diagnosed with breast cancer, you will be asked to complete the questionnaire a second time. The Central Baptist Breast Navigator Nurse will be available to answer any questions.

Risks/Discomforts

Taking part in this research study may result in a loss of privacy, since persons other than the investigators might view your information. There are no physical risks to participating in this study. It's possible that completing this survey may raise some questions or concerns. The Principal Investigator, Dorothy Brockopp RN PhD, will be available to answer any questions or respond to any concerns that you may have.

New Findings

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information. You will not be identified by name in any reports or presentations as a result of this study.

Benefits

There is no guarantee that you will benefit from taking part in this study. However, some people have gained a deeper understanding about themselves (i.e. their well-being) when responding to the questionnaires. Your willingness to take part may help health care providers better understand and/or treat others who are diagnosed with breast cancer.

Alternatives

You may choose not to take part in this study. If you do not want to be in the study, there are no other choices except not to take part in the study. Choosing not to take part in the study will not affect the present or future care you receive.

Patient Costs/Payment

There is no cost to you for participating in this study. You will receive a complimentary ceramic mug at the time of screening. If you complete the questionnaires a second time, you will receive a $30.00 check.

Illness/Injury Resulting from the Research Study

No illness/injury will result from this study. Please contact Dr. Dorothy Brockopp at (859) 536 - 5856, should questions arise from responding to the questionnaires.

Withdrawal from the Study

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

Confidentiality

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information contains. Your name will be associated with your questionnaire for a period of time, not to exceed two months. However, your name will not be on the questionnaires. A list of names and numbered questionnaires will be kept in a locked file that only the research team can access for that two month period. All identifying information will be destroyed following completion of the second survey. After the questionnaires from all the participants are gathered, the information will be analyzed by the research team. The researchers will be interested in looking at general responses from everyone who participated in the study, regarding psychological well-being. Records kept for this research study that identify you will be kept confidential (private) as required by law. Your records may be inspected by:

- Authorized representatives of the study sponsor: the University of Kentucky Institutional Review Board
- The Central Baptist Hospital Institutional Review Board (IRB) (a group of people who initially review and continue to monitor all research studies)

They may inspect or review study records about you, but will keep these records private as required by law. Whenever possible, information about you sent to a sponsor, lab or other organization involved with this study will not include your name, social security number or other means of identifying you. You will not be identified by name in any reports or presentations as a result of this study.

AUTHORIZATION TO USE AND DISCLOSE HEALTH INFORMATION FOR RESEARCH PURPOSES

Introduction

Federal regulations give you certain rights related to your health information. This includes the right to know who will be able to get the information and why they may be

able to get it. The study doctor must get your authorization (permission) to use or give out any health information that might identify you.

This form may contain words that you do not understand. Please ask the principal investigator or research staff to explain any words or information that you do not understand. You may take home an unsigned copy of this authorization form to think about or discuss with family or friends before making your decision.

By signing this Authorization, you agree to permit Central Baptist Hospital and its staff, and other health care providers (together "Providers"), and (Dorothy Brockopp) and her Associates, and the research staff (together "Researchers"), to use and disclose health information about you, including health information in your medical records to conduct the study, as described below.

1. **The health information that may be used and disclosed includes:**

   All information collected during the research described in the Informed Consent Form for the (Psychological Well-Being of Women Pre and Post-Breast Cancer Diagnosis**)** study

   health information to include only the diagnosis of breast cancer.

2. **The Providers may disclose health information in your medical records:**
   - to the Researchers and to the Sponsor (**University of Kentucky**).

3. **The Researchers may:**

   Use and share your health information among themselves and with other researchers involved with the research.

4. **The Providers, Researchers and Sponsor may:**
   - Disclose your health information as required by law and to representatives of government organizations, review boards (such as the Food and Drug Administration [FDA] or similar government agencies in other countries, and the Central Baptist Hospital Institutional Review Board), and other persons who are required to watch over the safety and effectiveness of medical products (drugs and devices), treatments and how the research is conducted.

