THE DEVELOPMENT AND VALIDATION OF THE RESILIENCE PROTECTIVE FACTORS INVENTORY: A CONFIRMATORY FACTOR ANALYSIS

by

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Abstract

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The concept of resilience was empirically discovered over 40 years ago. Over the last several decades' researchers continued to generate a theoretical and empirical evidence base relative to the concept of resilience. This study builds on the existing theoretical and empirical literature of resilience in an attempt to construct a measurement model capable of assessing the protective factors associated with resilience in an older adult population.

The development of the tested measurement model was two-fold (N=151). First, a qualitative interpretive meta-synthesis (QIMS) of qualitative studies on resilience among older adults was performed. Findings from the QIMS revealed 9 factors: Grit, Previous Experience with Hardship, External Connections, Independence, Positive Perspective on Life, Meaningfulness, Self-Care, Altruism and Self-Acceptance. Second, findings from a systematic review of resilience instruments were compared with the 9

factors generated from the QIMS in order to determine similarities and differences. Finally, items were generated and rated by an expert review panel.

A confirmatory factor analysis (CFA) was performed on each of the nine factors followed by the overall proposed model. The nine one-factor models all exhibited good model fit whereas the nine-factor model was problematic. The nine factor model was respecified based on *internal* resilience protective factors versus *behavioral* and *experience* resilience protective factors. Both models were tested using CFA and exhibited good model fit. Overall, the results suggest two separate measures are required to assess resilience protective factors among older adults. One measure focuses on the innate or internal protective factors, whereas the other measure focuses on the behavioral and experience protective factors. Findings from this study have application for social work practice and research.

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Chapter 1

Introduction to the Problem

The term resilience is associated with the ability to *bounce back* or *recover* from adverse conditions. Documenting and understanding how some individuals are able to recover from adversity or disturbance is of interest to social workers and healthcare professionals. Studying resilience is important since understanding human capacity for positive adaptation in adverse circumstances can assist mental health professionals in developing interventions premised in developing and cultivating specific pathways leading to positive adaptation.

The introduction of resilience into the psychological lexicon is credited to the early work of Werner (1982) and colleague Smith (1992) and was greeted with great interest by researchers, theorists, and practitioners across disciplines. The rising increase in interest of resilience coincided with a paradigm shift in perspectives from the traditional medical model of identifying pathology and disease, towards a more strengths based approach premised in highlighting internal and environmental strengths. Consequently, the later part of the Twentieth Century consisted of an explosion of resilience research and theory and researchers generated a massive body of literature relative to the topic (Kaplan, 1999; Yates & Masten, 1994).

The development of resilience empirical and theoretical studies highlighted the variability of definitions, theoretical development, and operationalization of resilience throughout the scholarly literature (see Kaplan, 1999; Olsson, Bond, Burns, Vella-Brodrick & Sawyer, 2003). Despite the variability across studies, an element of consensus was achieved. Most notably, individuals possess personality characteristics and environmental factors that enhance resilience; however, becoming resilient is the result of a dynamic process, and an individual's level of resilience is not static and

increases and decreases variably during life stages (Rutter, 1985; Werner, 1989). Furthermore, resilience is multifaceted and varies with developmental stages, and life circumstances. The majority of early studies on resilience focused on children that flourished despite adverse environmental conditions (see Garmezy, 1991; Rutter, 1985; Werner, 1982, 1989); however, over the last several decades, an increase in application of resilience across the life span has presented in the scholarly literature.

Of increasing interest is the application of resilience to an older adult population. Research has shown that aging requires adaptation to multifaceted challenges to achieve unique personal goals (Baltes & Baltes, 1990; Heckhausen & Schultz 1993; Jopp & Smith, 2006). Resilience may be one factor that facilitates adapting to these multifaceted challenges. Examining the protective factors that facilitate resilience in older adults may assist gerontologists and other allied health professionals in assisting older adults in positive adaptation to multifaceted challenges.

Definitions of Resilience

Resilience is commonly defined as "a dynamic process encompassing positive adaptation within the context of significant adversity" (Luthar et. al., 2000, p. 543). Although a large body of resilience research exists, controversy remains regarding a consensus of a single definition. Some researchers incorrectly define resilience as a personality characteristic specific to an individual (e.g. Davidson et al., 2005), while other scholars view resilience as a variable process (not a personality trait) (Cicchetti & Garmezy, 1993; Luthar et al, 2000; Masten, 1994; Masten et al., 1990; Masten & Coatsworth, 1998; Rutter, 1990). The variable process includes: 1) contact with adversity or risk factor; 2) activation and interaction of protective or vulnerability factors; and 3) resilient outcomes or non- resilient outcomes. In order for an individual to be deemed resilient, after confrontation with adversity, they must demonstrate positive

adaptation in a specific domain (i.e. healthy psychological development). Currently, most researchers agree resilience is or varies according to the naturally changing/dynamic interplay of protective and vulnerability factors across the life span (Masten & Coatsworth, 1998).

Table 1-1 Examples of Varying Definitions of Resilience

Author	Definition
Connor & Davidson (2003)	"Resilience embodies the personal qualities that enable one to thrive in the face of adversity" p. 76
Luthar, Cicchetti, & Becker (2000)	"Resilience refers to a dynamic process encompassing positive adaptation within the context of significant adversity" p. 543
Masten (2001)	"Resilience refers to a class of phenomena characterized by good outcomes in spite of serious threats to adaptation and development" p. 228
Newman (2005)	"The human ability to adapt in the face of tragedy, trauma, adversity, hardship, and ongoing significant life stressors" p. 227
Wagnild & Young (1993)	"a personality characteristic that moderates the negative effects of stress and promotes adaptation" p. 165

Statements and Background of the Problem

In the present study, resilience is defined as "good outcomes in spite of serious threats to adaptation and development" (Masten, 2001, p. 228). Resilience is hypothesized as a result of factors that protect an individual from maladjustment subsequent to risk exposure. This study focuses on identifying and operationalizing protective factors that act serve as a buffer for older adults when faced with adversity. Findings from this study will guide social work researchers and practitioners in development and implementation of interventions and practice models premised in

assisting older adults develop and cultivate protective factors that promote resilience and healthy psychological development.

Purpose

The purpose of this study is two-fold: 1) to test a measurement model of resilience protective factors on an older adult population; 2) establish the psychometric properties as related to reliability and validity of the proposed measurement model.

Chapter 2

Review of the Literature

Theoretical Framework

Resilience theory serves as the theoretical basis of this investigation and consists of three central constructs: 1) risk factors; 2) protective factors; and 3) vulnerability factors. The central constructs are conceptualized as temporally related interactive counterparts of a larger multifaceted process model. As evidenced in the discussion of inconsistencies of definitions of resilience, it is important to note that resilience is routinely criticized by researchers for lack of consensus and conformity relating to terms and operationalization of constructs. The theoretical framework will be discussed as an overview of the theoretical constructs of resilience theory that serve as a foundation of the proposed model in this study.

Risk factors refer to events of adversity or conditions of vulnerability (Smith-Osborne, 2007). Resilience has been researched in relation to a wide variety of risk factors including trauma and neglect, domestic violence, exposure to community violence, bereavement, growing up in a household with a parent suffering from a mental illness, poverty, exposure to war, loss of a parent during childhood, and familial alcoholism (Angell, Dennis & Dumain, 1998; Beardslee, 1989; Crummy, 2002; Dufour, Nadeau, & Bertrand, 2000; Dumont & Provost, 1999; Garmezy, 1981,1993; Garmezy,

Masten, & Tellegen, 1984; Greene, 2002; Levy & Wall, 2000; Luthar, 1991; Rutter, 1985, 1999; Watt, David, Ladd & Shamos, 1995; Werner, 1982; Werner and Smith, 1992). Exposures to risk factors vary across population, age and life stage and are thought to initiate the activation of protective and vulnerability factors. It is important to note that empirical findings on which theoretical development has been based consistently concludes that the majority of people do NOT enjoy resilient outcomes under true conditions of adversity (not just developmentally appropriate events like bereavement). Research has focused on the minority with resilient outcomes to figure out how they are different from the majority. This understanding is important in determining which studies have used the concept of resilience correctly and which studies have not.

Protective factors generally refer to personality characteristics and environmental resources that aid in preventing maladjustment, whereas, vulnerability factors refer to personality characteristics or environmental resources that lead to greater maladjustment among individuals when faced with adversity (Smith-Osborne, 2007). The term protective factors have been used interchangeably with other terms including 'protective mechanisms' and 'positive personality characteristics'. The term vulnerability factors have been used interchangeably with 'vulnerability mechanism' and 'negative personality traits'.

Protective factors and vulnerability factors are categorized in terms of community, family or individual. Examples of family influence would be living with caregivers that abuse alcohol (vulnerability) versus living in a home with responsive caregiving. Individual influences include high levels of self-efficacy (protective) versus low levels of self-efficacy (vulnerability). Finally, community influences include exposure to violence in neighborhood or school (vulnerability) versus positive/nurturing community or school environments (protective).

Identifying and distinguishing the three central constructs of resilience have been problematic throughout the scholarly literature. A lack of uniform consensus in terms of language and definition has persisted across and within varying disciplines (Luthar, Cicchetti, & Becker, 2000). For example, the term vulnerability factors can also refer to characteristics or traits of individuals lacking resilient outcomes and is occasionally used interchangeably with risk factors. The lack of unified consensus and utilization of terminology leads to confusion in terms of the use, application, and operationalization of resilience. In order to increase understanding, one must recall that vulnerability factors and protective factors are environmental resources and personality characteristics possessed by an individual that influence positive or negative outcomes. Risk factors are conditions of adversity or environment that invoke the presence and identification of protective factors or vulnerability factors. Throughout the literature, researchers commonly report protective factors as they relate to resilience more than vulnerability factors (Luthar, Cicchetti, & Becker, 2000).

Historical Development of Resilience

Historically, researchers, practitioners, and theorists operated from a traditional medical model that was premised in highlighting and understanding diseases, psychopathologies and deficits. Scholarly literature, intervention research and practice models focused on problems and emphasis was placed on risk factors, and problematic disorders. In the late 1980's, a shift from this medical model ensued as researchers began to investigate why some individuals thrive despite adverse conditions. This research sparked a movement from the traditional medical model towards a more strengths based approach. Researchers, theorists and practitioners were not only interested in highlighting and understanding the pathways and conditions that lead to disease and psychopathology, but the pathways and conditions that lead to healthy

psychological development. During this shift the pioneering works of the concept of resilience emerged (see Werner, 1982; Garmezy, 1991; Rutter, 1985).

Landmark Studies

The identification and emergence of the concept of resilience is generally linked to the work of Werner (1982) and colleague Smith (1992). Werner and Smith conducted a longitudinal study of the 1955 birth cohort of children born in Kauai, Hawaii. Findings revealed children in the study were exposed to a variety of risk factors ranging from poverty, violence, to familial alcoholism. However, despite these adverse environmental conditions, a subset of the children exhibited positive adaptation in a number of identified domains. In order to generate understanding relative to the contextual conditions associated with positive adaptation, Werner and Smith identified personality characteristics or protective factors associated with this subset of youth. The identified factors included but are not limited to social competence, problem solving skills, and a sense of purpose (Werner, 1993, 1995).

In addition to the work of Werner and Smith, several other landmark studies are credited with the preliminary identification and conceptualization of the concept of resilience (see Garmezy, 1991; Garmezy, Masten, & Tellegen, 1984; Rutter, 1979, 1985). Rutter (1979, 1985) engaged in multiple longitudinal studies examining children from the island of Wight and inner-city London. Findings from these studies revealed a subset of youth flourished despite adverse environmental conditions or risk factors (i.e. homelessness). Rutter identified protective factors of these youth: self-efficacy, self-mastery, school environment (positive), planning skills, and positive relationships with an adult. Finally, Garmezy (1991) and Garmezy, Masten, & Tellegen (1984) conducted a longitudinal study examining the children of schizophrenic parents. Findings from this study included identification of the protective factors that led to competent adulthood.

Protective factors included self-esteem, positive outlook on life, internal locus of control, adequate problem-solving skills, and a sense of humor.

Collectively, the aforementioned landmark studies were longitudinal in nature, focused on children and adolescents, and premised in identifying the key protective factors thought to serve as a buffer to significant adversity. Additionally, these studies provided evidence to support the existence of the phenomenon of resilience and are classified as what is referred to as the first wave of resiliency inquiry.

Waves of Resilience Inquiry

The landmark studies illustrated behavioral outcomes and suggested the existence of the concept of resilience (Luthar & Zelazo, 2003). Since a theoretical framework did not precede the conception of the resilience, rather the identification was a result of scientific inquiry, the discovery, theory development, and operationalization deviates from quintessential research in the sense that resilience emerged indirectly. The pioneer studies serve as an empirical foundation that fostered continued empirical and theoretical examination and has been discussed in terms of four waves of inquiry (i.e. defined in the work of Werner (1982), Werner & Smith (1992), Rutter (1979, 1985), Garmezy (1991), and Richardson, Neiger, Jensen, & Kumpher (1990), (see table 2-2).

Table 2-1 Waves of Resilience Inquiry

Wave	Type of inquiry
First Wave	Trait/Characteristic identification (Richardson, 2002)
Second Wave	Process identification (Richardson, 2002)
Third Wave	Extension of process and boost of protective processes (Richardson, 2002)
Fourth Wave	Multilevel analysis (Masten, 2009)

The first wave of inquiry focused on identifying protective factors (commonly referred to as traits or characteristics) of individuals predictive of both personal and social success (Richardson, 2002). The process of resilience was not directly measured; however, protective factors or conditions that serve as a buffer to adversity were identified. For example, the founding group of resilience researchers focused on children at risk for psychopathology and developmental issues due to genetic and experiential circumstances (Masten, 2001) and highlighted the protective factors associated with positive adaptation. Researchers built on the findings from the landmark studies and continued to identify protective factors predictive of healthy psychological and social development across diverse age groups and populations. Table 2-3 illustrates examples of protective factors in children and adolescents, adults, and older adults

Table 2-2 Examples of Protective Factors by Life Stage

Age	Protective Factors
Children and Adolescents	Self-efficacy, self-mastery (Rutter, 1990) Ability to perceive experiences in a positive and constructive manner, proactive approach to problem solving, and positive and good-natured (Joseph, 1994)
Adults	Hardiness, humor, and repressive coping (Bonanno, 2004)
Older Adults	Perseverance, self-reliance, meaningfulness, equanimity, existential aloneness (Wagnild and Young, 1991)

The second wave of resilience inquiry marks a shift of focus from identification of protective factors to examination of resilience processes (Richardson, 2002). This shift led to increased complexity in conceptualization of the phenomenon of resilience as well as the application of the concept to diverse groups and populations. Researchers focused on examining the function of acquiring protective factors identifying the disruptive

and reintegrative mechanisms, and the process by which individuals moved from disruption to reintegration. Researchers began to conceptualize resilience as an evolving dynamic and interactional process between risk mechanisms (vulnerability factors), protective mechanisms (protective factors), and a risk setting (risk factors) (Dyer & McGuinness, 1996; Luthar, Cicchetti, & Becker, 2000; Ryff, Singer Love, & Essex 1998; Rutter, 1987, 2007; Saleebey, 1996). Risk settings or risk factors refer to conditions of adversity, whereas protective factors and vulnerability factors are mediating variables in the resilience process. Olsson, et al (2003) posit, "risk and protective mechanisms can be thought of as exerting their influence indirectly and through interaction with a risk setting" (p. 3).

Richardson, Neiger, Jensen, and Keumfper (1990) proposed a Resilience Process Model hypothesizing the existence of biopsychospiritual homeostasis within an individual that is influenced by adversity, life events or change, and protective or vulnerability factors. Disruption of the biospychospiritual homeostasis leads to a conscious or unconscious reintegration resulting in the one of the following outcomes: 1) resilient reintegration; 2) reintegration back to homeostasis; 3) reintegration accompanied with loss; 4) dysfunctional reintegration. More specifically, this group of theorists distinguishes resilience from reintegration back to homeostasis as seen in the separation of outcomes 1 and 2. Other resilience researchers, including Rutter (1987) have been consistent in defining resilience as returning to baseline after experiencing adversity.

The third wave of resilience inquiry builds on the knowledge acquired through the first and second waves. This wave sought to expand on the second wave by placing emphasis on the identification of the motivational forces within individuals and the experiences that initiate the activation and utilization of the motivational forces which drives an individual to experience growth upon exposure to risk factors (Richardson,

2002). Particularly, the third wave focused on expanding the notion that resilience is a mechanism that assists individuals in redirecting or maintaining their developmental trajectory of positive adaptation. Researchers began to develop and test interventions and prevention tools aimed at promoting or engaging protective processes within individuals as well as the utilization of external resources to enhance or promote resilience. These studies included randomized clinical trials of interventions aimed at providing knowledge to practitioners and researchers, specific to interventions capable of promoting the use and development of protective factors (Luthar, 2006; Masten, 2007; Weissberg, Kumpher, & Seligman, 2003; Yates & Masten, 2004). Currently, studies premised in initiating and promoting activation and development of protective factors are taking place (see Smith-Osborne, 2012).

Advancements in technology have allowed researchers to expand the breadth of the examination of resilience in a new and exciting fourth wave or resilience inquiry. Masten (2007) characterized the emergence of this fourth wave as focusing on a multilevel analysis: "new notions are emerging about how to define positive adaptation at cellular or neural levels and the roles of neural and psychobiological systems that influence adaptive behavior" (p. 923). Researchers are able to integrate biological measures capable of differentiating chemical and genetic differences among individuals that can serve as protective or vulnerability factors. Previously, conditions such as gender were observed as a protective factor among at risk children (i.e. female); however, science allows researchers to go beyond observation of the visual biological traits to observation at the cellular, neural, and chemical levels. Technological advances such as genetic mapping has the capacity to offer insight into the inherent biological structures of individuals and provide researchers with the ability to predict genetic markers that serve as risk, protective or vulnerability factors. Thus far, studies examining

the relationship between cortisol levels and resilience among children and adults (e. g., Alink, Cicchetti, Kim, & Rogosch, 2012; Cicchetti & Cannon, 1999; Mikolajczak et al., 2007; Simeon et al., 2007) are appearing in the scholarly literature. Additionally, an increasing number of studies assessing other biological factors and markers are underway (see Yehuda, Flory, Southwick, & Charney, 2006).

Literature on Resilience and Older Adults

Scholarly literature examining resilience among older adults is constantly growing. Both qualitative and quantitative studies across disciplines have taken place in order to generate greater understanding of the protective factors, risk factors, and vulnerability factors relative to resilience in an older adult population. Additionally, researchers are attempting to increase understanding of the multilevel perspective of resilience through biological, psychological, and environmental measures. Over the last several decades revealed an increase in scholarly research relative to enhancing the understanding of resilience as it applies to an older adult population.

