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EHEALTH LITERACY AND SOCIAL MEDIA USE FOR HEALTH INFORMATION AMONG OLDER ADULTS

By

Bethany L. Tennant

August 2013

Chair: Michael Stellefson
Major: Health and Human Performance

Background. The majority of older adults suffer from chronic conditions, and need health information about multiple diseases. Older adults with chronic diseases are already turning to the Internet and social media for health, and it is important to understand their eHealth literacy to effectively deliver online information to this underserved audience.

Purpose. Research was needed to investigate the interrelationships between socio-demographic characteristics, device use, perceived health status, eHealth literacy, and social media use for health information. Thus the purpose of this study was to examine eHealth literacy and social media use among older adults in the state of Florida.

Methods. Telephone surveys were conducted with 283 Internet using adults over the age of 50 living in the state of Florida. The eHealth Literacy Scale, social media use, technology acceptance factors, and demographic items were used to measure respective constructs.
**Results.** Study participants consisted of men and women aged 50 -91 years, who were primarily White and well-educated. More than two thirds of the sample reported suffering from a variety of chronic diseases.

The majority of respondents used the Internet for health information, and believed the Internet was useful for helping make decisions about their health. eHealth literacy was influenced by age, education, desktop computer use, and laptop computer use. The health variables were not related to eHealth literacy.

Over one third of participants (35.7%) indicated that they used some form of social media to locate or share health information in the last year. Social media use for health information was influenced by age, sex, education, and laptop computer use. Chronic disease status, or number of chronic disease was not related to social media use, however a negative association was found between social media use and health status.

**Conclusion.** The Internet, including social media applications, has the potential to improve health outcomes for older adults with chronic disease. Yet, much research is still needed to further understand the full influence of online health information seeking and social media on health behaviors and decision making in the older adult population.
CHAPTER 1
INTRODUCTION

According to the Centers for Disease Control and Prevention (CDC, 2009), chronic diseases, such as heart disease, cancer, stroke, diabetes and arthritis, are the leading causes of death and disability in the United States and are responsible for 78% percent of total U.S. health care expenditures. These diseases cause significant functional limitations for over 44 million Americans or approximately one-quarter of all persons living with a chronic illness (CDC, 2009). Nearly half of all adults in the United States are currently living with at least one chronic health condition (Bodenheimer et al., 2009), and almost one in four Americans are managing multiple chronic conditions (Anderson, 2010).

The number of adults with chronic conditions increases with age; at least 80% of older adults age 65 and older are living with one chronic disease. This trend is expected to continue as the median age of Americans continues to increase. By 2030, adults aged 65 and older are expected to represent almost 20% of the U.S. population (Administration on Aging, 2011). As the baby boomers (i.e. adults born between the years 1946 and 1964) begin to celebrate their 65th birthdays, it is projected that each day 10,000 people will turn 65, and the trend will continue for the next 20 years (Alliance for Aging Research, 2011). Older adults with chronic disease often report physical limitations, decreased quality of life, and an increased need for costly long-term health care (Anderson, 2010). Analysts predict that by 2030 the aging U.S. population will increase health care spending by 25%; this is without taking into account inflation or the higher costs of new technologies (CDC, 2007). Given that older adults are living longer than ever before and the number of older adults living with chronic conditions is on the
rise, there will likely be even more strain on our already overburdened health care system and some believe the burden and the cost of treating these chronic conditions is not sustainable for future generations (Partnership to Fight Chronic Disease, 2009). Because of this, new measures are required to lessen the continuing impact of chronic diseases on patient care.