5. **Once information that could be used to identify you has been removed**:
   The information that remains is no longer subject to this Authorization and may be used and disclosed by the Researchers and Sponsors as permitted by law, including other research purposes**.**
6. **Once your health information has been disclosed to a third party:**
   - It may be subject to further disclosure by recipients, and federal privacy laws may no longer protect it from further disclosure
   - The Researchers and the Sponsor agree to protect your health information by using and disclosing it only as permitted by you in this Authorization and the Informed Consent form
   - No publication about the research will reveal your identity without your specific written permission
   - These limitations to protect information about you continue even if you revoke (take back) this Authorization.
7. **Please note that:**
   - You do not have to sign this Authorization, but if you do not, you will not be allowed to take part in the research.
   - You may change your mind and revoke (take back) this authorization at any time. To revoke this Authorization, you must write to Central Baptist Clinical Research Center at 1740 Nicholasville Road, Lexington, KY 40503 to tell them you want to take back this Authorization. However, if you revoke this Authorization, you will no longer be allowed to take part in the Research. Also, even if you revoke this Authorization, the information already obtained by the Researchers and Sponsor may be used and disclosed as permitted by this Authorization and the Informed Consent.
   - While the research is in progress, you will not be allowed to see your health information that is created or collected during the research. After the research is finished, however, you may see this information as described in Central Baptist Hospital‘s Notice of Information practices.

9. This Authorization does not have an expiration (ending) date.

10. You will be given a copy of this Authorization after you have signed it.

Questions

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Dr. Brockopp at (859) 536-5846. If you have questions regarding your rights and welfare as a research volunteer, you may call the Central Baptist Hospital Institutional Review Board (a group of people who initially review and continue to monitor all research studies) at (859) 260-6074 We will give you a signed copy of this consent form to take with you.

I have read this informed consent. I have been informed of the risks and benefits involved and all of my questions have been answered to my satisfaction. I understand that if I have any questions at any time, they will be answered. I will receive a copy of this consent form. I voluntarily consent to take part in this research study. I am free to withdraw consent and stop taking part in this study at any time. By signing this form, I have not given up any legal rights.

_____ _____

Signature of Volunteer or Volunteer's Legal Representative Date

_____

Volunteer's Printed Name

_____ _____

Person Explaining Consent to Volunteer Date

INVESTIGATOR ONLY:

I verify that voluntary consent was obtained by one or more members of the research staff from this patient (or parent/legal representative, if necessary) for participation in this study.

_____ _____

Investigator's Signature Investigator's Printed Name

References

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Vita

Author's Name: Krista Moe, MS

Birthdate: December 12, 1979

Education

2006 University of Kentucky
M.S. Counseling Psychology
Ed.S. Education

2004 Arizona State University
B.S. Psychology
Minor: Women's Studies

Professional Positions

Central Baptist Hospital (Lexington, KY) 2010 - pres
Community Hospital
Evidence-Based Practice Assistant

Appalachian Regional Healthcare (Hazard, Kentucky) 2011-2012
Inpatient facility for care of adults for acute or persistent mental disorders
Psychology Intern

Eastern State Hospital (Lexington, Kentucky) 2009-2010
Inpatient facility for care of adults for acute or persistent mental disorders
Psychology Intern

Counseling and Testing Center (University of Kentucky, Lexington) 2008-2009
University counseling center for undergraduate and graduate students
Undergraduate/Graduate Student Counselor

President's Commission on Women (PCW, University of Kentucky, Lexington) 2008-2009
Graduate Assistant

Behavioral Science (University of Kentucky, Lexington) 2008-2009
Research Assistant

Counseling Psychology Department (University of Kentucky, Lexington) 2006-2009
Psychodrama Group Leader

College of Nursing (University of Kentucky, Lexington) 2005-2008
Research Assistant

Diversity Training and Process Group (University of Kentucky, Lexington) 2007
Diversity Training Group Co-Leader

Support Group for International Graduate Students (University of Kentucky) 2006
Support Group Co-Leader

Chrysalis House (Lexington, Kentucky) 2006
Inpatient drug rehabilitation facility for women.
Drug/Rehabilitation Counselor

Publications

Journal Articles

2011 Brockopp, D., Schreiber, J., Hill, K., Altpeter, T., **Moe, K.,** Merritt, S. A successful evidence-based practice model in an acute care setting. *Oncology Nursing Forum, 38*(5), 509-511.