Wagnild and Young (1991) conducted a qualitative study of resilience among community-dwelling older adults. Using grounded theory, Wagnild and Young derived five themes: equanimity, meaningfulness, existential aloneness, self-reliance, and perseverance. From these five themes, Wagnild and Young (1993) developed a 25-items measure consisting of two themes: personal competence and acceptance of self and life.

Neary (1997) used grounded theory to determine the strategies used by older women when faced with adversity. The sample consisted of 18 women aged 72-98. Findings found preserving choice though external resources, personal characteristics and strategies lead to successful management of difficulty or adversity. Additionally, the women used personal resources, flexibility, self-confidence and resourcefulness.

Felton (2000) conducted a qualitative study using grounded theory in order to examine the characteristics of community-dwelling women over age 85. The study generated nine themes including frailty, determination, access to care, cultural beliefs, self-care activities, previous experience with hardship, caring for others, efficient working machines, and family support. Felton and Hall (2001) developed a middle range theory of resilience based on the findings from the qualitative study. Testing of the proposed model was not performed.

Crummy (2002) used phenomenology to examine resilience among male widowers aged 71-100. Crummy identified a resilience framework through the identification of 6 essential and 20 incidental themes. The six essential themes include having a strong faith, preparing, doing what you have to do, overcoming loneliness, staying healthy and active, as well as moving forward.

Greene (2002) conducted a qualitative study on the experiences of 13 Holocaust survivors. More specifically, the study recounts the experience from the survivors perspective from prior to the crisis until after the war. Findings emphasize the coping strategies and reintegration mechanisms as it applies to social work practice.

Wagnild (2003) examined the relationship between resilience, successful aging, and income. Wagnild used the Resilience Scale to measure resilience (Wagnild & Young, 1993). Indicators of successful aging included self-rated health scales, morale, life satisfaction, and health-promoting behaviors. Findings revealed resilience was positively related to indicators of successful aging. Findings were inconsistent in terms of whether lower income levels are consistent with lower resilience levels. Conclusions indicated additional studies would need to be performed in order to establish if a positive relationship does in fact exist.

Nakashima & Canda (2004) used grounded theory to examine resiliency factors and processes among older adult hospice patients who were experiencing positive dying. The sample included 7 men and 9 women aged 63-103. Findings identified core resiliency factors as empowering relationships with significant others, spiritual beliefs and practices, ability to skillfully confront mortality, and stable caregiving and environment. Additionally, psychological processes of developing resilience were characterized by a dialectical tension of stress and resistance as well as the development of life narratives.

Hardy, Concato, & Gill (2004) studied resilience in urban dwelling older adults. This qualitative study examined 754 older adults on clinical, functional, and psychosocial factors. Participants answered questions related to stressful life events within the past five years. Those who identified the experience of such an event were asked to rate the level of stress related to the experience as well as fill out a self-reported resilience questionnaire. The resilience scale was specifically developed for this study and resilience was conceptualized as "the response to a stressful life event rather than an intrinsic personality trait" (Hardy, Concato, & Gill, 2004, p. 260). Findings indicated higher levels of perceived stress were positively associated with higher levels of resilience.

Johnson (2004) qualitatively examined the development of resilience in African American women aged 85 and above. The findings from the study generated factors including familial factors, community factors, and individual factors. Additionally, Johnson found the participants developed resilience through a combination of their environment as well as their inherent characteristics.

Kinsel (2005) conducted a qualitative study on a sample of 17 women ranging from 70-80 years of age. The study generated several protective factors including social

connectedness, extending self to others, moving forward with life, curiosity “head-on approach to challenge, being a maverick, and spiritual grounding.

Pentz (2005) used grounded theory to examine resilience among older adults diagnosed with cancer. The sample consisted of 10 men and 3 women aged 66-91. The older adults in the study were found to be resilient despite their diagnosis and the themes of social-support and spirituality-faith were discussed.

Hrostowski (2006) conducted a phenomenological study in order to determine how gay men and women develop resilience. The sample consisted of five men and five women aged 60 and over. Findings revealed resilient traits including supportive attachments, internal locus of control, and the benefits of existential aloneness as mechanisms by which they have avoided depression and achieved a high degree of life satisfaction.

Montross et al. (2006) conducted a quantitative study on 205 community-dwelling adults over 60. A self-report questionnaire examined demographic characteristics, medical history, activity levels, resilience, daily functioning, and health-related quality of life to determine relationships between variables and “aging successfully”. Findings indicated subjective ratings of “successful aging” were significantly correlated with resilience, social networks, activities, and physical and emotional functioning. 92% of the participants self-reported aging successfully; however, did not meet the criteria for successful aging due to illness or limitations in physical activity.

Wells (2010) conducted a qualitative study of 277 adults age 65 and older. The sample resided in the state of New York in rural, suburban, and urban settings. Resilience was measured using the Resilience Scale (Wagnild & Young, 1993). No significant differences were found between individuals residing in the three different areas. However, when resilience levels were found to be significantly associated with

stronger family networks, lower household income, and good mental and physical health status.

Emlet, Tozay & Raveis (2011) conducted a qualitative study on individuals aged 50-72 living with HIV/AIDS. The sample consisted of 25 (17 men and 8 women) and data was gathered through semi structured in-depth interviews. Findings resulted seven major themes congruent with resilience and strength. The themes include self-acceptance, optimism, will to live, generativity, self-management, relational living, and independence.

Majority of the studies examining resilience among older adults are qualitative in nature. Additionally, these qualitative studies primarily yield protective factors associated with resilience. The quantitative studies tend to view the relationship of resilience to certain demographic and economic variables. Further quantitative studies analysis is needed to test the theoretical frameworks posited by resilience researchers.

Criticisms of Resilience

Currently, researchers are enmeshed in the fourth wave of resilience research and have reached a consensus in terms of resilience as a multi-dimensional concept (Luthar, Doernberger, & Zigler, 1993; Newman, 2005). However, despite this agreement, several ambiguities in terms of definitions and processes exist. Researchers have varying ideations in terms of theoretical and empirical constructs. In an attempt to alleviate some of the inconsistencies and confusion, Polk (1997) conducted a concept synthesis that yielded a four dimensional model: 1) dispositional patterns; 2) relational patterns; 3) philosophical patterns, and 4) situational patterns.

Luthar, Cicchetti, & Becker (2000) addressed the concerns and limitations through a critical appraisal of the construct and proposed suggestions to address concerns and criticisms. Luthar and colleagues further suggested that researchers should use clarity and consistency in definitions and terminology, and present studies

within a clearly defined theoretical framework. They complete the assessment with two broad conclusions: 1) The continuation of scientific inquiry as it related to resilience is of importance; and 2) Resilience researchers need to enhance the scientific rigor of studies.

Research over the course of the past several decades, in terms of the empirical and theoretical constructs of resilience, has helped create understanding of the meaning of the concept. Clearly, additional research initiatives and theoretical and empirical development are required to address all of the flaws and criticisms identified throughout the literature. The potential of resilience as a construct in both clinical and experimental settings remains unknown; however, continued development of the theoretical and empirical literature is imperative to maximize the potential resources resilience is capable of providing.

Measurement of Resilience

As the term resilience evolved, researchers began to develop instruments aimed at measuring the construct. Two peer-reviewed articles (Ahern et al., 2006; Smith-Osborne & Bolton, 2013) discuss the existing instruments. Specifically, Smith-Osborne & Bolton (2013) conducted a systematic review of ten instruments, published in peer reviewed journals, that have been validated on children and adolescents (Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006; Jew, Green, & Kroger, 1999; Oshio, et al., 2003; Prince-Embury, 2008), adults (Baruth & Carroll, 2002; Connor & Davidson, 2003; Sinclair & Wallston, 2004), adults considered in midlife (35-60) (Ryan & Caltabiano, 2009), and the elderly (Wagnild & Young, 1993). The section below provides a brief synopsis of each instrument, as well as a critical appraisal, followed by a section critiquing the overall selection of scales. The critical appraisal assesses whether the full construct of resilience is measured in terms of social, psychological, and environmental factors related to community, family, and individual factors.

Resilience Scale

The Resilience Scale (RS) is a 25-item measure, rated on a 7-point Likert scale, and consists of 2 factors: personal competence and acceptance of life and self. The scale was originally validated on 810 community dwelling older adults, yet is intended for all adult populations (Wagnild & Young 1991). The RS demonstrates sound psychometric properties; however, considering the validation and development of the scale, the notion that the use of the RS extends to all adult populations is unwarranted (see further discussion below).

Resilience Scale for Adolescents

The Resilience Scale for Adolescents (READ) is 28-item scale, rated on a 5-point Likert scale, measuring adolescent resilience, and contains five factors: Personal Competence, Social Competence, Structured Style, Family Cohesion, and Social Resources (Hjemdal, et. al, 2006). The READ was validated on 425 adolescents between the ages of 13 and 15. The participants were recruited through junior high schools in Trondheim, Norway (Hjemdal et. al, 2006). Currently, a study is taking place in the United States to validate the READ on an American population.

The development and validation of the READ proves the scale has strong psychometric properties. However, continued development and validation should take place in order to further ensure the usefulness of the instrument on varying populations outside of Norway. The factors structure encompasses environmental, social, and personal elements, all thought to contribute to resilience throughout the scholarly literature. Overall, the READ adequately assesses the construct of resilience (Smith-Osborne & Bolton, 2013).

Resilience Scale for Children and Adolescents

The RSCA is comprised of three scales rated on a 5-point Likert scale: 1) Sense of Mastery; 2) Sense of Relatedness; and 3) Emotional Reactivity. Sense of Mastery is a 20-item scale and consists of three content areas: optimism about one's life and one's own competence; self-efficacy associated with developing problem-solving attitudes and adaptability, demonstrated by receptivity to criticism; and the ability to learn from one's mistake. The Sense of Relatedness consists of 24 items and assesses three areas: comfort with others, trust in others, perceived access to support by others, and capacity to tolerate differences in others. The Emotional Reactivity consists of 20-items and consists of three content areas: sensitivity or the threshold for reaction and the intensity of the reaction, length of time it takes to recover from emotional upset, and impairment while upset (Prince-Embury, 2008, p. 46). The RSCA was validated on a normative sample of 200 adolescents between 15 and 18 years, 226 children aged 9 to 11 years, 224 adolescents aged 12 to 14 years, and a clinical sample of 169 adolescents between the ages of 15 and 18 years (Prince-Embury, 2008; Prince-Embury & Courville, 2008).

The RCSA is the only peer-reviewed measure adequate in assessing resilience among children under the age of 13. Additionally, the RSCA measures resilience as it relates to time specific stressors or traumatic events, it does not measure resilience in relation to continuous or long-term conditions of adversity. Prior to using the RSCA in practice settings, the practitioner would need to determine the temporal relevance of the adversity faced by the client (Smith-Osborne & Bolton, 2013).

Adolescent Resilience Scale

The Adolescent Resilience Scale consists of 21- items, rated on a 5-point Likert scale, and contains three factors: novelty seeking, emotional regulation, positive future

orientation. The construct validity of the ARS was assessed on a Japanese population of 207 adults between the ages of 19 and 23 (Oshio et. al, 2003).

The ARS does not encompass both environmental and social factors as they relate to the construct of resilience. Additionally, the ARS measures resilience as it relates to time specific stressors or traumatic events, it does not measure resilience in relation to continuous or long term conditions of adversity. Similarly, prior to using the ARS in practice settings, the practitioner would need to determine the temporal relevance of the adversity faced by the client (Smith-Osborne & Bolton, 2013).

Resilience Scale-JGK

The Resilience Scale-JGK (RS-JGK) consists of 35 items, rated on a 5-point Likert scale, and measures three factors: Active Skill Acquisition, Future Orientation, and Independence/Risk Taking. The RS-JGK was validated on 408 high school students between 14 and 15 years old (Jew, Green, & Kroger, 1999).

The RS-JGK does not adequately measure the full construct of resilience. Instead the scale focuses on the intrapsychic traits that individuals use in stressful contexts. Therefore, neither environmental nor social factors are included in this measure.

Connor-Davidson Resilience Scale

The Connor-Davidson Resilience Scale consists of 25 items rated on a 5 point Likert scale and consist of 5 factors: personal competence, high standards, and tenacity; trust in one's instinct, tolerance of negative effects, and strengthening effects; positive acceptance of change and secure relationships; control; spiritual influences. The validation sample of the CD-RISC consisted of 6 groups (general population, primary care, psychiatric outpatients, generalized anxiety disorder, and PTSD) with a total of 827 participants (Connor & Davidson, 2003).

The CD-RISC has been used in practice settings to monitor practice outcomes (Connor, Davidson, & Lee, 2003). Furthermore, the CD-RISC does an adequate job in measuring the full construct of resilience.

Baruth Protective Factors Inventory

The Baruth Protective Factors Inventory (BPFI) consists of 16 items rated on a 5 point Likert scale, addressing four factors: adaptable personality, supportive environment, fewer stressors, compensating experiences. The BPFI was validated on 98 undergraduate students in a Human Development course between the ages of 19 and 74 (Baruth & Carroll, 2002). The factor structure of the BPFI measures the construct of resilience. However, further testing should take place given the size of the original validation sample.

Resilience in Midlife Scale

The Resilience in Midlife Scale (RIM) consists of 25 items, rated on a 5 point Likert scale was validated on Australian population of 130 adults between the ages of 35 and 60. The RIM is comprised of five factors: self-efficacy, family/social networks, perseverance, internal locus of control, coping and adaptation. (Cook & Caltabiano, 2009). The RIM is the only peer reviewed instrument focusing on midlife in the literature to date.

The factor structure of the RIM includes factors consistent with the construct of resilience. However, further testing is needed to determine the reliability and validity of this instrument on a large population prior to utilization of the instrument in practice and clinical settings.

Resilience Scale for Adults

The Resilience Scale for Adults (RSA) consists of 33 items, rated on a 5-point Likert scale, and assesses six factors: positive perception of self, positive perception of

future, social competence, structured style, family cohesion, social resources. The RSA was originally validated on 183 adults between the ages of 18 and 75 (Friborg, et al., 2003). The RSA demonstrates sound psychometric properties. Additionally, the RSA adequately measures the full construct of resilience based on the six-factor structure.

The Brief Resilience Coping Scale

The Brief Resilient Coping Scale (BRCS) contains four items, rated on a 5 point Likert scale, and measures one factor, namely, Adaptive Coping (Sinclair & Wallston, 2004). The BRCS only addresses one factor and therefore, resilience was operationalized as containing this one factor. Additionally, adaptive coping assesses resilience in terms of intrapsychic traits and fails to include environmental and social factors (Smith-Osborne & Bolton, 2013).

Discussion of Instruments

The above instruments comprise an exhaustive account of the resilience instruments in the scholarly literature (additional information examining the operationalization process of the individual measures is available in the systematic review by Smith-Osborne & Bolton). Of the ten instruments, only three measure the construct of resilience in its entirety, without temporal considerations (READ, RSA, and RIM). Meaning, these scales are the only instruments that look at psychological and social factors related to community, family, and the individual. However, each of these scales contains a unique factor structure with varying language and varying operationalization of the construct.

Overall, based on the brief descriptions, it is clear a large discrepancy in terms of factors exists among all of the instruments. Additionally, the factor structures vary in length and terminology. This lack of consistency in terms of factor structure and language further exemplifies the lack of congruency of resilience as a concept among

researchers. The number of factors on each scale ranges from 1 (being the least) to 6 (being the greatest). Table 2.4 lists the instruments a well as their respective factors and is a partial example of a table found in Smith-Osborne and Bolton (in press).

The RSA and the RIM are the two most comprehensive measures available for testing resilience in an adult population. The factor structure of the RSA and RIM is consistent with resilience theory of protective factors for it includes assessment of environmental, familial, and individual resources. Further testing of both instruments should take place before inclusion into practice settings (i.e. evaluation of test-retest reliability). The RSA and RIM are not sufficient in measuring the protective factors of resilience in an older adult population. Past resilience research has shown that protective factors evolve in accordance with age and life stage and the RIM and RSA were not developed for an older adult population.

Table 2-3 Resilience Instruments and Related Factors

Instrument (Authors)	Factors
ARS (Oshio et al., 2003)	1. Novelty seeking 2. Emotional regulation 3. Positive future orientation
RS (Wagnild & Young, 1993)	1. Personal competence 2. Acceptance of self and life
RSA (Friborg et al., 2003; Friborg et al., 2009)	1. Positive perception of self 2. Positive perception of future 3. Social competence 4. Structured style 5. Family cohesion 6. Social resources
CD-RISC (Connor & Davidson, 2003)	1. Personal competence, high standards, and tenacity 2. Trust in one's instinct, tolerance of negative effects, and strengthening effects 3. Positive acceptance of change and secure relationships

Table 2.3-continued

	4. Control 5. Spiritual influences
BPFI (Baruth & Carroll, 2002)	1. Adaptable personality 2. Supportive environment 3. Fewer stressors 4. Compensating experiences
RIM (Ryan & Caltabiano, 2009)	1. Self- Efficacy 2. Family and Social Networks 3. Perseverance 4. Internal Locus of Control 5. Coping and Adaptation
READ (Hjendal et al., 2006)	1. Personal Competence 2. Social Competence 3. Structured Style 4. Family Cohesion 5. Social Resources
RSCA (Prince-Embury, 2008)	1. Emotional Reactivity 2. Sense of Mastery 3. Sense of Relatedness
RS-JGK (Jew, Green, & Kroger, 1999)	1. Active Skill Acquisition 2. Future Orientation 3. Independence/Risk Taking
BRCS (Sinclair & Wallston, 2004)	Adaptive coping

Qualitative Interpretive Meta-Synthesis of Resilience Factors

The methodology used to conduct the qualitative meta-synthesis follows the technique developed by Aguirre and Bolton (2013), and is specifically tailored for the discipline of social work. Aguirre and Bolton termed their approach qualitative interpretive meta-synthesis (QIMS), and provide a systematic method for integrating, synthesizing, and interpreting qualitative studies while still maintaining the integrity and

essence explicated by the individual study's authors and participants. The process is outlined in figures 2.1 and 2.2 and is the process model found in Aguirre and Bolton (2013).

