THE RELATIONSHIP BETWEEN CIVIC ENGAGEMENT AND HEALTH AND WELL-BEING AMONG BABY BOOMERS AND OLDER ADULTS IN THE 2006 SOCIAL CAPITAL COMMUNITY SURVEY

A Thesis
Presented to the
Faculty of
San Diego State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Social Work and Master of Public Health
with a Concentration in
Health Services Administration

by
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Spring 2013
SAN DIEGO STATE UNIVERSITY

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DEDICATION

This thesis is dedicated to:

My husband Jeffrey Douglas Nelson, Ph.D., who for the last eight years has been the foremost source of love, light, happiness, and joy in my life. Pursuing the dual degree program and completing this thesis would not have been as manageable without you. From the moment I decided to attend graduate school you believed in me and provided me with endless quantities of support. I cherish each day with you and look forward to the adventures that await us. I am so lucky that you are mine.

My family, who has taught me the importance of hard work and persistence, and for instilling in me enduring morals and values. Thank you for the incredible love and support you have provided despite the many miles between us. May you forever know how much I love you all… to the moon and back.
ABSTRACT OF THE THESIS

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by

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Master of Social Work and Master of Public Health with a Concentration in Health Services Administration
San Diego State University, 2013

By 2050, the proportion of the older adults population in the United States will more than double. Baby Boomers will not only live longer than any previous generation but they also face unprecedented rates of chronic disease. This reality will impact their overall quality of life and strain funding sources required to manage their care. Recently, greater attention has been paid to the potential of volunteerism engagement as an intervention to enhance participants’ well-being and improve their health. Research has demonstrated a correlation between volunteering engagement and improved physical and cognitive health, higher well-being, and delayed mortality. This study assesses the sociodemographic characteristics of adults aged 50 years and higher in 2006 Social Capital Community Survey and examines the association between their volunteering and self-reported health and well-being.

The present study includes theories of successful aging, Erickson’s theory of psychosocial development, and role theory. It is designed as an analysis of secondary cross-sectional data. Results reveal that higher volunteering rates, self-reported health, and self-reported well-being were reported significantly more often by people who were married, had greater levels of educational attainment, and were currently working. Notably and contrary to the literature, there were no racial inequities in volunteering, health or well-being. While volunteering was not significantly associated with higher self-reported health after confounding variables were controlled for, there was a significant positive and linear association between volunteering frequency and high self-reported well-being. Furthering our understanding of health promoting interventions that will allow the older adult population to live happier, healthier, and within their communities longer is an urgent social and health policy imperative. Engagement in volunteering may be one such low cost intervention that will not only improve the life of the volunteer, but will also benefit society at large. Future research should utilize rigorous experimental design, make distinctions between informal and formal volunteering, include objective measures of health, and incorporate measures such as volunteer hours and activities to gain a deeper understanding of the variables involved in better individual outcomes.
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ACKNOWLEDGEMENTS

Foremost, I would like to express my sincere gratitude to my thesis committee members, Dr. Jong Won Min, Dr. Jong-Deuk Baek, and Dr. Daniel Finnegan, and to the following people and organizations that have supported me throughout this process:

Dr. Min, for your unending support and guidance throughout this process. Thank you for acting as my chair and for providing me with multiple learning opportunities.

Dr. Baek, for three years of Public Health education and perspective you have provided, and for your patience and guidance throughout the thesis writing process.

To all my colleagues at Senior Community Centers of San Diego, you are who I aspire to be. From the first time I set foot through the doors of the Gary and Mary West Senior Wellness Center, I knew I had entered an extraordinary organization. Many thanks to you for providing me with incredible opportunities to grow and develop professionally and personally. I will carry the lessons and inspiration I have gained through my time with you for the rest of my life.

To all my professors and mentors within the schools of Public Health and Social Work, for sharing your wisdom and expertise.

To Dr. Donald Helinski, for your constant presence, unwavering support, friendship, and keen insight. I am really blessed to have met you.

And last but not least, to the talented and compassionate graduate students in my Public Health and Social Work cohorts, as well as my colleagues in the Graduate Social Work Association; congratulations, we did it!
CHAPTER 1
INTRODUCTION

In recent years, the volunteerism and civic engagement of older adults has become the subject of an increasing number of conference break-out sessions, research endeavors and publications, governmental policy and funding initiatives, non-profit programming, and curriculum development (K. A. Anderson & Dabelko-Schoeny, 2010; Hinterlong, 2008; Morrow-Howell, O’Neill, & Greenfield, 2011; Welleford & Netting, 2012). This focus of attention is attributable to various factors, including evidence of the health and well-being benefits correlated with volunteering, the role social engagement plays in successful aging, and the potential of Baby Boomers to become organizational resources and catalysts for community change (Kaskie, Imhof, Cavanaugh, & Culp, 2008; Martinson & Minkler, 2006; Sander & Putnam, 2006). The present study will explore the association between volunteering frequency and self-reported health and well-being measures among Baby Boomers and older adult respondents of the Social Capital Community Survey, 2006.

In 2011, 24% of adults aged 65 years and older volunteered, a rate that has been increasing steadily over the past three decades (Bureau of Labor Statistics, United States, 2012). While this rate is lower than that of other age groups, older adults are most likely to devote 100 hours or more annually to volunteer activities, the highest total amongst all age groups (Bureau of Labor Statistics, United States, 2012). The Baby Boomer cohort has expressed a desire to remain involved in meaningful work upon retirement, paid or unpaid (American Association of Retired Persons, 2004; Civic Ventures, 2005) and are likely to choose a civic engagement activity in order to serve their community, fulfill their desire for lifelong learning, and to “make a difference” (Tan et al., 2009; White House Conference on Aging, 2005).

Throughout the year 2013, the leading edge of the Baby Boomer population – 77 million individuals born between the years of 1946 and 1964 – are turning 67 years old. In 2010, adults 65 years and older comprised 13% of the nation’s population, but by 2030 this group will grow to nearly 20% (United States Census Bureau, 2010). Numerous surveys on
the health of the Baby Boomer cohort have revealed a significant increase in self-reported prevalence of chronic diseases with advancing age, particularly cardiovascular disease, arthritis, cancer, obesity, lung problems and diabetes (Hung, Ross, Boockvar, & Siu, 2011; Martin, Freedman, Schoeni, & Andreski, 2009; Seeman, Merkin, Crimmins, & Karlamangla, 2010).

**PURPOSE OF THE STUDY**

By 2050, the number of adults aged 65 and older will total 88.5 million, more than double their population in 2005 (United States Census Bureau, 2010). This burgeoning population of older adults can anticipate living longer. The life expectancy of Americans has risen, and continues to rise, due to technological and scientific advances that have reduced the prevalence of infectious disease, created better diagnostics and treatments, and increased access to improved nutrition (Rowe & Kahn, 1998).

The unprecedented demographic shift of Baby Boomers into retirement age has mobilized discussion around the health and well-being of the aging population. With the increasing prevalence of single and multiple chronic diseases in older adults (Hung et al., 2011), successfully enhancing health and well-being outcomes has become a national priority. Complexities surrounding older adults’ health and well-being, like chronic co-morbidities, will have a significant impact on the future organization, funding, and utilization of health care and social services (Martinson & Minkler, 2006; Seeman et al., 2010).

The positive correlations between better health and well-being and formal volunteering have been established in literature spanning the past 40 years (Martinson & Minkler, 2006; Morrow-Howell, Hinterlong, Rozario, & Tang, 2003). Participation of older adults in formal volunteer roles has been shown to positively impact their physical and psychological health (Barron et al., 2009; Gottlieb & Gillespie, 2008; Morrow-Howell et al., 2003; Morrow-Howell, Hong, McCrary, & Blinne, 2009; Piliavin & Siegel, 2007), self-reported well-being (Dabelko-Schoeny, Anderson, & Spinks, 2010; Kim & Pai, 2010; Piliavin & Siegel, 2007), cognitive functioning (Carlson et al., 2008, Carlson et al., 2009; Fried et al., 2004), and has been associated with delayed mortality (Harris & Thoresen, 2005; Lum & Lightfoot, 2005).
As evidenced by existing literature, volunteering and civic engagement programs may improve the health and well-being of older adults. Given the reality of a rapidly growing population, pinpointing interventions to improve older adults’ health and well-being are significant public and social policy imperatives. By exploring these relationships in a novel assessment of the 2006 Social Capital Community Survey, this study will not only strengthen the knowledge base of social sciences research, but will also provide evidence to guide policy, program development, practice, and budgetary decision-making.

THEORETICAL BASES

There are four theoretical frameworks that form the foundation of the present study. Erickson’s theory of psychosocial development and role theory underlie volunteerism and civic engagement, while successful aging is placed within the theoretical contexts posited by researchers Baltes and Baltes, and Rowe and Kahn.

Volunteerism and Civic Engagement

Research on civic engagement and volunteering has been placed in various theoretical contexts, the two most prominent of which are Erik Erikson’s theory of psychosocial development and role theory.

THEORY OF PSYCHOSOCIAL DEVELOPMENT

The foundation of Erikson’s theory is that each individual confronts a psychosocial crisis at each of eight life stages. Crises are (or are not) resolved and later integrated (or confronted) in subsequent stages of life (Erikson, Erikson, & Kivnick, 1986). The constructs of generativity and its opposite, stagnation, comprise the psychosocial crisis in mid-life, but as he himself aged, Erikson came to believe that generativity was just as pertinent in later-life psychosocial well-being (Erikson & Erikson, 1997).

Generativity can be understood as a commitment to improve the life conditions of future generations and create a legacy. Further, it “encompasses… productivity and creativity, and thus the generation of new… products and ideas” (Erikson, 1982, p. 67). Erikson et al. (1986) held that generativity results from nurturing, caring, and “being concerned for the community, country and all of human kind” (p. 100). Researchers suggest that older adults can achieve generativity through various forms of engagement, including:
volunteering, employment, remaining active in one’s community, and intergenerational activities (K. A. Anderson & Dabelko-Schoeny, 2010; Bradley, 1997). Welleford and Netting (2012) suggest that “through the many avenues of generativity, not only does humankind benefit, personal development is advanced” (p. 246).

**ROLE THEORY**

Role theory suggests that at various stages throughout a person’s life they acquire, and simultaneously hold, multiple roles and these roles can be advantageous as long as they do not result in strain, overload, or conflict (K. A. Anderson & Dabelko-Schoeny, 2010; Rozario, Morrow-Howell, & Hinterlong, 2004). The benefits of possessing multiple roles are attributed to social integration and role enhancement, which positively impact an individual’s health and well-being by “[augmenting] their opportunities to enhance their social networks, power, prestige, resources and emotional gratification” (Moen, Robison, & Dempster-McClain, 1995, p. 260).

After older adults exit the workforce, meaningful roles and social connections they once possessed may be lost or lessened. Volunteering may replace these once-productive rolls and can protect the older adult from the negative impact of role loss (Greenfield & Marks, 2004; Morrow-Howell, 2010). Within volunteer roles, older individuals have the opportunity to adopt new roles, provide a socially valued service to their community, increase social resources, gain protection against functional decline, feel useful and purposeful, and enhance self-efficacy and self-worth (K. A. Anderson & Dabelko-Schoeny, 2010; Greenfield & Marks, 2004; Hinterlong, Morrow-Howell, & Rozario, 2007; Li, 2007).

**Successful Aging**

While research on successful aging dates back to the mid-1960’s (Baltes & Baltes, 1990), the social services fields have only relatively recently expanded their perspective from a focus on disability and disease to include health promotion and successful aging (Rowe & Kahn, 1997, 1998). Among the different theories of successful aging are Rowe and Kahn’s (1998) biomedical model and Baltes and Baltes’ ecological model (1990).
**Rowe and Kahn**

Rowe and Kahn posit that three components are required for successful aging and each of the components is itself a combination of various factors (Rowe & Kahn, 1997). The first component is low probability of disease, referring to the presence, absence or severity of both the disease itself and the risk factors for disease (Rowe & Kahn, 1997, 1998). Risk for disease results from both intrinsic (genetic) and extrinsic (lifestyle) factors, the latter of which contributes more to the disease processes as a person ages but remains modifiable and potentially reversible (Rowe & Kahn, 1997, 1998).

The second component of Rowe and Kahn’s model is the maintenance of high cognitive and physical functional capacities, particularly learning, short-term memory, and ability to perform activities of daily living (Rowe & Kahn, 1997, 1998). Rowe and Kahn (1997) note that even small declines in physical functioning can prevent an individual from participating in productive and social activities. Indeed, Albert and colleagues (1995) found that the amount of physical activity an older adult performed was a significant predictor of maintenance of cognitive functioning and self-efficacy.

The third component is active engagement with life, which is comprised of “interpersonal relations” and “productive activity” (Rowe & Kahn, 1997, p. 433). The authors’ define interpersonal relations as “contacts and transactions with others, exchange of information, emotional support, and direct assistance” (Rowe & Kahn, 1997, p. 433-434). The socioemotional and instrumental support that result from interpersonal relations are protective factors against isolation and loneliness and can enhance trust, care, and self-esteem (Rowe & Kahn, 1998). Rowe and Kahn state that an activity is productive if it creates societal value, including either volunteer or paid work (Rowe & Kahn, 1997).

In this model, successful aging requires the synthesis and maintenance of all three components: low probability of disease, maintenance of cognitive and physical functioning, and active engagement with life. Older adults are able to modify risks and outcomes through lifestyle, behavioral, and environmental interventions.

**Baltes and Baltes**

Baltes and Baltes’ (1990) ecological model of successful aging centers on the premise that optimal development at all ages is a process of adaptation that involves three
components: selection, optimization, and compensation. The manner in which these three components are realized depends upon the societal and personal conditions the individual confronts throughout life. Baltes and Baltes (1990) state that the significance of the process of adaptation increases as the older individual experiences changes in biological, mental, and social reserves.

Based upon this model, an older individual can overcome limits that accompany the aging process through “adaptivity” or behavioral plasticity; and selecting and focusing on the domains that the individual deems the highest priority (Baltes & Baltes, 1990, p. 7). Based on their own and others’ research, Baltes and Baltes identified seven themes about the nature of aging and created a series of strategies for successful aging, which includes enhancing physical, psychological and social health. Emphasized throughout their writings is their belief that aging is a highly individualized process and as such, resources and opportunities need to be diverse and flexible enough so that each individual is able create their own definition and expression of successful aging (Baltes & Baltes, 1990).

Taken together, the two models highlight the need for a multifaceted and integrated approach to successful aging. They emphasize the importance of individual action to modify health and risk factors, and they stress the importance of social health and engagement.

