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Social involvement, existential awareness, and perceived vulnerability in older adults

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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

SOCIAL INVOLVEMENT, EXISTENTIAL AWARENESS, AND
PERCEIVED VULNERABILITY IN OLDER ADULTS

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Education and Behavioral Sciences
Department of Counseling Psychology

May, 2012

This Dissertation by: Maria Zarlengo

Entitled: *Social Involvement, Existential Awareness, and Perceived Vulnerability in Older Adults*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy
in College of Education and Behavioral Sciences, Department of Counseling Psychology

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ABSTRACT

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The current study explored perceptions of old-age vulnerability by seniors as well as separate and combined effects of social involvement and existential awareness on the level of perceived vulnerability to aging. Two hundred and forty four seniors participated in the study. The data were collected with the use of a 101-question survey based on three published measures plus demographic questions. The dependent (criterion) variable was the vulnerability to old age measured by the Perceived Vulnerability Scale (PVS). The explanatory (predictor) variables included the degree of social involvement measured by the *Social Provisions Scale* (SPS) and the level of existential awareness measured by *Life Attitude Profile -Revised scale* (LAP-R).

Multiple regression analyses were completed with the use of different predictors: social involvement in general, provided support, existential awareness, and interaction between social involvement and existential awareness. Finally, a hierarchical regression analysis was performed including demographic variables (block one) and components extracted from the social involvement and existential awareness section (block two). The results indicated that existential awareness, social involvement, and demographic factors in combination explained the variance in the criterion to a large degree.

Limitations of the study were discussed including the need for further elaboration of theoretical constructs, some aspects of study design, and the homogeneity of the sample of population. Suggestions were provided for future research as well as for clinical applications in work with older adults.

ACKNOWLEDGEMENTS

People are just as wonderful as sunsets if I can let them be... When I look at a sunset, I don't find myself saying, "Soften the orange a bit on the right hand corner"... I don't try to control a sunset. I watch with awe as it unfolds. (Carl Rogers, *A Way of Being*, p. 22)

The subject matter of this study is very close to my heart. As a clinician, over the years, I worked with many senior clients and often was amazed by their independence, strength, and resilience in the face of adversity. On the other hand, I met many who were discouraged and unable to enjoy the sunsets of their lives. In my study, I attempted to elucidate the factors that could help seniors enjoy rewarding and exciting lives as long as possible.

Many people helped me in my research. First of all, I express deep gratitude to my research adviser and doctoral committee chair, Dr. David Gonzalez, for his thoughtful and caring assistance throughout the work.

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This study would not be possible without facilitation of many employees of senior community centers, churches, and retirement residences who helped me access the prospective study participants. I was especially moved by the enthusiasm and commitment of Edie Richey of the Clements Center in Lakewood, Colorado; Sheri Lobmeyer of the Senior Activities Center in Greeley, Colorado; and my dear friend Irene Lewis of Orange County, California, who were especially instrumental in motivating and recruiting participants for my research.

Finally, I thank my amazing husband Phillip who has invariably been supportive and enthusiastic and who is also a great inspiration as a person determined to enjoy his life adventure in any form it might take.

Of course my personal appreciation is extended to the contributions of the 200 plus individuals who lent their time and honest responses comprising the substance of my findings. The experience summarized here has broadened my admiration of human nature and appreciation of a bright future for the power of the healing mind. It is my hope that the reader will also glean from these pages admiration for the vigorous human spirit that guides many of us in the sunset of our lives.

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CHAPTER I

INTRODUCTION

The population of the United States is aging. According to the U.S. Census Bureau (2009), the percentage of people aged 65 and over in the entire population of the country is expected to grow from the estimated 12.3% in 2008 to over 20% in 2050. It would be in the interests of individuals and society if the elderly enjoyed a healthy lifestyle free of physical and mental illnesses. Many seniors live a satisfying and productive life well into advanced age. We all know examples of such individuals. Michelangelo designed St. Peter's Cupola when he was 83 and remained active until he was 89. Benjamin Franklin was past 80 when he helped draft the constitution. Many other seniors, without being rich and famous, enjoy happy lives pursuing their professions and hobbies, serving society as volunteers, and interacting with their families and friends.

On the other hand, there are many whose old age is plagued by losses, disability, disappointments, and other issues, not the least of which is mental health. According to the report of the President's New Freedom Commission on Mental Health (2003), the number of older adults with mental illnesses is expected to double to 15 million in the next 30 years. As the percentage of seniors grows in the population of the world, the number of studies addressing their specific issues also increases. The topics of these works include perceived vulnerability to old age factors, social involvement, and

existential awareness of seniors. Perceived vulnerability to adverse effects of aging undermines the wellbeing of older adults, increases their worries, and is related to anxiety and depressive disorders (Barlow, 2002). It can also exacerbate the issues of physical health as reported in numerous studies (Eldreth, 2009; Ward, Disch, Levy, & Schensul, 2004). In a way, the perceived vulnerability may become “a self-fulfilling prophecy.” A number of studies have been dedicated to the potential buffering factors that might mitigate the harmful effect of perceived vulnerability. Among others, Myall et al. (2009) reported the positive effect of existential resources on the perceived well-being of older adults. Other authors underscored the crucial role of social support and social relatedness for physical and mental functioning of seniors (Krause, 1987; Russell & Cutrona, 1991).

Perceived Vulnerability

Aspects of age-related vulnerability and outcomes have been addressed by many authors. Schieman and Plickert (2007) explored the effects of functional limitation on changes in levels of depression in older adults, taking into account the interaction of race, gender, and socioeconomic status. In their cross-national study, Zunzunegui et al. (2007) looked at the gender differences in depressive symptoms among older adult and their vulnerability to different risk factors (lower education, lower income, less skilled occupations, greater likelihood of widowhood, and higher social isolation). Stressors and protective characteristics of late adulthood were addressed by Schneller and Vandsburger (2008) who indicated that their study strived to

explore self-efficacy as an internal resiliency resource that vulnerable older adults experiencing stress due to severe health conditions, social network limitations, and financial pressures used to overcome stress and to stay actively engaged with their families and communities. (p. 88)

Myall et al. (2009) compiled a list of old age vulnerability factors rated as most detrimental by the participants of their study.

Social Involvement

Social involvement of seniors, which includes different aspects of social support, stands out as an important factor in the formation of life attitudes and general well-being of seniors. This issue has been highlighted in a number of studies. It has been suggested that social involvement is a complex phenomenon. Different researchers have suggested a number of ways to categorize it. Weiss (1974) proposed six categories of social interactions that he named *relational provisions*: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance; these categories were later used in the construction of the Social Provisions scale (Cutrona & Russell, 1987).

Many authors focused on the link between social involvement and health. Thus, one of the aspects of the research conducted by Cutrona, Russell and Rose (1986) was dedicated to the effect of social support on mental and physical health of seniors. Having explored different components of social support, they found a direct relationship between physical health and realization of being valued by others. Mental health, on the other hand, was associated with the mitigating effect of assistance from others on the stress levels of seniors. In another study, Aquino, Russell, Cutrona, and Altmaier (1996) found a direct relationship between social support and life satisfaction among the elderly. Gadalla (2009) found a strong correlation between social support and physical health of seniors. Russell and Cutrona (1991) determined that lack of social support had a direct effect on the levels of depression of the elderly as well as on the increased experiencing

of daily stresses. Lack of social support leads to feelings of isolation and loneliness, which, for older adults, may result in faster physical and mental decline and earlier nursing home admissions (Russell & Cutrona, 1997). Loneliness and lack of integrated social support network were found to be strongly associated with depression in older adults by Golden et al. (2009).

It is important to consider two aspects of social support: received and provided. A number of authors indicated that social support is a reciprocal activity; it is beneficial for seniors to be not only recipients but also providers of social support. In fact, Cruzaguet, Spokane, Caskie, Brown, and Szapocznik (2008) found that for the group of seniors involved in their study, the received social support was associated with a higher level of psychological distress. In another study, Dulin and Hill (2003) found that altruistic activities were associated with positive effects in older adults. The authors of the study used the definition of altruism as the “provision of service to others without the expectation of personal gain” (p. 294)—thus, it can be likened to the provided social support.

Some studies have touched upon the correlation of social support and existential awareness in seniors. Dulin (2005) found an interesting interrelationship between social support and religious participation in older adults. According to his study, persons with lower levels of social support tended to utilize religious participation as a means of managing psychological distress. It is possible to further hypothesize that persons with lower social participation will be more open to existential approach as a way to improve their psychological well-being. However, this inclination to rely on higher power and to

engage in deep self-exploration may serve to further distance them from society and deepen their isolation.

Existential Awareness

The role of existential awareness in psychotherapy has been discussed by many authors. Yalom (1980) described four ultimate concerns or givens of existence: death, freedom, isolation, and meaninglessness. He offered the following formula for existential psychodynamics: Awareness of Ultimate Concern → Anxiety → Defense Mechanism (p. 10). Yalom further explained that, according to this formula, awareness of the existential givens engenders anxiety, which, in its turn, leads to psychopathology. How, then, can the awareness of these concerns mitigate the perceived vulnerability? This question has been the focus of many studies. The issues that are most prominent in the literature are related to the meaning and purpose in life, death transcendence, and sense of coherence. The role of the meaning of life in psychotherapy was extensively explored in the works of Victor Frankl (1963), the founder of logotherapy. Frankl suggested that the meaning of life is not an abstract notion but is specific to each individual in concrete periods of their life. The research on meaning of life and its interconnection with mental health and quality of life has continued in many studies including recent ones. For example, Mascaro and Rosen (2008) conducted a study on existential meaning and its longitudinal relations with depressive symptoms. Breitbart, Gibson, Poppito, and Berg (2004) discussed existential themes as applied to psychotherapy in the settings of end-of-life care. Their study, related to Frankl's logotherapy, focused on the clients' awareness of death and search for meaning. Moomal (1999) explored the relationship between meaning in life and mental well-being. These studies, conducted in different countries on

three different continents (United States of America, England, and South Africa) testify to the universality and the indelible interest of scientists in the matters of existential psychology.

Yalom (2002) talked about the transforming experience of confrontation with death, stating that “though the physicality of death destroys us, the idea of death may save us” (p. 126). Mandić (2008) reiterated this statement, asserting that “for most of us, realizing how superficial we have been fills us with a sense of purpose, and inclines us to do two things: ... to be more autonomous, and also to be more focused on how we live our lives” (264). Beshai (2008) presented a correlation between cross-cultural death anxiety indices and several behavior correlates including religion, suicide, and personality variables. The concept of freedom has been in the center of attention for philosophers, writers, and politicians for centuries. It is important to distinguish political notions of freedom from the idea of personal, inner freedom. It is worth noting that prominent existential thinkers differed in their approaches to freedom. Solomon and Higgins (1988) indicated that Kierkegaard emphasized choice, Sartre--individual freedom to choose, and Nietzsche, unlike them, was a biological determinist, believing that we are free to become what we are. Anxiety provoked by existential isolation motivates people to desire interpersonal connections. This issue becomes especially crucial for seniors, whose old friends die, and the possibilities to establish new relationships are limited. The realization and reconciliation with the idea of existential isolation may prove to be therapeutic.

Need for the Study

Aging brings along a number of changes in people's lives, which may be perceived as negative: health decline, isolation from family and friends, negative societal attitudes towards aging, deterioration of self-image, financial concerns, as well as losses of family members and friends and losses of physical and mental abilities. As the population of the world, especially in the economically developed countries, grows older, researchers need to gain insight into the factors that could mitigate the negative psychological effects of aging. Desirable outcomes would include reduction of anxiety and depression in seniors, development of their self-esteem, and feelings of general satisfaction with life in old age.

Examination of the perceived vulnerability factors and their effect on the psychological health of seniors is important in the current healthcare status in the United States. The senior population is on the rise and the health care services, including mental health, cannot keep up with the growing needs of the elderly. At this time, when the American Psychological Association underscores the importance of empirically supported therapies, it is crucial to continue expanding the list of such therapies available to seniors. Gatz (2007) reviewed a number of articles describing cognitive-behavioral therapy as empirically established for anxiety disorders. Scogin, Welsh, Hanson, Stump, and Coates (2005) offered a similar review of therapies available for depression disorder in seniors. He found that six approaches met the requirements of empirically supported treatments: behavioral therapy, cognitive behavioral therapy, cognitive bibliotherapy, problem solving therapy, brief psychodynamic therapy, and reminiscence therapy.

While this is an encouraging beginning, more research is needed to open ways to more diverse psychotherapies for seniors to meet the requirements of empirically supported treatments (ESTs). This is particularly important in the era of managed care when many of the insurers do not cover treatments that have not been empirically proven. Kazdin (2008) mentions, “State legislatures and third-party payers, for example, are drawing on research to decide what is appropriate to do in practice, what is reimbursed, and what the rates of reimbursement will be” (p. 156). This attitude would restrict the access of senior to necessary services unless proved efficacious in research. My study explored the importance of existential awareness and social involvement in the attainment of mental health of seniors. A better understanding of the perceived vulnerability factors, as well as of separate and combined effect of social involvement and existential awareness, would provide a deeper insight into the perception of aging by seniors. This can contribute to new directions in the search for the most efficacious therapies including a number of experiential and group psychotherapies.

Statement of Purpose

In the current study, I explored several factors that might mitigate the harmful effect of perceived vulnerability. Specifically, I focused on positive existential resources available to seniors: meaning in life, death transcendence, sense of coherence and control, and social support in its different modalities. In addition, I reviewed some of the instruments developed to study old age vulnerability, social connection, and existential awareness.

The main purpose of my study was the exploration of three broad domains pertinent to the functioning of the elderly. The first was related to the perceptions by

seniors of their vulnerability to adverse factors of old age. I explored which factors were of most concern to seniors, engendering anxiety and depression, which could be potentially incapacitating. This knowledge would be helpful in suggesting antidotes to those concerns, which otherwise might undermine the spirit of the seniors and become self-fulfilling prophecies. The second included the different facets of social involvement including received and provided social support. Specifically, I explored what kind of support was more conducive to reduced vulnerability to aging and, consequently, life satisfaction. Third, I investigated the significance of existential awareness for mitigating depressive symptoms, creating an overall feeling of well-being, and contributing to improved mental health of the elderly. Finally, I explored the possible effect of interaction between existential awareness and social involvement on perceived vulnerability to aging. These issues were explored to help discover the internal and external ways seniors can fight off mental and physical decline. Furthermore, the results could be helpful to mental health professionals in choosing appropriate therapeutic strategies for elderly clients.

Research Questions

The following research questions guided this study:

- Q1 What factors of aging are perceived by the older adults as most detrimental?
- Q2 To what extent does social involvement in general explain the level of perceived vulnerability to adverse effects of aging?
- Q3 To what extent does provided social support explain the level of perceived vulnerability to adverse effects of aging?
- Q4 To what extent does existential awareness of seniors explain the level of the perceived vulnerability to adverse effects of aging?

- Q5 To what extent does the interaction between the social involvement and existential awareness explain the level of perceived vulnerability to aging?

Limitations of the Study

The following limitations of this study were identified:

1. The study was limited to a volunteer sample of older adults recruited from two geographical areas: Denver, Colorado and surrounding counties, and Orange County, California. Most of the participants were Caucasian with an educational level of high school and above.
2. The age of the adults in the study was between 60 and 90. The age difference among the participants exceeded one generation. This required a cautious approach to the analysis of data and the generalizability of conclusions.
3. The study used a four section survey based on three published instruments plus a demographic section: Perceived Vulnerability Scale (PVS), Social Provision Scale (SPS), and Life Attitude Profile-Revised (LAP-R). These were self-report instruments; PVS and LAP used a Likert scale and SPS requested responses in the range from 1 (*strongly disagree*) to 4 (*strongly agree*). Thus, the results depended a lot on the understanding by the participants of the questions and the accurate rating of their subjective experiences. There was a possibility of misunderstanding by the participants of the questions or defensive responding to appear more socially adjusted.

My hope was to determine whether or not there were interconnections among vulnerability to old age factors, social involvement, and existential awareness.

Hopefully, these findings would be informative when conducting psychotherapy with older adults and for the general improvement of functioning and sense of well-being in old age.

Definition of Terms

Actualization. Manifest expression of personal qualities that had not been previously evident.

Coherence. The way of seeing the world as comprehensible, manageable, and meaningful (Antonovsky, 1987).

Environmental docility hypothesis. Model suggesting that “high competence is associated with relative independence of the individual from the behavioral effects of environmental press, while low competence implies heightened vulnerability to environmental press” (Lawton, 1982, p. 48).

Existential givens. Also referred to as ultimate concerns are existential realities or basic truths about existence: death, isolation, freedom and meaninglessness.

Existential isolation. Fundamental and inevitable separation of each individual from others and the world; it can be reduced but never completely eliminated.

Experiential avoidance. Unwillingness to admit to and remain in contact with private experiences including sensations, memories, thoughts, and emotions (Hayes et al., 2004).

Hardiness. Courage and motivation to choose the future with all its risks and uncertainties, rather than the well-known past (Maddi, 2004).

Life expectancy. An expected time to live as calculated on the basis of statistical probabilities.

Logotherapy. A therapeutic approach developed by Viktor Frankl (1963) emphasizing value and meaning as prerequisites for mental health and personal growth.

Perceived vulnerability. Perception of events as uncontrollable, anxiety leading to negative outcomes.

Psychological autopsy. Postmortem psychological profile of a suicide victim constructed from interviews with people who knew the person before death (Barlow & Duran, 2002).

Self-efficacy. A belief that one is capable of performing in a certain manner to attain certain goals, that one has the capabilities to execute the courses of actions required to manage prospective situations and produce the desirable effect.

Social involvement. Aggregate of different aspects of social support.

Support-related concepts and definitions (Gottlieb & Bergen, 2009).

Perceived support. The individual's beliefs about the availability of varied types of support from network associates.

Received support. Reports about the types of support received.

Social network. A unit of social structure composed of the individual's social ties and the ties among them.

Social support. The social resources persons perceive to be available or actually provided to them by nonprofessionals in the context of both formal support groups and informal helping relationships.

Socioemotional selectivity theory. This theory maintains that as people grow older, they tend to search for emotionally-based sources of meaning in life (Carstensen, Fung, & Charles, 2003).

Spirituality. An inner sense of something greater than oneself; recognition of a meaning to existence that transcends one's immediate circumstances.

CHAPTER II

REVIEW OF LITERATURE

This chapter presents a review of literature in the major areas relevant to the topic of my study--the perceived vulnerability to adverse effects of aging and various factors associated with vulnerability. Studies related to protective characteristics of older adults, including social involvement and existential awareness, are reviewed. The literature on the role of social involvement including received and given support and their effect on the perceived well-being of seniors is examined. Special attention is given to the correlation between awareness of existential concerns and perceived vulnerability. In this context, reminiscence therapy is explored as a therapeutic approach to helping seniors enhance their lives and deal with the givens of existence. Interrelationships between vulnerability, social involvement, and existential awareness are explored. A short overview of psychological instruments used in relation to aging, age-related vulnerability, social involvement, and existential awareness is provided.

Perception of Vulnerability to Different Effects of Aging

As the population of the world ages, research related to different issues of old age is attracting the growing attention of scientists. There is an increased realization that it is not enough to prolong the life of seniors. Both for individuals and society in general, the quality of life is important. Seniors regard successful aging as a combination of social

relatedness, ability to accept changes, preservation of physical and mental health, and financial independence (Duay & Bryan, 2006).

A lot of research in the psychology of aging has been dedicated to the issues of age-related vulnerability. The concept of vulnerability affects the societal attitude of seniors as well as the self-perception of the elderly. A good deal of the research on perceived vulnerability has been related to anxiety. For instance, Barlow (2002) discussed the process by which generalized psychological and biological vulnerability, combined with stress due to life events, lead to worry and inadequate problem-solving skills.

A number of studies have focused on older adults' vulnerability in specific areas such as heart disease (Eldreth, 2009), HIV/AIDS perceived vulnerability (Ward et al., 2004), and perceived vulnerability to crime (Jackson, 2009). This last study produced an interesting finding--age was negatively related to the perceived vulnerability to crime. Older persons appeared to worry less about becoming victims of crime. In another study, seniors attending senior centers in the lower Manhattan expressed increased a permanent sense of vulnerability after September 11, 2001 (Baumann, 2008).

Some of the works published recently address the general issues of vulnerability in old age. Brocklehurst and Laurenson (2008) conducted an analysis of existing literature to understand the roots of the concept of vulnerability of older people. The purpose of their research was to educate both the community and the elderly on how negative stereotypical views regarding old age are formed and what old people can do to overcome them. Muslin (1992) indicated that with aging, "there is always a period of vulnerability to narcissistic injury, real or imagined, as the person accommodates to the

loss of the previous self and its potential for securing the predicted positive responses from both the outside and the inside world” (p. 29).

Age-related vulnerability is related to many different factors. A study conducted by a group of researchers from Australia with participation of 351 volunteers from urban and rural Australian communities aged 50-90 took into account 22 factors. The researchers first considered a pool of 52 items derived from the literature and open-ended interviews with older adults. After reviewing these items with older adults’ service providers and adjusting the list for redundancy and significance to the elderly population, they presented a final questionnaire of 22 items: health decline, isolation from friends, loss of independence, lack of adequate healthcare, loss of social interaction with colleagues and friends, loss of old friends, loss of meaningful and fulfilling activities, loss of memory, negative attitudes towards aging, changes in community services, loss of sight, lack of opportunities to complete unfinished business, isolation from family, change in personal financial situation, deterioration of body image, difficulty entering aged care due to increased costs, tripping and falling, physical disability, giving up recreational activities, present financial situation, government economic uncertainty, and loss of hearing (Myall et al., 2009). The study assessed differences in perceived vulnerabilities of older adults and their correlation with depression and well-being. It also looked at mitigating effects of existential beliefs on the outcomes.

A number of similar factors (failing health, reliance on multiple medications, and losses of significant people and of quality of life) were the center of a study conducted in the form of interviews with older adults age 65 and over residing in rural and urban areas of West Virginia (Schneller & Vansburger, 2008). Another team of scientists conducted

interviews with adults of similar age living in the community in the District of Columbia and Maryland. The study addressed functional limitations as a stressor in later life. It was shown that the effect of functional limitations has to be explored in relationship to socioeconomic status, race, and gender (Schieman & Plickert, 2007).

Verbal, financial, and physical mistreatment by family members were found to be other sources of vulnerability. Working with 3,005 community-residing adults, age 57 to 85, Laumann, Leitsch, and Waite (2008) determined that few older adults report abuse from family members. The reported abuse ranged from 0.2% for physical abuse to 9% for verbal abuse. The reports of financial and verbal abuse were lower for the Latino/Latina elderly than for African Americans or Whites. Another family-related stressor significant in the lives of many older adults was caregiving. A research study with participation of 1,801 depressed patients from 18 primary care clinics in the United States showed that there were nearly 6 million informal caregivers age 65 and over. The authors determined the connection between caregiving duties and depression outcomes: the depressed patients with caregiving duties reported higher levels of stress and were less responsive to therapy (Thompson, Fan, Unutzer, & Katon, 2008).