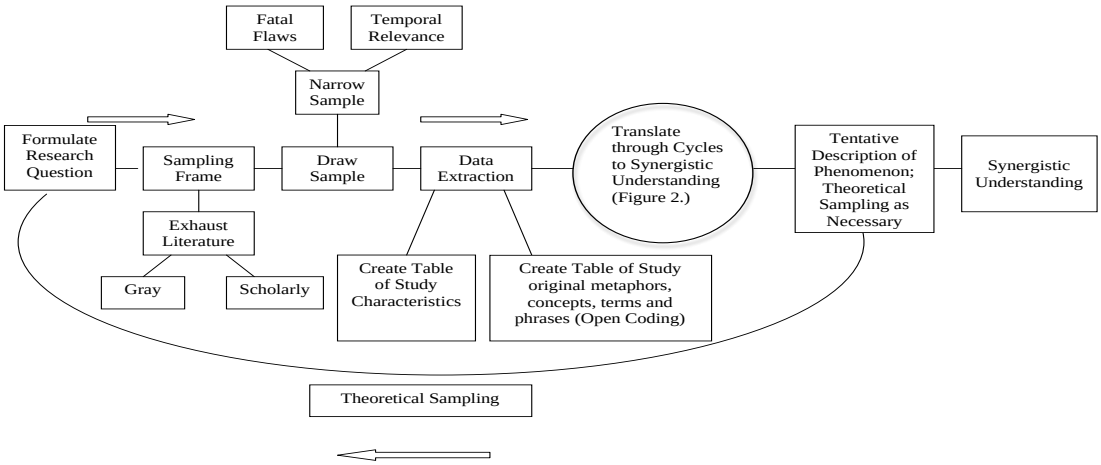


Figure 2-1 Qualitative Interpretive Meta-Synthesis Process Model

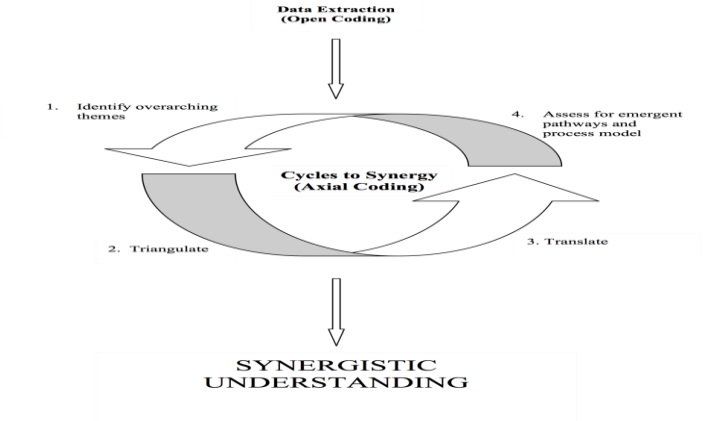


Figure 2-2 Cycles to Synergy

Data Collection

Data collection began with purposive sampling of qualitative studies focusing on resilience among older adults. As congruent with the methodology, the authors cast a broad net in order to encompass studies appearing in peer-reviewed journals across disciplines, as well as the gray literature (i.e. books, dissertations, and unpublished studies). The search terms utilized are as follows: qualitative studies, resilience, older adults, resilience among older adults, resiliency, qualitative research. The search terms were used in multiple databases (Academic Search Complete [EBSCO], CINAHL Plus with Full Text, E-Journals, ERIC, PsycARTICLES, Psychology and Behavioral Sciences Collection, PsycINFO, Social Work Abstracts, JSTOR, ISI Web of Knowledge, and ProQuest Dissertations and Theses, Google Scholar) and references of selected studies were scanned to ensure all applicable studies were retained and reviewed. Studies deemed relevant were than gathered and reviewed by each author.

Inclusion Criteria and Inclusion Process

Potential studies were identified through an exhaustive search of peer-reviewed articles, gray literature (i.e. dissertations and unpublished manuscripts), as well as examination of relevant reference lists. The terms used in order to guide the searches include: 'older adults' AND 'resilience' AND 'qualitative'. Articles were initially reviewed if they exhibited the following criteria: 1) English language; 2) lacked any fatal flaws; 3) published prior to December 2011; 4) examined resilience among older adults; and 5) qualitative methodology. Essentially, studies that identified resilience factors or characteristics were included in the sample. Following this approach, 646 studies were initially identified, and titles were further examined. Of these 646 titles, 108 abstracts were retrieved and examined, and 24 studies were read in their entirety.

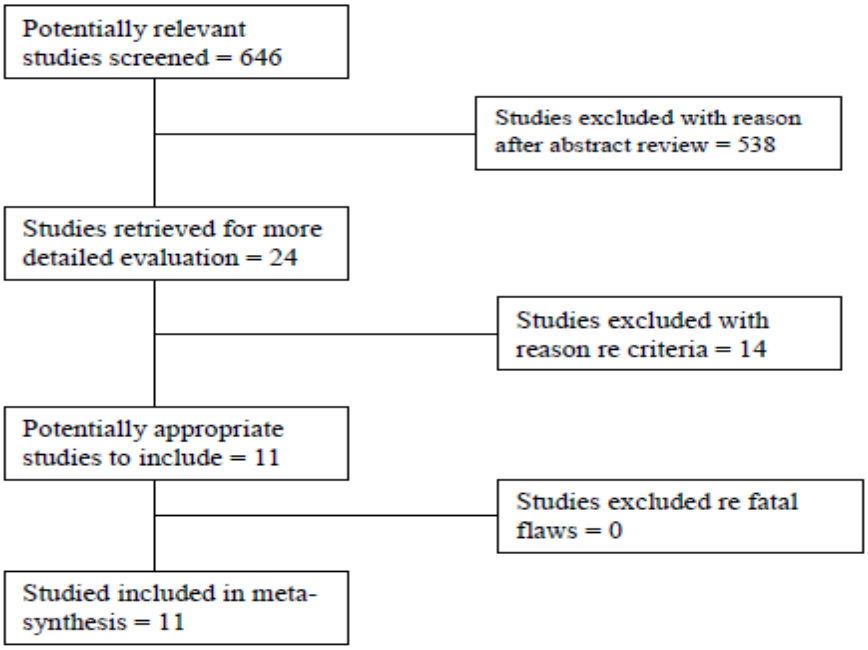


Figure 2-3 Quorum Chart

Data Analysis

Eleven studies were finally selected. Of these articles, 7 appear in scholarly journals and 4 consist of doctoral dissertations. Age of participants from the studies extend from 50 to 104, and include qualitatively conducted interviews of 170 older adults (see table 2.6).

Table 2-4 Qualitative Studies

Author(s)	Method	Population	Country	N	Gender	Age
Alex, 2010	Thematic narrative interviews and qualitative content analysis	Subsample from larger research initiative	Sweden	24	M=17, F=7	85+
Crummy, 2002	Phenomenology	Widowers	United States	19	M=19	71-100

Table 2.4- continued

Emlet, Tozay,& Raveis, 2011	Qualitative Inquiry/not specified	Individuals living with HIV/AIDS	United States	25	M=17, F= 8	50-72
Felten, 2000	Grounded Theory	Community-dwelling women	United States	7	F=7	85+
Hrostowski, 2006	Phenomenology	Gay men and lesbians	United States	10	M=5, F=5	60-82
Johnson, 2005	Qualitative Inquiry/ not specified	African American women	United States	15	F=15	85-104
Kinsel, 2005	Constant comparative method	Older Adults	United States	17	F=17	70-80
Nakashima & Canda, 2004	Semi-structured open ended interview	Hospice patients	United States	16	M=7, F= 9	63-103
Neary, 1997	Grounded Theory	Older Women	United States	18	F=18	72-98
Pentz, 2005	Grounded Theory	Cancer patients	United States	13	M= 10, F=3	66-91
Wagnild & Young, 1991	Grounded Theory	Community dwelling women	United States	24	F=24	67-92

The original themes from the studies included in the sample were identified and extracted. Maintaining the integrity of the original themes generated from the original studies plays an intricate role in the methodological process of a QIMS. In order to reduce the possibility of losing the essence of the original themes, three researchers provided a list of the original themes and corresponding definitions. Independently, each researcher deduced the original themes into axial codes. Upon completion, researchers triangulated and revealed the corresponding codes or factors that resulted from their independent axial codes. Finally, the researchers collaborated in order to generate a unified list of axial codes or factors encompassing all of the themes depicted within the studies selected for the sample.

Findings

Of the ten studies included, 54 original themes of resilient characteristics or factors were extracted. Axial coding was performed on the 54 original themes and yielded 9 independent factors: 1) meaningfulness, 2) previous experience with hardship, 3) grit, 4) altruism, 5) self-care, 6) self-acceptance, 7) external connections, 8) positive perspective on life, and 9) independence. Each of the identified factors is considered a component of the construct of resilience.

External connections are comprised of 12 themes found in 9 of the 11 studies and consists of three categories: 1) family connections; 2) social connections; and 3) community connections. Wagnild and Young's (1990) study of 24 older women was the only study from the sample that did not yield a theme emphasizing external connections. Selected themes include: relational living (Emlet et al., 2011); family support (Felton, 2000); attachment (Hrostowski, 2006); and social support (Pentz, 2005). The theme of relational living refers to both formal and informal support systems, including personal relationships and engaging in recreational activities. These systems allow individuals to feel a sense of self-worth and companionship (Emlet et al., 2011).

The factor of meaningfulness is comprised of 10 themes from 8 studies. Selected themes include: creating meaning (Alex, 2010); spiritual grounding (Kinsel, 2006); existential aloneness (Wagnild & Young 1990); and having a strong faith (Crummy, 2002). The notion of meaningfulness extends beyond the idea of religious or spiritual grounding to a philosophical underlying assumption that all individuals have a purpose, as well as identification of that purpose. Some individuals achieve meaningfulness through religious beliefs or practices, while others achieve meaningfulness through retrospective examination of life experiences and/or internal examination of oneself.

Grit is defined, by the Merriam-Webster Dictionary, as “firmness of mind or spirit: unyielding courage in the face of hardship or danger” (Retrieved June 1, 2012). The theme was generated from 7 themes found in 5 studies. Themes included frailty, determination, and perseverance. Felton (2000) identified both determination and frailty. Specifically, determination refers to the will to survive and refusal to be defeated while frailty relates to the process of the ability to positively adapt to physical impairments. Perseverance was defined as “the act of persistence despite adversity or discouragement” (Wagnild & Young, 1990, p. 254).

Positive Perspective on Life was identified from 3 themes from 3 studies. The themes are: 1) efficient working machines; 2) optimism; 3) individual factors; and gratitude. Felton (2000) had participants compare themselves to machines and thus identified the theme efficient working machines. “Participants referred to themselves as stronger and tougher, like machines. And like machines, they work better by being used (p.116). The theme of optimism “encompassed having a positive outlook on aging with HIV, maintaining future mindedness, feeling upbeat about life, and remaining hopeful about one’s continued well-being (Emlet et al., 2011, p. 105).

Johnson (2005) identified individual factors with two subthemes of desire/motivation and positive perspectives on life. Desire and motivation referred to the internal motivation used to seek one’s dreams. Positive Perspectives on life referred to the talent of perceiving things in a positive manner as well as the ability to view overwhelming situations as “something other than impossible (p. 71).

Self-care was derived from 5 themes found in 4 studies. The themes that led to the identification of the factor of self-care include: 1) access to care (Felton, 2000) self-care activities (Felton, 2000); 3) self-management (Emlet et al, 2011); 4) staying healthy and active (Crummy 2002); and 5) curiosity/ever seeking (Kinsel, 2005). Self-care is both

physical (i.e. staying health and active) and mental (i.e. curiosity ever/seeking). For example, exercising, following medicine regimen, and refraining from drugs and excessive alcohol would constitute physical self-care. Mental self-care can be maintained by possessing a continuous curiosity about the world and highly valuing education. For instance, taking a course at a local community college would be an example of mental self-care.

Self-acceptance was identified from 2 themes found in 2 studies. The themes include: confronting mortality and death (Nakashima & Canda, 2004); and self-acceptance (Emlet et al., 2011). Nakachima & Canda (2004) identified the theme confronting mortality and death which includes the acceptance of nearing death and an affirmative outlook on death. According to Emlet et al., (2011), "participants expressed feeling comfortable with themselves and who they are at this stage of their life" (p.105). Additionally, participants "acknowledged that self-acceptance was central to overcoming the negative effects of aging with HIV/AIDS...." (p.105).

Altruism is defined, by the Merriam-Webster Dictionary as "unselfish regard for or devotion to the welfare of others" (Retrieved June 1, 2012). The factor of altruism was derived from 3 themes from 3 studies: care for others (Felton, 2000); generativity (Emlet et al., 2011); and extending self to others (Kinsel, 2005). Older adults engaged in altruistic activities that included advocacy, selfless acts of service, various types of volunteer work, and mentoring of younger generations (see Emlet et al., 2011; Kinsel, 2005). Additionally, Felton (2000) identified that providing care for others enhanced the older-adults' well-being. Meaning, the benefit of altruism is two-fold: the older adults are giving to others as well as improving their well-being and sense of purpose.

The factor of independence was derived from 7 themes found in 6 studies. The themes include: independence (Emlet et al., 2011); internal locus of control (Hrostowski,

2006); feeling independent (Alex, 2010); living alone (Neary, 1997); maverick (Kinsel, 2005); self-reliance (Wagnild & Young, 1990); and personality characteristics (Neary, 1997). Emlet et al. (2011) found the "concepts of being self-supporting, self-reliant, looking to oneself as a resource, and managing one's own care encompassed behaviors and self-perceptions of mastery and control in aging with HIV disease" (p. 107). Wagnild and Young (1990) define self-reliance as "belief in oneself and capabilities" (p. 254). Alex (2010) found when older adults experiencing some sort of physical impairment switched focus to mental, social, and cognitive abilities, they had an easier time maintaining independence. Finally, Hrostowski (2006) identified internal locus of control as a theme that encompassed the knowledge of choice in terms of how to live one's life. Essentially, older adults identified their independence of thought, control of choice, and independence of one's behavior.

The factor" experience with hardship" was derived from 5 themes found in 3 studies and includes the select themes: overcoming loneliness (Crummy, 2003); life experience (Neary, 1997); and previous experience with hardship (Felton, 2000). Hardship can be operationalized and defined in various ways. Additionally, hardship varies across the life course. For example, hardship faced by youth may differ from hardship faced by older adults. Clearly, by the time an individual reaches older adulthood, many have experienced some level of hardship or adversity.

Theoretical Model of Resilience in Older Adults

In order to generate understanding of the literature related to resilience among older adults as well as the objective of this particular study, it is imperative to illustrate a theoretical model of resilience. Based on past resilience literature, this author has developed a linear process model of resilience (figure 2.4) using terminology consistent

with the identified central constructs of resilience (please refer to table 2.3 for definitions of central constructs). This model consists of four distinct phases:

1. Confrontation with risk factors
2. Activation of protective/vulnerability factors
3. Interaction of protective/vulnerability factors
4. Possible outcomes

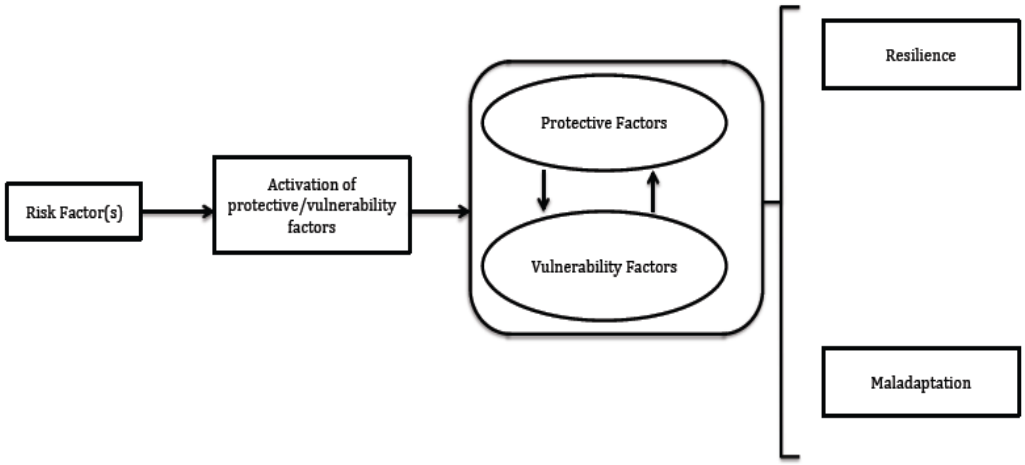


Figure 2-4 Linear Process Model of Resilience Developmental Psychopathology

The first phase of the resilience process is confrontation with risk factors. Risk factors or adversities differ across the life course. For instance, an example of a risk factor in terms of a child may be living with a schizophrenic parent, while an example of a risk factor for an older adult may be death of a spouse. Regardless, risk factors present themselves from birth until death. Finally, confrontation with risk factors (conditions of adversity) leads to phase two. Phase two consists of the activation of protective/vulnerability factors. Activation of protective/vulnerability factors is an individual's response to risk factors. This phase invokes the presence and identification

of such factors and leads into the third phase of the resilience process. The third phase of the involves protective factors and vulnerability factors interaction with one another. The interaction of these factors is a complex multidimensional process that differs across the life course. The interaction of protective/vulnerability factors leads into the final outcome phase.

The final phase consists of two potential outcomes of resilience or maladaptation. The interaction of protective/vulnerability factors directly influences the either outcome. For instance, if an individual possesses multiple protective factors and few vulnerability factors, the outcome would result in resilience. If an individual lacks protective factors, then the outcome may be maladaptation.

This study focuses on the third step in the resilience process model. Specifically, this study aims to operationalize the protective factors specific to older adults. The protective factors were identified through the aforementioned qualitative meta-synthesis and analysis of factor structures of existing resilience measurement instruments (see figure 2.5).

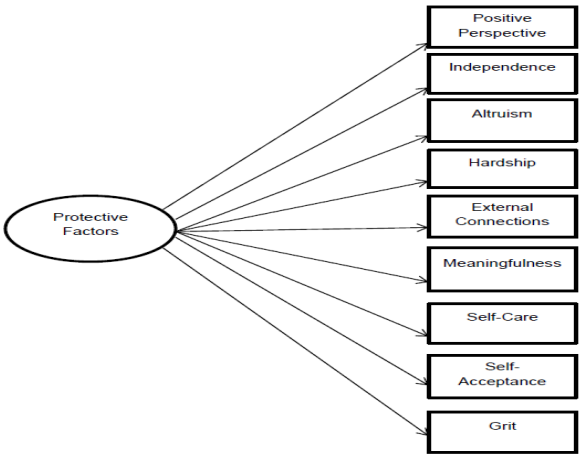


Figure 2-5 Protective Factors of Resilience Among Older Adults

Chapter 3

Methodology

The purpose of this study was twofold: 1) to develop an instrument capable of assessing resilience among older adults; and 2) to establish both reliability and validity of the measure. The impetus for this research was a result of the identification of a gap in the current literature pertaining to resilience among older adults. This study aims to provide researchers and practitioners with a valid and reliable measure capable of assessing protective factors of resilience in an older adult population. This chapter presents the instrument development process, methodological rationale, procedures, and statistical analyses used to develop and test the instrument.

The instrument development process was guided by the work of Robert F. DeVellis (2003). DeVellis posits an eight-step framework for developing and validating a measurement instrument. The guidelines are as follows:

1. Determine clearly what you want to measure
2. Generate an item pool
3. Determine the format for measurement
4. Have the initial item pool reviewed by experts
5. Consider inclusion of validation items
6. Administer items to a development sample
7. Evaluate the items
8. Optimize scale length

DeVellis's framework was selected over other guidelines due to the presence of a definitive fundamental, systematic approach, as well as the prestige, accomplishments, and qualifications of DeVellis himself. All of the eight steps identified are employed the present study.