**RESEARCH QUESTIONS AND HYPOTHESES**

The positive correlation between volunteering engagement and positive health and well-being outcomes are well established in the literature. Nonetheless, the field would benefit from a novel analysis of the 2006 Community Social Capital Survey dataset. This analysis will provide additional evidence on the significance of sociodemographic characteristics of volunteers and the relationship between the frequency of volunteering and measures of health and well-being. The research questions of the present study and their related hypotheses are as follows:

1. What are the sociodemographic characteristics of Americans aged 50 and older who report volunteering, those who have low/high self-reported health, and those who have low/high self-reported well-being?

2. What is the association between respondents’ reports of annual volunteering frequency (none, low and high) and self-reported health (low and high) and well-being (low and high)?
3. Hypothesis 1: Baby Boomers and older adults who report volunteering will have higher measures of self-reported health than those who report not volunteering.

4. Hypothesis 2: Baby Boomers and older adults who report volunteering will have higher measures of self-reported well-being than those who report not volunteering.

5. Hypothesis 3: Baby Boomers and older adults who report higher frequencies of volunteering will have greater self-reported health and self-reported well-being than those who report lower frequencies of volunteering.

**DEFINITION OF TERMS**

In published literature ‘volunteerism’ and ‘civic engagement’ are used both as interchangeable terms and as two distinct concepts; their definitions within the literature are elucidated below. Due to the similarities between their definitions and the synonymous references within the literature, this study will operationalize the terms ‘volunteerism’ and ‘civic engagement’ as being one and the same.

**Volunteerism**

Volunteerism is defined in the literature in various ways. Piliavin and Siegel (2007) define it as “other oriented community participation” (p. 460) and Wilson (2000) states that it includes committed engagement in proactive activities that have benefits beyond those conferred to volunteers themselves. Others state that volunteering is an unpaid and uncoerced activity structured by an organization to address community concerns (Cnaan, Handy, & Wadsworth, 1996). Rozario (2006-2007) asserts that volunteerism includes both formal (i.e., arranged by an organization) and informal (i.e., help provided to neighbors and others) activities that can either be sustained for a period of time or be efforts that take place sporadically in response to societal needs.

**Civic Engagement**

Like volunteerism, there are many definitions of civic engagement offered in the literature. It is used to refer to a variety of activities, including voting, formal volunteering, caregiving, and educating or helping others (Martinson & Minkler, 2006; Morrow-Howell, 2010; White House Conference on Aging, 2005). Kaskie & Gerstner (2004) define civic engagement as a “role that involves volunteer or paid participation in an activity that occurs within an organization that has a direct impact on the local community” (p. 369). Welleford and Netting (2012) expand the term beyond the organizational setting, stating that it “is a
broad concept denoting the interdependence of individuals within a societal fabric and… takes different forms” (p. 244). Dabelko-Schoeny et al. (2010) succinctly articulate the commonalities amongst the various definitions: “Civic engagement involves individual and collective actions designed to identify and address community issues and needs… [and is] thought to bring about mutual gains for both individuals and society” (p. 694-5).
CHAPTER 2

LITERATURE REVIEW

An analysis of the association between volunteerism and health and well-being of older adults requires a thorough literature review of each variable. This chapter includes information on the current status of older American health and well-being, as well as a systematic review of reports and literature on the volunteerism of older adults and the benefits that accrue as a result of volunteering efforts.

HEALTH AND WELL-BEING OF OLDER ADULTS

During the last 60 years, the United States has achieved substantial advances in medical technology, health care, nutrition, public health, and access to education; all factors that contribute to improved health outcomes (Federal Interagency Forum on Aging-Related Statistics, 2012; Martin et al., 2009). However, despite these advances, the American population is experiencing a rise in the prevalence of chronic disease and comorbidities, which are being diagnosed at earlier stages in individuals’ lifespans than in previous generations (Hung, Ross, Boockvar, & Siu, 2011, 2012; Martin, Freedman, Schoeni, & Andreski, 2010; Seeman et al., 2010). In addition to more frequent diagnoses of chronic diseases, individuals with these diseases are also living longer as mortality rates decline (Martin et al., 2009; Crimmins & Beltran-Sanchez, 2010).

Morbidity and Mortality

In developed countries around the world mortality rates have been declining since the mid-1800’s (Martin et al., 2009) and these rates have continued to decline in the United States in recent decades (National Center for Health Statistics, 2007). Indeed, life expectancy at birth has increased significantly, from 47 years in 1900 to 78.7 years in 2010 (Murphy, Xu, & Kochanek, 2012; United States Census Bureau, 2011a).

According to the 2010 National Center for Health Statistics mortality report, the age-adjusted death rate from years 2009 to 2010 reached an all-time low and overall life expectancy increased 0.1 year (Murphy et al., 2012). The age-adjusted death rates
significantly decreased for seven of the 15 leading causes of death, and increased for five leading causes of death (Murphy et al., 2012). The report lists the seven leading causes of death in the U.S. in the year 2010 and are as follows: (1) heart disease; (2) malignant neoplasms (cancer); (3) chronic lower respiratory diseases; (4) cerebrovascular diseases (stroke); (5) unintentional injuries; (6) Alzheimer’s disease; (7) diabetes mellitus; and (8) nephritis, nephritic syndrome and nephrosis (renal disease).

In their research studying changes in the health of adults, Martin and colleagues (2009) found adults have achieved significantly lower annual death rates from 1982-2005. When investigating the mortality of 59-year-olds – the leading edge of baby boom generation – the authors found that their rate was 14.4% lower than 59-year-olds in 1997 and 31.4% lower than 59-year-olds in 1982 (Martin et al., 2009).

As evidenced in literature, Americans are living longer today than at any other time in history, but the United States is beginning to fall behind other developed countries in life expectancy gains (Federal Interagency Forum on Aging-Related Statistics, 2012). The United States ranks 51st out of 222 countries for life expectancy at birth (Central Intelligence Agency, 2012), with countries including Hong Kong, Jordan, Canada, and France ranking higher. In Japan, which ranks 3rd out of 222 countries for life expectancy, women on average live 3.7 years longer than American women, and men on average live 1.3 years longer than American men (Federal Interagency Forum on Aging-Related Statistics, 2012).

Regardless of how the United States ranks amongst other countries, Americans are living longer today than at any other point in history, and the growing older adult population coupled with greater longevity results in increasing total prevalence of the chronic conditions that are connected to aging.

**Prevalence of Chronic Conditions**

Non-communicable chronic diseases, such as heart disease, cancer and stroke, are on the rise in the United States. Because they are generally long-term conditions and are unlikely to be cured, they have significant impacts on individuals and society (Centers for Disease Control and Prevention, 2012). For an individual, chronic disease can affect quality of life, cause declines in physical and mental functioning, and can lead to disability (National Center for Chronic Disease Prevention and Health Promotion, 2009). For societies, chronic
diseases result in lost economic productivity and cost a nation’s health care system billions of dollars each year (Bloom et al., 2011).

Recently, Hung and his colleagues (2011) analyzed three waves of the nationally representative Health and Retirement Study to examine trends in health impairments of 31,568 community-dwelling Americans 65 years and older. The authors found an increasing trend of prevalence for nearly all diseases, including cancer, diabetes, chronic lung disease, hypertension, and arthritis. They stratified the sample of older adults into five 5-year groups to examine potential age-dependent trends. The authors found that among all age groups involved in the study, the proportion that reported having no chronic diseases decreased 5.3% from 1998 (13.1%) to 2008 (7.8%) (Hung et al., 2011). There was a significant 5.7% decline in the proportion of respondents reporting having only one chronic disease (26.9% in 1998 to 21.2% in 2008) and a 5.3% jump in the proportion reporting having more than one chronic disease - from 86.9% in 1998 to 92.2% in 2008 (Hung et al., 2011). Startlingly, they found a 5.8% increase in the proportion of respondents reporting four or more chronic diseases, 17.4% in 2008, up from 11.6% in 1998. Hung and his colleagues found no significant differences in chronic disease prevalence between women and men (Hung et al., 2011).

Utilizing two waves of health-related measures of adults 60 years and older from the National Health and Nutrition Examination Survey (NHANES), Seeman and colleagues (2010) found similar results as Hung et al. (2011). The reported prevalence of chronic conditions, including arthritis, obesity, asthma, and diabetes increased for all ages, but largest increases were seen in the youngest group of respondents, aged 60-69. The increases in chronic conditions were accompanied by a significant decline in physical activity amongst respondents of all ages (Seeman et al., 2010).

Depression is one of the most prevalent mental disorders amongst all adults that is often recurring throughout the lifespan (Kessler, 2012; Martin et al., 2010). Amongst individuals 65 years and older, approximately 16% of women and 11% of men had depressive symptomology in 2008 (Federal Interagency Forum on Aging-Related Statistics, 2012). Data show that as men and women reach very old age (85+), their risk of experiencing depressive symptoms increases to nearly 20% (Federal Interagency Forum on Aging-Related Statistics, 2012).
Research specifically investigating the health of the Baby Boomer cohort mirrors the outcomes that have been reported for the current cohorts of older adults. Baby Boomers show an increasing trend of nearly all diseases, including cancer, diabetes, hypertension, chronic lung disease, arthritis, obesity, among others (Crimmins & Beltran-Sanchez, 2010; Martin et al., 2009, 2010).

Martin and her colleagues (2009) studied data from the National Health Interview Survey. They found both that the prevalence of self-reported chronic conditions increased with age and that as individuals aged, their number of multiple chronic conditions increased. From 1997 to 2006, 40-59 year-olds (i.e., Baby Boomers) reported significantly increased prevalence for diabetes mellitus, obesity, lung problems, and cardiovascular disease; the only decline in prevalence was for musculoskeletal conditions (Martin et al., 2009). Based on additional analysis, the authors suggest caution in making blanket statements regarding the health of Baby Boomers, as some outcomes vary by period, measure and age group (Martin et al., 2009). In the conclusion of their paper, Martin et al. (2009) note their perplexity at the fact that Baby Boomers’ health is not significantly better in all measures compared to previous cohorts, given the advances of education and improvements in public health (Martin et al., 2009).

In addition to the aforementioned physical health conditions, depression amongst Baby Boomers has been trending upwards over the past two decades (Martin et al., 2010). The increasing diagnoses of major depressive disorder and other emotional problems have serious implications for the nation’s productivity and health care spending. Nearly three-fourths of those who are diagnosed with lifetime major depressive disorder are also diagnosed with another mental or physical disorder, which can lead to poor health prognoses (H. Baumeister, Hutter, & Bengel, 2012; Gadermann, Alonso, Vilagut, Zaslavsky, & Kessler, 2012; Kessler et al., 2003). Furthermore, nearly all who are diagnosed with depression and other emotional problems report moderate to very severe difficulties in daily functioning (Kessler et al., 2003).

In the United States, the monetary costs of treating depression are high and growing, costing $12.5 Billion dollars in 2007 (Marcus & Olfson, 2010; Olfson, Marcus, Druss, & Pincus, 2002). Due to the growing prevalence and treatment of depression amongst Medicare beneficiaries, the Federal government Medicare expenditures increased from $.52
Billion in 1998 to $2.25 Billion in 2007; payments for antidepressant pharmaceuticals accounted for over half of his significant increase (Marcus & Olfson, 2010). Researchers have also noted the trend of lower use of psychotherapy to treat depression and an increased use of antidepressant prescriptions (Marcus & Olfson, 2010).

Prevalence of Disabilities and Functional Impairments

There is evidence that despite rises in prevalence of chronic conditions in older adults over the last twenty years, rates of disability are not rising in the same proportion but, in fact, have been relatively stable (Hung et al., 2011, 2012; Martin et al., 2010; Manton, Gu, & Lamb, 2006). Hung et al. (2011) found that while the prevalence of chronic diseases and multiple chronic diseases increased significantly for all age groups over the three waves of the study, the prevalence of instrumental activities of daily living (IADL) and activities of daily living (ADL) disability and impairment(s) had remained stable. They also discovered that prevalence of disability was greater in women than men, and that IADL and ADL disability had trended downward among the oldest-old (Hung et al., 2011).

There are various hypotheses to explain the counterintuitive trend of stable disability prevalence despite an increasing prevalence of chronic conditions. Hypotheses include: the impact of better screening and treatment of chronic conditions; better patient disease self-management and increased use of assistive devices; increased education; and higher amounts of preventive care (Hung et al., 2011; Martin et al., 2010; Schoeni, Freedman, & Martin, 2008). Collectively, these factors serve to lessen the risk of impairment and disability that a chronic disease may otherwise have on an individual.

The stable prevalence of disability notwithstanding, the rising prevalence of chronic disease coupled with the rapidly aging Baby Boomer cohort has significant implications for the future health and well-being of our nation’s older adult population. The Centers for Disease Control and Prevention (2012) report that chronic diseases, such as heart disease, cancer, diabetes, and stroke comprise 70% of all death and disability in the United States. Further, more than 75% of our nation’s health care expenditures are used to treat chronic conditions (National Center for Chronic Disease Prevention and Health Promotion, 2009) and nearly 90% of this money is spent on the 27% of Americans with multiple chronic conditions (G. Anderson, 2010). In 2005, 44% of Americans reported having at least one
chronic condition and it is estimated that by 2020 at least 157 million will have one or more (Freudenberg & Olden, 2011). Therefore, it is essential that older adults’ multiple chronic conditions are effectively managed to ensure both that the optimal levels of health and well-being are achieved, and that the fiscal health of government insurance programs are maintained (Hung et al., 2011; Martin et al., 2010).

**Health Inequities**

According to the Centers for Disease Control and Prevention (2011a), health disparities, now commonly referred to as health inequities, are defined as preventable differences in the burden of injury, disease, violence or ways to attain optimal health that are experienced by socially disadvantaged populations, including gender, race, ethnicity, disability, education, income. Health inequities result from a number of factors, including poverty, inadequate access to health care, educational inequalities, environmental threats, among others.

While progress has been made to reduce health inequities, they continue to persist in our nation (Braveman, Cubbin, Egerter, Williams, & Pamuk, 2010; Centers for Disease Control and Prevention, 2011b). The Federal government has attempted to address the problem through initiatives such as Healthy People 2020 (United States Department of Health and Human Services, 2010). One of Healthy People’s overarching goals has focused on the elimination of health disparities, indicators of which Healthy People has been measuring over the past two decades. Their research has revealed that racial and ethnic minorities experience inequities in incidence of cancer, cardiovascular disease, HIV/AIDS, tuberculosis, and physical activity, among others (United States Department of Health and Human Services, 2010).

In the United States, two diseases that are often used to illustrate health inequities are diabetes mellitus and coronary heart disease. Diabetes mellitus is more prevalent in the Hispanic population, who are 1.6 times as likely as non-Hispanic whites to be diagnosed and are 50% more likely to die from the disease (The Office of Minority Health, 2010). The American Diabetes Association (2012) reports that racial minorities are less able to obtain the care needed to effectively manage their diabetes, which results in increased morbidity and mortality. Similarly, Black women and men have significantly higher rates of coronary heart
disease and stroke than non-Hispanic whites, and they are at a higher risk of premature death due to these diseases (Centers for Disease Control and Prevention, 2011b). Providing access to preventive services for those at highest risk is said to be of utmost importance to address the primary risk factors of these diseases and to reduce, and ultimately eradicate, inequities (Centers for Disease Control and Prevention, 2011b).