One avenue for expanding the scope of care for the increasing number of individuals with chronic disease is through the use of internet-mediated health information and communication technologies (ICTs). These technologies are changing the way people obtain, evaluate, and communicate health information. For many Americans, the Internet has become a common source of health information (Fox, 2012). Since 2012, 81% of American adults use the Internet and, of those, 72% have looked for online for health information in the past year (Fox & Duggan, 2013). Online websites offer health consumers a convenient way to access health information that can improve decision-making, health behaviors, and health outcomes (Jones & Goldsmith, 2009). One of the major advantages of the Internet as a source for health information is the elimination of environmental barriers to seeking health advice, which is especially problematic for individuals unable to travel due to disability (Smarr et al., 2011). Among Internet-users with chronic disease, over 86% have looked online for health information at least one time in their lives (Fox, 2007). Research indicates that the Internet acts a source of health information, therapy, and support for individuals with chronic conditions. Internet-mediated health ICTs can enhance individual self-management capabilities and thereby improve important outcomes such as health-related quality of life (Wagner et al., 2004; Jones & Goldsmith, 2009; Solomon et al., 2012).
Healthcare organizations, health advocates, and researchers have used the Internet to deliver healthcare services and information efficiently and cost effectively (Crabb, Rafie, & Weingardt, 2010; Rideout et al., 2005; Wagner et al., 2004; Wright & Hill, 2009). A great deal of private and public investment has gone into web-based health interventions and the development of health and medical websites (Crabb et al., 2012). As compared to traditional in-person treatments, web-based interventions addressing different types of chronic diseases have the potential to reach a broader population of patients for extended periods of time (Solomon et al., 2012). For older adults who typically have high health information and service needs (Taja, Sharit, & Czaja, 2009), the Internet is especially useful for easing the burden associated with chronic disease management (Xie, 2011).

Compared to previous generations, aging baby boomers have relatively high education levels. They also tend to possess experience with computers and navigating the Internet (Gilbert, 2000). Compared to adults in younger age groups, older adults are less likely to use the Internet, although the proportion of older adults using the Internet is rapidly growing (Jones & Fox, 2009). Between 2005 and 2008, the rate of Internet use among adults aged 70-75 rose from 26% to 45% (Jones & Fox, 2009). Recent data shows that the majority (53%) of adults age 65 and older now use the Internet. In fact, among older Internet users, 70% access the Internet daily (Zickuhr & Madden, 2012). Researchers have noted that older adults seem receptive to the idea of using the Internet to enhance their own healthcare (Crabb et al., 2011). Up to 95% of older adults believe the Internet is a valuable tool for finding health information (Miller & Bell, 2012).
Habitual Internet use is expected to increase dramatically as the baby boomer generation ages, and their health care needs increase (Rideout et al., 2005).

For older adults, preventing complications associated with chronic illness is inherently important for maintaining overall health status (Sinden & Wister, 2008). Older adults living with chronic disease may benefit from accessing and using high-quality online health information for decision making.

Social media, or online platforms for participation, conversation, community and connectedness, offers opportunities to impact elder health and can keep older patients connected and informed (Chou et al., 2009; Hall, Stellefson, & Bernhardt, 2012). Online communities, blogs, and social networking websites, such as Facebook and Twitter, are examples of social media outlets. While older adults lag behind all other groups in terms of social media use, almost half (47%) of all Internet users ages 50-64 report having used social networking sites at least once and 20% report using social networking sites on a daily basis (Madden, 2010). The increasing numbers of older adults gravitation to social media use is evidenced by a recent report indicating use of social medial among Internet users 65 years and older increased 13% to 33% between the years 2009 to 2011 (Fox, 2012).

Social media websites have become innovative social channels for delivering and receiving health information and advice, in addition to connecting people with similar health concerns (Chou et al., 2009). Social media provides new prospects for health communication as well as potential opportunities to decrease health-related communication gaps and inequalities (Gibbons et al., 2011). Research suggests that social media may improve health-related quality of life, reduce feelings of social
isolation and depression, and increase social support for adults with chronic care needs (Chou et al., 2009; Kontos et al., 2010; Pulman, 2010).

For older adults, effectively using social media as a health communication strategy has the potential to address health disparities and may have important public health implications due to its low cost and wide reach (Kreps & Neuhauser, 2010). Nonetheless, it has been noted that the full potential of the Internet and social media to support healthy aging has yet to be realized. Progress in this research area has been slow, and many questions remain unanswered (Chou et al., 2009). There are a variety of reasons that may explain why advances have been slow to occur in this arena. Equal access to the Internet still remains an issue for older populations (Zickuhr & Madden, 2012). Although access to the Internet and social media does not ensure that individuals can locate, understand, appraise and apply the health information that they find. Older adults are also less trusting of the Internet as a source of health information (Miller & Bell, 2012). Many eHealth services intended for public consumption also cannot be fully used because the general public may not have the reading or Internet skills to benefit from their use (Gottlieb & Rogers, 2004).