Instrument Development

Item Generation and Instrument Format

The factor structure was hypothesized based on the qualitative interpretive meta-synthesis and review of the factor structure of existing resilience measures. The resulting nine factors were operationalized into corresponding questions and placed into an item pool. The chart below offers a detailed explanation of the definition of each factor, and the measure(s) that were reviewed prior to the operationalization process.

Table 3-1 Factor definitions, guiding measures, and sample questions

External Connections 1. Family 2. Peers 3. Community	External connections will be measured by developing questions related to connections with family, peers, and community. Guiding Measures: Quality of Life Inventory
Grit	Grit will be operationalized to assess the presence of determination, tenacity and perseverance. Guiding Measures: The Resilience Scale (Wagnild & Young, 1993) Value in Action Inventory of Strengths (Peterson & Seligman, 2001)
Independence	Independence will measure self-reliance and feelings of independence. Additionally, independence will include measurement of internal locus of control. Guiding Measures: The Resilience Scale (Wagnild & Young, 1993)
Self-Care	Self-care will look at the innate importance of maintaining both mental and physical health. Guiding Measures: Quality of Life Inventory (Frisch, 1992; Frisch et al., 2002) Curiosity and Exploration Inventory (Kadashan et al., (2009)

Table 3.1-continued

Self-Acceptance	This factor denotes one's acceptance of who they are as a person as well as acceptance of what their future may entail. Guiding Measures: Scale of Psychological Well-Being (Ryff, 1995) Flourishing Scale (Diener et. Al, 2010) Quality of Life Inventory (Frisch, 1992; Frisch et al., 2002)
Meaningfulness	The notion of meaningfulness extends beyond the idea of religious or spiritual grounding to a philosophical underlying assumption that all individuals have a purpose, as well as identification of that purpose. Some individuals achieve meaningfulness through religious beliefs or practices, while others achieve meaningfulness through retrospective examination of life experiences and/or internal examination of oneself Guiding Measures: Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (Peterman et al., 2002) Spiritual Support Scale (Nelson-Becker, 2005)
Experience with Hardship	Experience with hardship will measure past life experiences with hardship. The operationalization of this factor will not look at specific events. Instead the questions will be contextually broad. Guiding Measures: Affect Intensity Measure (Larsen, 1984)
Positive Perspective on Life	Positive perspective on life will be operationalized in terms of gratitude and optimism. Essentially, this factor will seek to determine if an individual views their life in a positive manner. Guiding Measures: Satisfaction With Life Scale (Diener et. al, 1985) Life Orientation Measure (Scheier, Carver, & Bridges, 1994). Gratification Questionnaire (McCullough, Emmons, & Tsang, 2002)
Altruism	Altruism will be operationalized by developing questions seeking to uncover the level of engagement in altruistic activities as well as importance of such activities. Altruistic activities will be defined as activities that are premised in giving back to the community. Guiding Measure: The Self Report Altruism Scale (Rushton, Roland, & Fekken, 1981)

Items were written at a 6th grade reading level and rated on a 7-point Likert scale. The 7-point Likert scale was selected for several reasons. First, Likert scaling offers respondents choices in "equal-appearing intervals" (Abell, Springer, & Kamata, 2009). Meaning, numbers are equated to text labels with perceived equal distances between each response choice. Second, 7-point scales (or wider response categories) lead to increased reliability of instruments (Tate, 1998). Finally, an odd number of response categories offers an option of a neutral selection choice, and allows the respondent to indicate equal attraction to both sides of the response choices (Devellis, 2003).

Content Validity

Content validity was assessed in an effort to determine if the proposed measure represents all facets of the protective factors associated with the concept of resilience. An expert panel was established and consisted of a combination of both social work and nursing researchers, practitioners, and educators. Of the 6 individuals approached, 4 agreed to take part in the assessment of the content validity of the measure. Experts included Dr. Roberta Greene, Dr. Pat Gleason-Wynn, David Cory LMSW, and Dr. Barbara Resnick.

Dr. Roberta Greene is a renowned researcher and social work practitioner, and published numerous articles on resilience among older adults before retiring from the University of Texas at Austin in 2012. Dr. Pat Gleason-Wynn holds a PhD and an MSW in social work, and a BA in nursing. Dr. Gleason-Wynn has extensive experience working with older adults as well as educating practitioners entering the social work profession. David Cory is an LMSW and has practiced social work for over 25 years. Finally, Dr. Barbara Resnick holds a PhD in nursing and specializes in resilience measurement and resilience research.

Each of the expert panel members were provided with an electronic preliminary version of the RFPI along with a detailed instruction manual. Each item was listed with the corresponding factor and contained a section for questions or comments. The expert panel rated individual items based on clarity and perceived applicability. Responses were rated on a 7-point Likert scale and items with a mean score of less than 3.5 were omitted. The RFPI originally contained 71 items. After the mean score analysis of observations from the expert panel, 3 items were removed as the items received a score below a 3.5. The version of the RFPI used in the current study contained a total of 68 items (please see Appendix A).

Reliability

Reliability refers to the stability, repeatability, or internal consistency of an instrument or questionnaire (Jack & Clarke, 1998). Reliability was measured using the Cronbach's alpha statistic (Cronbach, 1951). Cronbach's alpha utilizes inter-item correlations to determine if scale items are in fact measuring a specified domain/factor (Bowling 1997; Bryman and Cramer, 1997; Jack & Clarke, 1998). If items demonstrate 'good' internal consistency, Cronbach's alpha exceeds 0.70 for a developing instrument and 0.80 for a more established instrument (Bowling 1997; Bryman and Cramer, 1997).

Confirmatory Factor Analysis

The CFA was performed using Analysis of Moment Software (AMOS). This particular software is generally used for structural equation modeling (SEM). SEM consists of two components: measurement model and structural model. The measurement model in SEM is analyzed using CFA. In terms of this study, CFA was used to assess the proposed measurement model. CFA was selected over exploratory factor analysis (EFA) due to the fact that CFA offers the flexibility of testing theoretical models conceptualized *a priori*. The factor structure was determined through existing

empirical and theoretical findings. Therefore, exploring the factor structure of this model was deemed unnecessary.

Goodness of Fit

Goodness of fit estimates are used to determine how well the hypothesized measurement model fits the observed correlation (within sampling error). Majority of the goodness of fit indices are assessed using the chi-square statistic. However, utilization of additional model fit indices enhances the integrity of a fit model and compliments the chi-square statistic. In this case, model fit was based on three additional criteria: 1) the root mean square error of approximation (RMSEA); 2) comparative fit index (CFI); and 3) the root mean square residual (RMR). The following recommended criteria were used to determine goodness of fit of the model to the data: RMSEA < .10, CFI > .85, RMR < .10 (Kline, 2005). In order to achieve the best fit model, the initial model was modified until an adequate model based on the above specified parameters was achieved.

If a confirmatory analysis fails to yield a fit model, the model is reevaluated to identify ways to improve the model by exploring which parameters might be freed that had originally been fixed, and vice versa. Modification or re-specification of the model parameters is performed in order to determine best fit of the model. More than one model may fit; however, the iterative process described above assists in determining the best fit model. Finally, the factor loading of each item were assessed in order to determine if the items are adequately loading on each subsequent factor.

Convergent and Discriminant Validity

Convergent and discriminant validity were determined with the Resilience Scale (RS) and the Geriatric Depression Scale (GDS). It was hypothesized that scores on the GDS will be negatively correlated with the RPFI. Past resilience measures have used a depression to assess discriminant validity (see Baruth & Carrol, 2002; Friborg et al.,

2003, Princy-Embury, 2008). Additionally, it is hypothesized that scores on the RS will be positively correlated with the RPFI. Measures were selected based on similarity or difference in terms of the construct of resilience. Additionally, all of the measures have been found reliable and valid.

Geriatric Depression Scale, 15 item (GDS).

The Geriatric Depression Scale, 15-item (Lesher & Berryhill, 1994) was adapted from the original 30-item scale, with strong internal consistency of (r=0.81) (Almeida & Almeida, 1999). The GDS contains a "yes – no" item format with possible scores ranging from 0-15. Finally, researchers have identified varying cutoff scores ranging from 5-7 (Almeida & Almedia, 1999, Haworth, Moniz-Cook, Clark, Wang, & Cleland, 2007; Lesher & Berryhill).

The GDS was selected based on several characteristics including: length, repeated testing of reliability and validity, as well as the emphasis of analysis of cognitive symptoms (i. e. sadness) as opposed to somatic symptoms (i. e. sleep disturbances, weight fluctuation). Depressed older adults tend to exhibit increased somatic symptoms as opposed to cognitive symptoms when compared to younger adults, however, this finding may be related to the increase in health problems as one ages (Balsis & Cully, 2008; Karel, 1997). Therefore, inclusion of a measure with less emphasis on somatic symptoms was warranted in order to minimize false positive in terms of depressive classifications.

In terms of this study, the GDS was used to establish discriminant validity. The concept of depression as it relates to resilience was selected based on the findings of several research studies (see Hardy, Concato, & Gill, 2004; Rothermund & Brandtstadler, 2003; Mehta et al., 2008). Specifically, Hardy, Concato & Gill (2004) found fewer depressive symptoms to correlate with higher levels of resilience. Finally, the GDS is

available in the public domain.

Resilience Scale (RS).

The RS (Wagnild & Young, 1993) is a 25-item self-report. Items are rated on a 7-point scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Scores on the RS can range from 25- 175 (with higher scores associated with higher levels of resilience). Cronbach's alpha was reported for five pilot studies and a larger sample validation ranging from .76 to .91. In 2009, Wagnild completed an analysis of 12 studied that used the RS and reported the results. Alpha levels for the 12 studies using the RS after the large sample validation ranged from .72 to .94. Results can be seen in the table below (since the RS measures the construct of resilience, additional detail in terms of the instrument is provided in this section):

Table 3-2 published Studies Using the Resilience Scale

Authors	Population (age range)	Mean/sd	alpha	range
Hunter and Chandler, 1999	At risk adolescents (16-18)	132.5/-	.72	__
Christopher, 2000	Irish immigrants (mean 31.0)	__	__	__
Rew et al., 2001	Homeless adolescents (15-22)	111.9/17.6	.91	__
Monteith & Ford- Gilboe, 2002	Mothers with preschool children (27-44)	142.5/12.9	.85	109-166
Humphreys, 2003	Sheltered battered women (19-60)	143.1/24.0	.94	81-175
Schachman et al., 2004	Young military wives (18-28)	Pre- 142 Post- 158.0 Follow-up- 143.86	.86	__

Table 3.2- continued

Black & Ford- Gilboe, 2004	Adolescent mothers (18-23)	146.6/14.1	.85	114-167
March, 2004	Young old adults (58-85)	140.1/17.4	—	—
Nygren et al., 2005	Older adults (85-95)	148.0/1.0	.85	—
Broyles, 2005	Older adults (39-92)	143.0/ 16.3	.91	—
Leppert et al., 2005	Older adults (mean age 69.6)	132.6/22.17	.94	69-175
Wagnild, 2008	Older adults (66-85)	147.1/18.3	.94	98-168

The RS was selected as a measure to assess convergent validity for several reasons. First, as noted above, the RS has a long history of successful repeated testing of reliability. Second, the RS measures many of the domains asserted to comprise resilience (however, fails to include all of the domains). Third, the RS is available to the public domain.

Procedure

Approval from the University of Texas at Arlington Institutional Review Board was granted October 11, 2012 (see appendix B). Upon approval measurement packets were compiled and distributed. Packets included the Self-Administered Gerocognitive Examination (SAGE) (Scharre, Chang, Murden, Beversdorf, Katak, Naharaja, Bornstein, 2010) demographic sheet, RFPI, GDS, and RS.

Self-Administered Gerocognitive Examination (SAGE)

The Self-Administered Gerocognitive Examination (SAGE) was used to assess cognitive impairment. The SAGE test was developed by Scharre et al. (2010) (reliable in

detecting cognitive decline), and is used to detect mild cognitive impairment (MCI) and early dementia. The average time to complete the SAGE is approximately 15 minutes and the scores range from 0-22. The cutting scores include 17-22 (normal functioning), 15-16 (mild memory or thinking impairments), and 14 or below (more severe memory or thinking impairments). Originally, it was determined that individuals scoring below a 17 would be removed from the study. However, due to the disparity in scores across ethnic groups, scores on the SAGE were not used as part of the inclusion criteria. Further discussion of the SAGE can be found in the Discussion section.

Thus far, one study testing the reliability and validity of the SAGE has appeared in the scholarly literature (see Scharre et al. 2010). The SAGE is a new instrument and continued testing of the measure is required to support the reliability and validity of the measure. The original sample the SAGE was validated on consisted of 254 adults aged 59 and older (Scharre et al. 2010).

Participants

Five locations agreed to allow the researcher to distribute the questionnaire to a potential respondent population. Four of the recruitment sites were located in North Texas (The Senior Source, Three Fountains, Center for Healthy Living and Longevity, and Arlington Plaza) and one site was located in Urbana, Illinois (Clark Lindsey Retirement Community). Each site provided a signed letter of consent that was submitted to the University of Texas at Arlington IRB for approval (see appendix C). Participants that completed the measurement packet were entered into a drawing for a $100 Walmart gift card.

The Senior Source of Dallas

The Senior Source of Dallas is a multifaceted center that serves older adults in the greater Dallas area. Services include but are not limited to assistance with job

searches, nursing home advocacy, money management, volunteer opportunities, and counseling relative to aging issues (for more information refer to http://www.theseniorsource.org/).

The Senior Source offers several volunteer opportunities for older adults as well as volunteer opportunities for individuals of all ages. The Senior Companion Program is a volunteer opportunity for adults aged 55 and older. The volunteers work 20-40 hours per week with one to two frail older adults. Volunteers provide assistance in the following areas: socialization, escort services, support care, personal care, and home management (volunteer website is located at http://www.theseniorsource.org/pages/vol_seniorcompanion.html). The director of the Senior Companion Program, Gretchen Feinhals agreed to allow the researcher to recruit participants from a mandatory volunteer monthly meeting held at The Senior Source.

Three Fountains Retirement Community

Three Fountains Retirement Community is an independent retirement community for adults aged 55 and older, located in Dallas, Texas. Three Fountains provides residents with a variety of services and amenities in an independent setting (for more details see (http://www.seniorhousingnet.com/seniorliving-detail/three-fountains_6011-melody-lane_dallas_tx_75231-560060?source=web). The director of Three Fountains, Katie Sitton, agreed to allow the researcher to attend a monthly resident meeting to recruit participants for this study.

The Center for Healthy Living and Longevity

The Center for Healthy Living and Longevity (CHLL) is a multidisciplinary research center located at the University of Texas at Arlington. The CHLL offers evidence based rehabilitation programs to older adults to promote improved quality of life (for more information visit (http://www.uta.edu/coehp/kinesiology/research-

community/chll/index.php). One of the programs offered is premised in fall prevention. Participants are recruited to participate in a 2 month exercise program that meets 3 times per week for one hour. The exercise program is designed to prevent falls by strengthening key muscle groups through low impact exercises. The director of the CHLL, Dr. Chrispopher Rey, agreed to allow the researcher to recruit participants from the fall prevention program during the program's screening and enrollment process.

Arlington Plaza Independent Living Center

Arlington Plaza Independent Living Center is an independent retirement community for adults aged 55 and older, located in Arlington, Texas. Arlington Plaza provides residents with 3 meals a day, shuttle services, and a variety of activities and events (for additional information please see http://www.holidaytouch.com/Our-Communities/arlington-plaza/activities.aspx). The director of activities, Vickie Church agreed to allow the researcher to recruit participants prior to lunch service.

Clark-Lindsey Retirement Village

Clark-Lindsey Retirement Village is a continuing care retirement community that offers a variety of services including independent living, assisted living and skilled nursing care, and inpatient and outpatient physical, occupational, and speech therapies. Clark-Lindsey is located in Urbana, Illinois and generally provides services to adults aged 55 and older (for additional information please visit http://clark-lindsey.com/). Clark-Lindsey's Wellness and Activities Coordinator, Paula Martain, agreed to allow the researcher to recruit participants from the independent living community.

Data Collection and Data Entry

Completed packets are located in a locked room, in a locked cabinet, at the University of Texas at Arlington General Academic Classroom Building, room 109. Data from the packets were entered into SPSS 19.0 by the principle investigator and client

confidentiality was maintained by assigning each respondent a non-identifiable number associated with the corresponding assessment packet.

Missing Data and Skewness and Kurtosis

Missing data is a result of intentional or unintentional unanswered items. The prevalence of unanswered items is determined after respondent data is collected and entered into a database. Three issues are considered when examining missing data: 1) amount missing and randomness; 2) reason for missing data; and 3) most appropriate methodological approach to resolving missing data (Duffy, 2006). Furthermore, missing data can either appear as random or systematic (Munro, 2005). Random error refers to errors lacking a pattern across respondent groups, while systemic error refers to errors with a statistically observable pattern. Finally, several approaches exist in order to adjust for missing data, and decisions regarding the most appropriate approach are based on randomness of missing response items.

Generally, if less than 5% of the data are absent (without a definitive pattern), most procedures for missing data may be employed (Munro, 2005; Tabachnick & Fidell, 2007). If a systematic error is found within the data, the number of procedures is reduced. Two procedures that address missing data in SPSS and include Multiple Imputation (MI) and Missing Value Analysis (MVA). MI is generally perceived as the superior method (SPSS, 2011).

MVA involves three functions: 1) description of the pattern of missing data, 2) estimation of means, standard deviation, correlations and co-variances for several missing value methods (listwise, pairwise, regression and expectation-maximization EM), 3) fill in missing data (SPSS, 2011). Listwise and pairwise missing value methods do not require the third step of filling missing data (since they involve removing cases in their entirety). However, regression and EM are processes used to impute missing data.

Regression and EM involve the imputation of one 'complete' data set. Multiple Imputation yields more than one 'complete' data set and the standard errors are estimated in order to establish parameters (see Little & Rubin, 1987). Additionally, generation of 'complete' data sets reduce the chance of error related to replacing the missing values and is the method to be employed in this study. Finally, if data is found to be missing not at random, neither of these techniques may be employed (Tabachnick & Fidell, 2007).

Given the difficulty in predicting the amount and type of randomness of missing data, it is important to note the predetermined technique employed in any study may be subject to change. Decisions in terms of the appropriate approach should only be made after assessing the amount and type of missing data.

Chapter 4

Results

Participant Demographics

Descriptive statistics from the demographic questionnaire are tabulated in table 4-1. In the overall sample there were 30 residents of Urbana, Illinois and 121 residents of the Dallas Fort Worth metroplex. The age ranged from 57-93, with a mean of 76. Based on the age distribution, the majority of subjects (56.1%) were between the ages of 75 and 93, 38.5% were between the ages of 65 and 74, and 5.4% were between the ages of 57 and 64. The majority of the participants were female (78.1%) and white (66.9%). Forty three percent of the participants were married, 32.5% were widowed, 16.6% (n=25) were divorced, and 4.6% were single. The majority of the participants were born in the United States of America (92.1%) and had some higher education (i.e. some college, bachelor's degree, master's degree, and professional degree) (78.9%).