Perceived vulnerability has a number of practical implications. A study assessing 2,033 randomly selected people age 65 and over living in the community focused on the use of health services by elder adults based on their perceived vulnerability (McGee et al., 2008). Willcox, Willcox, and Ferrucci (2008), reviewing studies of exceptional human health and longevity, presented a new paradigm in gerontology: the study of healthy aging and the discovery of factors that enhance both length and quality of life in old age.

A number of studies have focused on the effects of environment and their correlation with vulnerability. A survey involving 1,939 older Dutch adults exploring environment stress found confirmation of Lawton's (1982) environmental docility hypothesis--vulnerable older adults experience considerably more stress in deprived neighborhoods than non-vulnerable older adults (Van Der Meer, Fortuijn, & Thissen, 2008). The study of the effects of urbanization on the vulnerability of older adults, which compared data on elderly (age 65 and over) suicide rates and urbanization in 86 countries, found a curvilinear relationship between male suicide and percentage of population living in urban areas. A similar relationship was found for women but it was not statistically significant. Shah (2008) speculated that in countries at the early stage of urbanization, the elderly suicide rate may increase; it will stabilize in the middle stages of urbanization and would go down at the advanced stages of urbanizations.

Some of the specific characteristics of the older adults' environment can actually have a beneficial effect on their susceptibility to life stressors. A study involving 68 younger participants (average age 20.8) and 116 older participants (average age 80.30) from the Syracuse area revealed that older adults were less exposed to daily stress but did not find differences in emotional reactivity to stressors (Stawski, Almeida, Swinski, & Smyth, 2008).

A number of instruments were developed to assess the vulnerability of older adults. Most of them seemed to be related to anxiety, worry and neuroticism. Thus, the Revised NEO Personality Inventory (NEO-FFI) has a vulnerability facet in the neuroticism domain (Costa & McCrae, 1998). The Stress Audit assesses relative vulnerability to stress (Miller, Smith, & Mehler, 1988). The Structured Interview for the

Five-Factor Model of Personality (SIFFM) also contains a vulnerability facet in the neuroticism model (Trull & Widiger, 1997). Table 1 provides the psychometric properties of these instruments.

The increase in the percentage of older adults in the general population is accompanied by growing interest of researchers to different aspects of old age. A number of measures related to aging have been published. Many of them are concerned with specific aspects of functioning in old age, e.g., memory and dementia detection tests, characteristics of nursing home environment, and functional status of older adults (Cassady, Dacaney & Chittooran, 2009; Fabry & Sakauye, 2004). Since the topic of the current study relates to adequately functioning adults residing in the community, these kinds of measures were not included in the review. However, a number of other instruments look at the characteristics that were of interest to this study. Most of them were used in the research studies reviewed in this chapter. The instruments discussed below reportedly have good psychometric properties.

Table 1

Vulnerability Measures

Measure	Internal Consistency	Test-Retest Reliability	Convergent and Discriminant Validity	Construct Validity
Revised NEO Personality Inventory (NEO-FFI, Costa & McCrae, 1998)	Domain level reliabilities range from .86 to .95 Botwin, Mental measurements yearbook 12	Short-term and long-term test-retest reliabilities have been established, Botwin, Mental measurements yearbook 12		Scaled correlated with a number of instruments including MBTI, MMPI, and CPI. Botwin, in Mental measurements yearbook 12
Stress Audit (assess relative vulnerability to stress; Miller et al., 1988)	Good internal consistency reported, Peterson, Mental measurements yearbook 10	.63 6-week test-retest reliability coefficient for the vulnerability scale, Peterson, Mental measurements yearbook 10	Validity has not been sufficiently demonstrated, Peterson, Mental measurements yearbook 10	
Structured Interview for the Five-Factor Model of Personality (SIFFM; Trull & Widiger, 1997)		test-retest reliabilities over a 2-week span ranged from .61 to .93. Mastrangelo, Mental measurements yearbook 15		Correlation exists between SIFFM scores and corresponding NEO PI-R scores, Mastrangelo, Mental measurements yearbook 15
Perceived Vulnerability Scale (PVS; (Myall et al., 2009)	Cronbach's $\alpha = .95$	concurrent negative correlations with depression and positive correlations with life satisfaction of the elderly	concurrent significant negative correlations with depression and positive correlations with life satisfaction of the elderly	Not reported

The Geriatric Depression Scale (Kurlowicz & Greenberg, 2007) is a simple instrument often used for quick screening of depression in older adults. Its psychometric properties were studied and reported by many authors (Lopez, Quan, & Carvajal, 2010). Reynolds, Richmond, and Lowe (2003) designed the Adult Manifest Scale version for the elderly. This scale has been normed on 636 individuals aged 60 and above. It has three anxiety scales: Worry/Oversensitivity, Physiological Manifestations of Anxiety, and Fear of Aging. Reynolds and Bigler (1999-2001) presented the Clinical Assessment Scales for the Elderly and the Clinical Assessment Scales for the Elderly-Short Form (CASE and CASE-SF). This instrument was designed with the purpose of detecting Axis I disorders in individuals from 55 to 90 years of age and provides scores in the following areas: Anxiety, Cognitive Competence, Depression, Fear of Aging, Mania, Obsessive-Compulsive, Paranoia, Psychoticism, Somatization, and Substance Abuse. The OARS Multidimensional Functional Assessment Questionnaire published by the Center for the Study of Aging and Human Development (1978) was designed for work with seniors age 60 and older and addresses such areas as social resources, economic resources, mental health, physical health, and activities of daily living. Payne (1994) suggested a method for assessment of a broad range of communication skills including reading, writing, comprehension, and others in the daily lives of older adults. Ossness, Clark, Hoeger, Rabb, and Wiswell (1996) devised a scale to assess functional capacity of older adults including balance, strength, flexibility, and coordination. It may be speculated that older persons' perceived vulnerability to factors of aging is related to their counseling needs. Myers (1993) developed a survey that explored older persons' needs and desires for counseling in four broad domains: personal concerns, social or interpersonal concerns,

activity concerns, and environmental concerns. She reported that the items were developed based upon a review of the literature in gerontology, psychology, and counseling involving older adult populations and involved a list of issues that included , among others, death and dying, mental and physical health concerns, relationship issues, and everyday life concerns. The psychometric properties of the instruments discussed above are presented in Table 2.

Table 2

Psychometric Properties of the Instruments

Measure	Internal Consistency	Test-Retest Reliability	Convergent & Discriminant Validity	Construct Validity
The Adult Manifest Anxiety Scale-Elderly (AMAS-E; Reynolds et al., 2003) Includes Fear of Aging scale.	$\alpha = .70$ (Reynolds et al., 2003)	.67 to .90 across an interval of 1 week (Reynolds et al., 2003)	Correlated with Multiscore Depression Inventory (MDI) (Reynolds et al., 2003)	Intercorrelations between the subscales are of a magnitude consistent with adequate construct validity. (Reynolds et al., 2003)
Clinical Assessment Scales for the Elderly and Clinical Assessment Scales for the Elderly-Short Form, (Reynolds & Bigler, 1999-2001) To identify Axis I disorders in elderly	α from .82 to .90 on clinical scales α for the Lie subscale of the validity scale from .40 to .67 (Reynolds & Bigler, 1999-2001)	.56 to .75 in 30 days on Form S, from .62 to .83 on form R (Reynolds & Bigler, 1999-2001)	Not reported	Subscales in the CASE correlate well with other tests such as the Beck Depression Inventory (BDI), Beck Hopelessness Scale (BHS), State-Trait Anxiety Inventory (STAI), Cognitive Behavior Rating Scales (CBRS), and MMPI-2 (Reynolds & Bigler, 1999-2001)
OARS Multidimensional Functional Assessment Questionnaire MFAQ (Center for the Study of Aging and Human Development, 1975-1978)	The reliability and validity data reported are based on a prior instrument, the Community Survey Questionnaire.			
Communication Profile: A Functional Skills Survey (Payne, 1994)	$\alpha = .82$	Not reported	Not reported	Not reported

(Table continues)

Table 2(Continued)

Measure	Internal Consistency	Test-Retest Reliability	Convergent & Discriminant Validity	Construct Validity
Functional Fitness Assessment for Adults Over 60 Years, Second Edition. (Osness et al., 1996)	Not reported	.80, Osness et al., 1996	Not reported	Not reported
Older persons counseling needs survey (Myers, 1993)		2-week test-retest reliability median = .56 (Myers, 1993)	Concurrent validity of the OPCNS is reported through correlation data comparing the OPCNS with five other instruments (Myers, 1993)	Excellent face validity is reported (Myers, 1993)
Geriatric Depression Scale, GDS (Lopez et al., 2010)	Livingston's r : .883 - .896, Gilmer-Feldt coefficient: .890 ; α = .888 (Lopez et al., 2010)			

Source: *Mental Measurements Yearbook*, 2010.

Social Involvement

Social involvement of seniors, which includes different aspects of social support, was found to be an important mitigating agent in the adverse effects of old age and was discussed in a number of studies. Although social support and social involvement are not synonyms, most of the authors reviewed perceived different kinds of social involvement as agents in the well-being of individuals. For this reason, in this chapter, the notions of “social support” and “social involvement” are used interchangeably.

Social support has been shown by a number of authors to be a multifaceted phenomenon. Weiss (1974) suggested six categories of social interactions or “relational

provisions”: attachment--the source of security and place; social integration including social networks; opportunity for nurturance; reassurance of worth--testifying to the person’s competence; a sense of reliable alliance; and guidance, which is especially important to people in stressful moments of life (p. 23). Cutrona (1990) underscored that at different periods and in relation to different events in their lives, people need different kinds of support. Based on a review of the social support literature, she suggested the following five categories of social support: emotional support, social integration or network support, esteem support, tangible aid, and informational support, which includes advice or guidance.

Weiss (1974) noted that specific needs for social provisions depend on the individuals’ stage in life cycle. Cutrona et al. (1986) conducted a pilot study to determine the social needs of the elderly. This study found that provided support is especially valued by older individuals.

Based on the ideas described above, Cutrona and Russell (1987) designed the Social Provisions Scale. The scale is based on six different functions or provisions of interpersonal relationships. These provisions, suggested by Weiss (1974) and described by Cutrona and Russell include the following: guidance (availability of persons who can provide advice or information); reliable alliance (assurance that others can be counted upon for assistance); reassurance of worth (recognition of one’s competence, skills, and values by others); opportunity for nurturance (the sense that others rely upon one for their well-being); attachment (emotional closeness providing sense of security); and social integration (a sense of belonging to a group of like-minded persons).

Many authors have focused on different aspects of social involvement including social support, both received and provided. Dulin and Pachana (2005), in their overview of social support related articles, outlined several kinds of social support: social support received from others, provided, and anticipated social support. The received social support is mostly in line with the stereotypical image of seniors as weak and in need of help, which is not true for many contemporary seniors. Anticipated social support is related to the perception of seniors that help would be available in case they need it. Both received social support and anticipated social support were found to be important in mediating the influence of stressful life events (Cutrona et al., 1986; Krause, 2007). However, based on the review of a number of studies, Dulin and Pachana concluded that the provided social support, which gives the elderly a sense of meaning and purpose, is most beneficial for both their physical and emotional well-being. Cruza-Guet et al. (2008), in their study of psychological distress among Hispanic elders in Miami, found that elders who provided more social support than received reported lower levels of psychological distress. Aquino et al. (1996) pointed out the interrelatedness of received and provided support. Their study revealed that social support acts as a mediator between volunteer work and life satisfaction. Thus, seniors who participate in volunteer activities, providing support to different causes, at the same time perceive themselves more supported by others. The same researchers also found a direct connection between social support and life satisfaction of the elderly.

Social Support and Health

A number of authors relate social support to health. Cohen, Underwood, and Gottlieb (2000), in their introduction to the volume dedicated to social support

measurement and interventions, described two models related to the influence of social support on health: the stress-buffering model and the main or direct effect model. The first one was developed in relation to persons under stress. In this model, social support is considered to be a factor in preventing responses to stress that may be harmful to health. The second model suggested that the effects of social support are beneficial to all individuals regardless of their level of stress. In the same volume, Wills and Shinar (2000) outlined two aspects of social support: the perceived social support is the support available if needed and the received social support is the one that had been recently obtained. These authors stated that the perceived support had been consistently shown to be inversely correlated with symptomatology; whereas, the findings for the received support were opposite in different studies. Some authors related it to higher levels of distress and others to lower levels.

Brissette, Cohen, and Seeman (2000) reviewed the literature on the effect of social integration and social networks on the health status of individuals. Citing different sources, they maintained that people who are more socially integrated are less susceptible to cardiac diseases, infection, depression, and, in general, live longer. Lett et al. (2009), citing the existence of evidence that depression and low social support are associated with increased risk for patients with coronary heart disease, suggested measures that could be used for screening patients for increased psychosocial risk. Specifically, they suggested measuring different aspects of social support including perceived emotional support from intimate relationships; perceived tangible support; and the number of children, relatives, and friends in the support network.

The complex nature of social networks has been described by Glass, Mendes de Leon, Seeman, and Berkman (1997). The authors analyzed social networks of the elderly and discerned four elements: children, relatives, friends, and confidant. This latter element was described as “one special person you know that you feel very close and intimate with, someone you share confidences and feelings with, someone you feel you can depend on” (Glass et al., 1997, p. 1505). Krause (1987) reported that older adults who were satisfied with their social support network also tended to report better health. Some authors indicated that the quality of interpersonal relationship was more important than the size of social network. For instance, George, Blazer, Hughes, and Fowler (1989), in their study of social support and outcome of major depression, found that “a smaller social network at baseline was related to fewer depressive symptoms at the follow-up” (p. 483). The authors concluded that the quality of interpersonal relationships is a crucial factor in the total composition of social support. Kim and Nesselroade (2003) explored the relationship between social support and physical and psychological wellbeing from an intra individual point of view. Using a dynamic factors model, they determined that negative social support (defined as negative social interactions) was related to poor physical functioning, influencing a person’s blood pressure and gait. Interestingly, they found that positive social support was inversely related to positive self-concept at the concurrent time. This seems to be in agreement with previously cited studies and reiterates that older adults might consider received social support a sign of weakness on their part, while the provided social support gives them a sense of value and a higher self-esteem. Lee, Arozullah, Cho, Crittenden, and Vicencio (2009) studied the interconnection between health literacy, social support, and health status among older

adults. The researchers hypothesized that social support could be an important factor in contributing to the health status of low health literacy adults, thus mitigating the negative effect of low health literacy. However, the results of the study did not support their hypothesis. The study revealed a relationship between the three variables but the results showed that social support affected more favorably the health status of the older adults possessing higher health literacy. Still, the authors came to the conclusion that social support can produce positive health effects in older persons and that it is important to investigate the ways of enhancing social support to person with low health literacy. In their pilot study, Cutrona et al. (1986) investigated the relationship between social support, stress, and physical and mental health of seniors and found that different aspects of social support were related to psychological and physical health of the elderly. The perception of being valued by others appeared to be directly connected to physical health. On the other hand, mental health was influenced indirectly by the effect of social support on the reduction of stress. This conclusion is in line with the findings of Dulin and Hill (2003) who conducted a study of the relationship between altruistic activity and positive and negative effect in low income older adults, providing services within a federally subsidized service program (Foster Grandparents and Senior Companions). The results of their research indicated that altruistic activities (which can be seen as provided support) are associated with positive affect. They further stated that positive affect has mental health consequences by reducing the level of depression in seniors. Cohen, Teresi, and Holmes (1985), in their study of inner city adult elderly population, explored the effect of social network on elderly person's physical and mental health. They determined that social networks play a significant role in the elderly person's adaptation

to environment and maintaining good health. Social isolation manifested by loneliness was the center of the study of premature nursing home admissions (Russell & Cutrona, 1997). The authors associated higher level of loneliness with a higher incidence of mental decline, resulting in an early nursing home admission.

An interesting study (Isaacowitz, Vaillant, & Seligman, 2003) of human strengths was conducted in Pennsylvania. The participants, all men, represented two different samples: 89 participants from the original grant study of Harvard graduates (average age 78) and three groups of men from the community from the Philadelphia area. These men represented three age groups: 100 young men (18-25), 86 middle-aged men (36-59), and 94 older adults (60+). Older adults demonstrated higher levels of interpersonal and self-regulatory strengths than the younger persons. Loving relationships emerged as the main strength for both community-living older men and Harvard graduates. In addition, community-living older men indicated hope and citizenship among their main strength; whereas, Harvard graduates named the appreciation of beauty (Isaacowitz et al., 2003). Hernandez and Gonzales (2008) explored interactions between 179 university students and 101 slightly depressed elderly people. They came to the conclusion that interaction with younger people helped older people to reduce negative stereotyped images of themselves.

Studies of the association between social support, social network, and physical and mental health have been conducted internationally. Thus, a positive correlation between social support and physical health, especially for women, was found in the study based on the data of the National Population Health Survey on Canadians aged 65 years and older (Gadalla, 2009). Thanakwang (2009) conducted her study on the data of the

National Elderly Survey in Thailand. The sample included 24,644 seniors aged 60 and over. The author found that contact with friends had a positive effect on the perceived health of the seniors. Golden et al. (2009) conducted their study in Dublin, Ireland. Using a sample of over 1,200 seniors (aged 65 and over), they explored the relationships between social network, loneliness, mood, and well-being in community dwelling elderly. Their study elucidated the connection between social isolation and depression. They concluded that social isolation, both subjective (loneliness) and objective (lack of social network), accounted for 70% of depressed mood prevalence in the sample they studied. Lubben et al. (2006) indicated that social isolation has been identified as related to increased health risk. In their study based on data from three European countries (England, Germany, and Switzerland), they evaluated the Lubben Social Network Scale (LSNS-6). The authors maintained that the scale proved to be a valid and reliable instrument for measuring social isolation among community dwelling older adults. Smits, Van Russelt, Jonker, and Deeg (1995), on a sample of 116 individuals from Nederland aged from 55 to 89, concluded that social involvement is important for maintenance of cognitive abilities.

Social connectedness was found to be a defense against suicidal factors including suicidal ideation and behavior, mental illness, personality vulnerability, medical illness and physical impairment, losses, poor social support, and functional limitations. Heisel (2006), in his meta-analysis of 26 psychological autopsy studies conducted in USA and a number of countries of Western Europe and Asia, came to the conclusion that the protective factors included social connectedness, spirituality, hobbies, and finding meaning in life. Hsu (2007) examined the effect of social participation on the life span

and cognitions of elderly in Taiwan. The social activities reviewed included work, volunteering, and involvement in religious groups. The study demonstrated that social activities can be a protective factor in both cognitive impairment and early mortality.

A new area of research of social interconnectedness of seniors is computer-mediated social support. Nahm, Resnick, and Mills (2003) reported the results of their study utilizing a survey posted on the SeniorNet Website. They explored the relationship among the computer-mediated social network, perceived social support from the network, and psychological well-being. Although this study did not demonstrate a significant relationship between computer-mediated social support and subjective well-being, the authors suggested the need to develop online social sites for older adults. Given that many of the older adults are socially isolated and that the new generation of seniors will be most probably computer literate, computerized social networks appear to be a promising area of research.

A number of instruments have been designed to measure different aspects of social involvement. Table 3 present psychometric properties of some instruments used in the reviewed literature.

Table 3

Measures of Social Support

Measure	Internal Consistency	Test-Retest Reliability	Convergent and Discriminant Validity	Construct Validity
The Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsay, 1981)	$\alpha = .93 - .94$, Barrera et al., 1981	$r = .88$ (two day test-retest), Barrera et al., 1981	Evidence for the divergent validity of the ISSB comes from its differentiation from perceived support measures, Haber, Cohen, Lucas, & Baltes, 2007	Correlated with social support network size ($r = .32$ to $r = .42$), as assessed by the Arizona Social Support Interview Schedule, Barrera et al., 1981
ENRICH Social Support Inventory (ESSI; Mitchell et al., 2003, cited in Gottlieb & Bergen, 2009)	$\alpha = .86 - .91$, (Mitchell et al., 2003, cited in Gottlieb & Bergen, 2009)	Not reported	Correlated with the Perceived Social Support Scale, a measure of available emotional support ($r = .62$) (Mitchell et al., 2003, cited in Gottlieb & Bergen, 2009)	Not reported
Social support and meaning in life measure for older adults, Krause, 2007	standardized factor loadings ranged from .605 to .894, Krause, 2007	Not reported	Not reported	Not reported
Lubben Social Network Scale, LSNS, Lubben et al., 2006	$\alpha = .83$, Lubben et al., 2006	Not reported	discriminant validity is determined by comparing means of individuals living with a partner or living alone, participating or not in group activities, and having marginal emotional support or low, moderate, or high emotional support, Lubben et al., 2006	Not reported

Table continues

Table 3 (Continued)

Measure	Internal Consistency	Test-Retest Reliability	Convergent and Discriminant Validity	Construct Validity
Interpersonal Support and Evaluation List (ISEL; Cohen & Hoberman, 1983)	$\alpha = .90$ for full scale, .70-.80n for subscales			
Multidimensional scale of Perceived Social Support Scale (MSPSSS; Zimet, Dahlem, Zimet & Farley, 1988)	$\alpha = .88$.85, Zimet et al., 1988	Not reported	Correlated with the Depression and Anxiety scales of HSCL (Hopkins Symptoms Checklist; Zimet et al., 1988)
Social Networks Questionnaire (SNQ; Glass et al., 1997)	$\alpha = .67 - .97$, Glass et al., 1997	Not reported	Convergent validity demonstrated by significant t-tests on all factors of the scale; Glass et al., 1997	Not reported
Social Provisions Scale (SPS; Cutrona & Russell, 1987)	$\alpha = .653-.760$ for subscales, $\alpha = .915$ for the total SPS (Cutrona & Russel, 1987). $\alpha = .76$ to .84. for subscales, .92 for the total scale (Russell & Cutrona, 1991; Cutrona et al., 1986).	Not Reported	Discriminant validity was established for college population (Cutrona & Russell, 1987), not reported for older population	Not reported

Existential Awareness

Awareness of and sensitivity related to the ultimate existential concerns is one of the unique characteristics of old age that serves as a protective factor against despair and deteriorating quality of life. The theoretical underpinnings of these concerns have been proposed by a number of existential philosophers and clinicians. Yalom (1980) described

four ultimate concerns or givens of existence (death, freedom, isolation, and meaninglessness) and their connection to existential anxiety. May (1969) wrote about the essential characteristics of an existing person: the centeredness of persons in themselves, need to self-affirm and preserve this centeredness, need for other people to empathize with and learn from, awareness (vigilance) regarding potential dangers to self, self-consciousness as unique form of human awareness, and anxiety related to awareness that one's being can end.