To have productive interactions with technology-based health tools, participants generally need a particular set of knowledge, skills, abilities and other attributes (KSAOs) (Chan & Kaufman, 2011). The evolution of more interactive and complex web 2.0 technologies has made identifying and using credible eHealth information sources even more important (Sinden & Wister, 2008). For example, health consumers must be able to determine whether health information is from reputable medical sources (e.g. Centers for Disease Control and Prevention, National Institutes of Health, American
Cancer Society), and they must be able to understand the difference between biased and unbiased claims that may or may not be evidenced-based (Stellefson et al., 2011; Van Deuresen & van Dijk, 2011).

**Statement of the Problem**

Among older adult populations, researchers have focused on assessing health literacy rather than eHealth literacy (Ivanitskaya, O'Boyle, & Casey, 2006) primarily because eHealth literacy skills are a moving target as technologies are constantly changing (Xie, 2011). While eHealth literacy has been previously measured among adolescents, college students, and the general adult population (Hanik & Stellefson, 2011; Neter & Brainin, 2012; Norman & Skinner, 2006b), there is limited information on eHealth literacy in aging populations with chronic disease. Currently, however, it is largely unknown whether older adults with chronic disease have the capability or the confidence to seek, find, understand and appraise health information from electronic sources and apply that knowledge to a health problem (Norman & Skinner, 2006a).

Without sufficient KSAOs, older adults are at heightened risk for consuming non-credible online health information; information that could lead to both intentional and unintentional health risk behaviors (Rice, 2006). Some research suggests that elderly persons with poor health are the least likely subgroup in the United States to use the Internet (Wright & Hill, 2009). Today, it is especially important to investigate the eHealth literacy of older adults experiencing chronic disease, because evidence suggests that this population may especially benefit from what the Internet has to offer from online activities that can support health literacy and promote healthy behaviors (Czaja et al., 2006). Programs and interventions designed to improve eHealth literacy aim to empower individuals to become active participants in their own health care (Norman &
Skinner, 2006a; Hou et al., 2010). While potential improvements in eHealth literacy rates may improve the quality, capacity, and efficiency of healthcare systems (IOM, 2009), low or unknown eHealth literacy rates may halt policy efforts necessary to increase health system efficiencies, decrease costs, improve health outcomes and decrease disparities (Collins et al., 2012).

In addition, little research has been done on the effect that social media has had on eHealth literacy rates. The use of social media brings new opportunities to impact population health by enhancing information sharing capability and increasing connectivity more so than static, non-interactive health websites. For individuals with chronic disease, social media provides a new and valuable channel for facilitating social support and patient engagement (Madden, 2010). Currently, online health conversations are being driven by the availability of social media tools and the increased desire for using this new form of media, especially for people living with chronic conditions who wish to connect with like individuals (Fox, 2011). Thus, social media use among older adults, especially among older adults with chronic disease, warrants further inquiry.

**Purpose of the Study**

The purpose of this study was to investigate eHealth literacy and social media use among older adults with one or more chronic disease(s) in the state of Florida.

**Research Questions**

The following research questions directed this study:

1. What is the extent to which older adults living in the state of Florida believe that the Internet is a useful resource for health information?

2. What are the eHealth literacy scores of older adults living in the state of Florida?
3. What is the extent to which older adults in the state of Florida use social media to locate or share health information?

4. Do older adults living with one or more chronic disease(s) exhibit higher eHealth literacy than older adults without chronic disease(s)?

5. Do older adults living with one or more chronic disease(s) exhibit greater social media use for health information than older adults without chronic disease(s)?

6. Does the use of social media for health information predict overall eHealth literacy in older adults living in the state of Florida?

7. What is the extent to which eHealth literacy is associated with perceived health status among older adults living in the state of Florida?

8. What is the extent to which using social media for health information is associated with perceived health status among older adults living in the state of Florida?

9. What are the socio-demographic, chronic disease, and Internet device use factors that predict eHealth literacy among older adults in the state of Florida?