Table 4-1 Demographic Characteristics of Sample

Variable		n	Mean	SD	Range	Frequency	%
Age		150	76.1	7.7	57-93		
Gender		151					
	Female					118	78.1
	Male					33	21.9
Race		148					
	White					99	66.9
	Black					39	25.8
	Hispanic					5	3.3
	Asian					4	2.6
	Other					1	.7
	Missing					3	2.0
Marital Status		147					
	Single					7	4.6
	Married					66	43.7
	Divorced					25	16.6
	Widowed					49	32.5
	Missing					4	2.6
Education		150					
	Some high school					19	12.6
	High school diploma					20	13.2
	Some college					42	27.8
	Bachelor's degree					32	21.2
	Master's degree					21	13.9
	Professional degree					16	16
	Missing					1	.7
Public Assistance		141					
	Yes					57	37.7
	No					84	55.6
	Missing					10	6.6
Birth Location		150					
	USA					139	92.1
	Other					11	7.3
	Missing					1	.7
Fluent in English		150					
	Yes					142	94.0
	No					8	5.3
	Missing					1	.7

Table 4.1- continued

Weekly activities		136	6.8	5.7	34		
Location		151					
	Clark Lindsey					30	19.9
	Three Fountains					6	4.0
	Longevity Center					62	41.1
	Senior Source					43	28.5
	Arlington Plaza					10	6.6
SAGE		151	17.9	4.08	4-22		
Income		102	50,946	87,885	450-750,000		

Missing Values

A total of 159 assessment packets were completed. Eight packets were removed from the sample for failure to complete one or more of the measurement instruments, resulting in a total of 151. Upon removal of the 8 packets, missing values were calculated for the GDS (3.478%), RS (2.199%), RFPI (.949%), and total for all of the scales (1.168%). The maximum number of missing items from a single case was 20 (18.4%) of the 106 total items and fell below the 20% threshold identified for case elimination. Additionally, missing data patterns were analyzed using Little's Missing Completely at Random (MCAR) to determine if the data was missing at random or if systematic errors were present. Little's MCAR test was significant (Chi-square=10470.049, df=10388, p=.284) and indicated the data was in fact missing at random. Based on the small amount of missing values (1.618%), a single imputation was used to generate missing values.

Table 4-2 Missing Value by Scale

	% Missing per scale	Total % Missing
GDS	3.478%	
RS	2.199%	
RPFI	.949%	
All Scales		1.618%

Skewness and Kurtosis

One of the major assumptions of structural equation modeling is that the data are normally distributed. One way to assess the normality of a sample distribution is by assessing skewness and kurtosis. Skewness affects the test of means and kurtosis impacts test of variance and covariance (DeCarlo, 1997). Similar to many statistical analyses, researchers have differing opinions relative to the appropriate numeric threshold of both skewness and kurtosis that demonstrates normality versus non-normality.

West, Finch & Curran (1995) suggest an absolute kurtosis value of greater than 7 would be indicative of a departure from normality. Whereas Kline (2005) states an absolute kurtosis value of greater than 10 suggests a problem, and absolute values higher than 20 are extremely problematic. It is important to note that SPSS subtracts 3 from the absolute value of kurtosis, and therefore a value of 0 is indicative of a normal distribution (Kim, 2013). West, Finch, & Curran (1995) suggest an absolute skewness value of greater than 2 is indicative of departure from normality. Alternatively, Chou and

Bentler (1995) suggest an absolute skewness value of greater than 3 is indicative of departure from normality.

In order to assess normality, skewness and kurtosis were calculated for each item on the RPFI (see table 4-3). Given several factors surrounding the sample data (i. e. skewness level, positive data values, and absence of values equaling 0), logarithmic transformations were used. Additionally, the direction of skewness determined the logarithmic equation selected. Negative skewness resulted in the use of NEWX=LG10 (8-X) and positive skewness resulted in the use of NEWX=LG10(X). Transformation was completed on all items of the RFPI and a summary of the skew and kurtosis before and after transformations can be found in table 4-3. The decision to transform the data was made in order to create a normal distribution and avoid violating one of the assumptions of CFA (non normality). Transformed values ranged between .00 and 1 whereas the ordinal item values ranged from 1 to 7. The change is values reflect the numeric adjustment relative to the process of achieving normality. However, these adjustments do not affect reliability or validity as they remain the same before and after transformation.

Table 4-3 Skew and Kurtosis of the Items on the RFPI Prior and After Transformation

RFPI Item	Skew		Kurtosis		Transformation		
	Statistic	SE	Statistic	SE	Trans	Skew	Kurtosis
Pers1.1	-4.676	.197	33.595	.392	Lg10(8-x)	1.981	.392
Pers1.2	-1.570	.197	2.892	.392	Lg10(8-x)	.440	-.809
Pers1.3	-2.243	.197	6.916	.392	Lg10(8-x)	.872	-.064
Pers1.4	-1.667	.197	4.373	.392	Lg10(8-x)	.115	-.541
Pers1.5	-3.473	.197	20.804	.392	Lg10(8-x)	1.228	1.152
Pers1.6	-3.281	.197	18.017	.392	Lg10(8-x)	1.221	1.060
Pers1.7	-3.881	.197	24.324	.392	Lg10(8-x)	1.1532	2.192

Table 4.3- continued

Indep2.1	-2.63	.197	10.385	.392	Lg10(8-x)	1.028	.274
Indep2.2	-1.423	.197	2.388	.392	Lg10(8-x)	.214	-.749
Indep2.3	-2.830	.197	13.735	.392	Lg10(8-x)	.899	.287
Indep2.4	-.768	.197	.030	.392	Lg10(8-x)	-.375	-.320
Indep2.5	-2.477	.197	9.929	.392	Lg10(8-x)	.945	.057
Indep2.6	-1.665	.197	4.761	.392	Lg10(8-x)	.304	-.788
Indep2.7	-1.772	.197	4.715	.392	Lg10(8-x)	.266	-.609
Indep2.8	-1.445	.197	2.606	.392	Lg10(8-x)	.204	-.834
Alt3.1	-2.545	.197	7.707	.392	Lg10(8-x)	1.524	1.409
Alt3.2	-3.219	.197	14.300	.392	Lg10(8-x)	1.616	.197
Alt3.3	-1.419	.197	2.134	.392	Lg10(8-x)	.461	-.937
Alt3.4	-2.187	.197	8.074	.392	Lg10(8-x)	.781	-.322
Alt3.5	-1.950	.197	6.120	.392	Lg10(8-x)	.666	-.557
Alt3.6	-2.508	.197	9.750	.392	Lg10(8-x)	1.016	.248
SC4.1	-3.962	.197	23.319	.392	Lg10(8-x)	1.943	3.483
SC4.2	-2.504	.197	7.796	.392	Lg10(8-x)	1.074	.469
SC4.3	-1.808	.197	5.776	.392	Lg10(8-x)	.682	-.661
SC4.4	-4.279	.197	27.011	.392	Lg10(8-x)	2.037	4.133
SC4.5	-.4.943	.197	31.249	.392	Lg10(8-x)	2.261	6.000
SC4.6	-3.515	.197	18.618	.392	Lg10(8-x)	1.674	2.314
SC4.7	-2.024	.197	5.947	.392	Lg10(8-x)	.496	-.411
Accep5.1	-1.472	.197	10.221	.392	Lg10(8-x)	.856	-.032
Accep5.2	-1.780	.197	5.895	.392	Lg10(8-x)	.258	-.593
Accep5.3	.678	.197	-.683	.392	Lg10(x)	-.084	-1.039
Accep5.4	-1.006	.197	-.151	.392	Lg10(8-x)	.167	-.957

Table 4.3- continued

Accep5.5	-2.178	.197	7.630	.392	Lg10(8-x)	.423	-.238
Accep5.6	-2.092	.197	6.133	.392	Lg10(8-x)	.604	-.255
Accep5.7	-.279	.197	-1.105	.392	Lg10(8-x)	-.606	-.398
Mean6.1	-2.360	.197	7.996	.392	Lg10(8-x)	.863	-.069
Mean6.2	-1.546	.197	3.297	.392	Lg10(8-x)	.158	-.536
Mean6.3	-1.867	.197	3.803	.392	Lg10(8-x)	.779	-.488
Mean6.4	-1.803	.197	5.131	.392	Lg10(8-x)	.479	-.672
Mean6.5	-3.093	.197	15.675	.392	Lg10(8-x)	1.079	.748
Mean6.6	-2.771	.197	14.656	.392	Lg10(8-x)	.753	.021
Grit7.1	-1.730	.197	6.196	.392	Lg10(8-x)	.310	-.839
Grit7.2	-1.359	.197	2.447	.392	Lg10(8-x)	.080	-.718
Grit7.3	-1.737	.197	4.094	.392	Lg10(8-x)	.367	-.609
Grit7.4	-2.558	.197	10.894	.392	Lg10(8-x)	.668	.059
Grit7.5	-2.164	.197	9.553	.392	Lg10(8-x)	.547	-.563
Hard8.1	-.589	.197	-.845	.392	Lg10(8-x)	-.249	-.945
Hard8.2	.781	.197	-.608	.392	Lg10(x)	.067	-1.164
Hard8.3	-.324	.197	-1.335	.392	Lg10(8-x)	-.374	-.962
Hard8.4	-.841	.197	-.371	.392	Lg10(8-x)	-.042	-1.040
Hard8.5	-1.739	.197	4.072	.392	Lg10(8-x)	.353	-.592
Hard8.6	-2.018	.197	5.179	.392	Lg10(8-x)	.652	-.371
Con9.1	-1.833	.197	4.378	.392	Lg10(8-x)	.584	-.597
Con9.2	-1.605	.197	4.039	.392	Lg10(8-x)	.097	-.463
Con9.3	-2.794	.197	12.743	.392	Lg10(8-x)	1.138	.553
Con9.4	-1.405	.197	2.279	.392	Lg10(8-x)	.196	-.794
Con9.5	-1.946	.197	3.897	.392	Lg10(8-x)	.779	-.409

Table 4.3- continued

Con9.6	-1.841	.197	5.957	.392	Lg10(8-x)	.391	-.778
Con9.7	-3.123	.197	12.428	.392	Lg10(8-x)	1.349	1.372
Con9.8	-2.483	.197	11.424	.392	Lg10(8-x)	.720	-.217
Con9.9	-1.441	.197	2.291	.392	Lg10(8-x)	.383	-.760
Con9.10	-2.040	.197	5.63	.392	Lg10(8-x)	.607	-.418
Con9.11	-2.978	.197	10.573	.392	Lg10(8-x)	1.380	1.426
Con9.12	-2.146	.197	8.302	.392	Lg10(8-x)	.330	-.388
Con9.13	**-3.125**	.197	15.510	.392	Lg10(8-x)	1.074	.885
Con9.14	-2.217	.197	7.143	.392	Lg10(8-x)	.668	-.286
Con9.15	-2.374	.197	9.200	.392	Lg10(8-x)	.839	-.097

Confirmatory Factor Analysis

Scale structure was assessed through Confirmatory Factor Analysis (CFA) using maximum likelihood estimation as implemented in AMOS. First, a CFA was performed using each one of the nine factors, followed by a CFA on the overall proposed model. The individual factors were run independently as a data reduction technique. The original modification and the subsequent respecificaton goodness of fitness indices can be found in table 4-4. Respecifications were performed if goodness of fit indices fell below accepted thresholds and/or if there was a presence of unexpected patterns of indicator-factor loadings (models are presented with unstandardized factor loadings). The one-factor Positive Perspective on Life originally contained 7 items. The results indicated that the model was not a good fit of the data ($\chi 2$ (14, N =151) = 44.299, p=.000; RMSEA = 0.120; CFI = 0.91. Modification indices revealed the measurement errors for items 1 and 2 were highly correlated with other items. Based on these modification indices items 1

and 2 were removed. The respecified model with 5 items resulted in a good model fit (χ2 (5, N =151) = 4.946, p= .422; RMSEA = 0.000; CFI = 1.00; GFI = .987; and RMR=.001.

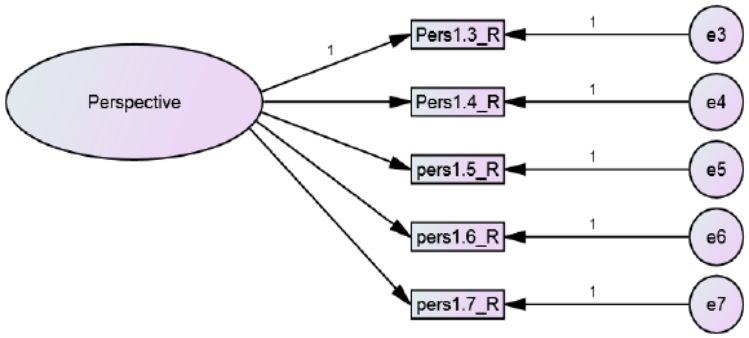


Figure 4-1 Graphical Representation of the One-Factor Positive Perspective on Life Model

The one-factor model of Independence originally contained 8 items. Results from the CFA indicated that the model was not a good fit of the data (χ2 (20, N =151) = 38.647, p= .007; RMSEA = 0.079; CFI = 0.945; GFI = 0.946; and RMR=.002). Modification indices revealed the measurement errors for item 1 was highly correlated with other items and item one was removed. The respecified model with 7 items resulted in a good model fit (χ2 (14, N =151) = 17.811, p= .216; RMSEA = 0.043; CFI = 0.986; GFI =.970 and RMR=.002.

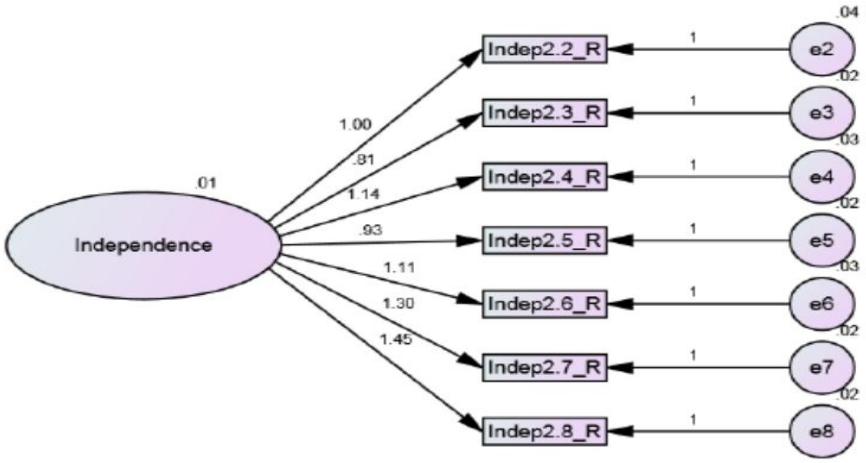


Figure 4-2 Graphical Representation of the One-Factor Independence Model

The one-factor Altruism model originally contained 6 items. The results indicated that the model was not a good fit of the data ($\chi 2$ (9, N =151) = 19.695, p= .020; RMSEA = 0.089; CFI = 0.981; GFI = 0.954; and RMR=.001). Modification indices revealed the measurement errors for item 1 was highly correlated with other items and item 1 was removed. The respecified model with 5 items resulted in a good model fit ($\chi 2$ (5, N =151) = 3.271, p= .658; RMSEA = 0.000; CFI = 1.00; GFI =.991 and RMR=.001.

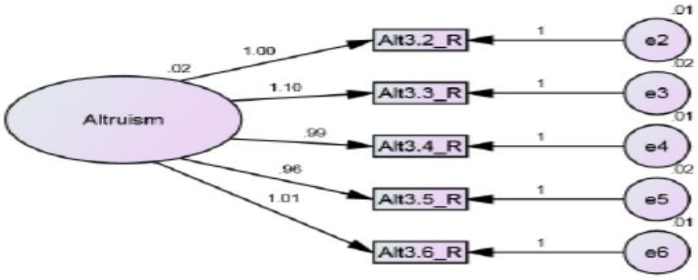


Figure 4-3 Graphical Representation of the One-Factor Altruism Model

The one-factor Self-Care model originally contained 7 items. The results indicated that the model was not a good fit of the data ($\chi 2$ (14, N =151) = 55.752, p= .000; RMSEA = 0.141; CFI = 0.888; GFI = 0.907; and RMR=.002). Modification indices

revealed the measurement errors for items 2 and 4 was highly correlated with other items. Based on the modification indices items 2 and 4 were removed. The respecified model with 5 items resulted in a good model fit ($\chi 2$ (5, N =151) = 3.137, p= .679; RMSEA = 0.000; CFI = 1.00; GFI =.992 and RMR=.000.

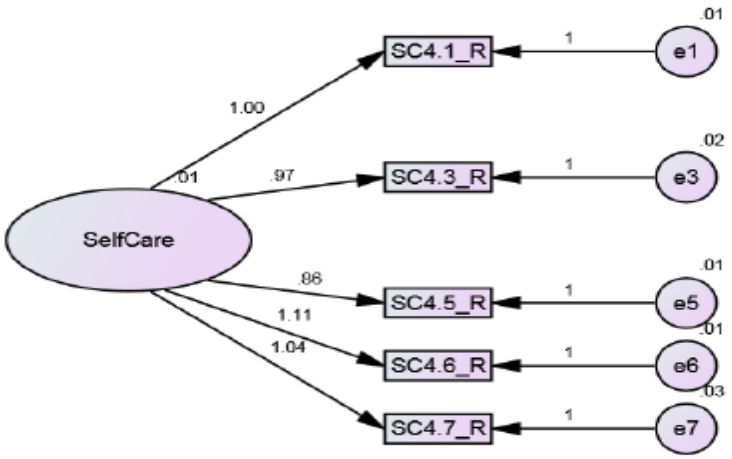


Figure 4-4. Graphical Representation of the One-Factor Self-Care Model

The one-factor Self-Acceptance model originally contained 7 items. The results indicated that the model was not a good fit of the data ($\chi 2$ (14, N =151) =32.183, p= .004; RMSEA = 0.093; CFI = 0.954; GFI = 0.945; and RMR=.004). Modification indices revealed the measurement errors for item 3 was highly correlated with other items. Based on the modification indices item 3 was removed. The respecified model indicated errors on items 1 and 2 were correlated. A covariance was drawn between items 1 and 2, and the respecified model with 6 items resulted in a good model fit ($\chi 2$ (, N =151) = 5.203 p= .736; RMSEA = 0.000; CFI = 1.00; GFI =.998 and RMR=.000.