The existential issues most widely explored and discussed in the contemporary literature are related to the meaning and purpose in life and to the connectedness between the meaning of life and death awareness and acceptance.

Meaning of Life

The issues of the role of the meaning of life in psychotherapy were extensively explored in the works of Victor Frankl (1963), the founder of logotherapy. According to his teaching, "The patient is actually confronted with and reoriented toward the meaning of life" (Frankl, 1963, p. 98). In Frankl's approach, the meaning of life is not an abstract notion but specific to each person in concrete moments of their live. According to Frankl, the lack of awareness of a meaning worth living for creates inner emptiness, which he called "existential vacuum" (p. 169). He noted that the existential vacuum often plagues pensioners and aging persons.

Frankl's (1963) ideas were continued in recent studies. Langle (2005) described fundamental existential motivations leading to the main motivation--the search for the meaning in life. Lantz and Gomia (1995) discussed an existential approach in psychotherapy with older adults aimed at helping clients realize and actualize the

meaning in their lives. Hill and Mansour (2008) stressed the importance of meaning-centered strategies including gratitude, altruism, and forgiveness in psychotherapy with older adults. Abramova (1999) reflected on the egoistic stagnation of old age present in older individuals who limited their existence to the past and rejected the need to explore their being to its fullest.

Chamberlain and Zika (1988) suggested that meaning can be obtained through “goal achievement or fulfillment, through an enthusiastic orientation that views life as exciting, through having a clear philosophy or framework, or more simply through contentedness and satisfaction with what one has in life” (p. 595). In another study, these authors found a strong association between the meaning of life and psychological well-being (Zika & Chamberlaine, 1992).

Fry (2000, 2001) explored the contribution of existential factors including personal meaning, religiosity, and spirituality to psychological well-being of older adults. The first study was conducted among community-dwelling and institutional care older adults. The second one specifically looked at older adults following spousal loss. The results of both studies supported the importance of several existential variables-- personal meaning, optimism, importance of religion, and accessibility to religious support in the prediction of psychological well-being--in all the samples. These results are in agreement with the outcome of the study conducted with the participation of a nationwide sample of older adults (Krause, 2009). The author reported that older people with a strong sense of meaning in life were found to be less likely to die over the study follow-up period than those who did not have a strong sense of meaning. Further, the study

revealed that one particular aspect of meaning--having a strong sense of purpose in life--was most strongly associated with mortality.

Reinhoudt (2004) found that existential meaning was significant for social functioning and mental health of older adults and could compensate for the lack of other qualities such as hardiness. Hardiness has been operationalized by Maddi (2004) as existential courage and motivation to choose the future with all its risks and uncertainties rather than the well-known past. Maddi associated the choice of the unknown path to the future with continued elaboration of existential meaning. However, it also gives rise to ontological anxiety; thus, it might intuitively seem that seniors would prefer to continue with the old familiar ways. This might rob them of the option to further develop the meaning of their lives. According to Settersten (2002), "The most pervasive discomfort in later life may not be fear of destitution or even fear of poor health, but rather an awareness . . . that . . . life can become empty of meaning" (p. 70).

Using the Life Regard Index, Van Rans and Marcoen (1997) studied the differences in experiencing the meaning of life in older and younger adults. They considered two dimensions of the meaning: framework and fulfillment. Framework was defined as the measure of "the ability to see one's life within some perspective and to derive a set of life-goals or views"; whereas, fulfillment was related to "the degree to which one considers oneself as having fulfilled or as being in the process of fulfilling the life-goals" (p.878). Their study revealed that older adults experience more meaning in life than younger adults.

Finding deeper meaning in one's life is related to the concept of life acceptance, which, in its turn, has been associated with better mental health (Butler & Ciarrochi,

2007). These authors found a positive correlation of psychological acceptance with the quality of life as revealed in the experience of 187 participants from community and nursing homes in Australia, average age 78. The study explored the effects of stressful events such as retirement, changes in financial and social situation, physical health and functioning, and losses of loved ones. The results of this study testified to the importance of the ability to accept life as it is.

Some of the studies that do not necessarily focus on older adults provide good insight into the correlation between meaning of life and various aspects of mental health. In South Africa, Moomal (1999) administered the Purpose of Life Test, MMPI, and the Eysenck Personality questionnaire to university students and examined the relationship between the meaning of life and mental health; he came to the conclusion that they are positively correlated. Morgan and Farsides (2009) described three studies conducted with the purpose of creating the Meaningful Life Measure--the instrument for evaluating the meaning in life construct. Working with participants representing different age groups, the researchers administered the Purpose in Life Test; the Life Regard Index, and the Psychological Well-Being: Purpose in Life Test. They further suggested a new 23-item instrument for assessing the meaning of life--the Meaningful Life Measure (MLM). The five subscales of MLM measured sense of purpose, excitement, principles, accomplishment, and value. The authors maintained that this new instrument combined the best features of existing meaning measures including PIL, LRI, and PWB-P, while at the same time being more parsimonious. They also concluded that positive psychology interacted with existential psychology in the search for meaning in life.

Mascaro and Rosen (2008) administered three instruments assessing meaning of life and three instruments assessing depression to 574 undergraduate students. The instruments assessing meaning of life included the Spiritual Meaning Scale, the Personal Meaning Profile, and the Life Regard Index-Revised. The instruments assessing depression included PAI-dep, DASS-dep, and BDI-II. The authors were able to correlate the changes in perceived meaning of life with symptoms of depression.

Death Acceptance

The association between meaning of life and death acceptance becomes especially crucial as individuals achieve older age. Erikson (1980) described eight stages of life. The main task of the eighth stage--Integrity vs. Despair--is to achieve integrity, satisfaction, and find the meaning of one's life. Later Erikson added the ninth stage to his construct. The individuals, typically at the age of 80-90, cycle back to the same issues they were born with--loss of strength, control, and autonomy. The key issue is to maintain hope and, again, be aware of life's meaning until the moment of death (Erikson & Erikson, 1997).

Many classic and contemporary authors believe that death awareness instigates personal change. Yalom (2002) pointed out that the change occurs when the person faces responsibility for their own life as it draws to the end. He offered the examples of Ebenezer Scrooge and Tolstoy's characters Ivan Ilyich and Pierre Bezukhoff. They all experienced change in personality in the face of death. The same is true of many terminally ill patients who also feel change in the face of coming death (Yalom, 2002).

The topic of the interconnection between approaching death and the realization of the meaning of one's life continues to be prominent in contemporary literature. Mandic

(2008) indicated how the acceptance of the reality of death may enrich people's lives. Breitbart, Gibson, Poppito, and Berg (2004) advocated for the importance of spirituality and meaning making. They focused on therapy with terminally ill patients in order to bring purpose and meaning into their lives until the moment of death. Ardel and Koenig (2007), in the course of semi-structured qualitative interviews with 103 older adults and 19 hospice patients, discovered the ways in which spirituality is connected with the sense of subjective well-being in the face of imminent death. Beshai (2008), when reviewing studies on death anxiety, considered correlation between death anxiety and a number of factors such as religion, suicide ideation, and personality traits. He reported that men, elderly, and highly religious persons appeared to have lower levels of death anxiety. This appeared to be very significant for the perceived well-being of older adults since one of the characteristics of old age is the close proximity of death.

In Russia, the issues of death and salvation were in the core of classic literature until the beginning of the 20th century. In her research of Russian literature published at that time, Mansing-Delic (1992) reflected on the topics of life, death, and the myth of immortality permeating the works of Russian writers and philosophers. In the Soviet academic literature, death was taboo for many years since it was against the optimistic spirit propagated by the communist party. Only recently was this topic "rehabilitated." In one of the examples, Smolina (2002) spoke at a conference dedicated to gerontosophy --the philosophy of old age and pointed out that imminence of death, physical and mental decline, and illness are the three dangers that people confront in old age. Hayes et al. (2004) developed the Acceptance and Action Questionnaire--a measure of experiential avoidance or unwillingness to admit to and remain in contact with private experiences

including sensations, memories, thoughts, and emotions. This phenomenon had been linked, among other effects, to reduced defenses against death awareness.

Many studies in the area of assessment of attitudes to the meaning and purpose of life and other existential matters were conducted by Reker with different co-authors.

Reker (1992) created the Life Attitude Profile-Revised, which was used in this current study. He provided the following definitions of the dimensions of this scale.

The Purpose dimension refers to having life goal, having a mission in life, having a sense of direction from the past, in the present, and towards the future [...] The Coherence dimension refers to having a logically integrated and consistent analytical and intuitive understanding of self, others, and life in general. Implicit in coherence is a sense of order and reason for existence, a clear sense of personal identity, and greater social consciousness [...] The Choice/Responsibleness dimension refers to the perception of freedom to make all life choices, the exercise of personal control of life events [...] The Death Acceptance dimension refers to the absence of fear and anxiety about death and the acceptance of death as a natural aspect of life [...] The Existential Vacuum dimension refers to having a lack of meaning in life, lack of goals, lack of directions, boredom, apathy, or feelings of indifference [...] The Goal Seeking dimension refers to the desire to get away from the routine of life, to search for new and different experiences, to welcome new challenges, to be on the move, and an eagerness to get more out of life [...] The Personal Meaning Index was developed to provide a more focused measure of personal meaning. [...] It is derived by summing the Purpose and Coherence dimensions [...] Existential Transcendence is a global measure of attitudes toward life that takes into account both the degree to which meaning and purpose has been discovered and the motivation to find meaning and purpose. [...] Existential Transcendence is derived by summing the score on the LAP-R dimensions of Purpose, Coherence, Choice/Responsibleness, and Death Acceptance, and subtracting the scores on the Existential Vacuum and Goal Seeking. (Reker, 1992, pp. 14-20)

Reminiscence Therapy with Older Adults

The exploration of the meaning of life is often used in psychotherapy with older adults. The technique that has been proved to be efficacious is the life review or reminiscence therapy. In his seminal article that brought life review to the attention of the therapists, Butler (1963) explained that the need to review one's life is related to the

realization of mortality and desire to find meaning at the completion of life. Reflecting on Erickson's (1980) stages of life and, in particular the eighth--Integrity vs. Despair, Haber (2006) identified life review as an important part in reaching integrity, satisfaction, and finding the meaning of one's life. Other authors related the life review to existential theory; both strive to understand the purpose of an individual's life (Reker & Chamberlain, 2000). The meaning of life is also deeply related to the recognition of the purpose of one's existence (Reker & Wong, 1988). Reker, Peacock, and Wong (1987) determined that meaning and purpose in life are related to feelings of mental and physical health; whereas, absence of meaning and purpose in life is indicative of psychological and physical concerns. Based on the results of his study indicating that purpose of life is an important contributor to successful aging, Reker (2001) suggested that life review can be a helpful meaning-making intervention, which may enhance perception of successful aging, especially in institutionalized seniors.

Some of the studies on the efficacy of life review therapy were conducted with nursing home residents. For example, Cook (1998), on a sample of 36 female residents of a nursing home in the United Kingdom, suggested that the life review led to increased life satisfaction. Wang (2005) worked with older adults in nursing home in Taiwan and determined that reminiscence is a recommended therapy for old people who reside in care facilities; it promotes well-being and improves quality of life.

In their meta-analysis of the effectiveness of reminiscing for psychological well-being, Bohlmeijer, Roemer, Cuijpers, and Smit (2007) described the Reminiscence function scale (RFS). It included eight functions of reminiscing: boredom reduction, death preparations, identity-forming, conversation, intimacy maintenance, bitterness

revival, teach/inform, and problem-solving. In another study of the functions of reminiscing, Cappeliez and O'Rourke (2002) administered the Neo-Five Factor Inventory, the Life Attitude Profile-Revised, and the Reminiscence Function Scale to 89 older adults. Their study revealed that personality traits, coupled with existential concerns, predicted the functions of reminiscence in older adults. Specifically, they were found to be connected with intrapersonal functions of reminiscence: boredom reduction, death preparation, identity, and bitterness revival. A later study by Cappeliez, O'Rourke, and Chaudhury (2005) suggested that boredom reduction and bitterness revival were related to the decrease in life satisfaction; whereas, death preparation was related to higher life satisfaction. Watt and Cappeliez (2000) evaluated short-term reminiscence therapies with clients in the community and found that the interventions led to significant improvements in the symptoms of depression. The same conclusion was reached by another group of researchers (Bohlmeijer, Westerhof, & Emmerik-de-Jong, 2008) who worked with 1106 older adults with depressive symptoms. They discovered that integrative reminiscence combined with a narrative therapeutic framework may be an effective intervention for enhancing meaning in life with depressed older adults (Bohlmeijer, Westerhof, & Emmerik-de-Jong, 2008).

Psychometric properties of some of the instrument used to measure existential variables are described in Table 4.

Table 4

Measures Related to Existential Beliefs

Measure	Internal Consistency	Test-Retest Reliability	Convergent & Discriminant Validity	Construct Validity
Purpose in Life test, Crumbaugh & Maholick, 1964	Not reported	Spearman-Brown = .90, Crumbaugh & Maholick, 1964	Very modest success in the study of concurrent validity, Crumbaugh & Maholick, 1964	Test distinguished significantly between patient and non-patient population, Crumbaugh & Maholick, 1964
Ryff's scale of psychological well-being (RPWB; Ryff, 1989)	$\alpha = .87 - .93$ for different subscales, Ryff, 1989	From .81 to .85 on different subscales in 6 week period, Ryff, 1989	Correlations with prior measures of positive functioning (i.e., life satisfaction, affect balance, self-esteem, internal control, and morale) are all positive and significant, with coefficients ranging from .25 to .73. Correlations with prior measures of negative functioning (i.e., powerful others, chance control, depression) are all negative and significant, with coefficients ranging from $-.30$ to $-.60$., Ryff, 1989	
Sense of coherence, SOC, Antonovsky, 1987	$\alpha = .84$ to .91 for different populations, Antonovsky, 1987		Positively correlates with Rumbault, Anderson, and Kaplan's Sense of coherence scale. Negatively correlates with Sarason Test Anxiety scale. Antonovsky, 1987	Table continues

Table 4 Continued

Measure	Internal Consistency	Test-Retest Reliability	Convergent & Discriminant Validity	Construct Validity
The Seeking of Noetic Goals Test, SONG, Crumbaugh, 1977.		Spearman-Brown = .83, Crumbaugh, 1977 6-week test-retest reliability of .78, Reker & Cousins, 1979	correlation with PIL(Purpose in Life) ranging from -.27 to -.52 offers evidence of the SONG's discriminant validity, Crumbaugh, 1977, Reker & Cousins, 1979	
Reminiscence function scale, RFS, Webster, 1997	$\alpha = 0.74-0.86$			
Acceptance and Action questionnaire (AAQ), Hayes et al., 2004	$\alpha = 0.70$ (for one of the versions of the scale), Hayes et al., 2004	Test-retest reliability 0.65 over several months, Hayes et al, 2004	Correlates significantly with a number of other measures, including White Bear Suppression Inventory (WBSI), the Thought Control Questionnaire (TCQ), the Dissociative Experiences Scale (DES), subscales from the Ways of Coping Questionnaire (WOC), the Post-traumatic Stress Diagnostic Scale (PDS), and the Impact of Events Scale (IES).	
Life Regard Index (LRI; Battista & Almond, 1973)	Cronbach's α 0.75 – 0.87 (Debats, 1993).	$r = 0.94$, Battista & Almond, 1973	Correlated negatively with measures of anxiety and depression, (Debats, 1990).	LRI discriminated between people with low and high levels of well-being and life satisfaction, (Debats, 1993).

Table continues

Table 4 Continued

Measure	Internal Consistency	Test-Retest Reliability	Convergent & Discriminant Validity	Construct Validity
Meaningful Life Measure,(MLM; Morgan & Farsides, 2009)	$\alpha = .63 - .88$ for different subscales, Morgan & Farsides, 2009	Retest required due to high drop-out rate, Morgan & Farsides, 2009	Correlates with PIL, LRI, and PWB-P, Morgan & Farsides, 2009	
Life Attitude Profile, Revised (LAP-R; Reker, 1992)	$\alpha = .77$ to $.91$, Reker, 1992	The test-retest coefficients ranged from $.77$ to $.90$ in 4-6 weeks	convergence of the LAP-R dimensions with criterion variables in Purpose in Life test, Ladder of Life Index and others.	factor analysis provides support for the construct validity of LAP-R, Reker, 1992

Perceived Vulnerability, Social Involvement and Existential Awareness

Many of the works reviewed indicated interconnectedness between the variables of interest to the current study. Krause (2007), using the data of longitudinal nationwide older adults study, researched the association between social support and the perceived meaning in life. The study examined different types of social support including enacted support, negative interactions, and anticipated support. The findings indicated that the emotional support older adults received from family and friends was related to a greater sense of meaning in life; whereas, more tangible support was related to lower sense of meaning. These results are in agreement with the socioemotional selectivity theory (Carstensen et al., 2003). According to this theory, as people grow older, they tend to search for emotionally based sources of meaning in life. The authors further stated that what makes old age emotionally meaningful is a sense of anticipated ending. Thus, awareness of death gives more meaning to life in old age.

Antonovsky (1987) combined components of existential thinking and social support in the concept of coherence, which he defines as follows:

The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic feeling of confidence that (1) the stimuli derived from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement. (p. 19)

Ryff and Singer (2008) also found correlations between psychological well-being, which may be regarded as indication of mental health, purpose in life, and social connections. They described psychological well-being as an amalgamation of six dimensions: self-acceptance, purpose in life, environmental mastery, positive relationships, personal growth, and autonomy. These dimensions were assessed by Ryff's (1989) scale of psychological well-being.

Reker (2001) reported results of a longitudinal study involving 99 community-residing and 87 institutionalized older adults aged 65 to 94 years. The study researched the importance of existential (purpose in life, religiousness, and death acceptance) and traditional (social resources, intellectual and cognitive competence) factors for successful aging. The results of the study indicated that purpose in life was important for successful aging in both community and institutionalized environment.

In other works, issues of vulnerability were directly related to spirituality, which may be regarded as being within the existential realm. Thus, Hank and Schaan (2008) assembled data from 22,000 computer-assisted personal interviews with individuals over 50 years of age from 10 European countries. They looked at the correlation between frequency of prayer, which may be seen as intrinsic spirituality, and four health-related outcomes in older adults: self-perceived general health, general physical health,

functional limitations, and mental health. They came to the conclusion that prayer is an important coping mechanism for older adults.

Krause (2006), in his review of research on the health and religion in later life, examined six dimensions of religion that have been found to have positive effect on health: church attendance, prayer, religious coping responses, forgiveness, church-based social support, and religious meaning. His research indicated that religious practices were, for the most part, beneficial for the physical and mental health of older adults. It also demonstrated complex interconnection between existential issues of meaning and transcendence, social support, and physical and psychological vulnerability in old age.

Summary of Literature

As the population of the world ages, especially in industrially developed countries, issues related to different aspects of aging attract more and more attention of researchers. A number of studies have addressed the old age vulnerability factors, focusing on the interrelationship between vulnerability, stress and anxiety, and their combined effect on physical and mental health of seniors. Other adverse aspects of old age explored in research included loss and grief, financial limitations, abuse of seniors, and environmental effects. Two areas more thoroughly represented in literature concerned social involvement and existential awareness of seniors. Many authors researched different types of social involvement including received and provided support, and their importance for the health, well-being, and life satisfaction of the elderly. Among the existential concerns, the most widely studied appeared to be the search and recognition of the meaning of life and the acceptance of death as a factor contributing to the meaning of life. Some works were dedicated to the interconnection between the

perceived vulnerability, social support, existential awareness, and spirituality and faith systems. The literature reviewed provided background for the conceptualization and conduct of my study.

CHAPTER III

METHODOLOGY

This chapter addresses the research design, participants, procedure, instrumentation, hypotheses tested, and data analysis.

Research Design

This was a survey-based, correlational study that examined the existence and strength of the relationship between the independent and dependent variables. The explanatory (predictor) variables were

1. Degree of social involvement measured by the first section of the survey based on the Social Provisions Scale (SPS; Cutrona & Russell, 1987).
2. Level of provided social support measured by the Reassurance of Worth and Opportunity for Nurturance domains in the first section of the survey.
3. Level of existential awareness measured by the second section of the survey based on the Life Attitude Profile-Revised scale (LAP-R; Reker, 1992). The level of existential awareness was represented by the global composite score on the LAP-R: Existential Transcendence.

Additional explanatory variables were determined after running principal component analyses on the items constituting the first and the second sections of the survey.

The dependent variable was the vulnerability to old age measured by the third section of the survey based on the Perceived Vulnerability Scale (PVS; Myall et al., 2009).

The moderator variables were intended to be interactions between social involvement and existential awareness and between the predictors determined by the factor analysis.

The demographic variables included gender, age, levels of education, perceived health and perceived financial security.

Participants

The target population of the study was American older adults age 60 and over. Although different studies related to the elderly use various cut off ages for their participants, the age limit used in this study was selected in accordance with older adult demographic definition accepted by the United Nations (United Nations Program on Ageing, 1982). The eligibility criteria were as follows: independently living, cognitively non-impaired persons over 60 years of age. Exclusions comprised institutionalized, cognitively impaired persons, and persons under 60 years of age. The type of sample was nonprobability, convenience, volunteer, snowball, and purposeful.

To achieve the best representation and variety, the participants were recruited from a variety of locations: senior community centers in Denver, Colorado Springs, and Greeley; and Senior Centers in Orange County, California. Additional sources of recruitment included residents of retirement apartments in the Denver Metro area; clients of dining centers of the “Meals on Wheels” program in Denver; and members of the Denver-based social groups of independent active seniors.

I determined the required number of participants based on the planned statistical analyses (multiple regression and factor analysis). For the multiple regression, Green (1991) recommends to take into account, while determining the sample size, the number of predictors, α level, and anticipated effect size.