10. What are the socio-demographic, chronic disease, Internet device use, and technology acceptance factors that predict use of social media for health information among older adults in the state of Florida?

**Definition of Terms**

- **Chronic disease**: an illness lasting 3 months or more, including, but not limited to: arthritis, cardiovascular disease, cancer, diabetes, obesity, and COPD.

- **eHealth**: health information or services delivered through the Internet or related web technologies (Eysenbach, 2001).

- **eHealth literacy**: ability of an individual to seek, find, understand and appraise health information from electronic sources and apply that knowledge to a health problem (Norman & Skinner, 2006a).

- **Health communication**: the study and use of communication strategies to inform and influence individual decisions that enhance health (CDC)

- **Healthy People**: A federal interagency workgroup that establishes national population health goals.

- **Older adults**: adults aged 50 or older (World Health Organization, 2012)

- **Social media**: Online media such as social networking, blogging, and/or online support groups that advances conversation and allows participants to contribute to the creation or development of the information delivered (Eysenbach, 2008).
Web 2.0: Web-enabled applications that are built around user-generated or user-manipulated content, such as wikis, blogs, podcasts and social networking sites (Pew Internet & American Life Project, 2011).

**Significance of the Study**

Given that Internet-mediated health ICTs could potentially reach broader audiences with health information, Healthy People (2020) has called for, “an increase in the proportion of online health information seekers who report being able to easily access online health information” (Health Communication and Health Information Technology Objective #9). The Healthy People 2020 goal is to have 41.0% (up from 37.3% reported in 2007) online health information seekers report being able to easily accessing health information. To track progress toward this national public health objective, we must determine whether populations perceive online health information to be useful and if they are eHealth literate. This study will measure older adults with chronic disease in the state of Florida perceived usefulness of the Internet for health information as well as their perceived ease of use of the Internet for health information which can be compared to the national data.

Findings can enable health professionals (e.g. physicians, nurses, health educators) to better recommend and prescribe eHealth resources to older adults with chronic disease. If eHealth resources are to improve public health, while avoiding the perpetuation of further social inequalities, the divergence between what eHealth is provided and what individuals can access/use must be resolved (Norman & Skinner, 2006b). It is important to focus this study on older adults because these groups have much to gain from online health information seeking and social media as they typically have greater needs for health services and information and often are faced with additional barriers to meet these needs (Miller & Bell, 2012; Xie, 2008).
The findings from this study fill several gaps in this emerging field and provide insight into the eHealth literacy of older adults with chronic diseases. Knowledge of individuals’ levels of eHealth literacy in this population, allows for creation of tailored eHealth technologies, thus allowing older adults to become more empowered to better self-manage chronic conditions and proactively manage their health. The findings from this study will aid in developing new strategies for addressing challenges inherent to delivering online self-management health interventions to this growing population. The findings from this study may explain the impact chronic diseases have on older adults’ eHealth literacy, and reveal what factors may predict eHealth literacy, as well as, any associations between eHealth literacy and perceived health status in this population. In addition, the data from this study will shed light on current social media use for health information among older adults and any relationships between social media use and eHealth literacy and perceived health status among this population.
CHAPTER 2
REVIEW OF THE LITERATURE

This chapter provides a review of the literature on: 1) chronic disease prevalence; 2) digital health communication; 3) health literacy and eHealth literacy; 4) social media and health information seeking; and 5) the theoretical explanations for health information seeking.

Chronic Disease Prevalence

Chronic diseases are non-communicable illnesses characterized by prolonged duration that are rarely cured completely (CDC, 2009). These types of diseases are prevalent in the United States and are a leading public health concern. Chronic diseases have surpassed infectious diseases as the leading cause of death and disability in the United States, causing seven out of every 10 deaths (CDC, 2009), with five chronic diseases -- heart disease, cancer, stroke, chronic obstructive pulmonary disease (COPD), and diabetes -- accounting for more than two-thirds of all deaths (CDC, 2007). The incidence of chronic disease in the United States is also steadily increasing. In 2009, 145 million Americans -- almost 1 out of every 2 adults -- had at least one chronic illness. By 2020, this number is expected to grow to 157 million (Anderson, 2010).