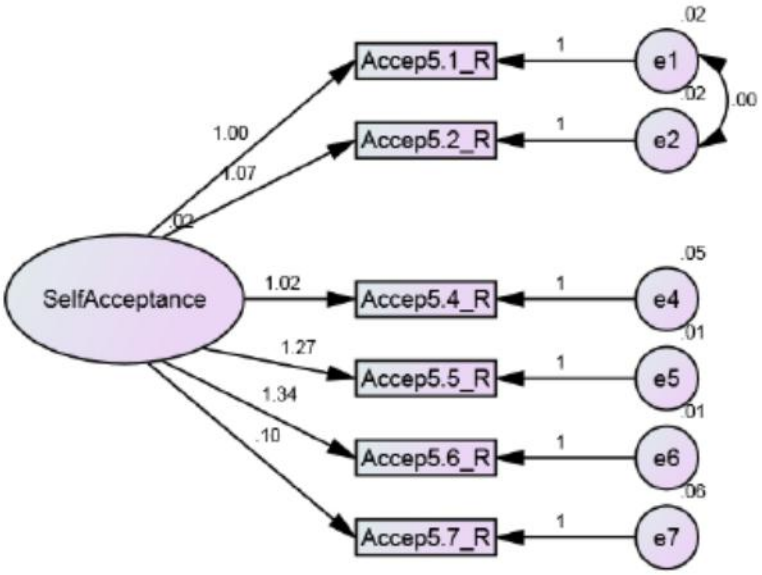


Figure 4-5. Graphical Representation of the One-Factor Self-Acceptance Model

The one-factor Meaningfulness model originally contained 6 items. The results indicated that the model was not a good fit of the data ($\chi 2$ (9, N =151) =16.553, p= .021; RMSEA = 0.088; CFI = 0.967; GFI = 0.961; and RMR=.002). Based on the modification indices items 1 and 2, and items 3 and 6 were correlated. A covariance was drawn between items 1 and 2, and items 3 and 6. The respecified model with the original 6 items resulted in a good model fit ($\chi 2$ (7, N =151) = 5.085 p= .650; RMSEA = 0.000; CFI = 1.00; GFI =.989 and RMR=.001.

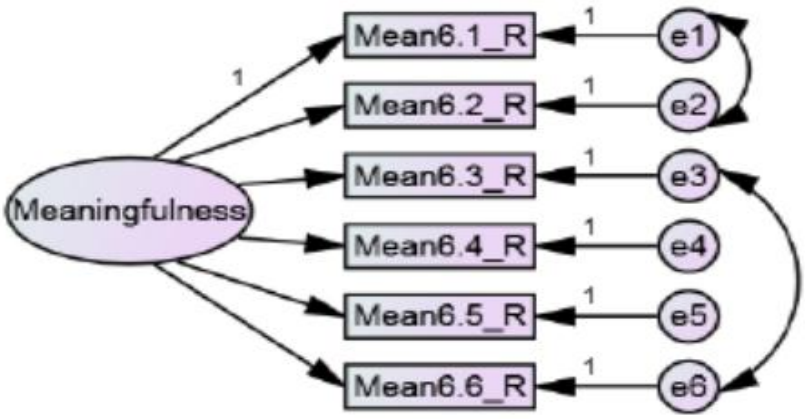


Figure 4-6. Graphical Representation of the One-Factor Meaningfulness Model

The one-factor Grit model originally contained 5 items. The results indicated that the model was not a good fit of the data ($\chi 2$ (5, N =151) =36.446, p= .000; RMSEA = 0.169; CFI = 0.938; GFI = 0.930; and RMR=.002). Modification indices revealed the measurement errors for item 5 was highly correlated with other items. Based on the modification indices item 5 was removed. The respecified model with 4 items resulted in a good model fit ($\chi 2$ (2, N =151) = .591 p= .744; RMSEA = 0.000; CFI = 1.00; GFI =.998 and RMR=.000.

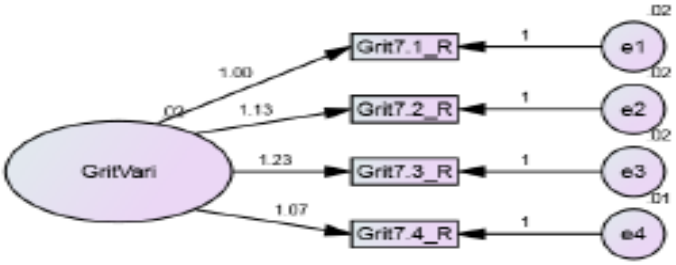


Figure 4-7. Graphical Representation of the One-Factor Grit Model

The one-factor Previous Experience with Hardship model originally contained 6 items. The results indicated that the model was not a good fit of the data ($\chi 2$ (9, N =151)

=69.558, p= .000; RMSEA = 0.212; CFI = 0.674; GFI = 0.853; and RMR=.010). Modification indices revealed the measurement error for item 3 was highly correlated with other items. Based on the modification indices item 3 was removed. A covariance was drawn between items 1 and 2, and items 2 and 4. The respecified model with 5 items resulted in a good model fit (χ2 (3, N =151) = 6.329, p= .097; RMSEA = 0.086; CFI = .974; GFI =.983 and RMR=.003.

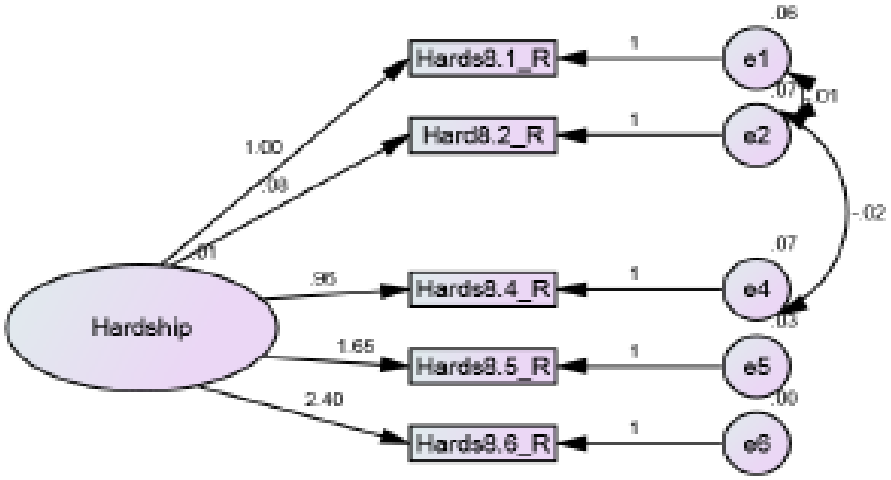


Figure 4-8. Graphical Representation of the One-Factor Previous Experience with Hardship Model

The one-factor External Connections model originally contained 15 items. The results indicated that the model was not a good fit of the data (χ2 (90, N =151) =311.027, p= .000; RMSEA = 0.128; CFI = 0.849; GFI = 0.776; and RMR=.003). Modification indices revealed the measurement errors for several of the items were highly correlated with other items. Based on the modification indices items 5, 7, 8, 10, 11, 12, 13, and 14 were removed. A covariance was drawn between items 2 and 4. The respecified model

with 7 items resulted in a good model fit (χ2 (13, N =151) = 15.793, p= .260; RMSEA = 0.038; CFI = .993; GFI =.971 and RMR=.001.

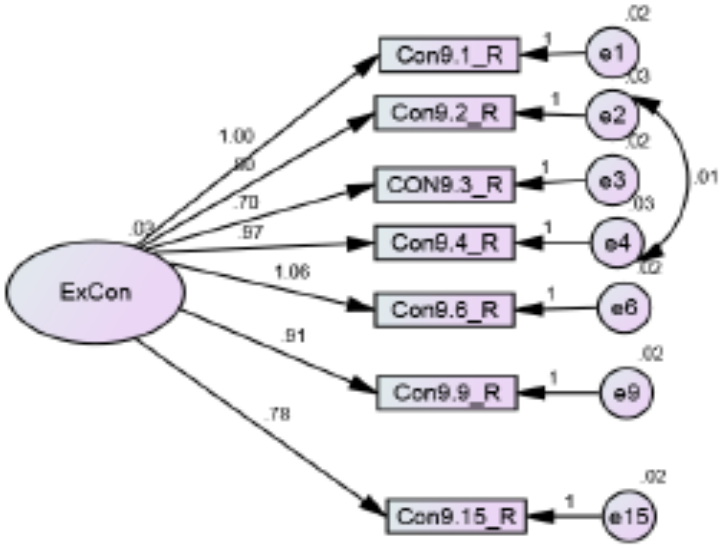


Figure 4-9. Graphical Representation of the One-factor External Connections Model

Table 4-4 Indices for the Confirmatory Factor Analysis Original and Re-specified Models for the single model solutions

Model	Item Trimmed	p-value	df	χ2	CFI	RMSEA	GFI	RMR
Perspective	Original	.000	14	44.299	.911	.120	.914	.002
Modified Model 1	Item 1	.033	9	18.158	.966	.082	.958	.002
Modified Model 2*	Item 2	.422	5	4.946	1.00	.000	.987	.001
Independence	Original	.007	20	38.674	.945	.079	.946	.002
Modified Model 1*	Item 1	.216	24	17.811	.986	.043	.970	.002
Altruism	Original	.020	9	19.695	.981	.089	.954	.001
Modified Model 1*	Item 1	.658	5	3.271	1.00	.000	.991	.001

Table 4.4 continued

Self-Care	Original	.000	14	55.852	.888	.141	.907	.002
Modification 1	Item 2	.009	9	21.983	.955	.098	.956	.001
Modification 2*	Item 4	.697	5	3.137	1.00	.000	.992	.001
Self-Acceptance	Original	.004	14	32.183	.954	.093	.945	.004
Modification 1	Item 3	.157	9	13.130	.989	.055	.971	.001
Modification 2*	1-2 Cor	.736	8	5.203	1.00	.000	.988	.001
Meaningfulness	Original	.021	9	16.553	.967	.088	.961	.002
Modification 1	1-2 Cor	.050	8	15.489	.977	.079	.970	.001
Modification 2*	3-6 Cor	.650	7	5.085	1.00	.000	.989	.001
Grit	Original	.000	5	36.446	.938	.169	.930	.002
Modification 1*	Item 5	.744	2	.591	1.00	.000	.998	.000
Hardship	Original	.000	9	69.558	.674	.212	.853	.010
Modification 1	Item 3	.000	5	22.215	.867	.152	.939	.007
Modification 2	Cor 2-4	.028	4	10.863	.947	.107	.973	.005
Modification 3*	Cor 1-2	.097	3	6.329	.974	.086	.983	.003
Connections	Original	.000	90	311.027	.849	.128	.776	.003
Modification 1	Item 14	.000	77	264.077	.854	.127	.787	.003
Modification 2	Item 13	.000	65	239.070	.845	.134	.789	.003
Modification 3	Item 12	.000	54	191.963	.861	.131	.809	.003
Modification 4	Item 5	.000	44	149.019	.873	.126	.838	.003
Modification 5	Item 7	.000	35	109.219	.895	.119	.866	.003
Modification 6	Item 8	.000	27	81.702	.908	.116	.889	.003
Modification 7	Item 11	.001	20	44.382	.950	.090	.933	.002

Table 4.4- continued

Modification 8	Item 9	.020	14	26.926	.969	.078	.950	.002
Modification 9*	Cor 2-4	.260	13	15.793	.993	.038	.971	.001

Table 4-5 Latent Variable Correlation Marix

Factors	1	2	3	4	5	6	7	8	9
1. Perspective	1.00								
2. Independence	.684*	1.00							
3. Altruism	.720*	.560*	1.00						
4. Self-Care	.717*	.619*	.748*	1.00					
5. Acceptance	.659*	.653*	.507*	.581*	1.00				
6. Meaningfulness	.728*	.586*	.712*	.644*	.640*	1.00			
7. Grit	.682*	.668*	.575*	.531*	.623*	.674*	1.00		
8. Hardship	.370*	.364*	.337*	.297*	.394*	.417*	.380*	1.00	
9. Connections	.692*	.617*	.756*	.720*	.550*	.674*	.597*	.320*	1.00

Two Scale Solutions

The nine-factor RFPI model contained 51 items. The hypothesized one-dimensional 9-factor model was not a good fit was the data ($\chi 2$ (862, N =151) =1338.709, $p < .000$; RMSEA = 0.061; CFI = 0.870; GFI = 0.730; and RMR=.003). Correlations among factors were positive, statistically significant, ranged from .297 to .756, and presented no conceptual overlap (i.e. correlations of .85 or above) (see table 4-5). Factor correlations that exceed .85 are commonly combined in order to achieve a more parsimonious solution (Brown, 2006). Based on the correlation matrix as well as the theoretical and empirical underlying assumptions of resilience, it was hypothesized that

the data was not a good fit due to the presence of two or more interrelated sub dimensions.

Post hoc analysis of the data was performed to test for the presence of interrelated sub dimensions. Individual factors were categorized based on theoretical similarities (internal versus external factors). Factors were then added one at a time to a measurement model to determine goodness of fit. The first measurement model that was tested included factors that represented actions, behaviors and experiences. The factors were added to the model in the following order: 1. External Connections; 2. Self-Acceptance; 3. Self-Care; and 4. Previous Experience with Hardship. Iterations of this model, named the Behavior and Experience Resilience Protective Factors Inventory (BERPFI), are listed in table 4-7. The BERPI was a good fit with the data (see figure 4-11).

The second model was named the Internal Resilience Protective Factors Inventory (IRPFI). The remaining 5 factors were added to the second measurement model in attempt to achieve model fit. First, Grit and Independence were added and demonstrated a good model fit. However, when Positive Perspective on Life was added, the 3-factor solution did not yield a good model fit. In attempt to generate a model fit, Grit and Independence were added to a higher order factor termed Fortitude. A second higher order factor termed Conviction was created and the remaining 3 factors were added in the following order: 1) Positive Perspective on Life; 2) Meaningfulness; and 3) Self-Acceptance. The IRPFI was a good fit with the data (see figure 4-12) and iterations of the IRPFI can be found in table 4-6.

Table 4-6 Indices for the Confirmatory Factor Analysis Original and Re-specified Models for the two model solutions

Model	Item Trimmed	p-value	df	χ2	CFI	RMSEA	GFI	RMR
BERPFI	Original	.000	200	295.869	.928	.057	.853	.003
Modification 1	Con 9.15	.000	180	250.197	.951	.051	.865	.003
Modification 2	Con 9.3	.004	161	211.746	.962	.046	.877	.003
Modification 3	Con 9.6	.032	143	175.859	.973	.039	.889	.003
Modification 4	SC 4.1	.042	126	154.783	.975	.039	.899	.003
Modification 5*	Hards 8.2	.114	112	130.304	.984	.033	.910	.002
IRPFI	Original	.000	341	582.710	.883	.069	.785	.003
Modification 1	Grit 7.4	.000	315	524.438	.889	.067	.798	.003
Modification 2	Indep 2.2	.000	290	469.385	.902	.064	.808	.003
Modification 3	Indep 2.3	.000	266	429.995	.907	.064	.817	.003
Modification 4	Indep 2.5	.000	243	388.171	.914	.063	.826	.003
Modification 5	Pers 1.3	.000	221	358.527	.916	.064	.833	.003
Modification 6	Pers 1.4	.000	200	299.006	.936	.057	.853	.003
Modification 7	Mean 6.2	.000	181	258.993	.947	.054	.964	.002
Modification 8	Mean 6.5	.001	162	221.311	.956	.049	.873	.002
Modification 9	Mean 6.4	.022	144	180.265	.971	.041	.892	.002
Modification 10	Accep 5.1	.023	128	161.986	.970	.042	.899	.002
Modification 11	Accep 5.4	.046	112	138.461	.976	.040	.908	.002
Modification 12*	Accep 5.5	.086	97	116.504	.979	.037	.916	.002

Table 4-7 Latent Variables Correlation Matrix for the Internal Resilience Protective Factors Inventory

Factors	1	2	3	4	5
1. Perspective	1.00				
2. Independence	.488*	1.00			
3. Acceptance	.458*	.474*	1.00		
4. Meaningfulness	.560*	.434*	.476*	1.00	
5. Grit	.535*	.609*	.487*	.559*	1.00

Table 4-8 Latent Variables Correlation Matrix for the Experience and Behavior Resilience Protective Factors Inventory

Factors	1	2	3	4
1. Altruism	1.00			
2. Self-Care	.723*	1.00		
3. Hardship	.426*	.346*	1.00	
4. Connections	.696*	.656*	.372*	1.00

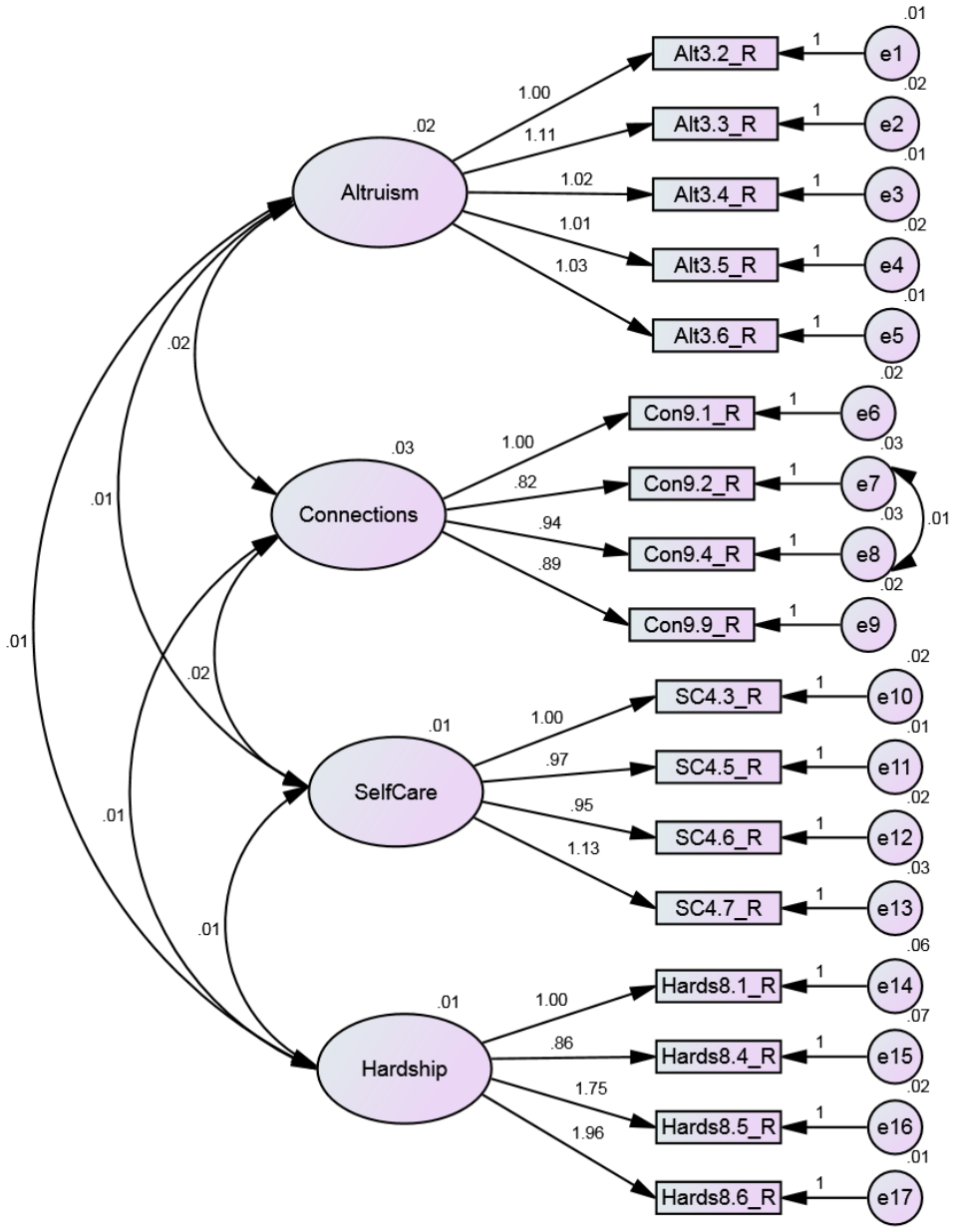


Figure 4-10 Graphical Representation of the Behavior and Experience Resilience Protective Factors Inventory Model