Based on the review of literature, I believed I would have two factors in the Existential Awareness section of my study and two factors in the Social Involvement section. For the Existential Awareness part, I utilized the sum of scores on Purpose, Coherence, Choice/Responsibleness, and Death Awareness scales of LAP-R (Reker, 1992) to assess existential strengths of individuals while using the scores on the Existential Vacuum and Goal Seeking scales to assess existential weaknesses. On the Social Involvement scale, I expected to have two factors: received and provided support. In addition to these four factors, I included in the number of predictors the total scores on the Social Involvement and the Existential Awareness sections of the survey. The first one was determined by summing up the scores on all six domains in the Social Involvement part of the survey (Guidance, Reliable Alliance, Reassurance of Worth, Opportunity for Nurturance, Attachment, and Social Integration). The second one was calculated by summing the scores in the Purpose, Coherence, Choice/Responsibleness and Death Awareness domains, and subtracting from the result the sum of scores in the Existential Vacuum and Death Acceptance domains. I was also interested to find out if the following interactions impacted the dependent variable: interaction between global scores on existential awareness and social involvement, interaction between existential strengths and provided support, and interaction between existential weaknesses and received support. Other aspects I wanted to explore included the impact of interactions

between existential awareness and age and existential awareness and level of education on the dependent variable. Thus, the total number of variables explaining the dependent variable was expected to be 17:

- global score of existential awareness;
- global score of social involvement;
- existential strengths;
- existential weaknesses (I presumed that the last two variables were going to have a linear negative relationship);
- received support;
- provided support;
- interaction between global scores of existential awareness and social involvement;
- interaction between existential strengths and provided support;
- interaction between existential weaknesses and receive support;
- interaction between existential awareness and age;
- interaction between existential awareness and level of education;
- age (3 levels);
- education (5 levels).

Based on 17 predictors, an α level of .05, anticipated effect size .15 (based on f^2), and desired statistical power level .80, I determined that I would need 150 participants for my full study (Green, 1991). This number of explanatory and moderator variables could be revised based on the results of the factor analysis.

In assessing the desired sample size, I also took into account the number of participants necessary for factor analysis and reliability. However, there did not seem to be definite recommendations for sample sizes based on these two criteria. Several authors (Brace, Kemp, & Snelgar, 2006; De Winter, Dodou, & Wieringa, 2009) suggest a minimum size of 200 for factor analysis. Gall, Gall, and Borg (2003) suggest that with the lower reliability, the sample size has to be “adjusted accordingly” (p. 177). The three instruments I used for my survey reported good internal consistency for comparable populations: Cronbach’s $\alpha = .95$ for the Perceived Vulnerability Scale (Myall et al., 2009); .77 to .91 for Life Attitude Profile-Revised (Reker, 1992); and .92 for Social Provision Scales (Cutrona et al., 1986; Russell & Cutrona, 1991). I planned to have at least 200 participants in my full study since this minimal number for factor analysis would be sufficient for regression analysis and would also take into account the reliability of the measures used in my survey.

Procedure

The study was submitted to the Institutional Review Board (IRB) for review and approval (see Appendix B). Permissions to contact the participants were obtained from agencies through which I recruited the participants as required by the regulations of the agencies.

Different strategies were used for initial contact and data collection with different groups of participants. I envisaged that individual interviews with some of the participants might be conducted to help them fill out the instruments since the survey might appear complicated to some of the participants. Demographic data were collected during the interviews. I consulted with social workers in the retirement apartments and

“Meals on Wheels” to determine the best way to collect data from the respondents in these locations. Since many of the participants are living on fixed income, I planned to provide small gifts (bags of treats including chocolate and cookies) in appreciation of their time. The participants in the community senior centers were found by contacting the senior’s activities coordinators in each center to get permission to make presentations related to the topic of the study and to place notices on the community information boards. The members of the active seniors group were contacted during one of the hiking trips. Permission of the board of this group was requested to contact the members by e-mail and to publish the request to participate in the study in the online newsletter of the club. The research instruments and demographic questionnaire were directly delivered to the community seniors centers and e-mailed to prospective participants of the active senior’s group. The instruments also were distributed during presentations or the community events. I expected that these groups of participants would be able to answer the questions and return the questionnaires independently. The incentives provided to the members of the community center were donations to their organization. I planned to discuss with the board of the active senior’s group what incentive would be preferable: either a donation to the local charity or an entry into a raffle for gift cards to bookstores and local restaurants. I planned to offer to provide interpretation of the scores of the questionnaires. Only participants interested in these incentives would be asked to provide their names and contact information, which were to be kept confidential in a password-protected computer data base (see Appendix C for consent form).

Instrumentation

My survey consisted of three separate sections plus several demographic questions placed at the end of the survey. Upon reviewing a number of published instruments used to evaluate old age vulnerability, social involvement, and existential awareness, I chose three scales for my survey: the Perceived Vulnerability Scale (PVS; Myall et al., 2009), the Social Provisions Scale (SPS; Cutrona & Russell, 1987), and the Life Attitude Profile-Revised (LAP-R; Reker, 1992). I decided on these three instruments based on their good psychometric properties, which had been established in relation to the population similar to my target population (seniors), and also because they appeared to be a good match for finding answers to my research questions. I contacted the authors of the three scales and received permission to use the instruments in my study. The description of these scales with psychometrics follows.

The Social Provisions Scale

The first section of my survey evaluated different aspects of social involvement using The Social Provisions Scale (Cutrona & Russell, 1987). This instrument is based on six different functions or “provisions” of interpersonal relationships. These provisions, suggested by Weiss (1974) and described by Cutrona and Russell (1987), include Guidance (availability of persons who can provide advice or information); Reliable Alliance (assurance that others can be counted upon for assistance); Reassurance of Worth (recognition of one’s competence, skills, and values by others); Opportunity for Nurturance (the sense that others rely upon one for their well-being); Attachment (emotional closeness providing sense of security); and Social Integration (a sense of belonging to a group of like-minded persons).

The scale consisted of 24 items measuring the six subscales described above. Each subscale was assessed by four statements: two positively worded and two negatively worded. The responses ranged from 1 (*strongly disagree*) to 4 (*strongly agree*), indicating the extent to which the statements corresponded to the respondents' social network. Scores are obtained for the whole measure by summing the responses and for each of the six subscales.

Cutrona and Russell (1987) evaluated the reliability of the scores on a sample of 1,792 respondents: 1,183 students from introductory psychology courses, 303 public school teachers, and 306 nurses from a military hospital. The authors determined that the reliability of the scores from individual subscales was adequate with α coefficients ranging from .65 to .76; the reliability of the total Social Provisions score was found to be .92 (estimated based on the formula for the reliability of a linear combination of scores given by Nunnally (1978, as cited in Cutrona & Russell, 1987). After analyzing the factor structure of the Social Provisions Scale, Cutrona and Russell concluded that it assessed both specific components of social support and the overall level of support available to the person. I realized that most of the participants of their original study were much younger than my target population. This indicated the need for a pilot study to determine the reliability of the scale for older adults, which I conducted in the summer of 2010.

Weiss (1974) noted that specific needs for social provisions depended on the individual's stage in the life cycle. Cutrona et al. (1986) conducted a pilot study to determine the social needs of the elderly. The participants were 50 volunteers age 60 and older recruited through a senior citizens center. The results of their study indicated that for senior adults, reassurance of worth and opportunity for nurturance were significant

predictors of physical health. The authors underscored that the elderly were unique among the populations they studied in their need to provide social support to others. Based on the same study, the authors indicated that the reliability for the total support score was .92; the reliability of the four-item subscale scores ranged from .76 to .84 (Cutrona et al., 1986; Russell & Cutrona, 1991). The Social Provisions Scale also showed significant concurrent, negative correlations with depression and positive correlations with life satisfaction of the elderly.

The Life Attitude Profile-Revised

In the second section of the survey, I utilized The Life Attitude Profile-Revised (LAP-R; Reker, 1992) to assess different aspects of existential awareness of the participants. This was a 48-item measure of discovered meaning, purpose in life, and the motivation to find meaning and purpose in life. The six dimensions were Purpose, Coherence, Choice/Responsibleness, Death Acceptance, Existential Vacuum, and Goal Seeking. In addition, there were two composite scales: Personal Meaning Index and Existential Transcendence. The responses were given on a 7-point Likert scale from *strongly agree* (7) to *strongly disagree* (1). Each of the six scales was assessed by eight items. The scores were computed by summing the scores of the items. The scores for the composite scales were determined as follows: for Personal Meaning Index by summing scores on the Purpose and Coherence scales; for the Existential Transcendence by summing the scores on Purpose, Coherence, Choice/Responsibleness, Death Acceptance scales and subtracting from this result the sum of scores on the Existential Vacuum and Goal Seeking subscales.

Reliability of scores from the LAP-R: Internal consistency was determined for a normative group of 750 individuals divided into three age groups: young adults (17-24), middle-aged adults (25-40), and older adults (41-89), both males and females. Reliability was reported for each age group. Reker (1992) reported α coefficients for internal consistency from .77 to .91 across age groups and gender. Test-retest reliability was computed in the same study for a group of 200 subjects. Two tests were conducted with an interval of four to six weeks. The test-retest coefficients ranged from .77 to .90. Reker reported that the results of factor analysis, conducted and reported for three age groups described above, provide a support for the construct validity of scores from the LAP-R. Reker also provided information on satisfactory concurrent validity of scores from the instrument. The author presented data confirming convergence of the LAP-R dimensions with criterion variables described in a number of instruments including the Purpose in Life Test, Ladder of Life Index, and others.

Through the Academic Search Premier database, I found a number of recent studies that used the LAP-R. However, the authors of these studies did not conduct psychometric analysis of this measure but just reported the psychometrics provided by Reker (1992). I hope that my study will contribute to the information regarding the reliability and factor analysis of this measure.

Perceived Vulnerability Scale

The third section of my survey assessed the perceived vulnerability to aging. In this section, I used The Perceived Vulnerability Scale (PVS) that was developed by a group of Australian researchers to assess feelings of vulnerability in older adults (Myall et al., 2009). The authors of the PVS considered a pool of 52 items derived from the

literature and open ended interviews with older adults. After reviewing these items with older adults' service providers and adjusting the list for redundancy and significance to the elderly population, they presented a final questionnaire of 22 items.

Myall et al. (2009) administered the PVS simultaneously with a number of other instruments on two separate occasions over an interval of three years. The other instruments administered in their study measured anxiety, stress, depression, perceived well-being, and the extent to which individuals found meaning and purpose in their lives. The participants were volunteers from urban and rural areas in Australia aged 50 to 90. The total number of volunteers who participated in both stages of the study was 233. The participants were asked to evaluate on a 6-point Likert scale from 1 (*not vulnerable*) to 6 (*extremely vulnerable*) their perceived vulnerability to various effects of aging including health decline, isolation from friends, loss of independence, lack of adequate health care, loss of social interactions with colleagues and friends, loss of old friends, loss of meaningful and fulfilling activities, loss of memory, negative attitudes toward aging, changes in community services, loss of sight, lack of opportunities to complete unfinished business, isolation from family, change in personal financial situation, deterioration of body image, difficulty entering aged care due to increased costs, tripping and falling, physical disability, giving up recreational activities, present financial situation, government economic uncertainty, and loss of hearing. The mean PVS score at the original stage was 2.95; at the second stage three years later, it increased to 3.14, which probably reflected the natural process of feeling more vulnerable in the process of aging. Scores from the PVS scale showed good internal consistency (Cronbach's $\alpha = .95$) and good six-week test-retest reliability, ($r(32) = .73, p < .001$). I realized that the

sample used for test-retest reliability was very small. I took this into account by increasing my own sample size. Since this new scale was just published in 2009, I did not find any other studies that used it.

The demographic questions at the end of my survey addressed participants' gender, age, level of education, perceived health, and perceived financial security.

Research Questions and Hypotheses

The following research questions and their relational hypotheses are discussed:

Q1 What factors of aging are perceived by the older adults as most detrimental?

I did not have a preconceived idea about what factors the participants would designate as most detrimental; therefore, no hypothesis was associated with this question. The answer to this question was very important in determining factors negatively affecting the health and general well-being of older adults. Although some of the factors perceived as most detrimental were of an objective nature (health decline, losses of friends, and economic issues), many others were related to life style, life attitudes, and subjective perceptions of seniors. The latter ones, once revealed, could be addressed in counseling. The results might also be useful to community agencies in planning for new facilities and activities for seniors. The results obtained could be important in designing therapeutic interventions and in informing public and governmental bodies of the most urgent needs and issues associated with old age. The results are presented in tables as descriptive statistics and corresponding suggestions are made.

Q2 To what extent does social involvement in general explain the level of perceived vulnerability to adverse effects of aging?

This question was addressed by the following hypothesis:

H1 Degree of social involvement mitigates the perceived vulnerability to old age factors.

Q3 To what extent does provided social support explain the level of perceived vulnerability to adverse effects of aging?

This question was addressed by the following hypothesis:

H2 Degree of provided social support mitigates the perceived vulnerability to old age factors.

Q4 To what extent does existential awareness of seniors explain the level of perceived vulnerability to aging?

This question was addressed by the following hypothesis:

H3 Level of existential awareness mitigates perceived vulnerability to old age factors.

Q5 To what extent does the interaction between social involvement and existential awareness explain the level of perceived vulnerability to aging?

This question was addressed by the following hypothesis:

H4 The interaction between the social involvement and existential awareness has an impact on perceived vulnerability to aging.

Data Analysis Plan

I used SPSS to analyze the data. Upon receiving the data, I numbered the surveys to avoid confusion and completed the data entry. During this process, I assigned “8” to blank responses. Upon completing the data entry, I ran frequencies to determine variance, errors, and outliers. I reviewed and correct cases that appeared unusual. After that, I ran descriptive statistics, determining means, standard deviations, skewness, and kurtosis. I also developed histograms to get a visual representation of distribution and dispersion of data.

My survey consisted of four parts: the first section measured six domains of social involvement; the second section measured six domains of existential awareness and

provided two composite scores; the third section measured perceived vulnerability to aging as a unidimensional construct; and the fourth section asked some demographic questions including gender, age, level of education, perceived health, and perceived financial security.

I began the analysis with section four of the survey to determine demographic characteristics of my respondents. I ran frequencies to determine gender distribution, distribution of age, level of education, and perceived health and financial stability.

Following this step, I performed transformations. Twenty-four items of section one assessed six subscales; each measured two statements worded positively and two negatively. For this section, I recoded the reverse worded items and then computed new variables by summing responses to items related to each domain. Then I ran frequencies and histograms on these new six variables to determine means, skewness, and kurtosis. I performed the same procedures for the second section. The second section did not have reverse worded items. However, I recoded positive scores of two subscales (Existential Vacuum and Goal Seeking) into negative scores and then computed new variables by summing the scores on each of the subscales. I transformed these two scales into their negative values because one of the composite scores on this global scale was derived by summing four subscales and subtracting this number from the sum of the other two subscales. Also, the negative values on these subscales were needed to compute the Cronbach's alpha for the composite scores.

The third section of my survey had no subscales so I ran frequencies, descriptive statistics, and histograms. For this section (vulnerability), I determined both the sum of scores on all of the items and the vulnerability index by dividing the sum by the number

of items (22). I computed Cronbach's α coefficients for the scales, subscales, and composites.

Following these steps, I ran an exploratory factor analysis. I ran a principal components analysis on the rating scales of Section 1--Social Involvement and Section 2--Existential Awareness to determine the number of underlying factors. (Actually, since these two sections were based on existing instruments with published number of factors, I had certain expectations of what the number of factors might be but I wanted to check it out for my population). To determine the number of factors, I used the Cattell's scree test, proportion of common variance, and salient loading of $\geq .3$. I used oblique rotation since I assumed the factors would correlate. Section 3 of my survey was a unidimensional scale based on multiple items. I did not run a factor analysis on this scale.

To answer the research questions 2 through 5, I conducted multiple regression analysis. Happner, Wampold, and Kivlighan (2008) suggested using this statistical method for studying the separate and collective contributions of one or more predictor variables to the variation of a dependent variable. The criterion variable was perceived vulnerability, which was a continuous variable measured by section 3 of my survey. I determined the number of independent variables based on the results of the factor analysis. I expected that these factors would be received support, provided support, existential strengths, and existential weaknesses, plus the global scores on Social Involvement and Existential Awareness. I also wanted to take into account the demographic variables including gender, age, level of education, perceived health, and perceived financial security. There would also be moderators--interactions between predictors. I ran a three-step hierarchical regression: the first step was to control for the

demographic variables, the second for the main effect variables, and the third for the product variables used to test the interactions.

The following assumptions of multiple regression and diagnostics were taken into account. The relationships between the predictors and the outcome variable should be linear. I used scatterplots to diagnose problems of non-linearity. Since I conducted multiple regression, I examined partial regression plots instead of the simple scatterplots between the predictor variables and the outcome variable. I conducted collinearity analysis to determine the discrepancy between bivariate and multivariate contributions of variables. I investigated unusual and influential data including outliers, leverage, and influence. If I found such data through scatterplots, I was going to perform regression analysis with and without these observations to determine their effect on the criterion. I also ran tests to verify that my analysis met the following assumptions: normality (the errors should be normally distributed); homogeneity of variance (the error variance should be constant); independence (the errors associated with one observation were not correlated with the errors of any other observation); and model specification (the model should be properly specified including all relevant variables and excluding irrelevant variables). I specified the variables prior to conducting the regression. I also used residual scatterplots between the standardized dependent variable and standardized residuals for checking the assumptions.

Pilot Study

Participants

In July of 2010, I conducted a pilot study to test the procedure of data collection and to determine the reliability of scores of the instrument for my intended population. I

was also interested in determining the response rate I might expect in my study since, upon reviewing a number of published studies on older adults, I found out that different studies reported different response rates. Kaldenberg, Koenig, and Becker (1994), based on a four-page, mailed-in questionnaire similar in length to mine and distributed to respondents aged 60+, reported the overall response rate of 47.3%. The highest response rate (52%) was in the youngest group (60-62), dropping by 0.5% for each subsequent age category. In 2004, the National Research Center, Inc. conducted a study on the needs and strengths of older adults in Colorado. The survey was conducted by phone among 2,000 persons of 60+ years of age. It provided a response rate of 17%. Tseng et al. (2007), in a survey conducted mostly by telephone but with some mailed-in surveys, among 2,344 participants aged 65 and over, reported a response rate of 62%.

The participants for my pilot study were recruited from two sources: the Community Recreation Center in Arvada, Jefferson County, Colorado, and from my social acquaintances. To recruit participants from the Community Recreation Center, I first discussed the survey with the Center's Activities Director. I incorporated her suggestions into the survey by slightly modifying the wording of one question, which appeared vague, and adding an incentive to my project (a donation of five dollars to the Community Center for each completed and returned questionnaire). The Director also informed me that the Center's policies did not allow addressing participants during scheduled activities, as I originally planned, since the members paid for a certain number of minutes in their yoga and art classes. Instead, in order to attract their attention to the survey, I created a colorful introductory letter and a wall sign that I delivered to the

Center. The box with the copies of the survey was placed in an open area of the Community Center.

I delivered the surveys directly to the Center, hoping this would facilitate their receipt by seniors. I knew that they still might pick them up but not respond. Taking into account the limited time of the pilot project, I first brought 50 copies to the Community Center since the Activities Director thought it might be a feasible number. However, later she requested 30 additional copies. I distributed about 20 additional copies among my acquaintances and former co-workers. I discuss the response rate obtained in the Results and Conclusion section of this paper.

Results of the Pilot Study

The limited amount of time for this pilot project and the insufficient number of responses did not allow me to make conclusions regarding the research questions and hypotheses. However, this pilot project provided valuable information and useful insights for my main study. These results are described below.

Survey design. In the course of the project, I combined three existing questionnaires to design one instrument. I added demographic questions to those instruments to understand better the pattern of responses. At first, I thought the survey (99 items) might be too long and too difficult for my population to fill out. It was very helpful to test it on a sample comparable population. The number of responses I received in a short period of time (59 in one week) exceeded my expectations; thus, it appeared that the length of level of difficulty of the survey was appropriate for older adults. I did not include the question regarding the time of completion of the instrument on the questionnaire, which I regretted. For this reason, I did not have mean time of completion.

However, a few people I was able to talk about the survey (from my social acquaintances) informed me that it took about 15 to 20 minutes.

Response rate and incentives. I printed 100 questionnaires and distributed 80 in the Community Recreation Center in Arvada, Colorado, and 20 among volunteers from my acquaintances and their contacts (by snowballing). I received 59 completed questionnaires; however, two of them came after I finished the preliminary data analysis so I used 57 to determine descriptive statistics and reliability. The response rate in the community center was 57.75%; the response rate of volunteers was 85%.

The decision to donate to the community center as incentive proved to be a good one since the members of the center were happy to contribute in this way to their agency. I wrote a colorful introductory letter and attached it to my survey, explaining that for each completed and returned survey I would donate five dollar to the center. One of the respondents actually circled this sentence on the letter and commented, “This inspired my participation.”

I analyzed the data with SPSS. Most of the respondents answered all the questions. Some of the respondents missed one or two items; however, there did not seem to be a pattern other than more responses were missed in the existential awareness section of the survey. The item that had most missing answers (4) was “The meaning of life is evident in the world around us.” I realized that this was a very complicated question and might require a long time to consider. However, one of the response options on this part of the survey was “undecided.” I am not sure why the participants failed to choose it. In further research, I would consider using missing data handling procedures in order not to lose too much data.

Descriptive statistics. First I reviewed the demographic characteristics of my respondents. They are presented in Table 5.

Table 5

Demographic Characteristics of Respondents of Pilot Study

Characteristic		Percent
Gender		
	Male	17.5
	Female	82.5
Age		
	60-69	52.0
	70-79	40.9
	80+	7.1
Education		
	High School	22.8
	Some College	17.5
	College Degree	29.8
	Graduate Degree	29.8
Perceived Health		
	Excellent	24.6
	Good	49.1
	Fair	22.8
	Poor	3.5
Perceived Financial Security		
	Very Secure	10.5
	Secure	61.4
	Somewhat Insecure	22.8
	Insecure	5.3

The data in Table 5 suggest that my sample might not be representative of the target population--all community living, cognitively intact, American adults. Most of my respondents reported education of high school or higher (I had the category of “less than

high school” on my survey, but nobody selected it). Most of the respondents reported good or excellent health and secure or very secure finances.

Further, I computed descriptive statistics for the main scales and subscales of the survey (see Table 6).

Table 6

Descriptive Statistics of the Main Scales and Subscales of the Survey (Pilot Study)

	<i>N</i>	Min.	Max.	Mean	Std. Deviation	Skewness
Social Involvement	49	65.00	96.00	83.46	8.17	-.472
Guidance	57	11.00	16.00	14.28	1.61	-.503
Reassurance	54	9.00	16.00	13.85	1.87	-.648
Integration	55	9.00	16.00	13.71	1.97	-.453
Attachment	57	9.00	16.00	14.09	1.75	-.891
Nurturance	52	6.00	16.00	12.19	2.52	-.302
Alliance	56	10.00	16.00	15.10	1.56	-1.593
Purpose	50	11.00	54.00	42.40	8.46	-1.255
Coherence	49	19.00	55.00	41.45	8.47	-.518
Choice	52	31.00	56.00	46.12	5.62	-.307
Acceptance	52	19.00	55.00	39.10	8.68	-.453
Vacuum	51	9.00	45.00	23.45	9.15	.512
Goal	52	16.00	96.00	37.27	12.45	1.914
Meaning	45	50.00	109.00	84.91	15.00	-.497
Transcendence	39	12.00	164.00	110.05	33.13	-.831
Vulnerability	48	23.00	122.00	71.00	21.15	-.302
VulIndex	48	1.05	5.55	3.23	.96	-.302
Valid N (listwise)	34					

The review of this table points to the following conclusions. For the social involvement part of the survey, the results had a very definite negative skewness. This appeared to match the composition of my sample: the respondents, on the whole, appeared to be well-educated, in good health, and in financially secure. Furthermore, they were active members of a community center and thus must be experiencing good social involvement, which they reported. The mean scores on both global scales and subscales were comparable to those reported by Cutrona and Russell (1987). For instance, their global score was reported at 82.45; mine turned out to be 83.47.