Recent research has documented that the prevalence of functional limitations and of ADL disabilities are greater among non-Hispanic Blacks and Mexican Americans (Seeman et al., 2010). The Centers for Disease Control and Prevention (2003) projected the most rapid growth of disability will be in the Hispanic and non-Hispanic Black populations. These groups have significantly higher rates of obesity and lower socioeconomic status than other racial/ethnic groups, which puts these groups at increased risk for poorer health (Minkler, Fuller-Thomson, & Guralnik, 2006; Ogden et al., 2006). Braveman and her colleagues (2010) studied patterns of socioeconomic inequities in the adult population using five nationally representative data sources. Their results confirmed what other research has indicated: individuals at the lower end of the spectrum of education and wealth generally experienced worse health than those in middle and higher levels, and those in the middle were less healthy than individuals with the highest income and education (Braveman et al., 2010).

In addition to racial and socioeconomic indicators, the inequities in the prevalence of diagnosis of chronic conditions also vary by gender (Federal Interagency Forum on Aging-Related Statistics, 2012). From years 2009-2010, women reported higher levels of arthritis, asthma, chronic bronchitis, and hypertension, while men reported having higher heart disease, stroke, diabetes, and cancer (Federal Interagency Forum on Aging-Related Statistics, 2012). Also, as noted earlier, women have been found to experience greater disability prevalence than men (Hung et al., 2011). Finally, women, unmarried individuals, and those with low education and socioeconomic status, are at highest risk of experiencing a major depressive disorder (Kessler et al., 2003; Kessler, 2012).

In 2011, the Centers for Disease Control and Prevention (2011b) released its first periodic CDC Health Inequities and Inequalities Report – United States, 2011, which details the recent trends and fluctuations in health disparities for indicators such as health-care access, mortality, morbidity, and disability status. It was found that individuals who work
and live in low socioeconomic conditions are at higher risk for mortality, morbidity, reduced access to health care, and inadequate quality of care. As well, they are at higher risk for dropping out of high school and for experiencing poverty, two well-known social determinants of health (Centers for Disease Control and Prevention, 2011b). Minority populations, particularly Blacks, Hispanics and American Indians were at higher risk for living in inadequate housing and residing in areas with unhealthy air quality. Further, chronic conditions, such as obesity and hypertension are higher among non-whites and those with lower education, lower family income, and public health insurance (Centers for Disease Control and Prevention 2011b).

The 2010 U.S. Census revealed that the racial and ethnic landscape of the United States is becoming increasingly diverse, with the Hispanic population comprising more than half of the nation’s population growth from years 2000 to 2010 (United States Census Bureau, 2011b). If historic patterns of inequities persist, the growth in populations of people of color could potentially amplify the prevalence of health inequities.

**Volunteerism and Engagement**

According to the Bureau of Labor Statistics, United States (2012), twenty-four percent of adults 65 years and older spent time volunteering in 2011, a rate that has been growing over time. Further, older adults were more likely than their younger counterparts to devote more than 100 hours annually to volunteer work (Bureau of Labor Statistics, United States, 2012). However, this data fails to capture informal (i.e., activities not under the auspices of an organization) volunteer efforts and underestimates older adults’ total contribution to their communities, such as caregiving and mutual aid. In fact, various forms of informal volunteering are widespread among older adults (Hinterlong, 2008) and according to an American Association of Retired Persons survey, the majority of respondents (68%) reported performing some type of formal or informal volunteer service in the past year (Koppen, 2009). Martinez, Crooks, Kim, & Tanner (2011) noted that by failing to account for informal volunteering, the voluntary contributions of women, minorities and individuals with low socioeconomic status are disproportionally excluded.

Data from the Bureau of Labor Statistics, United States (2012) reveals the presence of racial and economic inequities in volunteer participation. Additionally, many researchers
confirm that individuals with better health, higher income, and greater levels of education are more likely to engage in, and devote more hours to, formal volunteering than their less healthy, poorer, and less educated counterparts (Bureau of Labor Statistics, United States, 2012; Martinez et al., 2011; Musick & Wilson, 2007; Pew Research Center, 2009; Rebok et al., 2011). As of fall 2011, 28.2% of whites volunteered, a rate higher than Blacks (20.3%), Asians (20%), and Hispanics (14.9%) (Bureau of Labor Statistics, United States, 2012).

The documented inequities in volunteer rates have been ascribed to these individuals having less economic resources, poorer health, and enduring systematic barriers related to discrimination (Martinez et al., 2011; McBride, 2006-2007). These factors disproportionally impact individuals with low socioeconomic status and/or from communities comprised of people of color (Martinez et al., 2011; McBride, 2006-2007; National Center for Health Statistics, 2012).

**Health and Well-being Benefits of Engagement**

Over the past four decades, research has established that volunteerism and civic engagement are positively correlated with better health and well-being, both in the United States (Martinson & Minkler, 2006; Morrow-Howell et al., 2003) and in many European countries (Haski-Leventhal, 2009). Participation of older adults in a formal volunteer role has been shown to positively impact their physical and psychological health (Gottlieb & Gillespie, 2008; Lum & Lightfoot, 2005; Morrow-Howell et al., 2003; Morrow-Howell, Hong, McCrary, et al., 2009), self-reported well-being (Dabelko-Schoeny et al., 2010; Morrow-Howell et al., 2003; Piliavin & Siegel, 2007), cognitive functioning (Carlson et al., 2008; Carlson et al., 2009), and has resulted in delayed mortality (Harris & Thoresen, 2005; Lum & Lightfoot, 2005).

**Physical Health**

Physical health has been shown to improve as the result of civic engagement activity. Researchers have found that volunteers report improved self-rated health (Luoh & Herzog, 2002; Morrow-Howell et al., 2003; Van Willigen, 2000), fewer functional limitations (Moen, Dempster-McClain, & Williams, 1992; Morrow-Howell, Hong, McCrary, et al., 2009), and have smaller increases in the number of problems in ADL and IADL (Lum & Lightfoot, 2005).
Older adults who participated in Experience Corps, a intergenerational high-commitment volunteer program, had increased physical activity and calories expended, developed greater muscle strength, had less decline in walking speed, and experienced less falls than individuals in control or comparison groups (Fried et al., 2004; Tan, Xue, Li, Carlson, & Fried, 2006; Tan et al., 2009). Not only were participants in Experience Corps more likely to see benefits than the control groups, but participants’ behavioral changes, such as increased physical activity, were sustained three years later (Tan et al., 2006; Tan et al., 2009).

Other Experience Corps research has demonstrated that older adult volunteers improved walking speed, objectively measured strength, stair-climbing ability, and energy after volunteering for at least 15 hours per week for 4-8 months (Barron et al., 2009). The same researchers also found that volunteers who reported being in ‘fair’ health exhibited greater improvements in tests of physical performance tasks than volunteers who reported being in better health (Barron et al., 2009). Fried et al. (2004) found that participants in Experience Corps had lower rates of assistive device utilization than the control group and another study noted that after two years of service, Experience Corps volunteers experienced significant reductions in functional limitations (Hong & Morrow-Howell, 2010).

Moen et al. (1992) analyzed data of 300 women gathered over a 30-year period and found that even minimal amounts of volunteering were significantly related to possessing functional ability in older age. Researchers have suggested that older adults with functional limitations may experience greater benefits from volunteering than those without functioning limitations (Morrow-Howell et al., 2003).

Despite overall consistent research findings that volunteering is significantly associated with increased self-reported health and various objective health measures, Piliavin and Siegel (2007) presented contradictory results. In their analysis of the Wisconsin Longitudinal Study, they found that after controlling for various health behaviors (smoking status, exercise levels and body-mass index, among others), the initial significance of an association between self-reported health and volunteering disappeared. The authors did not rule out the impact of volunteering on health, however, as their research confirmed the association between “connection to others” and good health (Piliavin & Siegel, 2007, p.461). They noted that engaging in volunteering roles often enhances a person’s social network.
(Piliavin & Siegel, 2007). Additionally, they found evidence for a causal relationship between volunteering and psychological well-being, the latter of which is known to be related to physical health (Piliavin & Siegel, 2007).

**Psychological Well-Being**

Since the late-1960’s, published research has demonstrated the positive relationship between well-being and volunteerism (Morrow-Howell et al., 2003). Researchers have found that volunteers present fewer depressive symptoms and experience greater declines in depressive symptoms after volunteering (Brown, Brown, House, & Smith, 2008; Morrow-Howell, Hong, McCrary, et al., 2009; Musick & Wilson, 2003). As well, they report higher self-esteem and self-efficacy (Omoto, Synder, & Martino, 2000; Li, 2007) and enhanced self-reported well-being (Baker, Cahalin, Gesrt, & Burr, 2005; Dabelko-Schoeny et al., 2010).

Van Willigen (2000) found that older adult volunteers reported significantly higher levels of life satisfaction than non-volunteers. Further, possessing a volunteer role was found to be a predictor of psychological well-being and may serve as a protective factor against role-loss or role-absences that many adults experience in older age (Greenfield & Marks, 2004).

In their research on the effects of volunteering on older-adults’ well-being, Morrow-Howell and colleagues (2003) found that volunteer status had a significant effect on reducing participants’ depressive symptomology. Lum and Lightfoot (2005) found that older adults who volunteer at least 100 hours annually have slower increases in depression levels than those volunteering less than 100 hours or not at all. Likewise, after analyzing three waves of the Americans’ Changing Lives study, Kim and Pai (2010) found that volunteering was associated with lower levels of depression. They also found that volunteer role and frequency of volunteering predicted faster declines in depression for older adult volunteers compared to their younger counterparts. In their research, Hong and Morrow-Howell (2010) used a quasi-experimental two-group pre-post test design to determine outcomes from older adults’ participation in Experience Corps, and found that the volunteers had significant decreases in depression (and functional limitations) compared to the control group. Other research has shown that increased social interaction is associated with a lower risk of experiencing depressive symptoms and is the principle factor predicting improvement in depressive symptoms (Isaac, Stewart, Artero, Ancelin, & Ritchie, 2009).
It appears that older individuals need not volunteer for long durations or at high commitment to experience beneficial psychological outcomes. After discontinuing a five-week civic engagement intervention (i.e., assembling care packages for community groups), clients of an adult day health service program experienced significant decreases in self-esteem and self-reported health (Dabelko-Schoeny et al., 2010). The authors postulated that civic engagement opportunities may mitigate declines in well-being and enhance a sense of generativity amongst seniors who have functional limitations (Dabelko-Schoeny et al., 2010).

**COGNITIVE FUNCTIONING**

In past research, the benefits experienced by older adult volunteers have been primarily based upon subjective, self-reported health measures, but recent research has used objective measures to assess the impact of volunteering at the neurological level. Through the use of functional magnetic resonance imaging (fMRI) Carlson et al. (2008) at Johns Hopkins University have compared the memory, executive function, and psychomotor speed of Experience Corps volunteers with non-volunteers. They discovered that engaged subjects had improved memory and executive function, and that participants who had impaired functioning at baseline experienced the greatest improvements (Carlson et al., 2008). What is notable about this and other Experience Corps research is the fact that the majority of the volunteer population studied are in a sociodemographically high-risk group: African American, low income, and low formal education whose average MMSE score was at the threshold for cognitive impairment. The authors highlighted their finding that over a relatively short time-span of engagement, participants experienced intervention-specific improvements in cognition, indicating the possibility of immediate benefit of engagement to those at highest risk of cognitive decline (Carlson et al., 2008).

Carlson and her colleagues’ (2009) subsequent research provides evidence that frequent participation in high-commitment civic engagement activities increases brain plasticity, which supports the brain’s executive function that is integral to the maintenance of functional independence (Carlson et al., 2009). Multimodal activities in an enriched social environment such that Experience Corps provides serves to “exercise and reactivate skills that may have been relatively unused for years or even decades” (Carlson et al., 2009, p. 1280), and may increase task novelty, problem-solving skills, and motivation. An increase in
intellectual activity has been found to be protective against diseases of cognitive decline, such as Alzheimer’s disease (Friedland et al., 2001).

Further, in other research on Experience Corps, Fried et al. (2004) found that involvement resulted not only in significantly increased cognitive activity but also lowered low-cognitive activity (i.e. amount of television viewing) during non-volunteer hours. Further, Barron and colleagues (2009) demonstrated that regardless of health status, all Experience Corps volunteers decreased television viewing, which could have important impacts on both cognitive and physical health.

**Frequency of Volunteering**

Participation in civic engagement roles benefits older individuals in various ways and past research has demonstrated that older adults need only to devote a few hours a week to experience these benefits. Morrow-Howell et al. (2003) found a nonlinear relationship between volunteer hours and well-being outcomes, suggesting that even modest amounts of volunteering can yield benefits. There is no consensus as to the ideal level of intensity, however. Morrow-Howell et al. (2003) concluded it is two-to-three hours per week, Musick and Wilson (2003) estimated it at three hours per month, Lum and Lightfoot (2005) found most benefits accrued to those volunteering over 100 hours annually (two-or-more hours per week), and Musick, Herzog, & House (1999) found that no additional health benefits accrued after forty hours per year.

Tan et al. (2009) and other researchers studying the Experience Corps program have found that benefits accrue to older adult volunteers who volunteer weekly at 15 hours or more, but other research shows that older adults who volunteer at higher levels experience less benefits, possibly due to role strain (Musick et al., 1999; Van Willigen, 2000). In addition, the positive outcomes associated with volunteering appear to be related to the conditions of the volunteer environment, including the amount of social interaction, the meaningfulness of the work, relationships with staff, and the volunteer’s ability to state preferences and choose tasks (Morrow-Howell, 2010; Morrow-Howell et al., 2003).

Piliavin and Siegel (2007) asserted that in addition to the intensity (amount of time) spent volunteering, there are two additional dimensions that the optimal amount of engagement should be measured: (1) the diversity (number) of organizations in which a
person volunteers and (2) the consistency of volunteer efforts throughout the lifespan. Piliavin and Siegel (2007) found a positive, linear relationship between volunteer’s diversity of volunteer effort (i.e. volunteering for multiple organizations) and benefits to the individual’s psychological well-being. Volunteering for multiple organizations has also been found to be protective against Alzheimer’s disease (Friedland et al., 2001). Similarly, Van Willigen (2000) found that life satisfaction and perceived health significantly increased for older adults who possessed a volunteer role and/or volunteered for more than one type of organization. Regarding consistency of volunteerism, Piliavin and Siegel (2007) discovered that greater participation was positively and linearly related to well-being.