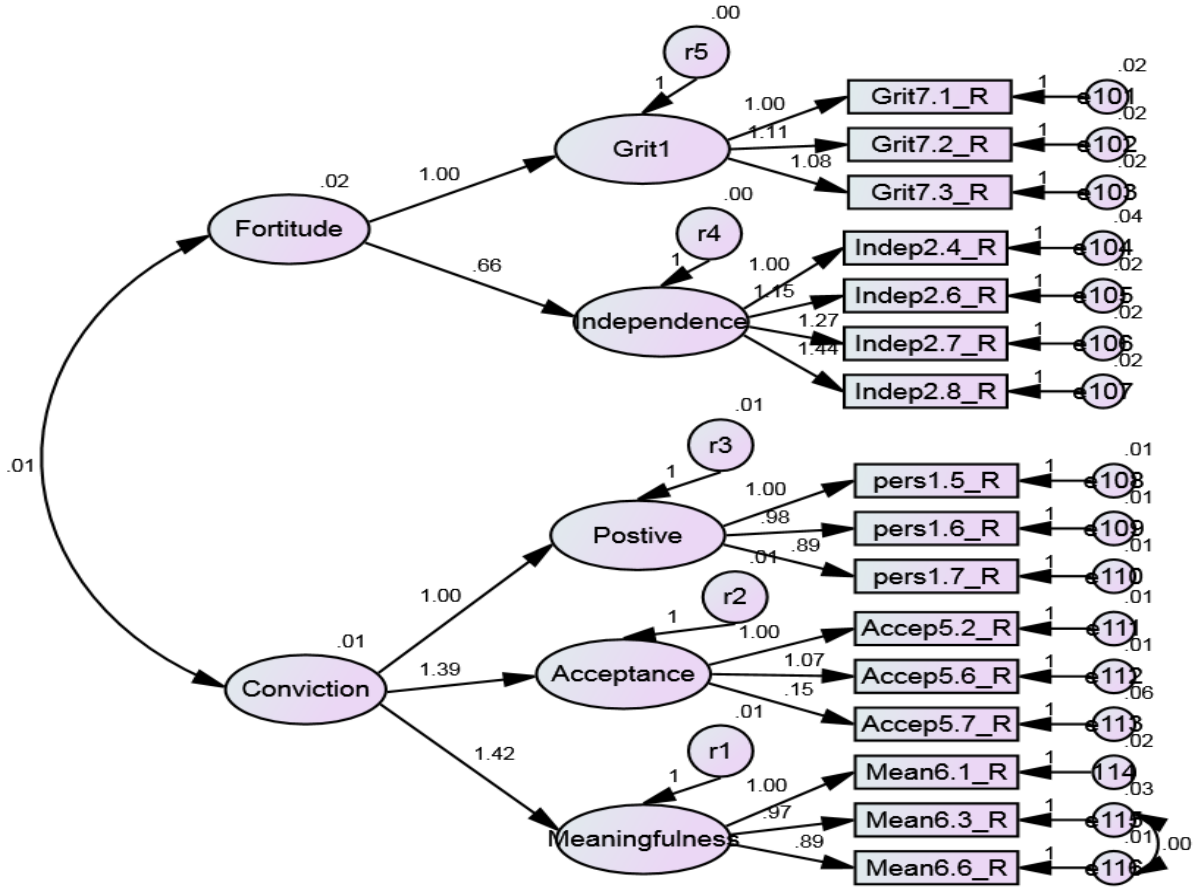


Figure 4-11 Graphical Representation of the Internal Resilience Protective Factors Inventory Model

Analysis of Internal Consistency

One of the criteria for establishing the psychometric integrity of a measure is assessing the correlation among items within the scale (Litwin, 1995). Reliability was assessed using Chronbach's alpha for the IPFI, BERPFI, and each of the nine factors. The reliability estimate for the BERPFI (α=.901) was found to be in an excellent range. The reliability estimate for Positive Perspective on Life (α=.807), Independence (α =.761), Self-Care (α=.736), Meaningfulness (α =.756), External Connections (α=.805), Grit (α=.796), Altruism (α=.897), and Self-Acceptance (α=.897), were in a good range and the estimate for Previous Experience with Hardship (α=.636) was found to be within a questionable range.

Table 4-8 Analysis of Internal Consistency Results

Factors	# items	Chronbach's alpha	max	min	Mean	SD
Perspective	3	.807	21	3	19.76	1.99
Independence	4	.761	28	4	22.63	3.80
Altruism	5	.897	35	6	31.79	4.04
Self-care	4	.736	28	5	25.82	2.74
Acceptance	3	.897	21	3	16.52	2.58
Meaningfulness	3	.756	21	7	18.84	2.58
Grit	3	.796	21	7	17.89	2.78
Hardship	4	.636	28	4	21.77	4.00
Connections	4	.805	28	4	23.77	3.70
IPFI	16	.890	112	22	95.64	22.00
BEPI	17	.901	119	19	103.17	11.80

Convergent and Discriminant Validity

Pearson Product Moment Correlations were conducted to assess convergent and discriminant validity for the Behavior and Experience Resilience Protective Factor Inventory (BERPFI) and the Internal Protective Factors Inventory (IPFI). The participants' BERPFI and IPFI were compared with the Geriatric Depression Scale (GDS), Resilience Scale (RS), and Self-Administered Gerocognitive Exam (SAGE).

Results indicated that the both the IPFI and BERPFI was significantly correlated (r=.769, p <.05; r=.769, p <.05) with the RS. The correlations between the RS and the IPFI, and the RS and the BERPFI evidenced the direction as hypothesized. Participants' results were predicted to have a positive and significant correlation.

The results indicated a low significant correlation between the BERPFI and the GDS (r= - .257, p <.05) as well as the IPFI the GDS (r= - .263, p <.05). It was hypothesized that the participants' responses would present as negatively correlated with depression. In accordance with the hypothesis, both the BERPFI and the IPFI demonstrated a negative significant correlation. Finally, findings from the correlation between the SAGE and the IPFI as well as the BERPEI and the SAGE were negative. However neither of the correlations appeared statistically significant.

Table 4-9 Convergent Validity of the Factors and the Overall Resilience Protective Factors Inventory

Scale	GDS	RS	SAGE
IPFI	-.263*	.769*	-.085
BEPI	-.257*	.751*	-.135

Chapter 5

Discussion and Implications

The purpose of this study is two-fold: 1) to test a measurement model of resilience protective factors on an older adult population; 2) establish the psychometric properties as related to reliability and validity of the proposed measurement model.

Factor Solution

Results of the present study indicated that the 9 one-factor models are a good fit with the data and the proposed 9-factor model is not a good fit (the 9-factor model was misspecified). According to Brown (2006), misspecification is determined based on three problem areas: 1) goodness of fit indices that fall below accepted thresholds; 2) large standardized modification indices or residuals; and 3) large or small parameter estimates. Normally, modification indices may be used to determine the sources of strain in the solution. However, as in this case, if the model is grossly misspecified, resolving the problem through respecification is not likely to generate a fit model (MacCallum, 1986). Therefore, it was clear obtaining parsimony on the 9-factor model would be problematic.

The correlation matrix for the 9-factor model revealed a high degree of correlation among the latent factors. The inability to achieve parsimony coupled with the high correlation among latent variables was perceived as indicative of the presence of two interrelated sub dimensions of protective factors. Meaning, the number of hypothesized factors was correct; however; the protective factors of resilience cannot be measured as one model. Therefore, two separate models were proposed and preliminary testing was performed.

One important characteristic in confirmatory factor analysis is that the factor structure must be determined *a priori* (Byrne, 2010). In this study, the hypothesized 9-

factor model was found to be a poor fit with the data. Findings from the 9-factor model led the researcher to believe measuring resilience as one instrument was problematic. The division of the 9-factor solution into the respective 4-factor and 5-factor solution was based on the natural separation between external protective factors and internal protective factors. The 4-factor model is action oriented and external in nature in the sense that the factors represent behaviors and experience (Self-Care, Previous Experience with Hardship, External Connections, and Altruism). The 5-factor model represents the factors related to innate thought processes and belief systems (Positive Perspective on Life, Meaningfulness, Grit, Independence, and Self-Acceptance). Based on findings from this study, the Resilience Protective Factors Inventory is tentatively comprised of two separate measures: 1) The Behavior and Experience Protective Factors Inventory; and 2) the Internal Resilience Protective Factors Inventory. Additional testing of the 4-factor and 5-factor model will need to be conducted in the future in order to further establish the model solutions.

Theoretical Application

As discussed in chapters 1 and 2, past resilience research has been plagued with inconsistent terminology, application of central constructs, and conceptualization. Inconsistencies have extended from theoretical frameworks to theory development. From a theoretical vantage point, this study examined one of the three central constructs of resilience, protective factors. Traditionally, protective factors have been perceived as one dimensional; however, results of the confirmatory factor analysis reveal protective factors consist of two interrelated sub dimensions (behavioral/experience and internal).

Findings from this have implications for resilience theory. Originally, a unidimensional 9-factor model was hypothesized. This model was a poor fit with the data and post hoc analysis revealed resilience protective factors are multidimensional in

nature. The two models, one focusing on internal protective factors and the other on behavioral and experience protective factors, offer resilience researchers further indication of the multidimensional nature and demonstrate resilience protective factors should not be measured on one dimension. Application of the findings from this study apply to older adults, however, findings may offer reason for researchers to examine the multidimensionality of protective factors as it applies across the life span. Specifically, existing measurement instruments may need to incorporate a behavioral and experience sub dimension specific to the corresponding life stage.

As aforementioned in Chapter 2, several existing measurement instruments for children, adolescents, and adults measure the entire concept of resilience (i.e Read and RSA). The authors of the Resilience Scale for Adolescents (READ) (Hjemdal et. al., 2006) used a similar approach to this study in developing the READ by running a CFA on each of the identified 5 factors independently, then combining the factors and testing the 5-factor solution. The results of the 5-factor measurement model demonstrated a good fit in terms of the RMSEA (.034); however, the chi-square ($\chi 2$ =423.52) and degrees of freedom (df=340) were high, and several of the items loaded on more than one factor. Finally, the absolute fit statistic demonstrated significance ($p < .01$). Hjemdal et al. (2006) argue the degree of model misspecification was low, and the "model fit well in the population although not exactly" (p. 89). Misspecification is not usually referred to as 'low'. However, given the results of the absolute fit statistics and significance, the READ may also contain two interrelated sub dimensions. This would explain the results from the chi-square and degrees of freedom. Further exploration and testing would be required in order to prove this hypothesis.

Finally, findings from this study offers insight relative to specific protective factors of resilience in an older adult population. Nine distinct factors were hypothesized and

tested and were found to be a good fit with the data when measured as two separate models.

Limitations of the Present Study

Demographic Questionnaire

Several limitations of the present study were identified. The most salient limitation is that participants in this study do not adequately represent the population of older adults in the United States. The present sample was predominately female residents of North Texas. Another limitation was the missing values in the demographic portion of the measurement packet. The demographic questionnaire was strategically located as the last two pages of the measurement packet. Several questions had 10 or more missing values including: income, participation in weekly activities, and government assistance. Participants were asked to report their annual income and values were recorded as a continuous variable.

Feedback from employees at respondent sites revealed several participants felt disclosing information regarding income was ‘too personal’ and the question made respondents ‘uncomfortable’. In the future, one way to address this would be to include income as a categorical variable. Participants would be asked to select a predetermined income range as opposed to report a specific numeric value. Ordinal level data are weaker than ratio level data; however, offering a range of income levels for the respondent s to select may increase the response rate since selecting a category may be perceived as less invasive.

Another problem area in the measurement packet was the question inquiring if the participant receives government assistance. Government assistance includes programs such as Social Security and Medicare. Majority of the participants are over the age of 65 and qualify for Medicare; however, over half of the participants claim they do

not receive any form of government assistance. In the future, changing the terminology from 'government assistance' to 'government program' and providing examples (i.e Medicare) might elicit accurate responses from the sample population. The sample population may view government assistance negatively as Medicare and Social Security are often referred to as entitlement programs.

Findings from a recent poll conducted by the Pew Research Center highlighted the generational differences in respect to government spending (PRC, 2012). The Baby Boomer generation "are more likely than any other age group to say government spending should concentrate its resources on programs that benefit older adults" (PRC, 2012, p. 4). Findings from this study offer evidence that Baby Boomers are not opposed government spending on programs that benefit older adults. This finding coupled with the lack of response to the question in this study regarding 'government assistance' offers some policy and social work practice implications. Policy makers and social work practitioners should be clear in terminology of public programs as related to older adults. Using the term 'government assistance' may be perceived unfavorably by older adults, so careful considerations should be made in terms of language when discussing government programs.

Sample Size

When designing a confirmatory factor analysis it is important to consider the number of cases required to achieve an acceptable level of precision in the model's parameter estimates, as well as reliable goodness of fit indices. Several researchers have offered guidelines and specified values for sample sizes: less than 100 is considered "small"; 100-200 is considered "medium"; greater than 200 is considered "large"; minimum sample size of 100; minimum sample size of 200; a minimum of 5 to 10 cases per freed parameter; and minimum number of cases per indicator (see Bentler &

Chou, 1987; Boosma, 1983; Ding Velicer, & Harlow, 1995; Kline, 2005; Tanaka, 1987). The sample size for this study was 151. Based on a selection of the sample size recommendations some critics may argue the sample size for this study is too small. However, the sample size does meet and in some cases exceed recommendations for a minimum sample requirement. Future research of the Resilience Protective Factors Inventory should include data from a larger and more diverse sample population.

Self Administered Gerocognitive Exam

The Self Administered Gerocognitive Exam (SAGE) was included in the measurement packet as a tool to assess for the presence of cognitive impairment in the sample population. The SAGE presented as a limitation due to the variability in scores across racial groups. It was originally postulated that study participants would need to score a 17 or above on the SAGE in order to be retained in the sample population. Upon review of the descriptive statistics of participant scores on the SAGE, it was apparent Black and Hispanic participants scored significantly lower than White participants. The mean score for Black and Hispanic participants was below the predetermined exclusion criteria of 17. Elimination of the Black and Hispanic participants scoring below 17 would adversely affect the diversity and integrity of the sample population. Based on the implications of removing the Black and Hispanic participants from the sample as well as the evidence discussed below, it was determined no participants would be eliminated based on SAGE scores.

Past studies have identified differences in the prevalence of dementia among blacks and whites (Demirovic, Prineas, Loewenstein, Bean, Duara, Sevush, & Szapocznik, 2003; Gurland, Wilder, Latigua, Stern, Chen, Killeffer, & Mayeux, 1999; Tang et al., 2001), whereas other studies suggest that difference in the prevalence of dementia by race is attributable to differences in socioeconomic status, education,

cultural, of health factors (Fillenbaum et al., 1998; Fitzpatrick et al., 2004). Other studies have shown differences between Whites and other ethnic groups are reduced once educational status, household income and other demographic characteristics are adjusted for (see Schwartz et. al., 2004). However, none of these studies have used the SAGE as the measure for cognitive decline. Thus far, one study testing the reliability and validity of the SAGE has appeared in the scholarly literature (see Scharre et al. 2010). Continued testing of the SAGE would be required before any adaptation of cutoff scores according to socio demographic characteristics could be postulated. Based on the low response rate of the demographic questions and the sample size (n=151), determining the confounding factors for the disparity in cognitive scores was problematic and beyond the scope of this study. However, future investigations should exam the effects of demographic characteristics on results of the SAGE.

Future Research and Concluding Remarks

Future research should consist of additional testing of the proposed 4-factor and 5-factor solutions with a diverse sample of older adults from a variety of locations. Such testing will increase the generalizability of findings and lead to the application of the measures in future practice and research settings. Testing of these models will serve as a foundation in further establishment of the protective factors of resilience in an older adult population and contribute to the theoretical development of the concept. Furthermore, incorporation of biological measures (i.e. genetic markers and cortisol levels) will offer additional insight into the biological factors that serve as protective factors associated with resilience. Yehuda, Flory, Southwick & Charney (2006) offer guidance in developing a research agenda for translational studies of resilience. This group of researchers promotes a biological and behavioral approach to study resilience and discusses the benefits of such collaborations. A multidisciplinary approach would

increase the rigor and valor of resilience studies and benefit development of intervention studies for prevention as well as therapeutic processes for individuals that have suffered from stress-related psychopathology.

Possible application of the Resilience Protective Factors Inventory in the social work practice setting could be as non-clinical diagnostic measure for social workers working with an older adult population. Results from the measure would be useful for social workers in determining what protective factors are present and what protective factors are not present. Based on the individual outcome, the social worker would work with the individual on cultivating the identified protective factors since development of these factors would serve as a buffer when an older adult is faced with adversity.

In addition, the Resilience Protective Factors Inventory could serve as the theoretical underpinning for the development of an intervention premised in development of each of the nine protective factors. The intervention could be tailored to a group or individual setting and would facilitate pathways to healthy psychological development among older adults. Furthermore, examination and development of external connections and altruism not only serves as a buffer to healthy psychological development but may also have implications for the maintenance of cognitive acuity. Several studies have found levels of community participation in social activities, satisfying interactions with children, friends, and relatives, and interaction in large social networks are related to levels of cognitive decline (Holtzman, Rebok, Saczynski, Kouzis, Doyle & Eaton, 2004; Fratigioni, Wang, Ericsson, Maytan, & Winblad, 2000; Wang, Karp, Winblad & Fratiglioni, 2002).

Continued research on resilience as it relates to older adults is promising for the field of social work as well as other disciplines. Future research should include a transdisciplinary research teams and rigorous methodological approaches. Development

of interventions premised in preventing stress-related psychopathology and treating stress-related psychopathology will offer social work practitioners with multiple interventions to choose from when working with a client population.