The existential subscales and composites appeared to have a more normal distribution as evidenced by the charts. However, the scales related to existential strengths (Purpose, Coherence, Choice/Responsibleness, and Death Acceptance) were negatively skewed; whereas, scales related to existential weaknesses (Goal Seeking and Existential Vacuum) had a positive skewness. This, again, appeared to match my sample since the participants, on the whole, seemed to possess a lot of strengths. The mean scores I received on each of the existential strength subscales and composite subscales exceeded those reported by Reker (1992) and the mean scores on existential weaknesses subscales were below those obtained in Reker's research. Reker's numbers referred to his entire sample of $N = 750$ without subdivision into age group. This made it very tempting to jump to the conclusion that older persons appeared to be more existentially aware and adjusted. However, all the scores were within one standard deviation and my sample was not large enough or representative enough of all the older adults' population.

The mean vulnerability index score (3.27) appeared to have a rather normal distribution and was comparable to those reported by Myall et al. (2009): 2.95 in the first

stage of their study and 3.14 three years later. For individual vulnerability factors in the current sample of my pilot study, mean vulnerability indices ranged from 2.55 to 3.93. The factors that appeared to be of most concern to the respondents were (in descending order) health decline, government economic instability, loss of old friends, and loss of memory.

I also computed Cronbach's α reliability coefficients for all the subscales and scales (see Table 7). These α coefficients appeared comparable with those reported for the original instrument used in the design of my survey with the exception of "Attachment" subscale the in social involvement realm and "Goal Seeking" in existential awareness, which came up substantially lower. These were also the lowest α coefficients obtained in my pilot project. I made a note of how these coefficients computed in the full study and reviewed the items to explore possible reasons.

Table 7

Cronbach's Alpha Reliability Coefficients for all the Subscales and Scales of the Survey (Pilot Study)

Scale/Subscale	Cronbach's Alpha
Social Involvement	.86
Guidance	.68
Reassurance of Worth	.63
Social Integration	.66
Attachment	.50
Opportunity for Nurturance	.63
Reliable Alliance	.75
Purpose	.88
Coherence	.87
Choice/Responsibleness	.73
Death Acceptance	.86
Existential Vacuum	.83
Goal Seeking	.44
Personal Meaning	.88
Existential Transcendence	.63
Perceived vulnerability	.95

Conclusions

Although the pilot study did not provide me with sufficient data to run inferential statistics and to answer the research questions, it proved helpful in many other ways.

First, it gave me the opportunity to prepare and test my survey. The pilot project proved

it was feasible for respondents to complete it within a reasonable timeframe. I slightly reworded one of the questions based on feedback from the respondents.

Based on this pilot study, it appeared that people could be happy and content in old age. In the full research, I planned to continue exploring the ways to achieve this goal in order to make recommendations for the most efficient psychotherapeutic interventions.

One of the important conclusions I made was related to the sampling procedure. My original plan for the full study was to recruit participants mostly through senior community centers. This first experience proved that, although I would probably obtain a satisfactory response rate, the participants might not be representative of my target population. In the future research, I planned to contact senior apartments and “Meals on Wheels” to try and attract person of more diverse educational level and socioeconomic status. However, with different types of population, I might have to consider other methods of survey administration such as face-to-face interviews.

I realized how important it was to obtain cooperation of allies in the communities. I believe the staff of the community center was very instrumental in encouraging members to pick up and fill out the survey. The incentive of donating on behalf of participants to the community center worked well in that environment. However, while working with less affluent population, I would consider a more tangible incentive such as gift cards to grocery stores or bags of treats.

The most evident limitation of my study was that it was limited to Colorado and California. The characteristics of older adults in other parts of the country might be different. It would be interesting to conduct similar research including population of

other states. Based on my review of research literature, it appeared that researchers in Europe and Australia, so far, have been focusing more on the studies of aging. Since the older adult population is on the increase, I believe it is very important to continue research in every area related to this age in the United States.

CHAPTER IV

RESULTS

In this chapter, I present the results of the study. First, I describe the process of data collection and the demographics of the sample. Then I explain the process of data treatment including imputation of missing data, component extraction, and review of correlations. Finally, I discuss the multiple regression analysis and the results in relation to the study questions.

Preliminary Data Analysis

I conducted data collection in two waves: during the summer of 2010 and in the spring of 2011. I used two methods of distribution of my questionnaire. I distributed paper questionnaires in a number of agencies providing services to older adults: retirement communities in the Denver area; senior recreation centers in Jefferson and Weld counties, Colorado, and in Orange County, California; churches; and volunteer organizations. I also placed the survey on “Survey Monkey” and provided the link to the seniors of the same agencies in case they preferred this media of communication.

I received 244 valid responses. Upon receiving them, I numbered the responses to avoid possible confusion and entered the data into SPSS, which I used to analyze the results. At that time, I recoded 12 reverse coded items of the social involvement section. This did not affect the total number of items in my survey. After that, I ran frequencies and histograms to give a general picture of my data. I noticed a strong negative skewness

in most of the variables representing social involvement. This appeared natural since most of my participants were recruited in social settings and apparently had a high level of social involvement. This feature of data represented one of the inevitable limitations of the study and is further discussed in Chapter V.

I also realized I had missing data, which could substantially reduce the number of responses to be used in inferential statistics. For this reason, I decided to impute missing data, if appropriate, and started with analyzing the pattern of missing data (see Figure 1).

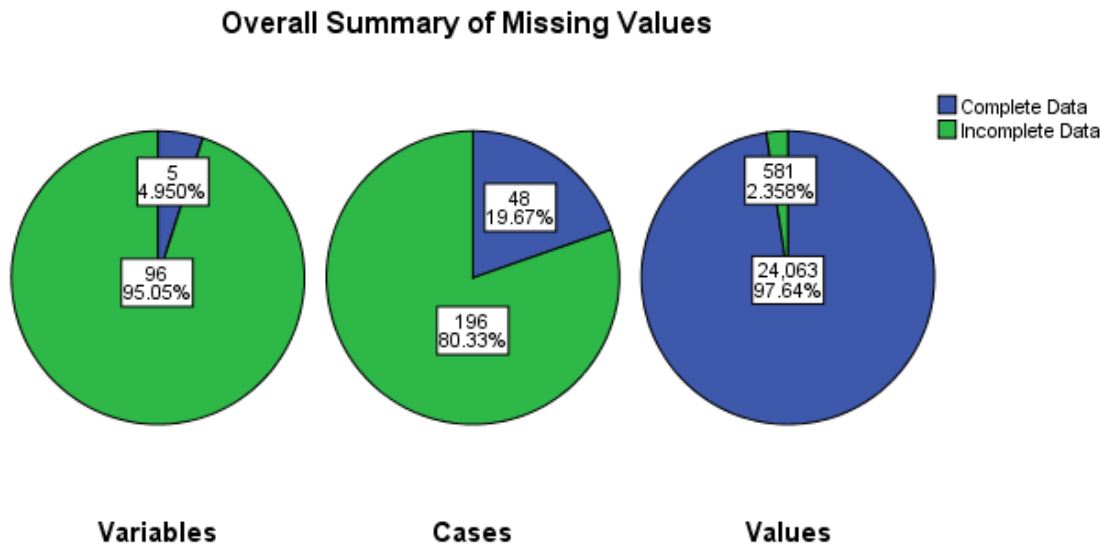


Figure 1. Summary of missing data.

The analysis showed the following:

- 96 of the 101 variables (about 95%) had at least one missing value.
- 196 of 244 cases (80%) had at least one missing value.
- However, only 581 of the 24,063 values (cases \times variables) were missing; this is slightly over 2%.

Only two variables had over 10% missing: employment (63 or 25.8%) and employment satisfaction (174 or 71.3%). This was quite natural for the following reasons:

1. In the first part of data collection, I did not ask these two questions.
2. Most of the persons who did answer the question about employment were not employed; naturally, they did not respond to the question regarding employment satisfaction.
3. In the process of data collection, some of the participants voiced an idea that it would have been better to add voluntary activities to this question since this also brings satisfaction similar to that received from employment. It would be important to consider this suggestion in future studies. The results of this part of the survey (employment related) are discussed in a separate paragraph and are of interest, but they were not part of my original research questions.
4. The pattern of frequencies chart showed that the great majority of the cases had three patterns: missing data on employment satisfaction, no missing data, and missing data on employment.

Five variables did not have missing items (most of the demographic variables) and thus did not require imputation. The number of missing values for other variables (with the exception of the two employment related variables described above) ranged from one to nine. The statement that had most missing values (nine respondents missed it) was “The meaning of life is evident in the world around us.” This was followed by items missing seven values: “Other people do not see me as competent,” “I have a clear

understanding of the ultimate meaning of life,” and “I am determined to achieve new goals in the future.”

Overall, the missing values were randomly distributed and each individual item missed only a few responses. Based on this, I decided to impute the missing data. In the treatment of the missing data, I used the EM algorithm, which is described as “an iterative procedure that produces maximum likelihood estimates” (Graham, 2009, p. 555.) The missing data were imputed for all the variables with the exception of the five that did not have missing data and the two employment-related variables that had too much missing data, which I did not intend to use in the multiple regression analysis. After using the EM algorithm, some of the imputed data were out of range. I replaced out of range data by rounding to the nearest integer within the range. To make sure that the data were not distorted in the process of rounding, I conducted a sensitivity analysis. The means and standard deviations of all the items (including those missing most responses) after EM treating and rounding were within hundredths of original raw data.

After imputing missing data, I started the analysis of data with section four of the survey—the demographics (see Table 8).

Of the 169 persons who responded to the employment question, 69 (38.1%) stated that they were employed and 112 (61.9%) were unemployed. Of the 69 persons who stated that they are employed, 63 (90%) reported employment satisfaction.

I then looked at the dependent variable (criterion) that I defined as the Perceived Vulnerability Index. I defined this variable in two ways: first, as a mean of scores on all items of the scale, and second, as a factor score obtained from principal component analysis.

Table 8

Sample Demographics: Gender, Age, Level of Education, Perceived Health, Perceived Financial Security

Variable	Frequency	Percent
Gender		
Male	57	23.4
Female	187	76.6
Age		
60-69	86	35.2
70-79	109	44.7
80-89	40	16.4
90-99	8	3.3
100+	1	.4
Education		
Less than High School	9	3.7
High School	35	14.3
Some College	63	25.8
College	64	26.2
Graduate Degree	73	29.9
Perceived Health		
Excellent	48	19.7
Good	129	52.9
Fair	57	23.4
Poor	10	4.1
Perceived Financial Security		
Very secure	27	11.1
Secure	135	55.3
Somewhat Insecure	63	25.8
Insecure	19	7.8

In the first instance, I obtained the vulnerability index by dividing the sum of perceived vulnerability scores for each item of Section 3 of the survey by 22--the number of items. The scores were normally distributed (see Figure 2) with the mean of 3.30 and

Cronbach's Alpha = .94, which is quite comparable with the results reported by Myall et al. (2009).

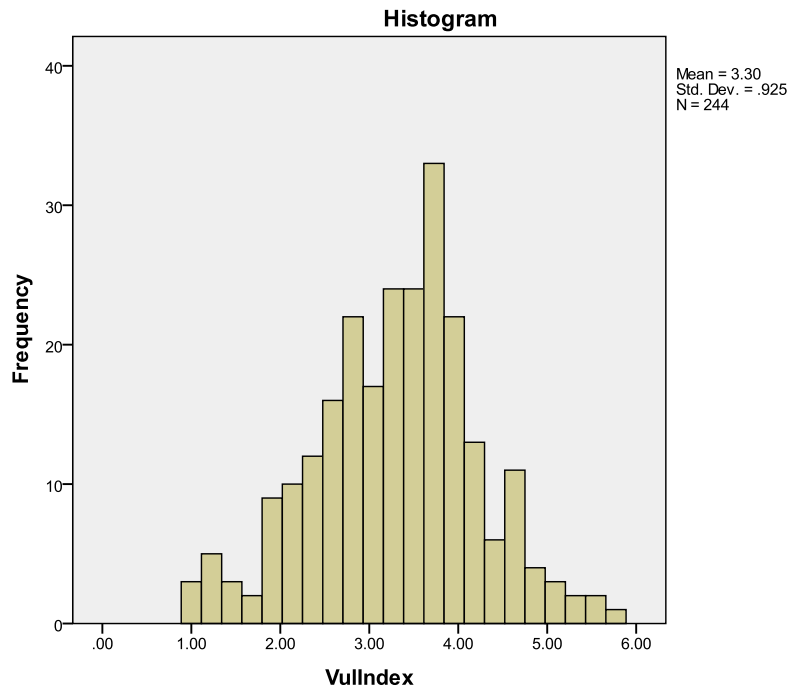


Figure 2. Vulnerability index distribution.

Following that, I conducted a principal component analysis on items of Section 3. Based on the previous literature and on the high internal consistency of this variable, I considered it unitary. For this reason, I ran a principal component analysis on Section 3 of the survey (vulnerability) and limited the number of extracted factors to one. The factor loading and communalities are presented in Table 9.

Table 9

Loadings from the Principal Component Analysis on the Perceived Vulnerability Scale

Item #	Item	Factor Loading	Communalities
3	Loss of independence	.753	.566
19	Giving up recreational activities	.730	.533
7	Loss of meaningful activities	.729	.532
5	Loss of social interaction with colleagues and friends	.723	.523
14	Changes in personal financial situation	.716	.512
8	Loss of memory	.709	.503
16	Difficulty in entering of aged care due to increased costs	.687	.473
11	Loss of sight	.684	.468
2	Isolation from friends	.676	.457
1	Health decline	.657	.431
4	Changes in personal financial situation	.648	.420
18	Physical disability	.639	.408
17	Tripping and falling	.638	.408
20	Present financial situation	.634	.401
10	Changes in community services	.628	.395
13	Isolation from family	.602	.362
22	Loss of hearing	.600	.361
15	Deterioration of body image	.595	.354
6	Loss of old friends	.594	.353
12	Lack of opportunity to complete unfinished business	.587	.345
9	Negative attitudes to aging	.558	.312
21	Government economic instability	.508	.258

In the same way, I computed two sets of independent (predictor) variables. First, I calculated subscales according to the previous literature based on the first and second sections of my survey and, following that, ran PCA on those two sections.

The first section consisted of items related to social involvement and was based on the Social Provisions Scale (Cutrona & Russell, 1987). I computed the scores for the six subscales (Guidance, Reassurance of Worth, Social Integration, Attachment, Nurturance, and Reliable Alliance) as well as for the composite Social Provision Scale.

The means and reliabilities for this part of the survey are presented in the Table 10 compared with the results reported by Cutrona and Russell (1987).

Table 10

Comparisons of Mean Scores and Cronbach's Alphas for the Social Involvement Section

Provision	Mean		Cronbach's Alpha	
	My Study	Cutrona & Russell	My Study	Cutrona & Russell
Guidance	13.92	14.18	.73	.76
Reassurance of Worth	13.43	13.29	.65	.67
Social Integration	13.41	14.01	.69	.67
Attachment	13.34	13.72	.66	.75
Opportunity for Nurturance	11.98	12.82	.71	.66
Reliable Alliance	14.20	14.43	.67	.65
Social Provisions	80.29	82.45	.88	.91

These results were quite comparable with those reported by Cutrona and Russell (1987). However, the participants of my study, overall, reported a slightly lower level of social support than the much younger (mostly introductory course psychology students) in the Cutrona and Russell study.

The second section of the survey consisted of items related to existential awareness and was based on the Life Attitude Profile-Revised (Reker, 1992). I computed the scores for the six subscales (Purpose, Coherence, Choice/Responsibleness, Death Acceptance, Existential Vacuum, and Goal Seeking) as well as for two composite scales: Personal Meaning and Existential Transcendence.

The means and reliabilities for this part of the survey are presented in the Table 11 compared with the results reported by Reker (1992). For the purposes of comparison, I selected the coefficients of internal consistency reported by Reker for his older age group of participants. Reker's mean scores are reported for his total normative sample. It is important to keep in mind that over 90 % of this group were persons younger than my sample, belonging to age groups between 17 and 59 (Reker, 1992, p. 46).

Table 11

Comparisons of Mean scores and Cronbach's Alphas for the Existential Awareness Section

Subscale/scale	Mean		Cronbach's Alpha	
	My study	Reker	My study	Reker
Purpose	41.07	40.03	.89	.83
Coherence	41.52	38.40	.85	.81
Choice/Responsibleness	44.66	44.94	.80	.77
Death Acceptance	38.08	36.13	.82	.81
Existential Vacuum	24.40	25.92	.82	.80
Goal Seeking	36.37	41.15	.79	.77
Personal Meaning	82.59	78.43	.89	.89
Existential Transcendence	104.56	92.47	.71	.88

Following these calculations, I ran a principal component analysis to determine possible additional predictors. First, I ran a principal component analysis for the social involvement section of the survey. I analyzed the data for the social involvement part of the survey by means of a principal component analysis with Promax rotation with Kaiser Normalization. The various indicators of factorability were good: many of the correlations exceeded .3, KMO value was .902, and the Bartlett's test indicated that data were probably factorable if $p < 0.5$. The residuals indicated that the solution was a good one. Five components with eigenvalues more than 1 were found. However, only two items loaded strongly on component 5. For this reason, and after reviewing the screeplot (see Figure 3), I decided to limit the number of components to four.

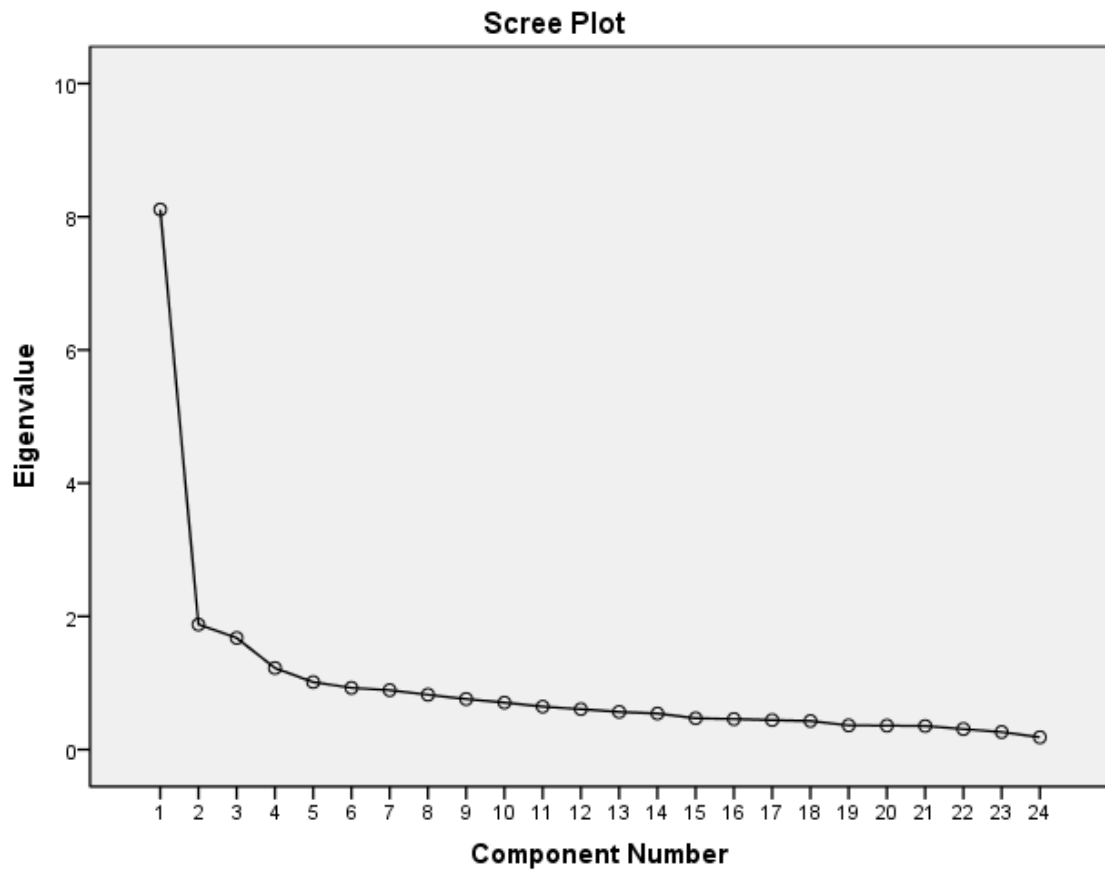


Figure 3. Screeplot for factor extraction for the social involvement section of the survey.

The results of the extraction are presented in Table 12.

Table 12

Factors Extracted for Social Involvement Section (Based on Pattern Matrix with Small Coefficients under .3 Suppressed)

Item No.		Components			
		Relation- ships	Assertive- ness	Provided Support	Intimacy
12	There is someone I could talk to about important decisions in my life	.884			
11	I have close relationships that provide me with a sense of emotional security and well-being	.788			
16	There is a trustworthy person I could turn to for advice if I were having problems	.754			
17	I feel a strong emotional bond with at least one other person	.726			
1	There are people I can depend on to help me if I really need it	.724			
13	I have relationships where my competence and skill are recognized	.657			
8	I feel part of a group of people who share my attitudes and beliefs	.639			
23	There are people who I can count on in an emergency	.578		.309	
5	There are people who enjoy the same social activities I do	.550			
20	There are people who admire my talents and abilities	.372		.346	
9	I do <u>not</u> think other people respect my skills and abilities		.857		
14	There is no one who shares my interests and concerns		.714		

Table continues

Table 12 Continued

Item No.		Components			
		Relation- ships	Assertive- ness	Provided Support	Intimacy
6	Other people do <u>not</u> view me as competent		.708		6
22	There is no one who likes to do the things I do		.540		
10	If something went wrong, no one would come to my assistance		.501		
3	There is no one I can turn to for guidance in times of stress	.336	.424		
2	I feel that I do <u>not</u> have close personal relationships with other people	.306	.328		
4	There are people who depend on me for help			.761	
7	I feel personally responsible for the well-being of another person			.743	.317
24	No one needs me to care for them			.600	.414
21	I lack a feeling of intimacy with another person				.711
19	There is no one I feel comfortable talking about problems with				.525
15	There is no one who really relies on me for their well-being			.454	.491
18	There is no one I can depend on for aid if I really need it				

The following four components were extracted and interpreted:

1. The first of the components was the combination of five domains of the Social Provisions Scale: Guidance, Reassurance of Worth, Social Integration, Reliable Alliance, and Attachment. It was interpreted as Importance of Relationships or Relationships.