The Question of Causation

The evidence correlating volunteering and engagement with positive health and well-being has been established by numerous cross-sectional studies (see Wheeler, Gorey, & Greenblatt, 1998 for a meta-analytic review) and is widely accepted by social scientists. Various longitudinal studies lend additional, stronger support for the connection between volunteering and various benefits (Greenfield & Marks, 2004; Lum & Lightfoot, 2005; Morrow-Howell et al., 2003; Musick & Wilson, 2003), but the question of causal directionality still remains.

However, researchers such as Van Willigen (2000) and Piliavin and Siegel (2007), have provided evidence indicating a causal relationship between volunteering and enhanced psychological well-being. Furthermore, the recent research investigating the health and well-being of senior volunteers in the Experience Corps program possesses a rigorous experimental design and provides further support for the assertion that volunteering directly results in positive physical, cognitive, and psychological outcomes.

After finding that non-volunteers reported significantly poorer health than did older adult volunteers and that volunteers reported higher levels of life satisfaction, Van Willigen (2000) utilized an OLS regression analysis to tease out whether the positive outcomes resulted from volunteer activities or if those who volunteer were healthier and happier in general. After conducting various permutations of measuring volunteering at different points in time, Van Willigen (2000) found that volunteering was always positively associated with life satisfaction and self-reported health. She then carried out further analysis and ultimately
concluded that “it was not simply the case that volunteers are the kind of people who are more satisfied with their lives and healthier in the first place… although physical limitations may restrict volunteer activity, physical and psychological well-being do not predict volunteering” (Van Willigen, 2000, p. S312). However, Thoits and Hewitt (2001) found that while volunteering increases life satisfaction, self-esteem, self-reported health, and reduces depression, it is in fact social integration that mediates the well-being-to-volunteer relationship. This led the authors to conclude, “voluntary activities are products of personal wellbeing” (Thoits & Hewitt, 2001, p. 127). Nevertheless, Piliavin and Siegel (2007) lend support to Van Willigen (2000) when they found strong evidence that the relationship between volunteering and well-being is causal and specific to altruistic forms of engagement.

To determine the impact on older adults resulting from volunteering with Experience Corps, researchers use both questionnaires (self-reported health status and life satisfaction, among others) and objective measures of health, including physical performance-based testing, measures of executive function, visuospatial memory, and fMRI (Barron et al., 2009; Carlson et al., 2008; Carlson et al., 2009; Hong & Morrow-Howell, 2010). As noted previously, many of the researchers utilize an experimental design in which participants are randomized into the Experience Corps volunteer pool or to wait-lists. The Experience Corps research has provided compelling evidence that as a direct result of high-intensity volunteering, participants experience better physical health, psychological well-being, and improvements in cognitive functioning.

**Other Considerations**

Although research has demonstrated that all individuals who volunteer are able to experience the various benefits associated with volunteering (Morrow-Howell et al., 2003), the benefits may not be experienced to the same degree by all subpopulations of volunteers. Some studies suggest that individuals with lower socioeconomic status, less social integration, lower educational achievement, greater functional limitations, and who are older experience more net benefits from engagement, including psychological well-being, health, and socialization (Carlson et al., 2008; Morrow-Howell et al., 2003; Morrow-Howell, Hong, & Tang, 2009; Piliavin & Siegel, 2007). In contrast, other studies provide evidence that individuals who are more socially integrated, are married and employed experience greater
benefits of volunteering, or that findings are inconsistent (Oman, Thoresen, & McMahon, 1999; Van Willigen, 2000).

The act of volunteering has been found to result in greater benefits than other types of social participation, such as donations of blood or money (Piliavin & Siegel, 2007). Piliavin and Siegel (2007) discovered evidence for a causal relationship between volunteering and psychological well-being, results that were not replicated for engagement in other types of organizational involvement like church or social groups. In other words, the authors found that the beneficial health effects were specific to altruistic forms of engagement. Also of note are the findings that the benefits of volunteering are not moderated by individual characteristics such as age, gender, and race (Morrow-Howell et al., 2003; Van Willigen, 2000), which suggests that everyone can experience personal benefits from volunteering.

Despite the greater self-reported health benefits of altruistic engagement, Lum and Lightfoot (2005) found that older volunteers had no less physician-diagnosed medical conditions than those who did not volunteer. They hypothesize that despite having medical conditions, older adult volunteers are more resilient due to the social and psychological resources attained through volunteering. This resiliency enables them to better cope with their health problems, and thus they report better health status (Lum & Lightfoot, 2005).

CONCLUSION

Rowe and Kahn (1998) noted that throughout the course of life, well-being is enhanced through involvement in activities that are purposeful and meaningful. Having social interactions and feeling a sense of belongingness to a group are fundamental to the functioning of human beings and their absence impacts an individual’s emotional and cognitive health (R. F. Baumeister & Leary, 1995). For older adults in particular, one of the most dependable predictors of longevity is having a social network; individuals without close relationships with family and friends are more likely to become ill and live shorter lives (Rowe & Kahn, 1998). Through membership in a convoy of friends and family, individuals are protected and provide a level of protection to others, which are important means to avoid isolation and loneliness that advanced age may bring (Rowe & Kahn, 1998).

The well-documented benefits of formal volunteering situated within the theoretical contexts of generativity, role theory and successful aging, lead to the hypothesis that it is
highly probable that possessing a civic engagement role has an impact on the health and well-being of the individual, the functioning of society, and the future solvency of health and social service programs.
CHAPTER 3

METHODOLOGY

STUDY DESIGN

The present study explores the association between volunteerism and self-reported health and well-being measures among respondents of the Social Capital Community Survey, 2006 (Roper Center, 2012). The study is designed as an analysis of secondary cross-sectional survey data and has been deemed exempt from further review by the Institutional Review Board for Research with Human Subjects at San Diego State University (see Appendix A).

POPULATION AND SAMPLE

The data for the present study was obtained from the unrestricted and publically available Social Capital Community Survey, 2006, made available through the Roper Center for Public Opinion Research. The data were collected by Professor Robert D. Putnam of the Saguaro Seminar on Civic Engagement in America, a project of the John F. Kennedy School of Government at Harvard University and in conjunction with numerous community foundations nation-wide (Roper Center, 2012).

The Saguaro Seminar commissioned the international survey firm TNS Intersearch to conduct the Social Capital Community Survey, 2006. Interviews took place over the telephone and respondents were selected by the Genesys™ system random-digit-dial survey telephone number generator (Roper Center, 2012). The survey was conducted by experienced interviewers under continuous supervision of senior staff and was completed in two waves from January through April of 2006. The national sample response rate was 16.7%. The dataset has an overall sample size of 12,100, which is comprised of a national adult sample (n = 2,741) and a sample of twenty-two communities (n = 9,359 respondents).

This study focuses solely on the nationally representative dataset and includes respondents 50 years of age and older, which represents the majority of the Baby Boomer cohort and the current cohort of older adults; the final sample size totals 1,396.
INSTRUMENTATION

The 2006 Social Capital Community Survey questionnaire was based upon the Social Capital Benchmark Survey, 2000, which was developed by the Saguaro Seminar and their Scientific Advisory Committee (Roper Center, 2012). The purpose of the surveys was to measure the manifestations and correlates of social capital to provide data to researchers, communities, and organizations (Roper Center, 2012).

The 2006 questionnaire underwent numerous edits, pretesting, and revisions before receiving final approval. Once finalized the survey was programmed in computer-assisted telephone interviewing software and was translated into Spanish, which also underwent a revision and approval process before being fielded. The survey includes 70 questions total, but due to budget limitations and reductions in the length of the survey to preserve response quality, several sections and questions were administered to randomly selected respondents in the sample; the surveys were approximately 32 minutes in length.

MEASUREMENT

The survey included many variables that were used to assess sociodemographic characteristics and to measure social capital. The measures in the present study were chosen based upon the theoretical foundation of the study, the existing literature on civic engagement and volunteerism, and the availability of relevant variables within the dataset. This study focuses on one key independent variable (volunteer frequency) and two dependent variables (self-reported health and self-reported well-being). Additionally, numerous sociodemographic variables were controlled for. Appendix B includes the complete set of questionnaire items utilized in this study.

Dependent Variables

This study includes two dependent variables: self-reported health and self-reported well-being.

SELF-REPORTED HEALTH

An individual’s subjective self-reported health status has been found to be predictive of their objective health status, health behaviors, nursing home placements, and mortality, regardless of gender and race/ethnicity (Idler & Benyamini, 1997; McGee, Liao, Cao, &
Cooper, 1998; Reuben et al., 2004). Further, research reveals that single-item general health status measures have good reliability, and have concurrent and discriminate scale performance with longer multi-item health status measures (Desalvo et al., 2006; Eriksson, Unden, & Elofsson, 2001). Such strong psychometric properties of single-item subjective health status make it a reasonable substitute for the multi-item instruments to assess an individual’s actual health (Desalvo et al., 2006).

In the Social Capital Community Survey, 2006, all respondents were asked to “Describe [their] overall state of health” on a 5-point scale from “Excellent” to “Poor.”

**HEALTH.** And how would you describe your overall state of health these days? Would you say it is excellent, very good, good, fair, or poor?

1 = Excellent  
2 = Very Good  
3 = Good  
4 = Fair  
5 = Poor  
8 = Don’t know  
9 = Refused

To be consistent with coding strategy in published literature, the health variable was recoded to “low = 0” and “high = 1” health. Those who rated their health as “poor” or “fair” were recoded as having “low” health (20.3% of respondents). Those who rated their health as “good,” very good,” or “excellent” (79.7% of respondents) were recoded as having “high” health.

**SELF-REPORTED WELL-BEING**

The Social Capital Community Survey, 2006 includes a number of variables that assess respondents’ well-being, including self-reported life-satisfaction and the presence or absence of positive or negative affect (i.e., feeling “calm and relaxed,” “worried,” “overwhelmed,” and “used up”). Contemporary research on subjective well-being conceptualizes the variable as possessing three components: cognitive evaluation of subjective life satisfaction, positive affect, and negative affect (Arthaud-Day, Rode, Mooney, & Near, 2005; Nieboer, Lindenberg, Boomsma, & Van Bruggen, 2005; Pavot & Diener, 2008). It was originally planned that this study would include a composite measure of the three components noted above, which are the gold standard in assessing well-being. However due to the survey administrators’ budgetary and survey length constraints, the
affective-component questions were randomly administered to only 50% of the study population leaving these variables unsuitable for inclusion in this study. Thus, this study was bound by the limitations of the original dataset and as such, well-being will be operationalized as self-reported life satisfaction only.

Despite researchers’ general consensus of preference for the three-factor structure of the well-being construct and criticisms of the single-item measure, the latter remains a widely used and valid measure to assess a respondent’s well-being (Diener, 2009; Pavot & Diener, 2008). This cognitive component of subjective well-being was measured in the 2006 survey with the question, “All things considered, how satisfied are you with your life as a whole nowadays?”

LIFESAT. All things considered, how satisfied are you with your life as a whole nowadays? Please answer using a scale where 1 means extremely dissatisfied and 10 means extremely satisfied.

1 = extremely dissatisfied
2 = A few times
3 = Once
4 = A few times
5 = Slightly dissatisfied
6 = Indifferent
7 = Slightly satisfied
8 = Satisfied
9 = Extremely satisfied
10 = extremely satisfied
88M = Don’t know
99M = Refused

The scaled response of the original variable was recoded into dichotomous variables that would reflect the original skewness of the data. Thus, responses from 1-7 were recoded to “low = 0” (26.2% of respondents) and responses from 8-10 were recoded into “high = 1” (73.8% of respondents).

**Independent Variable**

The independent variable in this study is volunteering frequency. Respondents were asked, “How many times in the past twelve months have you volunteered?” If necessary, respondents were prompted with frequency categories and volunteer work was clarified to mean “any unpaid work [they had] done to help people besides your family and friends or people you work with.” Respondents were asked to “count every time [they] did any volunteer work, no matter how much or little.”

VOLTIME2. How many times in the past twelve months have you volunteered?
1 = Never did this
2 = Once
3 = A few times
4 = 2-4 times
5 = 5-9 times
6 = About once a month on average
7 = Twice a month
8 = About once a week on average
9 = More than once a week
98 = M Don't know
99 = M Refused

The volunteer variable was recoded into “none = 0”, “low = 1” and “high =2” variables. The “none” variable included respondents who reported never volunteering in the past year, which amounted to approximately 42% of respondents. Those who reported volunteering 1-18 times (approximately once every three weeks) the past year were classified as volunteering at a “low” level; approximately 39% of respondents. Those who reported volunteering 20-60 times (once every 2.4 weeks to more than once weekly) were classified as volunteering at a “high” level; approximately 19% of respondents.

Confounding Variables

This study accounts for various socio-demographic variables that are known to be associated with self-reported health and well-being, including age, gender, race, marital status, educational status, employment status and income. All original variables from Social Capital Community Survey, 2006 dataset, save gender, were recoded to simplify statistical analysis.

AGE

The age variable was captured through respondents answering, “In what year were you born”; original variables included ages 51 to 102. The ages were recoded into four 10-year cohorts, from 50-59, 60-69, 70-79, and 80+ years.

RACE

The survey included multiple questions to capture various facets of participants’ race and ethnicity. However, for simplicity this study includes only one of the questions. Respondents were asked, “Do you consider yourself to be White, Black or African American, Asian or Pacific Islander, Native American, or some other race?” The vast majority of participants were non-Hispanic white (87.7%) and the remaining were divided amongst multiple racial and ethnic groups. To maintain statistical integrity race was recoded into “non-
Hispanic white = 0” and “Non non-Hispanic (NH) white” = 1, the latter henceforth referred to as “non-whites” or “people of color.”

**Marital Status**

Respondents were asked, “Are you currently married, separated, divorced, widowed, or have you never married?” This variable was recoded into dichotomized groups, “married = 1” (55.3%) and “not married = 2” (44.7%).

**Educational Status**

The respondents were asked, “What is the highest grade of school or year of college you have completed?” and their answers were categorized into seven different groups. In this study, the responses were recoded into four sub-groups, including “≤ high school diploma,” “some college or 2-year degree,” “4-year degree or some graduate studies,” and “graduate degree.”

**Employment Status**

Respondents’ employment status was captured through the question, “We’d like to know if you are working now, temporarily laid off, or if you are unemployed, retired, permanently disabled, a homemaker, a student, or what?” This variable was recoded into “currently working,” “retired,” and “not currently working.”

**Income**

The questionnaire included more than one question to obtain the most accurate estimation of the respondents’ income. The original six possible categories for income were recoded into two dichotomous variables: < $30,000 = 0 and ≥ $30,000 = 1.