Appendix A

Informed Consent and Measurement Packet

Appendix A: Informed Consent and Measurement Packet

INFORMED CONSENT

PRINCIPAL INVESTIGATOR: Kristin Whitehill Bolton

FACULTY ADVISOR: Dr. Alexa Smith-Osborne

TITLE OF PROJECT
Validation and Development of the Resilience Protective Factors Inventory

INTRODUCTION
Researchers at the University of Texas at Arlington are interested in creating a questionnaire that can measure resilience among older adults. Resilience is the process of 'bouncing back' in the face of some form of adversity. Adversity is generally a negative life event. You are being asked to participate in a research study. Your participation is voluntary. Please ask questions if there is anything you do not understand.

PURPOSE
The purpose of the present study is to develop a reliable and valid questionnaire to measure resilience in older adults. More specifically, by completing the questionnaire packet, we can take all of the responses and determine if the scale does measure resilience and if the scale is consistent in measuring resilience.

DURATION
Participation in this study will last approximately 45-60 minutes.

NUMBER OF PARTICIPANTS
The number of anticipated participants is 300 adults, aged 55 and over.

PROCEDURES
This research study consists of the completion of a self-administered measurement packet containing the following items: Self-Administered Gerocognitive Examination (SAGE), demographic sheet, The Resilience Protective Factors Inventory, Geriatric Depression Scale, and The Resilience Scale. Participation is completely voluntary.

POSSIBLE BENEFITS
Your involvement in this study will help to generate a greater understanding related to resilience among older adults. This understanding will lead to the development of programs that can help older adults cultivate skills that will increase their level of resilience. By increasing resilience, older adults will be less likely to experience negative effects when confronted with adversity.

POSSIBLE RISKS/DISCOMFORTS
Some of the questions are sensitive in nature and could possible evoke an emotional response. You as a participant may leave questions blank or stop participating in the study at no consequence. If you experience some sort of emotional response, the researchers can provide you with a list of community mental health practitioners.

COMPENSATION
Participants that complete the study will be entered in a drawing for two $100 gift cards from Walmart.

ALTERNATIVE PROCEDURES
There are no alternative procedures offered for this study, you as the participant may elect not to participate or quit at any time with no consequences.

VOLUNTARY PARTICIPATION
Participation in this research study is voluntary and participants are free to withdraw consent and to discontinue participation at any time without penalty. All individuals that complete the study will be entered into a drawing for $100 gift card. If you choose to withdraw from the study you will not be eligible for the drawing.

CONFIDENTIALITY

Every attempt will be made to see that your study results are kept confidential. A copy of this signed consent form and all data collected from this study will be stored in GACB 109 at UTA for at least three (3) years after the end of this research. The results of this study may be published and/or presented at meetings without naming you as a participant. Additional research studies could evolve from the information you have provided, but your information will not be linked to you in anyway, you will be anonymous. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the UTA Institutional Review Board (IRB), and personnel particular to this research have access to the study records. Your records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above. The IRB at UTA has reviewed and approved this study and the information within this consent form. If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, the University of Texas at Arlington will protect the confidentiality of those records to the extent permitted by law.

CONTACT FOR QUESTIONS
Questions about this research study may be directed to Kristin Whitehill Bolton (e-mail kristinw@uta.edu or phone: (217)621-6604. Any questions you may have about your rights as a research participant may be directed to the Office of Research Administration; Regulatory Services at 817-272-2105 or regulatoryservices@uta.edu.

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

_____
Signature and printed name of principal investigator or person obtaining consent **Date**

CONSENT

By signing below, you confirm that you are 18 years of age or older and have read or had this document read to you.

APPROVED
OCT 24 2013
Institutional Review Board

OCT 24 2012

2

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time

You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits, to which you are otherwise entitled.

SIGNATURE OF VOLUNTEER **DATE**

APPROVED

OCT 2 4 2012 OCT 2 4 2013

Institutional Review Board

Resilience Protective Factors Inventory

Directions: Read each question carefully. Using the scale below, please circle the number that best describes YOU.

Answer Key	
1=strongly disagree	5=somewhat agree
2=disagree	6=agree
3=somewhat disagree	7=strongly agree
4=undecided	

Positive Perspective on Life	
1. I am grateful for what I have in my life.	1 2 3 4 5 6 7
2. I am optimistic about my future.	1 2 3 4 5 6 7
3. Overall, more good things happen to me than bad.	1 2 3 4 5 6 7
4. In uncertain times, I anticipate the best.	1 2 3 4 5 6 7
5. I think it is important to remain hopeful.	1 2 3 4 5 6 7
6. I believe people should work towards their dreams.	1 2 3 4 5 6 7
7. I believe it is important to remain positive.	1 2 3 4 5 6 7
Independence	
1. I am able to depend on myself.	1 2 3 4 5 6 7
2. I ask for help when I need it.	1 2 3 4 5 6 7
3. I have my own thoughts and ideas.	1 2 3 4 5 6 7
4. I have never really been concerned with how others will perceive me.	1 2 3 4 5 6 7
5. I believe it is important to maintain my sense of who I am as a person.	1 2 3 4 5 6 7
6. My life is determined by my actions.	1 2 3 4 5 6 7
7. I have a choice about how physical challenges limit my life.	1 2 3 4 5 6 7
8. I have control of my life.	1 2 3 4 5 6 7
Altruism	
1. I believe giving back is important.	1 2 3 4 5 6 7
2. I enjoy helping others.	1 2 3 4 5 6 7
3. People would describe me as a giving person.	1 2 3 4 5 6 7
4. I believe it is important to give back to the community.	1 2 3 4 5 6 7
5. I enjoy sharing my knowledge with those that are younger than me.	1 2 3 4 5 6 7
6. Providing care for others makes me feel good.	1 2 3 4 5 6 7

Answer Key	
1=strongly disagree	5=somewhat agree
2=disagree	6=agree
3=somewhat disagree	7=strongly agree
4=undecided	

Self-Care	
1. I believe it is important to take care of my body.	1 2 3 4 5 6 7
2. I go to a healthcare provider when I have a problem.	1 2 3 4 5 6 7
3. I continue to learn new things.	1 2 3 4 5 6 7
4. I believe it is important to keep my mind active.	1 2 3 4 5 6 7
5. I have access to healthcare.	1 2 3 4 5 6 7
6. Physical activity is important in maintaining health.	1 2 3 4 5 6 7
7. Routines and rules make my life easier.	1 2 3 4 5 6 7
Self-Acceptance	
1. I accept who I am as a person.	1 2 3 4 5 6 7
2. I like most things about myself.	1 2 3 4 5 6 7
3. I am quiet when I am around other people because I am afraid they will not like me.	1 2 3 4 5 6 7
4. I don't question my self-worth.	1 2 3 4 5 6 7
5. I am comfortable with who I am as a person.	1 2 3 4 5 6 7
6. I believe in myself.	1 2 3 4 5 6 7
7. I am self-conscious in social situations.	1 2 3 4 5 6 7
Meaningfulness	
1. I believe my life has a purpose.	1 2 3 4 5 6 7
2. Some people wander aimlessly through life, but I do not.	1 2 3 4 5 6 7
3. I am a spiritual person.	1 2 3 4 5 6 7
4. I believe everyone has their own unique life path.	1 2 3 4 5 6 7
5. I believe life should be celebrated.	1 2 3 4 5 6 7
6. Finding meaning in one's life is important.	1 2 3 4 5 6 7

Answer Key	
1=strongly disagree	5=somewhat agree
2=disagree	6=agree
3=somewhat disagree	7=strongly agree
4=undecided	

Grit	
1. I am a determined person.	1 2 3 4 5 6 7
2. I can get through anything.	1 2 3 4 5 6 7
3. I refuse to give up.	1 2 3 4 5 6 7
4. It is important to look towards the future.	1 2 3 4 5 6 7
5. One should make plans when faced with a dilemma, instead of sitting around and waiting for something to happen.	1 2 3 4 5 6 7
Experience with hardship	
1. I have experienced prejudice	1 2 3 4 5 6 7
2. I am treated with less respect than other people.	1 2 3 4 5 6 7
3. There have been times in my life when I have not had the financial means to get by.	1 2 3 4 5 6 7
4. Growing up, my family struggled financially.	1 2 3 4 5 6 7
5. My past life experiences have prepared me to cope with any hardship I face.	1 2 3 4 5 6 7
6. Past hardship has made me a stronger person.	1 2 3 4 5 6 7
External Connections	
1. I believe I have a strong support system.	1 2 3 4 5 6 7
2. I have knowledge of community resources.	1 2 3 4 5 6 7
3. Maintaining connections with friends and family is important.	1 2 3 4 5 6 7
4. I feel a connection to the community I live in.	1 2 3 4 5 6 7
5. My family has a strong bond.	1 2 3 4 5 6 7
6. I have a strong bond with my friends.	1 2 3 4 5 6 7

Answer Key	
1=strongly disagree	5=somewhat agree
2=disagree	6=agree
3=somewhat disagree	7=strongly agree
4=undecided	

7. I enjoy spending time with my family.	1 2 3 4 5 6 7
8. I enjoy spending time with my friends	1 2 3 4 5 6 7
9. I participate in activities.	1 2 3 4 5 6 7
10. If I have a problem, I know who I can call on for help.	1 2 3 4 5 6 7
11. I regularly communicate with my family.	1 2 3 4 5 6 7
12. I regularly communicate with my friends.	1 2 3 4 5 6 7
13. I believe that the people in my life care about me.	1 2 3 4 5 6 7
14. My support system can help me cope with hardship I face.	1 2 3 4 5 6 7
15. I enjoy being around other people.	1 2 3 4 5 6 7

How Well Are You Thinking?

Please complete this form in ink **without** the assistance of others.

Name_____ Date of Birth _____/_____/_____

How far did you get in school? _____ I am a Man_____ Woman_____

I am Asian_____ Black_____ Hispanic_____ White_____ Other_____

Have you had any problems with memory or thinking? Yes_____ Only Occasionally_____ No_____

Have you had any blood relatives that have had problems with memory or thinking? Yes_____ No_____

Do you have balance problems? Yes_____ No_____

If yes, do you know the cause? Yes (specify reason)_____ No_____

Have you ever had a major stroke? Yes_____ No_____ A minor or mini-stroke? Yes_____ No_____

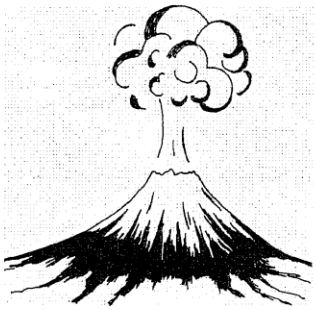
Do you currently feel sad or depressed? Yes_____ Only Occasionally_____ No_____

Have you had any change in your personality? Yes (specify changes)_____ No_____

Do you have more difficulties doing everyday activities due to thinking problems? Yes_____ No_____

1. What is today's date? (from memory – no cheating!) Month_____ Date_____ Year_____

2. Name the following pictures (don't worry about spelling):



_____ _____

Page 1 of 4 CONTINUE NEXT PAGE

Answer these questions:

3. How are a watch and a ruler similar? Write down how they are alike. They both are… what?

_____

4. How many nickels are in 60 cents? _____

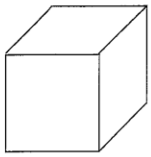
5. You are buying $13.45 of groceries. How much change would you receive back from a $20 bill?

_____

6. Memory Test (memorize these instructions). Do later only after completing this entire test:

At the bottom of the very last page: Write "I am done" on the blank line provided.

7. Copy this picture:



8. Drawing test

- Draw a large face of a clock and place in the numbers
- Position the hands for 5 minutes after 11 o'clock
- On your clock, label "L" for the long hand and "S" for the short hand

9. Write down the names of 12 different animals (don't worry about spelling):

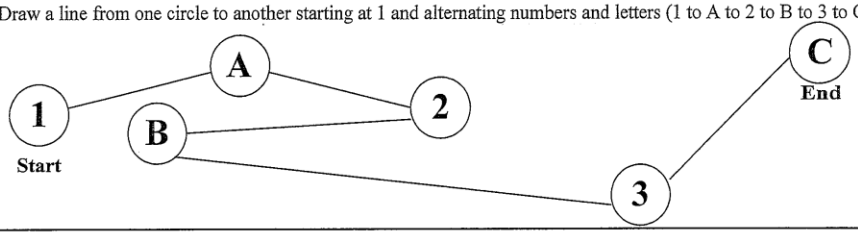
_____ _____ _____ _____

_____ _____ _____ _____

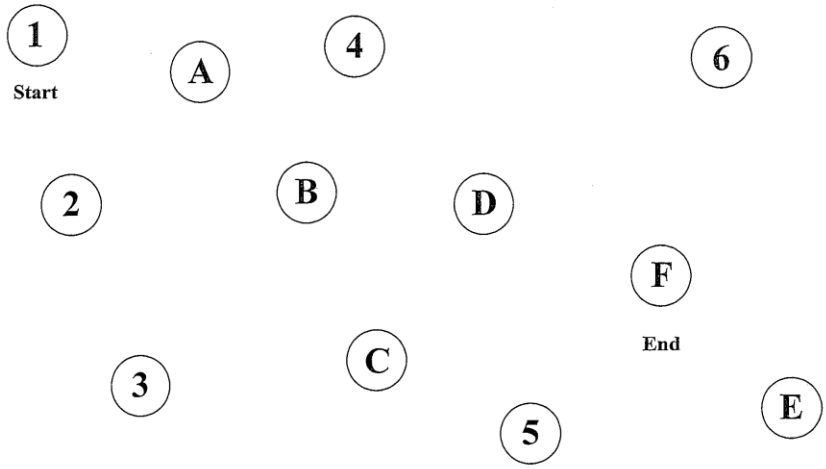
_____ _____ _____ _____

Review this example (this first one is done for you) then go to question 10 below:

Draw a line from one circle to another starting at 1 and alternating numbers and letters (1 to A to 2 to B to 3 to C).

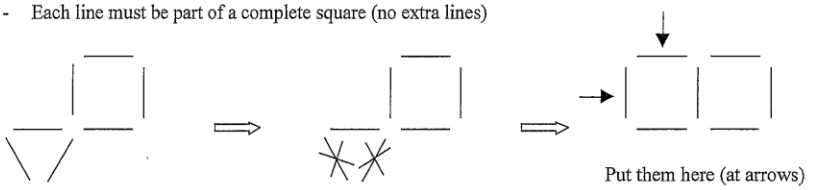


10. Do the following: Draw a line from one circle to another starting at 1 and alternating numbers and letters in order before ending at F (1 to A to 2 to B and so on).



Review this example (this first one is done for you) then answer question 11 below:

- Beginning with 1 triangle and 1 square
- Move 2 lines (marked with an X)
- To make 2 squares and no triangle
- Each line must be part of a complete square (no extra lines)



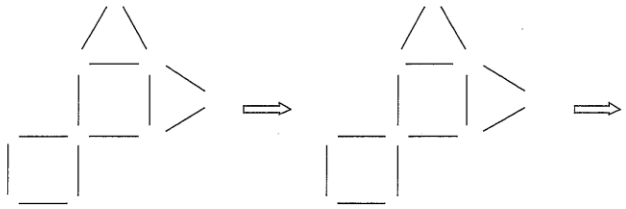
Put them here (at arrows)

1 triangle, 1 square — Move these 2 lines — Makes 2 squares (answer)

(Example) **(Example)** **(Example)**

11. Solve the following problem:

- Beginning with 2 squares and 2 triangles
- Move 4 lines (mark with an X)
- To make 4 squares and no triangles
- Each line must be part of a complete square (no extra lines)



2 squares, 2 triangles — Move 4 lines — **Draw answer here**

Mark with an X **4 squares**

12. Have you finished? _____

Geriatric Depression Scale (GDS) Short Form

Circle the best answer for how you have felt over the last week

1. Are you basically satisfied with your life?	Yes	No
2. Have you dropped many of your activities or interests?	Yes	No
3. Do you feel that your life is empty?	Yes	No
4. Do you often get bored?	Yes	No
5. Are you in good spirits most of the time?	Yes	No
7. Do you feel happy most of the time?	Yes	No
8. Do you often feel helpless?	Yes	No
9. Do you prefer to stay home rather than going out and doing new things?	Yes	No
10. Do you feel you have more problems with memory than most?	Yes	No
11. Do you think it is wonderful to be alive now?	Yes	No
12. Do you feel pretty worthless the way you are now?	Yes	No
13. Do you feel full of energy?	Yes	No
14. Do you feel that your situation is hopeless?	Yes	No
15. Do you feel that most people are better off than you are?	Yes	No

The Resilience Scale™ (RS™)

12 August 2012 Please read the following statements. To the right of each you will find seven numbers, ranging from "1" (Strongly Disagree) on the left to "7" (Strongly Agree) on the right. Click the circle below the number which best indicates your feelings about that statement. For example, if you strongly disagree with a statement, click the circle below "1". If you are neutral, click "4", and if you strongly agree, click "7", etc. You must answer every question to submit the test for scoring.

		Strongly Disagree						Strongly Agree
1.	When I make plans, I follow through with them.	1	2	3	4	5	6	7
2.	I usually manage one way or another.	1	2	3	4	5	6	7
3.	I am able to depend on myself more than anyone else.	1	2	3	4	5	6	7
4.	Keeping interested in things is important to me.	1	2	3	4	5	6	7
5.	I can be on my own if I have to.	1	2	3	4	5	6	7
6.	I feel proud that I have accomplished things in life.	1	2	3	4	5	6	7
7.	I usually take things in stride.	1	2	3	4	5	6	7
8.	I am friends with myself.	1	2	3	4	5	6	7
9.	I feel that I can handle many things at a time.	1	2	3	4	5	6	7
10.	I am determined.	1	2	3	4	5	6	7
11.	I seldom wonder what the point of it all is.	1	2	3	4	5	6	7
12.	I take things one day at a time.	1	2	3	4	5	6	7
13.	I can get through difficult times because I've experienced difficulty before.	1	2	3	4	5	6	7
14.	I have self-discipline.	1	2	3	4	5	6	7
15.	I keep interested in things.	1	2	3	4	5	6	7
16.	I can usually find something to laugh about.	1	2	3	4	5	6	7
17.	My belief in myself gets me through hard times.	1	2	3	4	5	6	7
18.	In an emergency, I'm someone people can generally rely on.	1	2	3	4	5	6	7
19.	I can usually look at a situation in a number of ways.	1	2	3	4	5	6	7
20.	Sometimes I make myself do things whether I want to or not.	1	2	3	4	5	6	7
21.	My life has meaning.	1	2	3	4	5	6	7

22.	I do not dwell on things that I can't do anything about.	1	2	3	4	5	6	7
23.	When I'm in a difficult situation, I can usually find my way out of it.	1	2	3	4	5	6	7
24.	I have enough energy to do what I have to do.	1	2	3	4	5	6	7
25.	It's okay if there are people who don't like me.	1	2	3	4	5	6	7

6. Years of formal education completed:

Some high school

Completed high school

Some college

Bachelor's degree

Master's degree

Professional degree

7. On average, how many times per week do you engage in activities? (i.e. Church, family gatherings, exercise, bingo, etc)

_____

8. Approximately what is your annual household income?_____

9. Do you receive any government assistance?

Yes No

If yes, please explain:

SURVEY COMPLETE

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