2. The second component was unusual in that it consisted of statements from different domains; however, the uniting feature was the fact that in the survey, all these statements were formulated in reverse and thus had a negative connotation. Since the analysis of frequencies revealed that most of the responded tended to *strongly disagree* with these statements, the factor was interpreted as Assertiveness of Worth or Assertiveness. This issue is more deeply considered in the discussion chapter.
3. The third component included all the statements from the Nurturance domain. It was considered to be Provided Support.
4. The nature of items loaded on component four related it to the need of intimacy; thus, the component was defined as Intimacy.

Following that, I ran a principal component analysis on the existential awareness sections of the survey. I analyzed the data for the existential awareness part of the survey by means of principal component analysis with Promax rotation with Kaiser Normalization. The various indicators of factorability were good; many of the correlations exceeded .3, KMO value was .880, and Bartlett's test indicated that data were probably factorable if $p < 0.5$. The residuals indicated that the solution was a good one. Ten components with the eigenvalues exceeding 1 were extracted; however, many of the items loaded on several factors. After examining the screeplot (see Figure 4) and the items for their meaning, I decided to limit the extraction to five components.

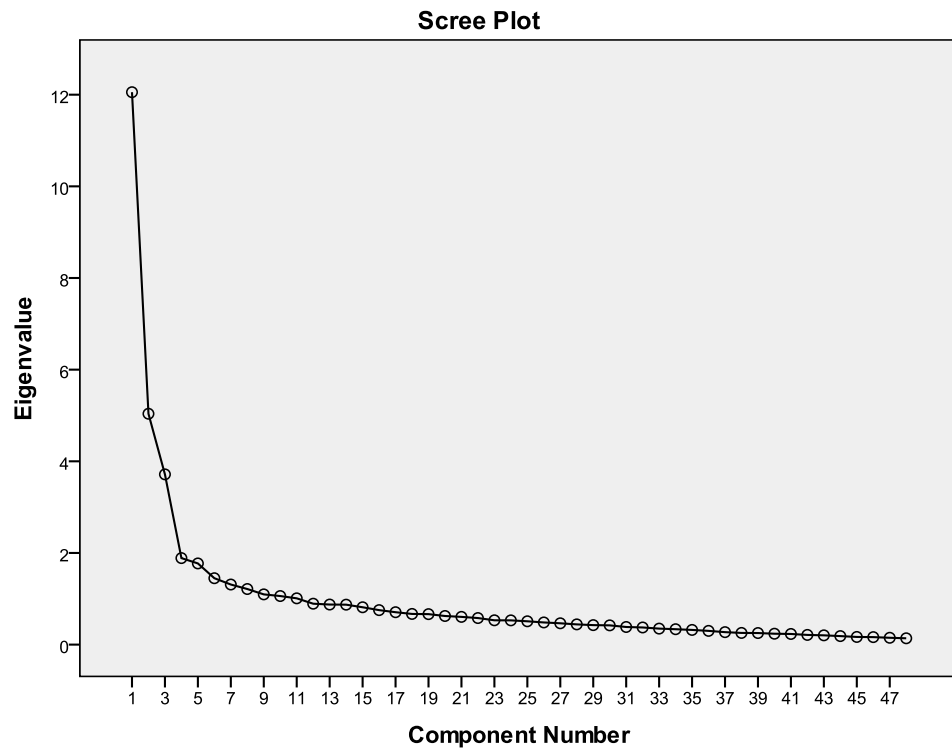


Figure 4. Existential awareness screeplot.

The results of the extraction are presented in Table 13.

Table 13

Factors Extracted for Existential Awareness Section Based on Pattern Matrix with Small Coefficients under .3 Suppressed

Item No.		Component				
		Insight	Discourage- ment	Determi- nation	Acceptance	Responsibi- lity
38	Ultimate Meaning	.889				
37	Mission in Life	.863				
16	Philosophy of Life	.749				
12	Consuming Purpose	.740				
27	Reason for My Being Here	.736				
35	Unified Life Pattern	.671				
29	Life Framework	.651				
1	Past Achievements	.602				
7	Meaning of Life Evident	.551				.330
5	Discovered Purpose	.536	-.413			
2	Clear Goals And Aims	.495	-.307			
26	Future Direction	.467				.414
48	Exciting Good Life	.458				
3	Opportunity To Direct Life	.444				
31	Fulfilled Goals	.439				
18	Basically Living as I Want	.417				.310
20	Uncertainty		.748			
33	Daydream New Place/ Identity		.674			
6	Element Is Missing		.660			

Table continues

Table 13 Continued

Item		Components				
No.		Insight	Discourage- ment	Determi- nation	Acceptance	Responsibi- lity
9	Lack of Meaning/Purpose		.658			
41	Eager to Get More Out of Life		.638	.349		
4	Change Main Objectives		.612			
21	I Am Restless		.598			
40	"I Don't Care" Attitude		.593	-.370		
42	Boring/ Uneventful Life		.551			
14	Break from the Routine of Life		.513	.351		
13	Lost Interest		.397			
10	New /Different Things Appeal			.669		
34	New Challenge		.437	.665		
43	Achieve New Goals	.423		.655		
36	Hope For Exciting Future		.377	.655		
24	Need For Adventure / New Worlds			.640		
11	Own Efforts			.590		.369
45	Accept Responsibility			.429		
22	Unconcerned About Death				.806	
32	Unafraid of Death				.777	
25	Neither Fear Nor Welcome Death				.737	

Table Continues

Table 13 Continued

		Components				
Item No.		Insight	Discourage- ment	Determi- nation	Acceptance	Responsibi- lity
8	Less Concerned Than Others About Death				.659	
15	Death Makes Little Difference				.650	
28	No Sense Worrying About Death				.628	
44	Seldom Thought About Death				.458	
47	Accept Death As Life Experience				.449	
30	Life In My Hands /I Am In Control					.802
17	Determine What Happens In My Life			.445		.680
19	Freedom To Choose					.656
39	Make Own Decisions			.303		.462
23	Do What I Want	.358				.444
46	Sense Of Order/ Coherence	.340				.436

The following five components were extracted and interpreted:

1. The first component consisted mainly of the items representing Purpose and Coherence domains of the second section of the survey. This component was defined as Insight to avoid confusion with the Personal Meaning domain defined earlier.
2. The second component consisted mostly of items representing Vacuum and Goal Seeking domains and was defined as Discouragement.
3. The third component consisted of items representing Goal Seeking and Choice. This was believed to have different implication from the item above and was defined as Determination.

4. The fourth component contained all the items of the Death Acceptance scale and was called Acceptance.
5. The fifth component contained most of the items of Choice/Responsibleness scale, with the addition of some items of the Purpose scale, and was identified as Responsibility.

Research Question Results

In this section, I describe the findings related to each research question and its corresponding hypothesis based on the analysis of data described in the Methodology chapter.

- Q1 What factors of aging are perceived by the older adults as most detrimental?

I did not have a preconceived idea about what factors participants would designate as most detrimental; therefore, there was no hypothesis associated with this question. Table 14 presents the scores in descending order of perceived vulnerability factors reported by my participants as most detrimental.

Table 14

Reported Vulnerability to Aging Factors in Descending Order

Factor	Vulnerability Factor	Mean Score
21	Government Economic Uncertainty	4.09
1	Health Decline	3.89
8	Loss of Memory	3.66
6	Loss of Old Friends	3.64
16	Difficulty in Entering of Aged Care Due to Increased Costs	3.64
22	Loss of Hearing	3.55
18	Physical Disability	3.52
15	Deterioration of Body Image	3.48
17	Tripping and Falling	3.45
14	Changes in Personal Financial Situation	3.45
19	Giving Up Recreational Activities	3.39
11	Loss of Sight	3.33
3	Loss of Independence	3.32
20	Present Financial Situation	3.16
9	Negative Attitudes to Aging	3.08
7	Loss of Meaningful Activities	3.05
10	Changes in Community Service	3.04
12	Lack of Opportunity To Complete Unfinished Business	2.86
4	Lack of Adequate Health Care	2.85
5	Loss of Social Interaction With Colleagues and Friends	2.80
2	Isolation From Friends	2.75
13	Isolation From Family	2.57

$N = 244$

The three items in relation to which the participants reported most vulnerability included government economic uncertainty, health decline, and loss of memory. These appeared to be factors over which the participants felt least control. The participants seemed to be the least vulnerable to isolation from family, isolation from friends, and loss of social interaction with colleagues and friends. This finding was in line with the high level of social involvement reported by participants as demonstrated by strong negative skewness of most of the social involvement variables. The participants on the whole appeared to have expressed trust in the continuation of these relationships.

To answer the research questions 2 through 5, I conducted multiple regression analysis. While performing multiple regression analysis, I took into account assumptions of multiple regression and conducted diagnostics as described in the Methodology section. I did not observe any unusual and influential data that might affect the results. For all the regressions performed, visual analysis of histograms of standardized residuals confirmed the assumption of normality. Visual examination of the scatterplots of standardized predicted values versus standardized residuals did not suggest any nonlinear relationship or homoscedasticity.

I decided to conduct the regression analysis based on the components extracted by principal component analysis (PCA) since they better reflected the characteristics of my population than the original subscales.

Q2 To what extent does social involvement in general explain the level of perceived vulnerability to adverse effects of aging?

This question was addressed by the following hypothesis:

H1 Degree of social involvement mitigates the perceived vulnerability to old age factors.

To answer this hypothesis, I ran a regression in which the criterion variable was the factor score of the single component extracted for the third section of the survey (old-age vulnerability). The predictor variables included factor scores for the four components extracted in PCA for the first section of the survey (social involvement): Relationships, Assertiveness of Worth, Provided Support, and Intimacy. These variables (with the exception of Provided Support) had a significant negative correlation with the criterion variable.

The model explained 7.4% of the variance ($R^2 = .074$). See Table 15 for information for the predictor variables entered into the model. Only Intimacy came up as a significant predictor.

As a result of multiple regression analysis with the use of enter method, a significant model emerged, $F(4,239) = 4.76, p < .01$. Since factor scores were weighted variables, no descriptive statistics are provided for them. The correlation matrix is provided in Table 16.

Table 15

The Unstandardized and Standardized Regression Coefficients for Social Involvement Variables (Factor Scores)

Variable	B	Standard Error	Beta
Relationships	-.126	.077	-.126
Assertiveness	-.056	.077	-.056
Provided Support	-.028	.067	-.028
Intimacy	-.149	.069	-.149*

$p < .05$

Table 16

Correlations for Social Involvement Factor Scores

Factor	Correlation	Vulnerability Factor	Relationships	Assertiveness	Provided Support	Intimacy
Vulnerability Factor	Pearson Correlation	1.000	-.220**	-.187**	-.097	-.220**
	Sig. (2-tailed)		.001	.003	.132	.001
Relationships	Pearson Correlation	-.220**	1.000	.530**	.313**	.375**
	Sig. (2-tailed)	.0010		.000	.000	.000
Assertiveness	Pearson Correlation	-.187**	.530**	1	.300**	.377**
	Sig. (2-tailed)	.0030	.000		.000	.000
Provided Support	Pearson Correlation	-.0970	.313**	.300**	1	.086
	Sig. (2-tailed)	.1320	.000	.000		.179
Intimacy	Pearson Correlation	-.220**	.375**	.377**	.086	1
	Sig. (2-tailed)	.001	.000	.000	.179	

**Correlation is significant at the 0.01 level (2-tailed). $N = 244$

Therefore, the results indicated that social involvement in general mitigated old age vulnerability but only to a small degree.

Q3 To what extent does provided social support explain the level of perceived vulnerability to adverse effects of aging?

This question was addressed by the following hypothesis:

H2 Degree of provided social support mitigates the perceived vulnerability to old age factors.

The criterion variable, as in the previous regression, was the factor score of the single component extracted for the third section of the survey (old-age vulnerability) and the predictor variable was the factor score for one of the four components extracted in PCA for the first section of the survey--Provided Support.

However, this regression (using enter method) did not result in a significant model, $F(2, 241) = 2.28, p = .132$. The model explained .9% of the variance ($R^2 = .009$). Therefore, my second hypothesis, based on the data reported by my participants, was not confirmed. The provided support did not appear to mitigate vulnerability to aging to any significant degree.

Q4 To what extent does existential awareness of seniors explain the level of perceived vulnerability to aging?

This question was addressed by the following hypothesis:

H3 Level of existential awareness mitigates perceived vulnerability to old age factors.

To answer this question, I performed a regression analysis in which the criterion variable, as in the previous regression, was the factor score of the single component extracted for the third section of the survey (old-age vulnerability) and the predictor variables included the factor scores for the five components extracted in PCA for existential part of the study: Insight, Discouragement, Determination, Acceptance, and Responsibility.

As a result of multiple regression analysis with the use of enter method, a significant model emerged, $F(5, 238) = 14.88, p < .001$. The model explained 23.8% of the variance, ($R^2 = .238$). See Table 17 for information about the predictor variables entered into the model. Correlations between the variables entered into the model are presented in Table 18. Discouragement, Acceptance, and Responsibility came up as significant predictors. Therefore, in answer to the third hypothesis, level of existential awareness explained the level of old age vulnerability to a moderate degree.

Table 17

*The Unstandardized and Standardized Regression Coefficients
for the Existential Awareness Variables (Factor Scores)*

Variable	B	Std. Error	Beta
Insight	-.034	.076	-.034
Discouragement	.247	.068	.247***
Determination	.013	.060	.013
Acceptance	-.220	.058	-.220***
Responsibility	-.232	.067	-.232**

. $p < .01$. * $p < .001$

Table 18

*Correlations Between Factor Scores (Vulnerability and Existential Awareness Parts of
the Survey)*

Factor	Correlation	Vulnerability Factor	Insight	Discourage- ment	Determina- tion	Acceptance	Responsi- bility
Vulnerability Factor	Pearson Correlation	1	-.312**	.347**	-.041	-.260**	-.366**
Insight	Pearson Correlation	-.312**	1	-.514**	.281**	.161*	.514**
Discouragement	Pearson Correlation	.347**	-.514**	1	-.037	-.004	-.354**
Determination	Pearson Correlation	-.041	.281**	-.037	1	-.035	.187**
Acceptance	Pearson Correlation	-.260**	.161*	-.004	-.035	1	.139*
Responsibility	Pearson Correlation	-.366**	.514**	-.354**	.187**	.139*	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

$N = 244$

- Q5 To what extent does the interaction between social involvement and existential awareness explain the level of perceived vulnerability to aging?

This question was addressed by the following hypothesis:

- H4 The interaction between the social involvement and existential awareness has an impact on perceived vulnerability to aging.

To answer this question, I first computed new variable for interaction by multiplying standardized scores of composite scales: Social Provisions and Existential Transcendence. I used these composite scales rather than factor scores saved as variables for the sake of simplicity. Following that, I ran regressions where the criterion variable was the vulnerability index and the predictor variables were Social Provisions, Existential Transcendence, and Interaction.

As a result of multiple correlation analysis with the use of enter method, a significant model emerged, $F(3, 240) = 20.31, p < .001$. The model explained 20.2% of the variance, ($R^2=.202$). Table 19 provides information for the predictor variables entered into the model. Correlations between the variables entered into the model are presented in Table 20. Interaction did not come up as significant predictor. Thus, based on my data, Hypothesis IV was not confirmed.

Table 19

The Unstandardized and Standardized Regression Coefficients for the Variables Entered into the Model

Variable	B	Std. Error	Beta	<i>t</i>	Sig.
Social Provisions	-.002	.006	-.019	-.257	.797
Transcendence	-.013	.002	-.448***	-6.413	.000
Interaction	-.037	.049	-.048	-.763	.446

*** $p < .001$

Table 20

Correlation between Vulnerability Index, Social Provisions, Existential Transcendence, and Interaction Variable

Factor	Correlation	Social Provisions	Transcendence	Vulnerability Index	Interaction
Social Provisions	Pearson Correlation	1	.566**	-.253**	-.402**
Transcendence	Pearson Correlation	.566**	1	-.448**	-.237**
Vulnerability Index	Pearson Correlation	-.253**	-.448**	1	.066
Interaction	Pearson Correlation	-.402**	-.237**	.066	1

N=244. **Correlation is significant at the 0.01 level (2-tailed).

The review of correlations between the demographic variables and vulnerability variable showed significant correlations between vulnerability and age, level of education, perceived health, and perceived financial security (see Table 21).

Table 21

Correlations Between Vulnerability Factor Score and Demographic Variables

Factor	Correlation	Vulnerability Factor	Sex	Age	Education	Employment	Employ- ment Satisfac- tion	Health	Finance
Vulnerability Factor	Pearson Correlation	1	.059	.128*	.196**	-.128	-.005	.261**	.287**
	N	244	244	244	244	181	70	244	244
Sex	Pearson Correlation	.059	1	.044	.006	-.030	.078	-.003	.092
	N	244	244	244	244	181	70	244	244
Age	Pearson Correlation	.128*	.044	1	.032	.019	.055	.113	-.097
	N	244	244	244	244	181	70	244	244
Education	Pearson Correlation	.196**	.006	.032	1	-.377**	-.270*	-.189**	-.128*
	N	244	244	244	244	181	70	244	244
Employment	Pearson Correlation	-.128	-.030	.019	-.377**	1	.400**	.343**	.173*
	N	181	181	181	181	181	70	181	181
Employment Satisfaction	Pearson Correlation	-.005	.078	.055	-.270*	.400**	1	.177	.127
	N	70	70	70	70	70	70	70	70
Health	Pearson Correlation	.261**	-.003	.113	-.189**	.343**	.177	1	.261**
	N	244	244	244	244	181	70	244	244
Finance	Pearson Correlation	.287**	.092	-.097	-.128*	.173*	.127	.261**	1
	N	244	244	244	244	181	70	244	244

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

To determine the possible contribution of demographic variables on vulnerability to aging, I ran multiple regression analysis with vulnerability factor score as criterion and level of age, level of education, perceived health, and perceived financial security as predictors.

As a result of multiple regression analysis with the use of enter method, a significant model emerged, $F(4, 239) = 15.56, p < .001$. The model explained 20.7% of the variance ($R^2 = .207$). See Table 22 for information for the predictor variables entered into the model. All the variables were significant predictors.

Table 22

The Unstandardized And Standardized Regression Coefficients for the Variables Entered into the Model (Demographics)

Variable	B	Std. Error	Beta
Age	.146	.071	.120*
Education	.234	.051	.271***
Finance	.297	.080	.227***
Health	.357	.079	.274***

* $p < 0.05$. *** $p < .001$.

Finally, I ran a hierarchical regression analysis including demographic variables (block one) and all the nine components extracted from the social involvement and existential awareness sections of the study (block two). As a result of multiple regression analysis with the use of hierarchical method, a significant model emerged, $F(14, 229) = 10.51, p < .001$. The model explained 39.1% of the variance ($R^2 = .391$). Table 23 provides information for the predictor variables entered into the model. Level of education, perceived health, perceived financial security, discouragement, death acceptance, and responsibility were significant predictors.

Table 23

The Unstandardized and Standardized Regression Coefficients for the Variables Entered into the Model (Demographics, Social Involvement, and Existential Awareness Predictors)

		B	Std. Error	Beta
1	Sex	.066	.137	.028
	Education	.233	.051	.270***
	Age	.144	.071	.119*
	Health	.299	.080	.228***
	Finance	.353	.079	.271***
2	Sex	-.034	.130	-.014
	Education	.223	.049	.259***
	Age	.125	.066	.103
	Health	.246	.075	.188**
	Finance	.295	.074	.227***
	Relationships	.044	.071	.044
	Assertiveness	.072	.070	.072
	Provided Support	-.050	.061	-.050
	Intimacy	-.065	.059	-.065
	Insight	-.037	.074	-.037
	Discouragement	.249	.069	.249***
	Determination	.030	.059	.030
	Acceptance	-.233	.056	-.233***
	Responsibility	-.166	.064	-.166*

* $p < .05$. ** $p < .01$. *** $p < .001$.

The addition of demographic variables to the list of predictors contributed to the effect size of the model. The effect sizes for all the regression models were determined based on the following formula (Cohen, 1992, p. 157):

$$f^2 = \frac{R^2}{1-R^2}$$

The scope of the effect sizes, based on f^2 , was the following (Green, 1991, p.502):

Hypothesis 1 (social involvement predictors)--.08 (small); Hypothesis 2 (provided support predictors)--.04 (small); and Hypothesis 3 (existential predictors)--.31 (medium). Interaction of Social Involvement and Existential Awareness checked in Hypothesis 4 did not add to the explanation of the criterion. The effect size for the regression with the use of demographic predictors was .26 – (medium) and for the regression including combination of social involvement, existential, and demographic predictors, it was .64 (large).

CHAPTER V

DISCUSSION

In this chapter, I discuss the results of the study. First, I review results for each of the research questions. The results are presented in relation to relevant literature. I also discuss the contribution of my study to similar studies undertaken in the past. Next, I explore the limitation of the study and make suggestions of how these could be overcome in future research. Finally, I summarize the study and make suggestions for future research including possible counseling techniques most effective in work with seniors.

Discussion of Results

Perceived Vulnerability to Aging

Perceived vulnerability to aging was measured by the Vulnerability Index, which was calculated as the mean of scores for each vulnerability factor. This index, as reported by my participants (3.30), was higher than the two indices reported by Myall et al. (2009) for two studies they conducted with an interval of three years (2.95 and 3.14, respectively). The age of the participants reported by Myall et al. was very close to the age of my sample (between 50-90) and the number of participants was comparable (391 in the pilot study and 233 three years later). For this reason, it did not seem that age was crucial in this difference. Other factors that might account for the difference include cultural differences (Myall et al. conducted their research in Australia) and general economic situation at the time of distribution of surveys in Australia and the United

States. Another factor to take into account could be the level of information available to participants. Issues such as economic problems and threat of Alzheimer's disease are constantly discussed in media, which, on the one hand, keeps public informed but, on the other hand, can contribute to worries and vulnerability.

Of the 22 factors that were presented in the survey, my participants felt most vulnerable to government economic uncertainty, health decline, and loss of memory. Although these threats were caused by different reasons, what united them was the inability of individuals to take control of them. On the other hand, the items to which the participants felt least vulnerable included loss of social interactions and isolation from friends and family. This reliance on continued social support might be explained, to a certain degree, by the sources of my participants: most of them were recruited through social organizations and thus likely were better socially connected than their more isolated peers.