**Data Analysis Procedure**

The data in this study were analyzed using Statistical Package for the Social Sciences (SPSS) Statistics 19.0 for Mac OS X (IBM Corp., 2010). The data analysis procedures were developed to address the primary research questions and hypotheses. The first research question addresses analyzing the characteristics of respondents who report volunteering, those with low/high self-reported health, and low/high self-reported well-being. The second research question focuses on the association between respondents’ reports of annual
volunteering frequency and two dependent variables (self-reported health and well-being) while controlling for the other variables.

To address the first research question, frequencies were presented to describe the characteristics of the study sample, the independent variables, and the dependent variables. Then, Pearson’s chi-square tests of independence were completed to assess the simple associations among the independent variable, the dependent variable, and the demographic variables. The chi-square test assumes random sampling of a sufficiently large independent sample size and independence of the observations (Hinton, Brownlow, McMurray, & Cozens, 2004). The results of the chi-square analysis allow for the determination of a statistical independence or association between the variables being compared (Hinton et al., 2004).

To address the second research question and related hypotheses, both unadjusted and adjusted binary logistic regression analyses were conducted. Binary logistic regression was selected due to the dichotomous nature of the dependent variables in the study. The analysis allows for the “odds of an event’s occurrence [to be modeled] and to estimate the effects of independent variables on these odds” (O’Connell, p. 11, 2006). The odds for an event are presented as an odds ratio (OR), which compares the odds for different values of the independent variables. The OR measures the association between an independent variable and a binary outcome and the p-value demonstrates the significance of that association.

Each variable within the dataset has different responses missing, ranging from 0 – 142. As a result, a least-wise deletion was used when running the multiple logistic regression analyses.
CHAPTER 4

RESULTS AND DISCUSSION

This chapter describes the characteristics of the study sample and the results from the statistical analyses of the study hypotheses. It concludes with a discussion of the findings and limitations of the present study.

RESULTS

The following section reports the results of the various analyses performed in this thesis. First, participant demographic and other characteristics are presented, followed by the results of the bivariate and logistic analyses.

Participant Characteristics

This section begins with a description of the many participant characteristics that were included in this study.

DEMOGRAPHICS

The participant sample is comprised of 1,396 adults who ranged in age from 50 to 102, with a mean age of 64.33 ± 10.31 (standard deviation). As presented in Table 1, the majority of participants were aged 50-59 (39.7%) and 60-69 (30.8%); approximately 63% of the sample was female, and a little over half were married (55.3%). The vast majority of the sample (87.7%) was non-Hispanic white and individuals whose income was equal to or exceeded $30,000 (68.7%). Approximately 37% of respondents graduated from high school or less, 31% obtained a two-year degree or some college, about 17% obtained a 4-year college degree, and roughly the same possessed a graduate degree (15.6%). Nearly equal parts were currently working (43.8%) or were retired (42.9%), and about a sixth (13.4%) were not working but are looking for employment.
Table 1. Demographic Characteristics of Study Participants (N = 1,396)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Valid N</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>554</td>
<td>39.7</td>
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<td>60-69</td>
<td>430</td>
<td>30.8</td>
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<tr>
<td>70-79</td>
<td>271</td>
<td>19.4</td>
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<tr>
<td>80+</td>
<td>141</td>
<td>10.1</td>
</tr>
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<td></td>
<td></td>
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<tr>
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<td>521</td>
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<tr>
<td>Female</td>
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<td></td>
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<td></td>
</tr>
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<td>55.3</td>
</tr>
<tr>
<td>Not married</td>
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<td>44.7</td>
</tr>
<tr>
<td>Educational status</td>
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<td></td>
</tr>
<tr>
<td>&lt; High school diploma</td>
<td>509</td>
<td>36.6</td>
</tr>
<tr>
<td>Some college or 2-year degree</td>
<td>431</td>
<td>31.0</td>
</tr>
<tr>
<td>4-year degree or some graduate</td>
<td>233</td>
<td>16.8</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>216</td>
<td>15.6</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
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<tr>
<td>Currently working</td>
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<td>43.8</td>
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<tr>
<td>Retired</td>
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<td>42.9</td>
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<tr>
<td>Not currently working</td>
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<tr>
<td>Income</td>
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<td>&lt;$30,000</td>
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</tr>
<tr>
<td>$30,000</td>
<td>862</td>
<td>68.7</td>
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</table>

Note. NH = Non-Hispanic

Volunteer Frequency, Self-Reported Health and Life Satisfaction

An assessment of the independent variable and dependent variables, shown in Table 2, revealed that approximately 42% of participants reported not volunteering over the past 12 months, about 40% volunteered at a low level, and nearly 19% reported volunteering at a high level. Large majorities of the sample reported having both high health status (79.7%) and high life satisfaction (73.8%).
Table 2. Volunteering Frequency, Self-Reported Life Satisfaction, and Health Status of Study Sample (N = 1,396)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Valid N</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteering frequency</td>
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<td></td>
</tr>
<tr>
<td>None</td>
<td>582</td>
<td>41.9</td>
</tr>
<tr>
<td>Low</td>
<td>546</td>
<td>39.3</td>
</tr>
<tr>
<td>High</td>
<td>261</td>
<td>18.8</td>
</tr>
<tr>
<td>Self-reported health status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>283</td>
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</tr>
<tr>
<td>High</td>
<td>1,112</td>
<td>79.7</td>
</tr>
<tr>
<td>Self-reported life satisfaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>364</td>
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</tr>
<tr>
<td>High</td>
<td>1,027</td>
<td>73.8</td>
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</table>

Bivariate Analysis of Independent and Dependent Variables

The following section contains the results from the bivariate analyses of the independent variable (volunteer frequency) and the two dependant variables (self-reported health and self-reported life satisfaction). These analyses were conducted to answer the first research question regarding the relationships among sociodemographic characteristics and volunteering frequency, self-reported health, and self-reported well-being.

Volunteer Frequency

Pearson’s chi-square tests of independence were performed to examine the relationships between participants’ volunteering frequency and various characteristics (Table 3). A test on volunteering frequency and age reveals that over half of individuals of more advanced age (70 and older) reported not volunteering ($\chi^2 = 29.70$, df = 6, $p < .001$). The youngest groups aged 50-69 years old was more likely than other age groups to report volunteering at both low and high levels.

A significant relationship was found between volunteering frequency and gender ($\chi^2 = 6.08$, df = 2, $p < .05$). Although males (39.8%) and females (39.0%) were nearly equally likely to report low volunteering, males (44.6%) were more likely not to engage in volunteering than females (40.3%). Regarding marital status, married respondents were significantly more likely than those who were not married to volunteer both at low (41.0% v. 37.3%) and high (20.1% v. 17.2%) levels ($\chi^2 = 6.35$, df = 2, $p < .05$).
<table>
<thead>
<tr>
<th>Variables</th>
<th>Volunteer Status (%)</th>
<th>Total ( N )</th>
<th>( \chi^2 )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>Low</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>36.5</td>
<td>44.7</td>
<td>18.8</td>
<td>553</td>
</tr>
<tr>
<td>60-69</td>
<td>39.0</td>
<td>41.4</td>
<td>19.6</td>
<td>428</td>
</tr>
<tr>
<td>70-79</td>
<td>50.7</td>
<td>31.0</td>
<td>18.3</td>
<td>268</td>
</tr>
<tr>
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<td>17.1</td>
<td>140</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td>6.08 **</td>
</tr>
<tr>
<td>Male</td>
<td>44.6</td>
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<td>15.6</td>
<td>520</td>
</tr>
<tr>
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<td>40.3</td>
<td>39.0</td>
<td>20.7</td>
<td>869</td>
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<td></td>
<td>1.12 ([0.572])</td>
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<td>38.9</td>
<td>19.4</td>
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<tr>
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<td></td>
<td>6.35 *</td>
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</tr>
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<td>17.2</td>
<td>617</td>
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<td></td>
<td>135.95 ***</td>
</tr>
<tr>
<td>( \leq ) High school diploma</td>
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<td>12.0</td>
<td>507</td>
</tr>
<tr>
<td>Some college or 2-year degree</td>
<td>40.1</td>
<td>40.1</td>
<td>19.8</td>
<td>429</td>
</tr>
<tr>
<td>4-year degree or some graduate</td>
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<td>51.7</td>
<td>22.4</td>
<td>232</td>
</tr>
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<td>Graduate degree</td>
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<tr>
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<td>27.45 ***</td>
</tr>
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<td>18.1</td>
<td>608</td>
</tr>
<tr>
<td>Retired</td>
<td>47.0</td>
<td>33.7</td>
<td>19.2</td>
<td>593</td>
</tr>
<tr>
<td>Not currently working</td>
<td>47.3</td>
<td>33.2</td>
<td>19.6</td>
<td>184</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td>40.37 ***</td>
</tr>
<tr>
<td>(&lt; $30,000</td>
<td>54.4</td>
<td>30.0</td>
<td>15.6</td>
<td>390</td>
</tr>
<tr>
<td>(\geq $30,000</td>
<td>35.3</td>
<td>43.7</td>
<td>21.0</td>
<td>861</td>
</tr>
<tr>
<td>Self-reported health</td>
<td></td>
<td></td>
<td></td>
<td>13.10 **</td>
</tr>
<tr>
<td>Low</td>
<td>51.4</td>
<td>32.6</td>
<td>16.0</td>
<td>282</td>
</tr>
<tr>
<td>High</td>
<td>39.5</td>
<td>41.0</td>
<td>19.5</td>
<td>1,106</td>
</tr>
<tr>
<td>Self-reported life Satisfaction</td>
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<td></td>
<td></td>
<td>24.74 ***</td>
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<td>Low</td>
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<td>11.9</td>
<td>362</td>
</tr>
<tr>
<td>High</td>
<td>38.5</td>
<td>40.2</td>
<td>21.3</td>
<td>1,384</td>
</tr>
</tbody>
</table>

*Note.* NH = Non-Hispanic; % is a row %

*\( p < .05; \) **\( p < .01; \) ***\( p < .001 \)
Educational status was significantly related with volunteering status ($\chi^2 = 135.95$, df = 6, $p < .001$); participants with more educational attainment volunteered at a higher frequency than their less educated counterparts. Currently employed individuals (46.9%) were likelier to volunteer at low levels than retirees (33.7%) and individuals not currently working (33.2%) ($\chi^2 = 27.45$, df = 4, $p < .001$). However, retirees (19.6%) were more likely to volunteer at high levels than individuals who reported currently working (18.1%). In terms of socioeconomic status, there was a significant relationship between income and volunteering ($\chi^2 = 40.37$, df = 2, $p < .001$), with those whose income was $30,000 and higher (64.7%) volunteering more than respondents making under $30,000 (45.6%).

Lastly, those with high self-reported health were more likely than those with low health to report volunteering at both low (41% v. 32.6%) and high (19.5 vs. 16%) levels ($\chi^2 = 13.10$, df = 2, $p < .01$). Similarly, respondents with high self-reported life satisfaction were significantly more likely than those with low life satisfaction to volunteer at both low (40.2% v. 36.5%) and high (21.3% v. 11.9%) levels ($\chi^2 = 24.74$, df = 2, $p < .001$). The only characteristic not related to volunteering frequency was race. Although people of color were more likely to report volunteering at low levels and non-Hispanic whites were more likely to volunteer at high levels, the difference was not significant ($\chi^2 = 1.12$, df = 2, $p = .572$).

In summary, those who were most likely to volunteer were aged 50-69, married, female, possessed greater levels of educational attainment, were currently working, had incomes over $30,000, and had high self-reported health and life satisfaction.

**Self-Reported Health**

To examine the relationship between participants’ health status and various characteristics, chi-square tests for independence were performed (Table 4). There were no significant relationships between self-reported health status and age, gender, or race. However, a significant relationship was found between health and marital status ($\chi^2 = 19.18$, df = 1, $p < .001$). Respondents who reported being married (83.9%) were more likely to report high health than their non-married counterparts (74.4%).

With regards to educational status, individuals with lower educational attainment were significantly more likely than those with higher educational attainment to report having low health ($\chi^2 = 47.99$, df = 3, $p < .001$). Further, participants not currently working (38.7%)
Table 4. Self-Reported Health Status by Demographic and Other Characteristics of Study Participant (N = 1,396)

<table>
<thead>
<tr>
<th>Variables</th>
<th>SR Health Status (%)</th>
<th>Total N</th>
<th>χ²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>17.7</td>
<td>82.3</td>
<td>554</td>
<td>4.00</td>
</tr>
<tr>
<td>60-69</td>
<td>22.6</td>
<td>77.4</td>
<td>430</td>
<td></td>
</tr>
<tr>
<td>70-79</td>
<td>21.4</td>
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<td>271</td>
<td></td>
</tr>
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<td>80+</td>
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</tr>
<tr>
<td>Gender</td>
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<td></td>
</tr>
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<td></td>
</tr>
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<td>0.00</td>
</tr>
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</tr>
<tr>
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<td>74.4</td>
<td>620</td>
<td></td>
</tr>
<tr>
<td>Educational status</td>
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<td></td>
<td>47.99</td>
</tr>
<tr>
<td>≤ High school diploma</td>
<td>28.9</td>
<td>71.1</td>
<td>509</td>
<td></td>
</tr>
<tr>
<td>Some college or 2-year degree</td>
<td>19.5</td>
<td>80.5</td>
<td>430</td>
<td></td>
</tr>
<tr>
<td>4-year degree or some graduate</td>
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<td>Graduate degree</td>
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<td>≥ $30,000</td>
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</tr>
<tr>
<td>Volunteer frequency</td>
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<td></td>
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</tr>
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<td></td>
</tr>
<tr>
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<td>83.1</td>
<td>545</td>
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</tr>
<tr>
<td>High</td>
<td>17.2</td>
<td>82.8</td>
<td>261</td>
<td></td>
</tr>
</tbody>
</table>

Note. NH = Non-Hispanic; % is a row %
*p < .05; **p < .01; ***p < .001
or retired (24.2%) were significantly more likely ($\chi^2 = 78.24, \ df = 2, \ p < .001$) to report low health status than those who were currently working (10.8%). A significant relationship was also found between income and health ($\chi^2 = 64.52, \ df = 1, \ p < .001$), in that those participants with less than $30,000 (34\%) were more likely than their higher income counterparts (14.3\%) to report low health. Finally, the relationship between self-reported health status and volunteering frequency was significant ($\chi^2 = 13.10, \ df = 2, \ p < .01$). Individuals who volunteered were more likely to report higher health status than those who did not volunteer.

To summarize, participants who were married, achieved higher levels of education, were employed, had higher income, and who volunteered were more likely to report possessing high health status.