2009 **Moe, K.,** Brockopp, D., Walmsley, L., Davis, J., Butler, K., Diebold, C. & Maiti, S. (2009). A pilot project to evaluate the academic performance, abilities, and satisfaction of second-degree students. *Nursing Education Perspectives, 30*, 226-228.

2006 Younger, J., Lawler-Row, K., **Moe, K.,** Kratz, A., & Keenum A. (2006). Effects of Naltrexone on repressive coping and disclosure of emotional material: A test of the opioid-peptide hypothesis of repression and hypertension. *Psychosomatic Medicine,* 68, 734-741.

Book Chapter

2010 Brockopp, D., **Moe, K.,** Schreiber, J., & Warden, S. (2010). Transitions throughout the cancer experience: Diagnosis, treatment, survivorship, and end of life. In T. W. Miller (Ed.), *Handbook of stressful transitions across the lifespan* (pp. 355 - 366). New York, NY: Springer Publishing.

Abstracts and Presentations

2011 Cantrell, D., **Moe, K.**, Nicholls, P., Gallenstein, M., Hetzel, B., Weir, A., Brockopp, D. (September 7-10, 2011). Patient-Nurse Discrepancies, Provider Knowledge and Biases Related to Management of Acute Pain. The American Society for Pain Management Nursing (ASPMN) 21st National Conference. Tucson, AZ.

2010 Brockopp, D., Abner, J., Hatch, J., **Moe, K.**, Schreiber, J. & Yackzan, S. (May 15, 2010). The influence of a belief system on psychological well-being among women undergoing a diagnostic mammogram. The Oncology Nursing Society's 35th Annual Congress. San Deigo, CA.

2010 **Moe, K.,** Brockopp, D., Abner, J., Hatch, J., Schreiber, J., Yackzan, S., Hick, M.…Varghese, A. (July 11 – 16, 2010). Predictors of Psychological Well-Being: 1150 Women. The 27th International Congress of Applied Psychology. Melbourne, Australia. *Presenter.*

2010 Brockopp, D., Abner, J., Hatch, J., Hick, M., **Moe, K.**, Schreiber, J., Varghese, A., & Yackzan, S. (2010, April). The influence of a belief system on

psychological well-being among women undergoing a diagnostic mammogram. The 2010 International Nursing Conference. Phuket, Thailand.

2009 McKinney, K., **Moe, K.,** & Wilson, J. (2009, February). First year medical student perspectives on the transition from class to clinic. Southern Society of General Internal Medicine. New Orleans, Louisiana.

2007 **Moe, K.,** Brockopp, D., Walmsley, L., Dampier, L. & Hensley, V. (2007, July). Identity Maps: A Strategy to Enhance the Success of Second-Degree Students. 18th International Nursing Research Congress Focusing on Evidence-Based Practice, Vienna, Austria. *Presenter*.

2006 Butler, K., Diebold, C., Walmsley, L., **Moe, K.,** & Brockopp, D. (2006, September). Use of The Learning and Study Strategies Inventory (LASSI) In a Second-degree Nursing Program. 12th Annual International Participative Conference, Education in Healthcare,University of Durham, England.

2006 Walmsley, L., **Moe, K.,** Brockopp, D. & Davis, J. (2006, July). Educating the Educated. 17th International Nursing Research Congress Focusing on Evidence-Based Practice, Montreal, Canada. *Presenter*.

Awards

2009 Leslie L. Martin award $5,000.00

Professional Memberships

2009-pres Kentucky Psychological Association (KPA) member, student affiliate

2009-pres Peer reviewer for *Nursing Education Perspectives*

2004-pres American Psychological Association, student affiliate
APA Division 17 – Counseling Division
APA Division 35 – Psychology of Women