Social Involvement

I used two approaches to measure the level of social involvement, which in many ways produced similar results but, on the other hand, provided some new insights into the whole picture of social involvement. First, following the logic suggested by Cutrona and Russell (1987), I calculated six subscales, or social provisions, as well as the composite score for the Social Provisions scale. The mean scores for six subscales in my research were mostly comparable with those obtained by Cutrona and Russell. The largest difference was in the Opportunity for Nurturance score that characterized the measure of provided support. The score reported by my participants (11.98) was noticeably lower than that reported by Cutrona and Russell (12.82). This might be explained by the fact

that my participants were considerably older than those in the study by Cutrona and Russell and, possibly, had fewer people to take care of and less energy to provide support.

Following these calculations, I decided to run a principle component analysis on the social involvement part of the survey to reveal, if possible, other aspects of the underlying structure of the overall construct of social support. The four components obtained as a result of analysis were in many respects reminiscent of the original subscales but there were also some interesting differences.

The first component, which I defined as Importance of Relationships, was a combination of five original subscales: Guidance, Social Integration, Reliable Alliance, and Attachment. I interpreted it as mostly related to received support. The third component included all the items from the Nurturance subscale. I called it Provided Support.

While these two components were not significantly different from the original subscales, two other components provided additional insight.

The second component included statements from different domains, seemingly random; however, when I looked at them closer, I realized all these statements were formulated in the negative. Most of my participants tended to *strongly disagree* with them, thus declaring their conviction that they were deserving of and enjoyed positive acceptance by others. Therefore, I interpreted this component as Assertiveness of Worth. This finding was in line with the results produced by Cutrona et al. (1986) that underscored the importance of reassurance of worth for seniors.

It appeared that in the connotations of reversely worded statement of the social provisions scale, my participants detected what Kim and Nesselroade (2003) referred to as negative social support or negative social interaction and strongly denied its existence in relation to them. This finding also made me think that the older persons in my study, in general, had strong feelings of self-esteem. This conclusion was in agreement with the study of Isaacowitz et al. (2003) where older participants (60+) demonstrated higher levels of interpersonal and self-regulatory strengths than younger persons.

The last component extracted by PCA included statements related to the need of intimacy, which I defined as Intimacy. I found wide support in literature for the importance of special, intimate relationships for the physical and mental well-being of seniors. For instance, Lett et al. (2009) suggested that perceived emotional support from intimate relationships should be taken into account when determining increased risks for patients with coronary heart disease. Glass et al. (1997) underscored the importance of the support received from a confidant--one special person to share confidences and to depend upon. Thompson (1993) believed that "the greatest challenge of all in later life comes with the loss of the intimates: husbands, wives, and also friends" (p. 688). George et al. (1989) suggested that the quality of interpersonal relationships was more important than the size of one's social network. In their study of premature nursing home admissions, Russell and Cutrona (1997) related high levels of isolation and loneliness to earlier mental decline.

The regression analysis where criterion was the single component extracted for the vulnerability part of the survey and the predictors were four components extracted for the social involvement part of the survey indicated that social support explained vulnerability

to aging but only to a small degree (effect size was small, based on Cohen, 1992). The sensitivity analysis (multiple regression with Vulnerability Index as criterion and six subscales (Guidance, Reassurance of Worth, Social Integration, Attachment, Nurturance, and Reliable Alliance) as predictors showed a similar result—a small effect size.

This could be explained by the fact that I recruited all my participants in social settings; they probably enjoyed higher levels of social support than the general population of seniors. The scores of all the social involvement items showed strong negative skewness. Since there was not much variety in predictors, it seemed natural not to expect much variety in the criterion. However, what I found interesting was the only predictor that came up as significant was Intimacy, which seemed to indicate the importance of having one significant person in life for experiencing the feelings of well-being, and also underscored the quality rather than quantity of relationships.

Provided Support

Several sources indicated the existence of a connection between provided support and general well-being of seniors. Among them were Dulin and Pachana (2005) who, upon review of several studies, came to the conclusion that provided support had the deepest implications for the sense of meaningful life and well-being of seniors. Cruza-Guet et al. (2008) also found that the providers of social support reported lower levels of psychological concerns. Cutrona et al. (1986) indicated that that the opportunity to provide support to others was important to the well-being of seniors.

In my study, I used two approaches to measure the level of provided social support. In the first approach, I computed two domains of the social provisions scale, following the method described by Cutrona and Russell (1987): Opportunity for

Nurturance and Reassurance of Worth. In the second, I used one of the components extracted by the principal component analysis of Section 1 of my survey: Provided Support. I performed regression analysis using the factor score for the single component extracted from the Vulnerability part of the survey as criterion and the Provided Support factor score as predictor. However, the resulting effect size (based on Cohen, 1992) was small. The sensitivity analysis (regression with Vulnerability Index as criterion and Opportunity for Nurturance and Reassurance of Worth as predictors provided a similar result—a small effect size.

Thus, my second hypothesis related to the mitigating effect of the level of provided social support on old age vulnerability was not confirmed in this study. There may be several explanations for this result. First, my population was older than that participating in the studies cited above and possibly, on the whole, had less physical and emotional resources to care for others. On the other hand, the very fact of having to take care of other persons (such as grandparents taking care of grandchildren) might have enhanced seniors' perception of vulnerability. They now had to be prepared to be strong and efficient for longer periods of time and be responsible not only for themselves but for other, more vulnerable individuals.

Existential Awareness

In measuring the levels of existential awareness, I used two approaches similar to the ones described for the social involvement part of the study. First, I computed scores for six subscales and two composite scores suggested by Reker (1992). The subscales included Purpose, Coherence, Choice/Responsibleness, Death Acceptance, Existential Vacuum, and Goal Seeking. The composites were Personal Meaning and Existential

Transcendence. Means and reliability indices in my study were quite comparable with those reported by Reker (see Table 11). However, both composite indices in my study were higher than those in previous research. This was probably due to the fact that my participants were older than those in Reker's study where most of the participants were under the age of 59. Based on the comparisons of means, it was possible to suggest that older persons had more appreciation for the meaning of their lives and also were able to better reconcile the reality of life with unachieved aspirations and dreams.

The higher level of achievement of personal meaning and existential transcendence reported by my participants related well to the conclusions reported by Missinne (2000). He indicated that older people were able to derive meaning of life from different values that "include family, spiritual needs, good health, helping others, and self-reliance. But despite their emphasis on the importance of good health, many older people felt that illness and suffering could be a blessing, too" (p. 131). The higher scores reported by my participants on the Death Acceptance subscale appeared to agree well with this last statement.

Following these computations, I ran principal component analysis to check for the existence of special underlying factors of existential awareness in my sample of older adults. Of the five extracted components, four were rather similar to the subscales described above. The first one mostly consisted of items in the Purpose and Coherence section of the survey and thus was very close to the composite of Personal Meaning. I defined it as Insight. The second component combined items from Existential Vacuum and Goal Seeking sections of the survey. These could also be interpreted as negative existential values based on the fact that Reker (1992) subtracted them from the sum of

other subscales while determining Existential Transcendence. I defined this component as Discouragement. Two other components included, for the most part, the same items as the Death Acceptance and Choice/Responsibleness subscales. I defined them as Acceptance and Responsibility.

The last of the components was different from those described earlier since it combined items from the Goal Seeking section of the survey and Choice/Responsibleness section of the survey. The Goal Seeking domain seemed to have some ambiguous meaning in the original research by Reker (1982). It is presented as “the desire to get away from the routine of life, to search for new and different experiences, to welcome new challenges, to be on the move, and an eagerness to get more out of life” (Reker, 1982, p.19). At the same time, it seemed that this domain was construed to be existential weakness since the scores produced by respondents on this domain were subtracted from their summary scores of existential transcendence. However, it seemed to me that combined with the items on the Choice/Responsibleness domain, Goal Seeking might represent existential strength, demonstrating the determination to go on with one’s life and strive for new horizons regardless of societal prejudices and convictions of what is “proper” and “allowable” to desire in old age. I called this component Determination and found multiple proofs of the existence of this phenomenon both in literature and in life.

There is no need at a certain point of life to stop moving forward. As beautifully expressed by Bateson (2010): “Any given life can be seen in terms of multiple layers of story rather than following one single plot, and...many roads not taken somehow continue to be available for wonder or regret” (p. 72).

Indeed, many persons reaching the age that traditionally was considered the age of retirement are searching for new beginnings. Some go back to school. Cunningham (2010), in her study related to baby boomers, students in community college determined that most of the baby boomers in her study were taking classes to prepare for a new career, advance in their current career, begin a second career for an encore career, or bridge employment during retirement. In her dissertation dedicated to baby boomer doctoral learners, Williams (2010) concluded that their experiences, coupled with educational credentials, could take their leadership abilities to the next level. These learners, both in the community college and at the level of doctoral studies, were pursuing new careers; they probably would be the ones to score high on the Goal Seeking subscale of my survey. They likely would agree with such statements as “New and different things appeal to me” or “I am determined to achieve new goals in the future.”

Of course, this striving for new horizons is not revealed only in the desire to continue education. Thompson (1993) indicated that some seniors developed “new leisure skills later in life, such as toy-making and wine-making, flower arranging or sequence dancing, activities which brought intense pleasure and meaning into their lives (p. 687). I was especially moved and inspired by his description of a widow who found pleasure in just walking alone on the hills. “If she doesn’t meet somebody to talk to, she just listens to the trees, and dreams of trips to Shanghai and the Grand Canyon” (Thompson, 1993, p. 689). I believe this is an excellent description of the person who would strongly agree with statements in my survey, “I feel the need for adventure and a new world to conquer” and who would perfectly fit the concept of “determination” as one of the components of existential awareness revealed in my study.

Frankel (2010) presented true life stories of individuals who completely rebuilt their lives at an age that commonly is considered to be the age of retirement. He wrote about an author whose first (successful) book of memoirs was published a few weeks before his 97th birthday, a woman who founded a new microfinance program in Africa after she turned 60, and another woman who opened a popular diner at the age of 70. Frankel concluded that “age does not of itself limit or enable us. The choice is ours” (p. 11).

However, it seems that in order to be able to create new meaning in older age, one has to prepare for that during the entire life. I agree with Missinne (2000) who stated, “People must learn to develop values other than work-oriented ones before they approach retirement. The capacity to enjoy the beauty of a sunset, to love and to be loved, or to derive some good from suffering should be learned at a younger age” (p. 132).

I wrote in such detail about “determination” because it was something new that came up in my research. I believe this factor will become more prominent as more “baby boomers” with their relatively better financial situation, health, and scope of interest enter old age. For now, it did not come up as significant predictor of vulnerability in my study. However, the idea of perceived vulnerability also needs to be considered from different points of view. On the one hand, it seems to be a negative phenomenon since it tends to increase levels of anxiety, may lead to depression, and be even harmful to physical health, as was indicated in a number of studies (Barlow, 2002; Ward et al., 2004). On the other hand, absence or low level of perceived vulnerability might indicate carelessness or indifference--if a person has nothing to lose or has no realistic realization of his or her

current situation in life, why worry? How much of perceived vulnerability is “just right”? This is another question for future study.

The existential factors that came up as most significant predictors of vulnerability in my study were Discouragement, Acceptance, and Responsibility. Discouragement showed a significant positive correlation with Vulnerability; whereas, Acceptance and Responsibility had significant negative correlation with Vulnerability. The Insight factor also had a significant positive correlation with Vulnerability but it did not come up as a significant predictor due to its significant positive correlation with all other predictor components of existential awareness.

Discouragement in many ways seems to be the opposite of Determination. This domain seems to describe persons who are not satisfied with their lives (as presented in their agreement with such statements as “I am eager to get more out of life than I have so far” or “I am restless”). They seem to experience boredom, apathy, and indifference as expressed in their acceptance of such attitudes as “Life to me seems boring and uneventful” or “I find myself withdrawing from life with an ‘I don’t care’ attitude.” These feelings prevent them from doing or even wishing to do something to improve their lives and lead to higher levels of anxiety and perceived vulnerability to aging. Brody (1999) noted that these feelings of boredom and apathy are expressions of existential frustration and are related to the lack of meaning in a person’s life. These issues should be dealt with in therapy.

Fan (2010), in his doctoral dissertation on the beliefs about aging and later life health and well-being among the elderly in Taiwan, also found that negative beliefs regarding aging such as boredom and feelings of uselessness directly challenged an

individual's desires to search for a sense of meaning, purpose, and security later in life, and thus appeared to contribute to the feelings of vulnerability.

Death Acceptance was another significant factor. Unlike Discouragement, it was negatively related to old age vulnerability. This finding was in line with conclusions found in much of the literature published on the subject. On the whole, the participants of my study presented with a higher degree of death acceptance than those reported in the previous study by Reker (1992; see Table 11). This coincides with Beshai's (2008) report that the elderly appeared to have lower levels of death anxiety than younger individuals. Griffith (2010), in the study of the relationship between death awareness and successful aging among older adults, found that death awareness appeared to play a significant role within the model of successful aging. Specifically, death acceptance was shown to provide a significant contribution to health status and a sense of meaning of life in older adults. Acceptance of death was also identified among contributors to positive experiences and future expectations of age and aging by the participants of Coburn's (2010) qualitative investigation of older adults' current experiences and thoughts about aging.

Finally, Responsibility came up as significant variable. By endorsing this variable, the participants declared that they personally made important decisions in their lives and took responsibility for these decisions.

The finding that Insight (variable combining items from Reker's [1992] Purpose and Coherence scales) did not come up as a significant predictor of vulnerability was explained by the fact that it had a strong positive correlation with other components (see Table 18) and thus did not add to the explanation of variance in the criterion.

I ran the regression analysis using a single component extracted from the Vulnerability section of the survey as criterion and five components extracted from the existential part of the survey as predictors. Taken together, the variables representing Existential Awareness explained 23.8% of the variance in the criterion, which is equal to medium effect size. In addition, for sensitivity analysis, I ran regressions using Vulnerability Index as the criterion and six subscales (Purpose, Coherence, Choice/Responsibleness, Death Acceptance, Existential Vacuum, and Goal Seeking) as predictors. The result was very similar to the previous regression. Thus, my third hypothesis was confirmed: existential awareness did explain the level of old age vulnerability to a moderate degree.

Interaction Between Social Involvement and Existential Awareness

To check for the effect of the interaction of the social involvement and existential awareness on the perceived vulnerability to aging, I computed the variable for the interaction and then ran the regression analysis using composite scores for social involvement, existential awareness, and interaction as predictors, and perceived vulnerability as criterion. The results indicated that neither interaction nor social involvement were significant predictors; only existential awareness was. This could be explained by two reasons: first, high correlation between the variables (see Table 20) and strong negative skewness of the social involvement scores. It appeared that most of my participants reported a similarly high level of social support; for this reason, they had not much variety in this respect. Thus, my fourth hypothesis was not confirmed based on the data available to me; the interaction of social involvement and existential awareness did not contribute to the explanation of the level of old age vulnerability.

Demographic Variables

The addition of demographic variables (age, level of education, perceived health, and perceived level of financial security) to the regression improved the explanation of the criterion and increased the effect size to large.

Limitations

Theoretical Constructs

The main theoretical constructs of the study including vulnerability, social support, and existential awareness are complicated and do not provide for an easy and unequivocal interpretation.

First, let us consider the notion of vulnerability. Many of the authors interpreted it as a negative trait and connected it to anxiety, depression, hopelessness, and health impairment (Barlow, 2002; Myall et al., 2009). However, there could be a different understanding of this trait. Could it possibly be related to rational thinking, cautiousness, and wisdom often attributed to older adults? According to Van Der Geest, Von Faber, and Sadler (2010), “Wisdom, cautiousness, discipline and altruism are the main virtues of the older people” (p. 142). It is possible to conjecture that the perceived vulnerability of older adults is just the reflection of their common sense and realistic assessment of the life’s challenges; thus, it may be construed as a strength rather than weakness. Meacham (1983, cited in Yang, 2008) considered wisdom to be a balanced attitude between narrow-minded overconfidence and excessive cautiousness. Erikson, Erikson, and Kivnick (1986) interpreted wisdom as a virtue that is manifested in a person’s “detached concern with life itself when facing death itself. It maintains and learns to convey the integrity of experience, in spite of the decline of bodily and mental functions” (p. 37).

May (1969) listed awareness (vigilance) regarding potential dangers to self as one of the essential characteristics of an existing person. It appeared that my participants might have scored higher on vulnerability due to being able to assess the issues facing them based on their wisdom and experience. Whether in doing so they demonstrated weakness of strength was not a given and could be a good topic for future research.

There has been a lot of discussion in literature regarding different types of social involvement including received, provided, and anticipated social support (Dulin & Pachana, 2005). Most of the authors concluded that provided social support was beneficial for the well-being of the elderly (Cruza-Guet et al., 2007; Cutrona et al., 1986); whereas, the findings regarding received support were controversial. Wills and Shinar (2000), after reviewing a number of studies, reported that some of the authors found received support to be connected with high levels of distress; others came to the opposite conclusion. In my study, I did not find a significant correlation between provided support and vulnerability, which might be due to the characteristics of my population as described below.

Philosophical constructs making up the existential awareness domain of my study are also subject to broad interpretation. Reker (1992), whose Life Attitude Profile was the basis for the corresponding part of my survey, seemed to interpret some of the domains of his scale as existential strengths (Purpose, Coherence, Choice/Responsibleness, and Death Acceptance) and others as existential weaknesses (Existential Vacuum and Goal Seeking). This conclusion might be drawn from the fact that the scores for the last two domains were subtracted from the sum of scores of the first four domains while calculating Existential Transcendence--defined as a “global

measure of attitudes toward life” (Reker, 1992, p. 20). However, it seemed that Goal Seeking combined with Choice might be interpreted as a strength, rather than a weakness, as demonstrated by many contemporary seniors striving to create a new life for themselves at an age when people are traditionally supposed to settle down and not crave new achievements. This complexity of constructs makes it hard to provide simple “one-size-fits-all” conclusions and recommendations.

Study Design

My study faced challenges related to its survey-based design. First, all survey studies are subject to measurement error: “behaviors that are perceived by the respondents as undesirable tend to be underreported” (Groves et al., 2009, p. 52). A good example in my research was related not so much to behaviors as to attitudes. Half of the statements in the Social Involvement part of the survey were formulated in the negative. Examples of such statements included “There is no one who shares my interests or concerns” or “There is no one who likes to do the things I do.” It appeared that my participants tended to *strongly disagree* or *disagree* with those statements that seemingly implied they lacked social support. Their uniform disagreement was expressed to the extent that all the negatively worded statement formed one of the principal components in PCA. I believe this is an example of response bias. One of my practical suggestions for future research would be to avoid using instruments with negatively worded statements since these could account for some bias in responses.

The other challenge is that in a survey study, researchers have to depend on the level of understanding or misunderstanding of the questions by the participants. A number of the items, especially in the existential part of the survey, could be interpreted

differently or even not understood by participants. Good examples from my surveys were such statements as “The meaning of life is evident in the world around us” and “I have a clear understanding of the ultimate meaning of life.” The contemplative nature of these statements provided for extremely varied interpretation by the respondents and made inferences from these statements ambiguous.

Finally, there was the limitation related to the gap between the target population and the sample, which I describe separately.

Homogeneity of Participants

Another limitation of my research was the homogeneity of participants. My sample differed considerably from the composition of the entire 60+ population of the United States. According to the U.S. Census Bureau (2010) women constituted 56.9% of the population in this age frame. Among my participants, 76.6% were women. Over half of my participants had college or graduate degrees and only 18% had a high school education or less; 72.6% assessed their health as “good” or excellent,” and 66.4% thought their financial situation was “secure” or “very secure.” My survey did not contain questions regarding race or ethnicity; however, since I personally distributed most of the copies, I was aware that the overwhelming majority of my participants were Caucasian. Although I attempted to reach a more vulnerable population (through Jefferson Center for Mental Health), I was unable to obtain permission to do so. This homogeneity was certainly a limitation of my study and something to be addressed in future research.

Implications for Work with Senior Citizens

The results of my research indicated that different aspects of existential awareness had a strong relationship with perceived vulnerability to aging. It seemed that counseling

based on an existential approach would work well with this population. The goals of therapy should include learning how to understand and overcome an *existential vacuum* first described by Frankl (1963). Different strategies to achieve this goal have been described in literature. Lantz and Gomia (1995) suggested specific treatment modalities aimed at “noticing, actualization, and honoring of meaning and meaning potential” (p. 33). These modalities included participation, encounter, and involvement through “art, poetry, Socratic reflection, circular questions, prayer, literature, drama, mediation, life review, active imagination, celebration, ritual, music, confiation, and the "I-Thou" dialogue” (Lantz & Gomia, 1995, p. 35). This last approach was also promoted by Spinelli (2007) who suggested,

Thus, two people agree to investigate the worldview adopted by one of them. They agree that the primary way of attempting this enterprise is through their experience of relatedness under a set of agreed-upon conditions that are shared by both participants, even if these shared conditions are likely to be unequal in that their content and focus have been principally determined by one participant. (p. 99)

Death acceptance came up as one of the significant components of existential awareness, which had a significant negative correlation with vulnerability to aging. It seems appropriate to suggest discussions related to recognition and peaceful acceptance of death in therapies with older adults. This would be particularly important while dealing with grief and loss since it is inevitable that elderly clients would be experience losses of their loved ones.

Inclusion of death awareness in therapies has been proposed by many authors.

Mandic (2008) called upon therapists to

be prepared to engage with their clients' (as well as their own) mortality in a way that also explores what sense this imparts to the living of life, and how that life needs to be seen as a whole in order that significant meaning can be made of it... For most of us, realizing how superficial we have been fills us with a sense of

purpose, and inclines us to do two things: to be more autonomous, and also to be more focused about how we live our lives. (p. 264)

Although it did not come up as an important and existential awareness in my research, social involvement, nevertheless, had a significant negative correlation with vulnerability. Therapies promoting social interaction may be suggested to increase the well-being of older adults. Reminiscence group therapy suggests a good combination of social interaction and existential therapy that offers an opportunity to focus on existential issues in a group format. The benefits of this therapy are widely represented in literature (Butler, 1963; Cook, 1998; Haber, 2006).

An exploration of literature on life review and reminiscence therapy suggests that this technique is used almost exclusively with seniors. There are reports of its successful application with cognitively well-functioning seniors and seniors at the mild and medium stages of dementia. Thus, Brooker and Duce (2000), working with clients diagnosed with dementia in three United Kingdom day care facilities, discovered that individuals experienced a greater level of relative well-being during reminiscence therapy than during general activities of unstructured time. The study in the nursing home in Japan indicated that reminiscence therapy improved clients' cognitive functions and behavior (Nawate et al., 2008). Piquart, Duberstein, and Lyness (2007), in their meta-analysis of therapies utilized with older people, determined that reminiscence, along with cognitive-behavioral therapy, is a well-established and acceptable form of depression treatment.