**SELF-REPORTED WELL-BEING**

As reported in Table 5, chi-square tests of independence were performed to examine the relationships between participants’ self-reported life satisfaction, demographics, and other variables. There was no significant difference in self-reported life satisfaction among different age groups, but gender was significantly related ($\chi^2 = 7.14, \ df = 1, \ p < .01$); females (76.3\%) were more likely to report high life satisfaction compared to males (69.7\%). In terms of race, low life satisfaction was reported significantly more often by non-Hispanic whites (27.3\%) compared to their counterparts (18.5\%) ($\chi^2 = 5.67, \ df = 1, \ p < .05$). As well, marital status was significantly related to life satisfaction ($\chi^2 = 27.03, \ df = 1, \ p < .001$) as those who were married (79.3\%) reported higher life satisfaction than unmarried individuals (66.9\%).

Self-reported life satisfaction was significantly related to participants’ educational status ($\chi^2 = 19.82, \ df = 3, \ p < .001$); those with lower levels of educational attainment were more likely to report low life satisfaction. The group with most members reporting high life satisfaction was participants who attained a 4-year college degree (82.3\%), compared to approximately 69\% of those who attained a high school diploma or less. Regarding employment status, participants who were not currently working (35.7\%) were significantly more likely to report low life satisfaction compared to those currently working (26.6\%) or retired (22.6\%) ($\chi^2 = 12.75, \ df = 2, \ p < .01$). As well, those with lower incomes (37\%) were
Table 5. Self-Reported Life Satisfaction by Demographic and Other Characteristics of Study Population (N = 1,396)

<table>
<thead>
<tr>
<th>Variables</th>
<th>SR Life Satisfaction (%)</th>
<th>Total N</th>
<th>$\chi^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>28.6</td>
<td>71.4</td>
<td>553</td>
<td>.063</td>
</tr>
<tr>
<td>60-69</td>
<td>27.7</td>
<td>72.3</td>
<td>429</td>
<td></td>
</tr>
<tr>
<td>70-79</td>
<td>21.0</td>
<td>79.0</td>
<td>271</td>
<td></td>
</tr>
<tr>
<td>80+</td>
<td>21.7</td>
<td>78.3</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td>7.14</td>
</tr>
<tr>
<td>Male</td>
<td>30.3</td>
<td>69.7</td>
<td>519</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>23.7</td>
<td>76.3</td>
<td>872</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td>5.67</td>
</tr>
<tr>
<td>NH White</td>
<td>27.3</td>
<td>72.7</td>
<td>1,161</td>
<td></td>
</tr>
<tr>
<td>Non-NH White</td>
<td>18.5</td>
<td>81.5</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td>27.03</td>
</tr>
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<td>20.7</td>
<td>79.3</td>
<td>768</td>
<td></td>
</tr>
<tr>
<td>Not married</td>
<td>33.1</td>
<td>66.9</td>
<td>617</td>
<td></td>
</tr>
<tr>
<td>Educational status</td>
<td></td>
<td></td>
<td></td>
<td>19.82</td>
</tr>
<tr>
<td>≤ High school diploma</td>
<td>30.6</td>
<td>69.4</td>
<td>506</td>
<td></td>
</tr>
<tr>
<td>Some college or 2-year degree</td>
<td>28.8</td>
<td>71.2</td>
<td>430</td>
<td></td>
</tr>
<tr>
<td>4-year degree or some graduate</td>
<td>17.7</td>
<td>82.3</td>
<td>232</td>
<td></td>
</tr>
<tr>
<td>Graduate degree</td>
<td>19.9</td>
<td>80.1</td>
<td>216</td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
<td>12.75</td>
</tr>
<tr>
<td>Currently working</td>
<td>26.6</td>
<td>73.4</td>
<td>608</td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>22.6</td>
<td>77.4</td>
<td>594</td>
<td></td>
</tr>
<tr>
<td>Not currently working</td>
<td>35.7</td>
<td>64.3</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td>28.50</td>
</tr>
<tr>
<td>&lt; $30,000</td>
<td>37.0</td>
<td>63.0</td>
<td>389</td>
<td></td>
</tr>
<tr>
<td>≥ $30,000</td>
<td>22.5</td>
<td>77.5</td>
<td>861</td>
<td></td>
</tr>
<tr>
<td>Volunteer frequency</td>
<td></td>
<td></td>
<td></td>
<td>24.74</td>
</tr>
<tr>
<td>None</td>
<td>32.2</td>
<td>67.8</td>
<td>580</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>24.3</td>
<td>75.7</td>
<td>543</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>16.5</td>
<td>83.5</td>
<td>261</td>
<td></td>
</tr>
<tr>
<td>SR Health Status</td>
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<td></td>
<td>69.16</td>
</tr>
<tr>
<td>Low</td>
<td>45.6</td>
<td>54.4</td>
<td>283</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>21.2</td>
<td>78.8</td>
<td>1,107</td>
<td></td>
</tr>
</tbody>
</table>

Note. NH = Non-Hispanic; % is a row %
*p < .05; **p < .01; ***p <.001
significantly more likely to report low life-satisfaction than their higher-income counterparts (22.5%) ($\chi^2 = 28.5$, df = 1, $p < .001$).

In summary, high life satisfaction was more likely to be reported by respondents who were female, married, non-white, had higher educational attainment, were currently working, and possessed incomes greater than $30,000.

**Logistic Regression**

The second research question examines the association between an independent variable (volunteering frequency) and two dependent variables (self-reported health and well-being) while controlling for other variables. To that end, two types of binary logistic regression analyses (unadjusted and adjusted) were conducted to test the hypotheses; the former between the independent and dependent variables, and the latter to examine the relationship while controlling for confounding variables.

**SELF-REPORTED HEALTH STATUS**

The first hypothesis of the present study is: Older adults who report volunteering will have higher measures of self-reported health than those who report not volunteering. To assess the first hypothesis, an unadjusted binary logistic regression analysis on self-reported health status and volunteer frequency was conducted (Table 6). The results indicated that respondents who volunteered at a low level were 1.6 times as likely to report having high self-rated health than those who did not volunteer (odds ratio [OR] = 1.63, $p < .01$). As well, those who volunteered at a high level were 1.6 times as likely to report having high health compared to their counterparts (OR = 1.59, $p < .05$).

<p>| Table 6. Unadjusted Binary Logistic Regression on Self-Reported Health Status ($N = 1,396$) |</p>
<table>
<thead>
<tr>
<th>Variables</th>
<th>OR</th>
<th>95% CI for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low</td>
<td>1.634**</td>
<td>1.220</td>
</tr>
<tr>
<td>High</td>
<td>1.593*</td>
<td>1.098</td>
</tr>
</tbody>
</table>

*Note. CI = Confidence Interval; OR = Odds Ratio; Ref = Referent Category
*p < .05; **p < .01; *** p < .001
Table 7 reports the adjusted estimates on the relationship between volunteering frequency and self-reported health status. After controlling for confounding variables, the significant effect between volunteering and self-reported health status disappeared. This outcome indicated that confounding variables accounted for the initial unadjusted relationship between volunteering and self-reported health status. The confounding variables that were significantly related to self-reported health status were: age, marital status, educational status, employment status and income. Thus, the first hypothesis is not supported.

Those who were of more advanced age were nearly two times as likely to report a high health status than their younger counterparts (70-79, OR = 1.99, \( p < .05 \); 80+, OR = 1.9, \( p < .05 \)). Also significantly more likely to report high health status were individuals who were married (OR = 1.476, \( p < .05 \)), who attained a four-year college degree (OR = 2.47, \( p < .01 \)), and who were currently working (OR = 4.07, \( p < .001 \)). Those whose income was less than $30,000 were nearly 50% less likely than higher-income individuals to report high self-rated health (OR = .532, \( p < .01 \)).

**SELF-REPORTED WELL-BEING**

The second hypothesis being tested in this study states that: Older adults who report volunteering will have higher measures of self-reported well-being than those who report not volunteering. Table 8 provides the results of the unadjusted binary logistic regression analysis on self-reported life satisfaction and volunteer status/frequency. These results indicate that compared to non-volunteer participants, low-level volunteers were approximately 1.5 times as likely (OR = 1.48, \( p < .01 \)) to report high life satisfaction than non-volunteers. Further, participants who volunteered at high levels were 2.4 times as likely to report high life satisfaction than non-volunteers (OR = 2.41, \( p < .001 \)).

The adjusted binary logistic regression analysis (Table 9) indicates that after controlling for confounding variables, the significant positive relationship between volunteering frequency and self-reported well-being is maintained for both low (OR = 1.46, \( p < .05 \)) and high (OR = 2.37, \( p < .001 \)) volunteering frequency. Thus, the second hypothesis is supported.
### Table 7. Binary Logistic Regression on Self-Reported Health Status (N = 1,396)

<table>
<thead>
<tr>
<th>Variables</th>
<th>SR Health Status</th>
<th>95% CI for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>Lower</td>
</tr>
<tr>
<td>Volunteer frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low</td>
<td>1.077</td>
<td>0.754</td>
</tr>
<tr>
<td>High</td>
<td>1.092</td>
<td>0.707</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59 (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>60-69</td>
<td>1.095</td>
<td>0.738</td>
</tr>
<tr>
<td>70-79</td>
<td>1.986*</td>
<td>1.173</td>
</tr>
<tr>
<td>80+</td>
<td>1.882*</td>
<td>1.024</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Female</td>
<td>1.189</td>
<td>0.858</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH White (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Non-NH White</td>
<td>1.191</td>
<td>0.747</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>1.476*</td>
<td>1.052</td>
</tr>
<tr>
<td>Not married (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Educational status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ High school diploma (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Some college or 2-year degree</td>
<td>1.253</td>
<td>0.875</td>
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<tr>
<td>4-year degree or some graduate</td>
<td>2.470**</td>
<td>1.421</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>1.645</td>
<td>0.963</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not currently working (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Currently working</td>
<td>4.074**</td>
<td>2.564</td>
</tr>
<tr>
<td>Retired</td>
<td>1.327</td>
<td>0.843</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; $30,000</td>
<td>0.532**</td>
<td>0.369</td>
</tr>
<tr>
<td>≥ $30,000 (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note. CI = Confidence Interval; OR = Odds Ratio; Ref = Referent Category*

*p < .05;  **p < .01;  ***p < .001
As illustrated in Table 9, demographic variables unrelated to participants’ self-reported life satisfaction include age and educational status. However, in addition to low and high volunteer frequency, gender, race, marital status, employment status, income, and health status were all significantly related to self-reported life satisfaction. Females were more likely than males to have high life satisfaction (OR = 1.54, \( p < .01 \)), as were non-whites (OR = 2.31, \( p < .01 \)), and those who were married (OR = 2.06, \( p < .001 \)). Also reporting higher life satisfaction than their counterparts were retired individuals (OR = 1.80, \( p < .05 \)) and those who reported having high self-reported health status (OR = 2.90, \( p < .001 \)). Individuals with incomes less than $30,000 were less likely than those with higher incomes to report high life satisfaction (OR = 0.65, \( p < .05 \)).

The third hypothesis being tested in this study states that: Older adults who report higher frequencies of volunteering will have higher measures of self-reported health and well-being than those reporting lower frequencies of volunteering. This hypothesis was not supported in the regression analysis between volunteering and health (Table 6). Though the difference was small, individuals who volunteered at a low-level (OR = 1.6, \( p < .01 \)) were more likely to report high health compared to those who volunteered at a high-level (OR = 1.6, \( p < .05 \)). However, as it related to volunteering and well-being, the third hypothesis was strongly supported (Tables 8 and 9). The analysis suggests that those who volunteer at a low-level had higher well-being than non-volunteers (OR = 1.48, \( p < .01 \)) and those who volunteered at a high-level had a greater likelihood of reporting high well-being than those who volunteered at no- or low-levels (OR = 2.41, \( p < .001 \)).
Table 9. Binary Logistic Regression of Self-Reported Life Satisfaction \((N = 1,396)\)

<table>
<thead>
<tr>
<th>Variables</th>
<th>OR</th>
<th>95% CI for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Volunteer frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low</td>
<td>1.464*</td>
<td>1.063</td>
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<tr>
<td>High</td>
<td>2.371***</td>
<td>1.545</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59 (Ref)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>60-69</td>
<td>0.968</td>
<td>0.687</td>
</tr>
<tr>
<td>70-79</td>
<td>1.547</td>
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<td>80+</td>
<td>1.786</td>
<td>0.973</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Male (Ref)</td>
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<td>-</td>
</tr>
<tr>
<td>Female</td>
<td>1.539**</td>
<td>1.149</td>
</tr>
<tr>
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</tr>
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<td>1.440</td>
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<td>Educational status</td>
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<td></td>
</tr>
<tr>
<td>≤ High school diploma (Ref)</td>
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</tr>
<tr>
<td>Some college or 2-year degree</td>
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<td>0.572</td>
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<td>0.744</td>
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</tr>
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<td>-</td>
</tr>
<tr>
<td>Currently working</td>
<td>1.196</td>
<td>0.764</td>
</tr>
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<td>1.118</td>
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<td></td>
</tr>
<tr>
<td>&lt; $30,000</td>
<td>0.645*</td>
<td>0.453</td>
</tr>
<tr>
<td>≥ $30,000 (Ref)</td>
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<td>-</td>
</tr>
<tr>
<td>SR Health Status</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>High</td>
<td>2.903***</td>
<td>2.077</td>
</tr>
</tbody>
</table>

*Note. CI = Confidence Interval; OR = Odds Ratio; Ref = Referent Category
*p < .05; **p < .01; ***p < .001
DISCUSSION

The purpose of this study was to examine the relationship between volunteering frequency and self-reported health status and self-reported well-being. A discussion of the findings is presented below and is organized by the research questions and hypotheses of this study.

Research Question #1

The first research question concerned the association among the sociodemographic characteristics of the study sample, and the independent (volunteering frequency) and dependent variables (self-reported health status and self-reported well-being).

Volunteering Frequency

Regarding the characteristics of volunteers (Table 3), the analysis showed that 58% of the survey respondents reported volunteering, twice the rate (24%) reported for the same age group by the Bureau of Labor Statistics, United States (2012). This difference may arise from two possible explanations: the sample in this study volunteered at higher levels than the general public, or there are differing definitions of volunteering between the two questionnaires. The Bureau of Labor Statistics, United States (2012) survey defines volunteers as “persons who did unpaid work through or for an organization” (p. 1). In other words they include only formal volunteering (i.e., volunteering facilitated by an organization) in their definition. In the current study, volunteering includes both formal and informal efforts and is defined as any engagement that was unpaid and done for anyone besides an individual’s family, friends, or colleagues (Roper Center, 2012). By accounting for informal volunteering, the 2006 Social Capital Community Survey likely captured volunteering engagement that other formal surveys generally do not include, but that are common particularly amongst women and marginalized populations (Hinterlong, 2008; Koppen, 2009; Martinez et al., 2011).

This study confirmed previous findings that retirees are less likely to volunteer than younger cohorts (Foster-Bey, Grimm, & Dietz, 2007) but when they do volunteer, older adults are more likely to devote greater amounts of their time than their younger counterparts (Bureau of Labor Statistics, United States, 2012). As well, this study adds further evidence to the literature that consistently demonstrates the existence of inequities in volunteering
frequency and time allotment (Table 3). Specifically, individuals with lower education, lower health, and lower income are significantly less likely to volunteer and devote less hours than those who have better health, higher incomes, and more education (Bureau of Labor Statistics, United States, 2012; Martinez et al., 2011; Musick & Wilson, 2007; Pew Research Center, 2009; Rebok et al., 2011).

One surprising finding was that racial differences in volunteering were not found in this study, though they are overwhelmingly prevalent in the literature (Martinez et al., 2011; Pew Research Center, 2009; Rebok et al., 2011). In fact, in the present study, people of color were more likely than non-Hispanic whites to volunteer, in contrast to other data showing that non-Hispanic whites are much more likely to volunteer than any other racial group (Bureau of Labor Statistics, United States, 2012). While race was not significantly related to volunteering frequency, this finding may suggest that either the sample population was not fully representative of the national population with regard to race or that the volunteering engagement of people of color was more accurately captured in this survey by the inclusion of informal volunteering in the definition of volunteering. It has been noted that people of color and women are more likely to engage in informal volunteering efforts and are often uncounted in research surveys (Martinez et al., 2011).

**SELF-REPORTED HEALTH STATUS**

Regarding the dependent variable self-reported health status, this study sample mirrors the broader population in the rates of low and high self-reported health. According to the Federal Interagency Forum on Aging-Related Statistics (2012), 76% of people aged 65 and older rated their health as good, very good, or excellent; nearly 80% of respondents in the present study sample reported their health as such (Table 2).

This study also lends further evidence to the existence of health inequities, particularly as those who were less educated and earned less income were significantly more likely to report lower health (Table 4). Numerous studies have demonstrated that an individual’s health status is positively associated with their socioeconomic status and educational attainment (Braveman et al., 2010; Centers for Disease Control and Prevention, 2011b; Minkler et al., 2006; Ogden et al., 2006). Despite well-established evidence of racial health inequities in the literature (Braveman et al., 2010; Centers for Disease Control and
Prevention, 2011b; United States Department of Health and Human Services, 2010), the prevalence of low and high health were equal between people of color and non-Hispanic whites (Table 4); this finding, however, was not statistically significant.

**SELF-REPORTED WELL-BEING**

Lastly, the self-reported well-being of the study sample skewed very positive with nearly 80% of respondents reporting high life satisfaction (Table 2). This result is consistent with research that has shown that scores from single-item well-being measures tend to skew towards higher life satisfaction (Diener, 2009). As with volunteering and health status, inequities in reports of well-being were also found. In particular, individuals with less education, less unemployment, less income, and less health were significantly more likely to report lower well-being (Table 5). These findings support previous research showing that sociodemographic variables like marital, socioeconomic, educational, health, and labor statuses are significantly correlated with an individual’s self-reported well-being (Clark, Frijters, & Shields, 2008; Clark & Oswald, 1994; Diener, Sandvik, Seidlitz, & Diener, 1993; Dolan, Peasgood, & White, 2008; Helliwell, 2003; Jorgensen, Jamieson, & Martin, 2010; Mentzakis & Moro, 2009; Winkelmann & Winkelmann, 1998). The literature demonstrates that individuals with middle levels of education are significantly more likely to have the highest level of life satisfaction (Stutzer, 2004), which was also reflected in the present study, though insignificant. Also replicated in this study are reports of lower life satisfaction by males and unmarried individuals (Alesina, Di Tella, & MacCulloch, 2004; Bratten, 2001; Helliwell, 2003). In general, non-Hispanic white Americans have higher self-reported well-being than other racial groups (Thoits & Hewitt, 2001), but uniquely in the present study, people of color were significantly more likely to report higher life satisfaction.

In summary, the findings of this research related to the characteristics of participants volunteerism, health, and well-being were for the most part aligned with the literature. However, the associations between race and the independent/dependent variables in this study may imply that the sample of non-whites may not accurately capture the characteristics reported in the literature. This may be due to the small sample size of non-whites (n = 163), variations in variable measurement amongst surveys, and/or selection bias.
Research Question #2

The second research question addressed the association between respondents’ reports of annual volunteering frequency and their self-reported health and well-being. The three study hypotheses were drawn from this question and will be discussed individually below.

HYPOTHESIS #1

The first hypothesis tested a significant association between volunteering and self-reported health. Initially, a significant association between the independent and dependent variable was found (Table 6), but subsequent deeper analysis revealed this relationship did not persist (Table 7). The association between low and high volunteering frequency and high self-reported health might be due to the effect of confounding factors known in the literature to be predictors of health, including marital status, education, employment, and income (Centers for Disease Control and Prevention, 2011b).

Due to a strong literature base supporting the relationship between volunteering and health, this finding was unexpected. Nevertheless, this lack of a significant relationship was consistent with a study conducted by Piliavin and Siegel (2007), who found that after controlling for confounding variables the initial significance disappeared. Like the aforementioned authors, it is possible that this study controlled for more health-related variables than other studies. The lack of significance in the present study may also be due to the way that the volunteering frequency variable was operationalized, i.e., number of times. In fact, amongst the various waves of the dataset used by Piliavin and Siegel (2007) volunteering was measured differently, including a nominal scale (“none,” “some,” and “very much”) a 5-point scale (1, “not involved” to 5, “a great deal”), but never by number of hours (p. 454). It appears that the studies that did not find a positive association between volunteering and health (e.g., the present study and Piliavin and Siegel, 2007) analyzed data that measured volunteering by “number of times,” whereas much of the research that has found a significant relationship between the two variables measured volunteering by number of hours (Luoh & Herzog, 2002; Tan et al., 2006; Van Willigen, 2000). It may be possible that measuring volunteering by number of hours more accurately captures volunteer effort.

Another potential explanation for the insignificant relationship between volunteering and health may be that the amount of time dedicated to volunteering was not sufficient or the
volunteering activities were in themselves not health producing. While researchers have found that health benefits accrue after volunteering from less than two hours a week (Morrow-Howell et al., 2003; Musick et al., 1999), experimental research has shown that the subjective and objective health of volunteers improved after participating in the high-intensity and cognitively stimulating Experience Corps program, for which volunteers dedicate 15 hours or more of their time weekly (Barron et al., 2009; Carlson et al., 2008; Carlson et al., 2009; Hong & Morrow-Howell, 2010). It is conceivable that physical health benefits are only achievable through volunteer tasks that increase physical activity and require a significant time commitment.

**HYPOTHESIS #2**

The findings of this study provide support for the second hypothesis in that older adults who reported volunteering had higher measures of self-reported well-being than those who reported not volunteering. These findings add to an extensive body of literature that demonstrates the well-being benefits of volunteering, including improved life satisfaction, reduced levels of depression, and enhanced self-efficacy (Baker et al, 2005; Brown et al., 2008; Dabelko-Schoeny et al., 2010; Li, 2007; Van Willigen, 2000).

The positive association between volunteering and well-being is congruent with the theoretical foundations of this study. One component of successful aging is active engagement in life, which includes directing one’s activities to produce something of social value (Rowe & Kahn, 1998). Donating one’s time to an organization provides an older adult with both a sense of purpose knowing they are contributing to their communities and leaving behind a legacy and a productive role that helps to mitigate role identity absences (Greenfield & Marks, 2004; Rowe & Kahn, 1998). Volunteering provides individuals with a sense that they matter and that they possess an important role in society (Piliavin & Siegel, 2007); it follows that this results in enhanced life satisfaction.

In addition to the production of social value, the active engagement in life component of successful aging also includes possessing interpersonal relationships (Rowe & Kahn, 1998), which is often a byproduct of volunteering. Social interaction and belongingness are fundamental human needs and their absence impacts an individual’s emotional and cognitive health (R. F. Baumeister & Leary, 1995). Volunteering activity can facilitate the growth of
interpersonal connections, enhance socioemotional and instrumental support, and improve social integration (Fried et al., 2004; Lum & Lightfoot, 2005). An increase in social activity through volunteering has the potential to lower the risk of depression and can alleviate symptoms if they exist (Hong & Morrow-Howell, 2010; Isaac et al., 2009; Musick & Wilson, 2003; Brown et al., 2008).

This finding has broad implications for enhanced quality of life for older adults and for public health promotion. It is well known that mental health issues, particularly depression, are related to cognitive decline (van den Kommer et al., 2012) and this decline is itself correlated to the physical disablement process (Barberger-Gateau & Fabrigoule, 1997). Further, the greater an older adult’s disability, the less social interaction they report and the less likely they are to engage in activities outside the home (Simonsick, Kasper, & Phillips, 1998). Researchers have found that older adults with less social integration and greater functional limitations experience disproportionately greater benefits from volunteering engagement than their counterparts (Carlson et al., 2008; Morrow-Howell et al., 2003; Morrow-Howell, Hong, Tang, 2009; Piliavin & Siegel, 2007). Thus, through the benefits of enhanced socialization and cognitive stimulation (Carlson et al., 2008; Carlson et al., 2009), volunteering engagement can enable older adults, particularly the most vulnerable, to mitigate or forestall depression, disability and isolation, ultimately improving their quality of life.

**HYPOTHESIS #3**

The final study hypothesis asserted that participants who volunteer at higher frequencies would have higher measures of self-reported health and well-being than those who reported lower frequencies of volunteering. This hypothesis was not supported in the binary logistic regression analysis between volunteering and health (Table 6), but was strongly supported in the binary logistic regression analysis between volunteering and well-being (Tables 8 and 9).

Participants who volunteered a high level were less likely to report high health than those who volunteered at a low level (Table 6). While it is true that this relationship was determined spurious after an adjusted analysis was performed, various research findings support the existence of a threshold effect between volunteering frequency and self-reported
health (Luoh & Herzog, 2002; Musick et al., 1999; Van Willigen, 2000). The curvilinear relationship between volunteering and health could be attributed to role strain, wherein the volunteer role places excessive amounts of stress on the individual (K. A. Anderson & Dabelko-Schoeny, 2010). It is conceivable that high involvement in volunteering activities creates fatigue and places a physical burden on older adult volunteers.

However, this hypothesis was supported in the positive and linear relationship between volunteering frequency and self-reported well-being (Table 9). This study revealed that participants who volunteered at low levels were nearly 50% more likely to report high well-being than non-volunteers. Even more striking was the finding that those who volunteered at high levels were approximately 140% more likely to report high levels of well-being. Like the support for the second hypothesis, this finding lends additional evidence that volunteering at both low and high levels is strongly correlated with enhancing the well-being of older adults. Individuals who perform altruistic actions and feel they are contributing to the greater social good derive personal satisfaction and well-being from their efforts (Piliavin & Siegel, 2007; Van Willigen, 2000). Expanding volunteering opportunities could enhance the life satisfaction and well-being of older adults.

**LIMITATIONS**

A number of important limitations of the present study must be considered. First, the data for this analysis were collected via self-reported questionnaires over the telephone. Despite the use of randomization and the numerous attempts made to reach the randomly selected individual, the final sample may have been tainted by selection bias. Also, while trained surveyors were used to administer the survey, it is possible that participants answered questions in a way they felt would be socially acceptable and please the surveyors.

This study was also limited by the relatively small sample of non-whites ($n = 163$), which made it statically impossible to parse out differences within this group (e.g., Blacks, Hispanic, Asian...etc.), leading to the false assumption that people of color comprise a homogenous group. The small sample size also limits the validity and transferability of the findings to the broader non-white population.

Additionally, the dependent variable health was quantified through participants’ self-assessments of their health status. While this is accepted as valid in the literature, the ability
to include more objective measures for health, such as physical functionality (e.g., ADL and IADL) or number of diagnosed chronic conditions, would have provided a more valid measure of respondents’ health statuses. Further, the limitations of the dataset precluded the use of affective variables to measure participants’ self-reported well-being, which would have made the findings more robust.

Finally, since this study is based on a cross-sectional secondary analysis, it cannot provide any insights into a longitudinal relationship between the independent and dependent variables, which may be the first step in determining causation. Possessing an understanding of causal pathways would enable targeted recommendations to provide direction for program development and policy.

Nevertheless, some strengths of this study should be noted. First, it contributes to the literature base by providing a novel analysis of the Social Capital Community Survey, 2006 as it relates to respondents’ volunteering frequency and their self-reported health and well-being. Second, the participant sample was drawn from a nationally representative dataset and is generalizable to the national adult population. Third, the present study provides additional support to previously published literature that volunteering frequency has a significant and positive linear relationship with well-being and the findings reinforce the concept that volunteering has the potential to be a tool for health promotion.
CHAPTER 5

SUMMARY & RECOMMENDATIONS

Over the coming decades, America’s older adult population will more than double. Furthermore, they will possess the longest life expectancies of any time in human history. As they live longer, older adults will be diagnosed with growing amounts of chronic physical and mental disease that will be managed with government and private health care funds. Furthering our understanding of health promoting interventions that will allow this population to live happier, healthier, and within their communities is an urgent social and health policy imperative. Based on this and other analyses, engagement in volunteering may be one such intervention that will not only improve the life of the volunteer, but also positively impact the society at large.

SUMMARY

The present study was designed to assess the relationship between volunteering and self-reported health and well-being amongst Baby Boomers and older adults in the 2006 Social Capital Community Survey. The theoretical frameworks underpinning the structure of this study include Erickson’s theory of psychosocial development, role theory, and two theories of successful aging. The literature is replete with evidence of the growing prevalence of chronic disease for adults of all ages (Hung et al., 2011). As well, there is substantial support for the positive impact of volunteering participation on older adults’ self-reported well-being, physical and psychological health, and cognitive functioning (Carlson et al., 2008; Carlson et al., 2009; Dabelko-Schoeny et al., 2010; Kim & Pai, 2010; Morrow-Howell, Hong, McCrary, et al., 2009).

The following questions were posed to guide the research process: (1) What are the sociodemographic characteristics of Americans aged 50 and older who report volunteering, those who have low/high self-reported health, and low/high self-reported well-being; and (2) What is the association between respondents’ reports of annual volunteering frequency and self-reported health and well-being? Three hypotheses were formulated in addressing the
second research question and include: (1) Baby Boomers and older adults who report volunteering will have higher measures of self-reported health than those who report not volunteering; (2) Baby Boomers and older adults who report volunteering will have higher measures of self-reported well-being than those who report not volunteering; and (3) Baby Boomers and older adults who report higher frequencies of volunteering will have higher measures of self-reported health and self-reported well-being than those reporting lower frequencies of volunteering.