My research indicated that Intimacy was a significant component of social involvement in explaining old age vulnerability. As a number of studies indicated, it is very important for an older person to have at least one close person, sometimes described as "confidant," in their lives (Glass et al., 1997). This lack of a like-minded person can

be especially evident in nursing homes where, for the most part, residents have to share a room with another person. Compatibility and friendly relationship between these two persons who have to share their lives in a small space of a nursing room could make a great difference in their lives. It would be great if nursing homes, at the time of admission, could provide an assessment by a psychologist to determine the best room allocation based on compatibility with a future roommate.

For lonely and isolated seniors living in the community, I would suggest expansion of senior dating services, including web-based, since the future generations of seniors will be, for the most part, computer literate. Regardless of the increase in life span, losses of spouses, partners, and friends are to be expected in old age and the surviving partner might face years of loneliness. It would be beneficial to the mental and emotional health of seniors to abandon prejudices they or society might have against establishing new relationships in the later part of life and find that special “confidant” to face together the joys and challenges of old age.

Summary

As the population of the United States grows older, research related to different aspects of aging is attracting more and more attention by scientists in different fields. Individuals in developed countries can expect to live for several decades after reaching what is considered to be the age of retirement. This calls for an entirely different paradigm of aging and life after career goals are achieved and duties related to child-bearing and rearing are completed.

The current study focused on several interrelated aspects of aging: old-age vulnerability and its connectedness with social involvement and existential awareness.

Old-age vulnerability has been shown to be an important factor affecting and limiting the perceived well-being of individuals. The awareness of vulnerability to aging experienced by older adults is, unfortunately, maintained by ageism--the societal attitude that tends to discount the value and possible contributions of older persons to society. Old age in America "is associated with decline, disease, disability, decrepitude, and death rather than wisdom, inner peace, and other positive qualities" (Osgood, 2000, p. 161).

According to previous research, perceived vulnerability to aging increases levels of depression and anxiety in older adults, affects their physical health, and, in general, has a great effect on both the quality and the length of their lives (Willcox et al., 2008). To measure this variable, I used a scale devised by Myall et al. (2009). My study demonstrated that older adults feel most vulnerable to issues over which they have no control including government economic uncertainty, health decline, and loss of memory. These factors also are related to each other; for instance, economic problems cause uncertainties regarding the future of Medicare and other health insurance programs and thus contribute to health-related worries.

I examined two broad domains that have been shown to influence vulnerability to aging: social involvement and existential awareness of seniors. Many studies have been published concerning the mitigating effect of social involvement on old-age vulnerability. Previous research differentiated between different kinds of social involvement including received, provided, and anticipated social support. Some authors (Cutrona & Russell, 1987; Weiss, 1974) argued for even more detailed classification of social support by dividing it into six social provisions. I used the scale suggested by Cutrona and Russell in my study and obtained comparable results for the six social

provisions scales. Thereafter, I analyzed my data using principal component analysis and detected interesting nuances including the importance of one special person in the lives of older adults for them to experience a sense of well-being. This finding supported the suggestion of the necessity of a “confidant” or “one special personyou can depend on” found in Glass et al. (1997, p. 1505).

Although I did not find a strong relationship between the level of social involvement reported by participants and vulnerability of aging or a significant relationship between provided support and vulnerability, I believe such relationship can be found in future research. There are two reasons for this opinion: first, there was a significant negative correlation between vulnerability and social involvement in general and between vulnerability and provided support in particular. Second, based on the sources of recruitment for my participants (mostly through community senior centers), I had a sample of well-connected individuals and thus could not access the level of vulnerability of seniors who lack social support.

Different aspects of existential awareness have been proved to have significant mitigating effect on old age vulnerability as shown both in past research and in my study. A number of authors stressed the importance of meaning in life as a fundamental existential motivation (Langle, 2005; Lantz & Gomia, 1995). To research the contribution of existential awareness to vulnerability, I used Life Attitude Profile-Revised suggested by Reker (1992). This instrument assessed six separate domains of existential awareness (Purpose, Coherence, Choice/Responsibleness, Death Acceptance, Existential Vacuum, and Goal Seeking) and two composite scales: Personal Meaning and Existential Transcendence. The scores produced by my participants on all the subscales were

comparable with those of Reker (1992). Principal component analyses that I ran on the items representing the existential part of the survey produced components very close to the original subscale. One new component that emerged was a combination of Goal Seeking and Choice. Although this component did not come up as a significant predictor of vulnerability, it was negatively correlated with it. It would be interesting to see if the significance of this factor increases with the mass retirement of Baby Boomers--relatively young and healthy seniors. At this time, my study confirmed that existential awareness had a moderate effect on old-age vulnerability.

Finally, I was interested to research if the interaction of social support and existential awareness had an influence on old-age vulnerability. In my analysis, I did not find a significant effect of this interaction on vulnerability. I believe this could be related to the high correlation between social involvement and existential awareness in my sample. I believe future research with different populations and possibly mixed methods, including qualitative research, could shed more light on the mechanism of such interaction.

Suggestions for Future Research

As the percentage of elderly in the population of the Western World, including the United States, continues to grow, the need to research problems related to aging and appropriate solutions to these problems is on the rise. One concept that needs to be defined and explored is the notion of vulnerability. Of course, vulnerability is not something that affects only the elderly. Baars (2010) rightly noted, "Human life is not accidentally, but essentially vulnerable" since "human life contains death; human freedom contains the possibility of evil; intense happiness contains as equally intense

suffering” (p. 43). But, he also indicated that with age, vulnerability increases: “love may end, loved ones may die, your body can fail you in many different ways, and friends may leave or disappoint you.” (p. 45). Many of these concerns were endorsed by participants in my study.

At the same time, positive aspects of realization of one’s finiteness and vulnerability as represented in wisdom and sensible cautiousness should be explored. It seems that these last characteristics could prolong life and contribute to its quality.

There is also a need to continue exploration of the role of provided support for the well-being of seniors. A number of studies found provided support to be a positive factor in emotional and physical health and well-being of seniors; in my study, this variable did not come up as a significant predictor of old age vulnerability. There is a practical aspect to these questions; many American grandparents are raising their grandchildren and thus have responsibility for them for years to come. Recently, there have been a number of studies regarding this phenomenon; however, few of them seemed to focus on the positive side of repeated parenting for grandparents. While some works did mention the satisfaction grandparents derived from “the joys of children, the tasks of child-rearing, participating in grandchildren’s, a new focus for life, and watching a child’s accomplishments” (Waldrop & Weber, 2001), most of the research on this topic dealt with the stresses and challenges. These were shown to include, among others, increased risk of depression in grandparents (Baker, 2010), injury to self-concept (sense of social stigma attached to parenting one’s grandchildren; Wooten, 2010), and limited resources available to grandparents. A study of possible benefits for emotional health and well-being that older adults can gain from parenting their grandchildren could contribute

significantly to understanding the role of provided support as a source of strength in older age.

As indicated above, one of the main limitations of my study was the homogeneity of participants. It would be interesting to repeat this research with different populations: the homeless, cognitively unimpaired but physically disabled residents of nursing homes, and elderly inmates in correctional institutions. Also, it would be important to reach persons of different races and ethnicities. Ultimately, the comparison of older adults from different world cultures along the lines of old age vulnerability, social involvement, and existential awareness could shed light on the possible influence of historical and cultural differences on the quality of aging.

In the process of my research, I encountered a number of studies conducted in other countries; however, those were mostly economically developed countries of Europe and Asia with similar issues related to aging. Situations in other parts of the world might be different and could add to understanding and contribute to the resolution of the challenges of American seniors. Thus, it appears that in less developed cultures, getting older actually has its advantages. For instance, Van Der Geest et al. (2010) noted, “In Ghana, growing old is a development that is looked forward to. It is a time when a person can rest, and enjoy the respect and appreciation from those who take care of them and come to listen to their wisdom” (p. 140).

Another possible direction of research also stems from the limitation of my study. Since most of my participants declared a high level of social involvement, I could not detect how the difference in social involvement would affect the level of existential awareness. In a sample with more differentiated levels of social involvement, it would be

interesting to explore if the higher level of social support affected the level and angle of existential awareness. For instance, is there a difference in death acceptance, in discouragement, or in determination to live their lives to the full between persons who consider themselves more or less isolated? Is lack of availability of social support related to stated religiosity and/or spirituality of the individuals?

The participants of my study spanned several generations: the youngest was born in 1950, the oldest in 1911. More than 60% of my participants were over 70 years old. The new wave of seniors, “the Baby Boomers,” is characterized generally by higher levels of education, income, health, and diversity of interests (Whitbourne & Willis, 2006). Would this cohort be different from the older cohorts in my study? Research on the aging potential of this population would be especially important in view of the large numbers of Baby Boomers and their expected long periods of retirement. In this connection, exploration of the effect of continued employment and/or volunteer activities on the well-being of seniors would be of interest.

In summary, the need for the research related to older adults, as well as the variety of topics to consider, is huge and continues growing in size and importance as new cohorts of Americans enter the retirement age.

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APPENDIX A

SOCIAL INVOLVEMENT, EXISTENTIAL AWARENESS, AND PERCEIVED VULNERABILITY QUESTIONNAIRE

SOCIAL INVOLVEMENT, EXISTENTIAL AWARENESS, AND PERCEIVED VULNERABILITY QUESTIONNAIRE

SECTION 1

Instructions: In answering the following questions, think about your current relationships with friends, family members, co-workers, community members, and so on. Please indicate to what extent each statement describes your current relationships with other people. Use the following scale to indicate your opinion. Please circle the appropriate number, where 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. So, for example, if you feel a statement is very true of your current relationships, you would respond with a 4 (strongly agree). If you feel a statement clearly does not describe your relationships, you would respond with a 1 (strongly disagree).

1=strongly disagree 2=disagree 3=agree 4=strongly agree

1. There are people I can depend on to help me if I really need it.	1	2	3	4
2. I feel that I do <u>not</u> have close personal relationships with other people.	1	2	3	4
3. There is no one I can turn to for guidance in times of stress.	1	2	3	4
4. There are people who depend on me for help.	1	2	3	4
5. There are people who enjoy the same social activities I do.	1	2	3	4
6. Other people do <u>not</u> view me as competent.	1	2	3	4
7. I feel personally responsible for the well-being of another person.	1	2	3	4
8. I feel part of a group of people who share my attitudes and beliefs.	1	2	3	4
9. I do <u>not</u> think other people respect my skills and abilities.	1	2	3	4
10. If something went wrong, no one would come to my assistance.	1	2	3	4
11. I have close relationships that provide me with a sense of emotional security and well-being.	1	2	3	4
12. There is someone I could talk to about important decisions in my life.	1	2	3	4
13. I have relationships where my competence and skill are recognized.	1	2	3	4
14. There is no one who shares my interests and concerns.	1	2	3	4
15. There is no one who really relies on me for their well-being.	1	2	3	4
16. There is a trustworthy person I could turn to for advice if I were having problems.	1	2	3	4
17. I feel a strong emotional bond with at least one other person.	1	2	3	4
18. There is no one I can depend on for aid if I really need it.	1	2	3	4
19. There is no one I feel comfortable talking about problems with.	1	2	3	4
20. There are people who admire my talents and abilities.	1	2	3	4
21. I lack a feeling of intimacy with another person.	1	2	3	4
22. There is no one who likes to do the things I do.	1	2	3	4
23. There are people who I can count on in an emergency.	1	2	3	4
24. No one needs me to care for them.	1	2	3	4

SECTION 2

This section contains a number of statements related to opinions and feelings about you and life in general. Read each statement carefully, then indicate the extent to which you agree or disagree by circling one of the alternative categories provided. SA=strongly agree, A=agree, MA=moderately agree, U=undecided, MD=moderately disagree, D=disagree, SD=strongly disagree. For example, if you STRONGLY AGREE, circle SA following the statement. If you MODERATELY DISAGREE, circle MD. If you are UNDECIDED, circle U. Try to use the undecided category sparingly.

SA=strongly agree A=agree MA=moderately agree, U=undecided, MD=moderately disagree, D=disagree, SD=strongly disagree

1. My past achievements have given my life meaning and purpose.	SA	A	MA	U	MD	D	SD
2. In my life I have very clear goals and aims.	SA	A	MA	U	MD	D	SD
3. I regard the opportunity to direct my life as very important.	SA	A	MA	U	MD	D	SD
4. I seem to change my <u>main</u> objectives in life.	SA	A	MA	U	MD	D	SD
5. I have discovered a satisfying life purpose.	SA	A	MA	U	MD	D	SD
6. I feel that some element which I can't quite define is missing from my life.	SA	A	MA	U	MD	D	SD
7. The meaning of life is evident in the world around us.	SA	A	MA	U	MD	D	SD
8. I think I am generally much less concerned about death than those around me.	SA	A	MA	U	MD	D	SD
9. I feel the lack of and a need to find a real meaning and purpose in my life.	SA	A	MA	U	MD	D	SD
10. New and different things appeal to me.	SA	A	MA	U	MD	D	SD
11. My accomplishments in life are largely determined by my own efforts.	SA	A	MA	U	MD	D	SD
12. I have been aware of an all powerful and consuming purpose towards which my life has been directed.	SA	A	MA	U	MD	D	SD
13. I try new activities or areas of interest and then these soon lose their attractiveness.	SA	A	MA	U	MD	D	SD
14. I would enjoy breaking loose from the routine of life.	SA	A	MA	U	MD	D	SD
15. Death makes little difference to me one way or another.	SA	A	MA	U	MD	D	SD
16. I have a philosophy of life that gives my existence significance.	SA	A	MA	U	MD	D	SD
17. I determine what happens in my life.	SA	A	MA	U	MD	D	SD
18. Basically, I am living the kind of life I want to live.	SA	A	MA	U	MD	D	SD
19. Concerning my freedom to make my choice, I believe I am absolutely free to make all life choices.	SA	A	MA	U	MD	D	SD
20. I have experienced the feeling that while I am destined to accomplish something important, I cannot put my finger on just what it is.	SA	A	MA	U	MD	D	SD

Section 2 continued

SA=strongly agree A=agree MA=moderately agree, U=undecided, MD=moderately disagree, D=disagree, SD=strongly disagree

21. I am restless.	SA	A	MA	U	MD	D	SD
22. Even though death awaits me, I am NOT concerned about it.	SA	A	MA	U	MD	D	SD
23. It is possible for me to live my life in terms of what I want to do.	SA	A	MA	U	MD	D	SD
24. I feel the need for adventure and "new worlds to conquer".	SA	A	MA	U	MD	D	SD
25. I would neither fear death nor welcome it.	SA	A	MA	U	MD	D	SD
26. I know where my life is going in the future.	SA	A	MA	U	MD	D	SD
27. In thinking of my life, I see a reason for my being here.	SA	A	MA	U	MD	D	SD
28. Since death is a natural aspect of life, there is no sense worrying about it.	SA	A	MA	U	MD	D	SD
29. I have a framework that allows me to understand or make sense of my life.	SA	A	MA	U	MD	D	SD
30. My life is in my hands and I am in control of it.	SA	A	MA	U	MD	D	SD
31. In achieving life's goals, I have felt completely fulfilled.	SA	A	MA	U	MD	D	SD
32. Some people are very frightened of death, but I am not.	SA	A	MA	U	MD	D	SD
33. I daydream of finding a new place for my life and a new identity.	SA	A	MA	U	MD	D	SD
34. A new challenge in my life would appeal to me now.	SA	A	MA	U	MD	D	SD
35. I have the sense that parts of my life fit together into a unified pattern.	SA	A	MA	U	MD	D	SD
36. I hope for something exciting in the future.	SA	A	MA	U	MD	D	SD
37. I have a mission in life that gives me a sense of direction.	SA	A	MA	U	MD	D	SD
38. I have a clear understanding of the ultimate meaning of life.	SA	A	MA	U	MD	D	SD
39. When it comes to important life matters, I make my own decisions.	SA	A	MA	U	MD	D	SD
40. I find myself withdrawing from life with an "I don't care" attitude.	SA	A	MA	U	MD	D	SD
41. I am eager to get more out of life than I have so far.	SA	A	MA	U	MD	D	SD
42. Life to me seems boring and uneventful.	SA	A	MA	U	MD	D	SD
43. I am determined to achieve new goals in the future.	SA	A	MA	U	MD	D	SD
44. The thought of death seldom enters my mind.	SA	A	MA	U	MD	D	SD
45. I accept personal responsibility for the choices I have made in my life.	SA	A	MA	U	MD	D	SD
46. My personal existence is orderly and coherent.	SA	A	MA	U	MD	D	SD
47. I accept death as another life experience.	SA	A	MA	U	MD	D	SD
48. My life is running over with exciting good things.	SA	A	MA	U	MD	D	SD

SECTION 3

Please indicate to what extent you feel vulnerable to the following outcomes related to aging. For each item, circle the appropriate number, where

1 = not at all vulnerable, 2 = not vulnerable, 3 = somewhat not vulnerable, 4 = somewhat vulnerable, 5 = vulnerable, and 6 = extremely vulnerable.

To what extent do you feel vulnerable to:

1	health decline	1	2	3	4	5	6
2	isolation from friends	1	2	3	4	5	6
3	loss of independence	1	2	3	4	5	6
4	lack of adequate health care	1	2	3	4	5	6
5	loss of social interaction with colleagues and friends	1	2	3	4	5	6
6	loss of old friends	1	2	3	4	5	6
7	loss of meaningful activities	1	2	3	4	5	6
8	loss of memory	1	2	3	4	5	6
9	negative attitudes to aging	1	2	3	4	5	6
10	changes in community service	1	2	3	4	5	6
11	loss of sight	1	2	3	4	5	6
12	lack of opportunity to complete unfinished business	1	2	3	4	5	6
13	isolation from family	1	2	3	4	5	6
14	changes in personal financial situation	1	2	3	4	5	6
15	deterioration of body image	1	2	3	4	5	6
16	difficulty in entering of aged care due to increased costs	1	2	3	4	5	6
17	tripping and falling	1	2	3	4	5	6
18	physical disability	1	2	3	4	5	6
19	giving up recreational activities	1	2	3	4	5	6
20	present financial situation	1	2	3	4	5	6
21	government economic uncertainty	1	2	3	4	5	6
22	loss of hearing	1	2	3	4	5	6

Please provide the following demographic information by checking the corresponding box:

Your gender:

Female ☐ Male ☐

Your age: _____

Your level of education:

Less than High School	High School	Some college	College	degree
Graduate degree				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are you currently employed?

Yes ☐ No ☐

If yes, does your employment status enhance your life satisfaction?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

On the scale from 1 to 4 how do you assess your health?

1- Excellent	2 – Good	3-Fair	4-Poor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On the scale of 1 to 4 how financially secure you feel?

1 – Very secure	2-Secure	3- Somewhat insecure	4-
Insecure			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you very much for completing the survey!

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY of
NORTHERN COLORADO
Institutional Review Board (IRB)



November 18, 2010

TO: Megan Babkes Stellino
School of Sport and Exercise Science

FROM: The Office of Sponsored Programs

RE: Exempt Review of *Social Involvement Existential Awareness, and Perceived Vulnerability in Older Adults*, submitted by Maria Zarlengo
(Research Advisor: David Gonzalez)

The above proposal is being submitted to you for exemption review. When approved, return the proposal to Sherry May in the Office of Sponsored Programs.

I recommend approval.

Megan Babkes Stellino 11/20/10
Signature of Co-Chair Date

The above referenced prospectus has been reviewed for compliance with HHS guidelines for ethical principles in human subjects research. The decision of the Institutional Review Board is that the project is exempt from further review.

IT IS THE ADVISOR'S RESPONSIBILITY TO NOTIFY THE STUDENT OF THIS STATUS.

Comments:

recruitment letter ✓
draft of notices to be posted ✓ email 4/2
director permission letters - will file w/ Sherry when done.
verbal consent (minor) ✓

25 Kepner Hall ~ Campus Box #143
Greeley, Colorado 80639
Ph: 970.351.1907 ~ Fax: 970.351.1934

APPENDIX C

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH



CONSENT FORM FOR HUMAN PARTICIPANTS
IN RESEARCH

Project Title: Social Involvement, Existential Awareness, and Perceived Vulnerability in Older Adults.

Lead Researcher: Maria Zarlengo, Counseling Psychology
(303) 596-2166, m-zarlengo@usa.net

Research Adviser: David Gonzalez, Ph.D., Counseling Psychology
(970) 351-1639; David.Gonzalez@unco.edu

The purpose of the study is to explore three broad domains pertinent to the functioning of older adults: the perception by older adults of their vulnerability to adverse factors of old age; different facets of social involvement; and consideration of general issues pertaining to the meaning and purpose in life. I believe that this knowledge will contribute to the understanding of the sources of emotional distress among older adults and will be helpful in suggesting appropriate strategies to improve the general well-being of seniors.

If you volunteer for this research study, you will be asked to fill out a 101 item survey that includes four sections. The total time it will require varies from person to person, and may be from 30 minutes to one hour.

In appreciation of your help I will contribute 3 dollars for every filled out survey to this wonderful [include name of the agency]

In appreciation of your help you will be included in a raffle for the following three prizes: one \$50 gift certificate to Outback Steakhouse, and two \$25 gift certificates to Mimi's restaurant. If you would like to be included in the raffle, please send a separate e-mail with your name to lead researcher at m-zarlengo@usa.net, or mail me the attached self-addressed stamped card.

Your participation in this study is strictly voluntary. I will protect the confidentiality of your responses to the greatest extent possible. Beyond the research team no one will be permitted to see or discuss any of your responses. The completed questionnaires will be kept under lock in the home office of the lead researcher. The scores with no identifiers will be maintained in a password-protected computer file. You might be acquainted with other participants of the study through the facility you attend. We urge all the participants to respect and protect each other's privacy and confidentiality of the responses.

Your participation in this study will most likely not result in any direct benefits to you as an individual but it may help you understand your aging experience better. You may find satisfaction in the fact that your participation in the study could contribute to the general understanding of aging and improvement of well-being of seniors. Risks to you are minimal and may include some psychological discomfort related to consideration of the survey questions, concerning social involvement and existential issues, such as meaning in life. If, upon completing the survey, you will experience psychological discomfort and need to talk to therapist, please contact me for referrals at m-zarlengo@usa.net.

Please feel free to phone me if you have any questions or concerns about this research and please retain this letter for your records. Thank you for assisting with this research,

Sincerely,

Maria Zarlengo

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions please complete the questionnaire if you would like to participate in this research. By completing the questionnaire, you will give us permission for your participation. You may keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1907.