To answer the questions and test the hypotheses, this study analyzed a number of variables including volunteer frequency (independent variable), self-reported health and well-being (dependent variables), and controlled for numerous sociodemographic variables including age, gender, race, income, educational status, marital status, and employment status; all variables save gender were recoded before being analyzed. Data analyses were conducted using SPSS and included the calculations of frequencies, completion of Pearson’s chi-square tests of independence, and binary logistic regression analyses.

The results of the analyses revealed that, in general, volunteering rates, self-reported health, and self-reported well-being were reported as significantly higher more often by people who were married, had greater levels of educational attainment, and were currently working. Additionally, younger females and respondents with high self-reported health and life satisfaction were more likely to volunteer than their counterparts. Respondents who were female and non-white were more likely to report high life satisfaction. Notably, and contrary to the literature, there were no racial inequities in volunteering, health, or well-being.

Regarding the hypotheses, volunteering was not significantly associated with self-reported health after confounding variables were controlled for. The most substantial findings to emerge from this study was the significant association between volunteering frequency and self-reported well-being and the fact that this relationship was both positive and linear.

**IMPLICATIONS & RECOMMENDATIONS**

The evidence from this study not only provides additional support to the growing body of literature on the benefits of volunteering, but coupled with existing literature can also be used to guide program development, practice, and policy.
As evidenced by its enhancement of well-being and reduction in depressive symptoms (Kim & Pai, 2010; Morrow-Howell, 2010), volunteering engagement has the potential to lower the prevalence and cost of depression and other mental health problems. Depression is known to have a negative causal impact on various dimensions of health and well-being (Kessler, 2012), an occurrence that is particularly relevant for older adults. As their age advances, older adults become increasingly vulnerable to experiencing depressive symptoms as the result of role loss and the inherent difficulties that accompany the aging process (Van Willigen, 2000). While the treatment of depression with pharmaceuticals has become more common, it has also become extremely costly, especially for the Federal Medicare program (Marcus & Olfson, 2012). Increasing volunteering opportunities for older adults could be a cost-effective way to mitigate the negative impacts of depression for those currently being treated and for those not yet treated, ultimately reducing expenditures related to ongoing treatment and mental health emergencies.

Given our knowledge of racial, socioeconomic, and gender disparities in health and well-being (Braveman et al., 2010; Centers for Disease Control and Prevention, 2011b; United States Department of Health and Human Services, 2010) and the association between volunteering and higher health and well-being, expanding volunteering opportunities could conceivably help to reduce these inequities and help to work toward achieving a more just society. In fact, those who are less likely to volunteer, specifically older adults, people with functional limitations, individuals with lower levels of education and income, and people of color (Bureau of Labor Statistics, United States, 2012) are, for the most part, the same individuals who report lower levels of health and well-being (Centers for Disease Control and Prevention, 2011b; Seeman et al., 2010). Individuals with scant resources are shown to have lower levels of health and face systematic barriers to volunteer participation (Martinez et al., 2011; McBride, 2006-2007).

The literature suggests that groups at risk for such inequities may actually experience greater net benefits from volunteering than their counterparts (Carlson et al., 2008; Morrow-Howell et al., 2003; Morrow-Howell, Hung, Tang, 2009; Piliavin & Siegel, 2007). In order to recruit those who are less likely to volunteer and more likely to experience inequities, organizations should incorporate volunteer programs in locations these individuals often
frequent or can conveniently access. For example, programs could be located in congregate meal sites in underserved areas, schools, adult day health centers, or nursing homes. Meaningfully locating volunteer opportunities in such sites will help to mitigate transportation and other known barriers to engagement (Martinez et al., 2011). Another method to engage these populations is the “personal ask.” Often when asked why they do not volunteer, respondents state that no one invited them to or they had not heard of an interesting opportunity (Martinez et al., 2011). Further, it has been noted that Black Americans are less likely than non-Hispanic whites to be asked to volunteer (Musick, Wilson, & Bynum, 2000). Researchers found that individuals are five times as likely to volunteer when personally asked by someone else (Morrow-Howell et al., 2011). Thus, through the use of the “personal ask,” individuals who may not otherwise volunteer are more likely to do so.

The types of activities performed by volunteers and the organizational support provided to them are undoubtedly associated with the beneficial relationship between volunteering and health and well-being. This study, however, was unable to address this relationship. Nevertheless, based upon the experimental research on the Experience Corps volunteer program (Carlson et al., 2008, Carlson et al., 2009), it appears that elements like physical movement, higher-order thinking, and decision-making are partially responsible for the significant effect that volunteering has on older adult participants’ health and well-being. It is known that physical activity can alleviate symptoms of depression, help older adults maintain independent living, and can increase quality of life (American College of Sports Medicine, 1998; United States Department of Health and Human Services, 1996). However, only 11% of older adults meet the Federal physical activity guidelines and the rate of compliance decreases further as people age, to 4% for those 85 and older (Federal Interagency Forum on Aging-Related Statistics, 2012). Therefore, if organizations were able to integrate physical activity into their volunteer role design, it could have beneficial effects on the volunteer’s physical and mental health. Organizations should also ensure volunteer activities allow participants to interact with others (other volunteers, staff members, or clients), which enhances the socioemotional benefits of volunteering (Tang, Choi, & Morrow-Howell, 2010).
In order for volunteering to have a beneficial impact on participants, they must remain invested in and continue to attend volunteering activities. Volunteer retention can be enhanced by providing organizational support and ensuring volunteers interests and skills are matched to the tasks they perform (Tang et al., 2010). As well, retention rates are higher when current volunteers recruit new participants (Hager & Brudhey, 2004). Hence, volunteer programs for older adults should be designed with these components to ensure participant interest and retention.

The ultimate goal of successful aging is to maximize longevity with fewer burdens of disease and disability (Depp & Jeste, 2006; Hung et al., 2012). The longer an older adult is able to maintain functional ability through the management of chronic conditions and other impairments, the less likely they are to experience disability and the greater the probability they will be able to live independently (Hung et al., 2011). To potentially enhance volunteers’ well-being and health, the sponsoring organization could also incorporate health and wellness education into the volunteer program. For example, if the organization provides its employees access to their own or other educational courses, they could make the opportunity to attend available to volunteers as well. Or if the organization has a gymnasium for employees or is contracted to provide discounts to a health center, they could extend the same benefits to their volunteers. The organization could also partner with community stakeholders to provide these resources to their older adult volunteers.

**Policy**

It is clear that volunteering is associated with better well-being and there is evidence that this association is causal (Carlson et al., 2008; Carlson et al., 2009; Hong & Morrow-Howell, 2010; Piliavin & Siegel, 2007; Van Willigen, 2000). Coupled with the fact that two-thirds of older adults who are not yet engaged in volunteering roles desire to be (National Governors Association, 2008), it is apparent that volunteer opportunities must be expanded, particularly for those we know are less likely to volunteer and more likely to experience inequities. Enacting policy to promote program implementation may enable older adults to increase their civic engagement, socialization, improve their well-being, and possibly improve their ability to cope with stress and chronic disease.
In order for organizations to create robust volunteer programs, funding sources including foundations, the Federal and state governments, and other relevant groups must direct personnel and funding resources to this end. To decrease inequities, an emphasis should be placed on the development of altruistic opportunities in underserved geographic areas and for populations with a higher likelihood of experiencing inequities. These programs can be a tool for both the promotion of individual health and wellness, as well as addressing community needs. Lastly, it is recommended that grants and other funding be made available to researchers to conduct experimental studies to further assess the impact of volunteering among older adults.

**Recommendations for Further Research**

After assessing the literature and conducting the present analysis, a number of recommendations can be made for further research.

First, the majority of literature studying the relationship between volunteering and health and well-being are of cross-sectional design. Aside from research on Experience Corp and some small-scale volunteer engagement interventions, there are almost no randomized controlled trials, which are needed to determine if the association between volunteerism and higher well-being is causal. Future research should include longitudinal and experimental research designs with volunteering as the independent variable.

Second, more rigorous experimental research might allow for the exploration of health and well-being associations or effects due to different types of volunteer activities. An experimental research design may also provide insight into how the context of the volunteer activities (e.g., formal volunteering through or within an organization, informal and unaffiliated with an organization, in a community setting, in a nursing home…etc.) is associated with the health and well-being of volunteer participants. It is also necessary for researchers to collect as much data as possible to gain insight into the causal roles that specific program and participant characteristics may play in improved health and well-being. The volunteer activities participants partake in should be closely tracked to determine which volunteer activities are most strongly correlated with the positive health and well-being outcomes. While this type of research may require significant resources, such findings and the resulting program and policy actions could have a considerable impact on the health and
well-being of the growing population of older adults. Further, the potential costs savings associated with health maintenance and improvement could be massive.

Third, future survey questionnaires should distinctly define volunteering as both formal and informal, to ensure that all types of altruistic engagement are accounted for and to parse out potential differences in behavior and outcomes. Like formal volunteering, informal volunteering confers benefits to individuals and communities and its inclusion will serve as a more accurate assessment of engagement across the sociodemographic spectrum.

Fourth, volunteering engagement should be measured by ‘number of hours,’ as it may more accurately reflect actual volunteering engagement than ordinal scales.

Lastly, in addition to using subjective self-reports of participants’ health, future research design should include objective measurements of participant health status, for example ADL, IADL, and number of diagnosed chronic conditions. Also, multi-factorial measures of well-being (i.e., both subjective/cognitive and affective) should be used when possible to improve the reliability and validity of the research findings. The use of more rigorous measurements could also permit the researcher to parse out which specific health and well-being variables are impacted by volunteering.
REFERENCES


APPENDIX A

LETTER OF EXEMPTION FROM SAN DIEGO STATE UNIVERSITY COMMITTEE ON PROTECTION OF HUMAN SUBJECTS
December 21, 2012

Student Researcher: Crystal Warning
Faculty Researcher: Jong Won Min

Title: Masters Thesis - C. Warning
Determination: Not HS Research-IRB Review Not Required

Regulations:
- The Department of Health and Human Services (DHHS) Code of Federal Regulations (45 CFR 46) defines research as, "a systematic investigation, including research development, testing and evaluation, designed to test a hypothesis or research question and to develop or contribute to generalizable knowledge."
- The Department of Health and Human Services (DHHS) Code of Federal Regulations (45 CFR 46.102(f)) defines a human subject as a living individual about whom an investigator (whether professional or student) conducting research obtains (1) Data through intervention or interaction with the individual, or (2) Identifiable private information.

Dear Crystal Warning,

In determining whether or not a project requires review by the IRB, our first step is to determine if the project involves human subjects. The IRB only reviews activities that involve the participation of human subjects in research.

In applying the aforementioned regulations to this project, it has been determined that this project does not require IRB review. Given that the data you are analyzing is publically available and is anonymous and you are not obtaining identifiable private information.

For questions related to this correspondence, please contact the IRB office ((619) 594-6622 or irb@mail.sdsu.edu). If at any point you believe this research project involves human subjects, please contact the IRB office to request a review. To access relevant policies and guidelines related to the involvement of human subjects in research, visit the IRB web site at http://gra.sdsu.edu/research.php.

Sincerely,

Ramona Perez
Chair, Institutional
Review Board

Choya Washington
Regulatory Compliance Analyst
APPENDIX B

SELECTED VARIABLES, SOCIAL CAPITAL
COMMUNITY SURVEY, 2006
GENDER 1. I am recording that you are a male/female
   1 = Male
   2 = Female

LIFESAT 9. All things considered, how satisfied are you with your life as a whole nowadays? Please answer using a scale where 1 means extremely dissatisfied and 10 means extremely satisfied.
   1 = extremely dissatisfied
   10 = extremely satisfied
   88M = Don’t know
   99M = Refused

HEALTH 10. And how would you describe your overall state of health these days? Would you say it is excellent, very good, good, fair, or poor?
   1 = Excellent
   2 = Very Good
   3 = Good
   4 = Fair
   5 = Poor
   8 = Don’t know
   9 = Refused

LABOR 40. Next, I would like to ask a few questions about work. We’d like to know if you are working now, temporarily laid off, or if you are unemployed, retired, permanently disabled, a homemaker, a student, or what? (INTERVIEWER: If multiple responses are given, enter the one with the lowest code number.)
   1 = Working
   2 = Temporarily laid off
   3 = Unemployed
   4 = Retired
   5 = Permanently disabled
6 = Homemaker
7 = Student
8M = Don’t know
9M = Refused

MARITAL  46. Now, I want to ask you some questions about family, friends, and neighbors. First, I'd like you to describe your household. Are you currently married, separated, divorced, widowed, or have you never married?

1 = Currently married
2 = Separated
3 = Divorced
4 = Widowed
5 = Never Married
9 = Refused

VOLTIME2  58. How many times in the past twelve months have you volunteered?

(IF NECESSARY: Prompt with categories)

(IF NECESSARY: By volunteering, I mean any unpaid work you've done to help people besides your family and friends or people you work with.)

(IF NECESSARY: Count every time you did any volunteer work, no matter how much or little.)

1 = Never did this
2 = Once
3 = A few times
4 = 2-4 times
5 = 5-9 times
6 = About once a month on average
7 = Twice a month
8 = About once a week on average
9 = More than once a week
98 = M Don't know
AGE 60. Our last few questions are used to ensure that our sample for this survey accurately reflects the population as a whole. First, in what year were you born?
VALID RANGE 1895-1987

EDUC 61. What is the highest grade of school or year of college you have completed?
1 = Less than high school (Grade 11 or less)
2 = High school diploma (including GED)
3 = Some college
4 = Assoc. degree year) or specialized technical training
5 = Bachelor's degree
6 = Some graduate training
7 = Graduate or professional degree
8 M = Don't know
9 M = Refused

RACE 63. Do you consider yourself to be White, Black or African American, Asian or Pacific Islander, Native American, or some other race?
1 = White
2 = African American or Black
3 = Asian or Pacific Islander
4 = Alaskan Native
5 = Native American
6 = Other
8 = Don't know
9 = Refused

INCOME 66. If you added together the yearly incomes, before taxes, of all the members of your household for last year, 2005, would the total be:
1 = Less than $30,000
2 = $30,000 or more
8 = Don’t know
9 = Refused

IF <YP_1> = 2, SKIP TO 66C. IF <YP_1> = 8 or 9, SKIP TO INSTRUCTIONS BEFORE 68

66B. Would that be: (READ LIST)
   1 = $20,000 or less
   2 = Over $20,000 but less than $30,000
   8 = Don’t Know
   9 = Refused

IF Q66B WAS ASKED, SKIP TO INSTRUCTIONS BEFORE 68

66C. Would that be: (READ LIST)
   1 = $30,000 but less than $50,000
   2 = $50,000 but less than $75,000
   3 = $75,000 but less than $100,000
   4 = $100,000 or more
   8 = Don’t Know
   9 = Refused