This increase in chronic disease incidence and prevalence has put additional financial and delivery system burdens on an already strained healthcare system. People with chronic conditions more frequently use health care services, including hospitalizations, office visits, home health care, and prescription drugs (Anderson, 2010). The overwhelming majority (99%) of Medicare expenditures are for beneficiaries with at least one chronic disease (Anderson, 2010). The Medical Expenditure Plan
Survey (2006) reported that 97% of home health care visits and 93% of prescription drugs are for individuals with chronic conditions. Between the years 2002 and 2009 the percentage of health care spending on individuals with chronic conditions increased from 78% to 84%; this increase in health care expenditures is estimated to be costing the economy more than a trillion dollars annually (Anderson, 2010; DeVol & Bedroussian, 2007). Under the new Patient Protection and Affordable Care Act, the current Medicare system for Americans 55 and older is being restructured. The Act (2010) proposes to reduce Medicare spending by $716 billion over 10 years which could lead to cuts in benefits and services for some seniors. Therefore, it is imperative to identify and utilize alternative methods of health management to help adjust the rising healthcare costs.

**Multimorbidity**

Unfortunately, most adults experience *multimorbidity*, or the coexistence of multiple chronic diseases or conditions. Multimorbidity affects almost half of all people with chronic conditions (Tinnetti, Fried, & Boyd, 2012; Anderson, 2010). Among health care recipients, almost 75% of adults aged 65 and older are affected by multimorbidity (Tinnetti, Fried, & Boyd, 2012; Anderson, 2010). Older adults with multiple chronic conditions are the major users of health care services, with utilization paralleling the number of chronic conditions. More than three-fifths of health care spending is attributed to individuals with multiple chronic conditions (Anderson, 2010). Individuals with multiple chronic conditions are far more likely to: (a) be hospitalized, (b) fill more prescriptions, (c) receive more physician and home health care visits, and (d) spend more for inpatient hospital care than individuals with one or no chronic conditions (Anderson, 2010). For example, a typical individual with just one chronic condition fills an average of 7.3
prescriptions per year, while an individual with five or more chronic conditions fills an average of 57.4 prescriptions per year (Anderson, 2010). Anderson (2010) further described that, “health care spending for a person with one chronic condition is almost three times greater than spending for someone without any chronic condition, while spending is about 17 times greater for someone with five or more chronic conditions” (p.15).

As the U.S. population ages, the proportion of individuals diagnosed with chronic conditions is growing exponentially. In 2010, individuals ages 65 and over represented 13.1% of the population; this figure is expected grow to 19.3% (72.1 million older persons) by 2030 due to the aging baby boomer generation (Administration on Aging, 2011). Adults over age 85, a subgroup of older adults, suffer the highest levels of multimorbidity; levels projected to reach 21 million in 2050, representing an increase of more than 15 million people when compared to 2005 levels. These projections predict a future U.S. healthcare workforce incapable will not be capable of treating the increased number of older adults who are managing high-cost multimorbidity (Bodenthalmer, Chen, & Bennett, 2009).

**Risk Factors for Chronic Disease**

The increased prevalence of chronic disease is multi-factorial. The major drivers of this increase in prevalence are the aging population coupled with a rise in risk factors such as obesity and alcohol use (Bodenthalmer, Chen, & Bennett, 2009). While advances in medical science and a marked increase in screening for and diagnosing chronic conditions has improved treatment outcomes and mortality rates, the growing incidence of diabetes, cardiovascular disease and stroke threatens to cancel out any gains that have recently been made (Anderson, 2010; DeVol & Bedroussian, 2007)
even though most chronic diseases are generally preventable. Tobacco use, lack of physical activity, poor eating habits, and excessive alcohol use are four common, yet modifiable, behaviors that are responsible for much of the illness, disability, and premature death associated with chronic disease (CDC, 2009).

From the patient perspective, chronic disease is viewed as a disruption and an uncertainty (Bury, 1982). While the effects of chronic conditions have varying levels of severity (Anderson, 2010), activity limitation affects more than a quarter of Americans with chronic conditions (CDC, 2009). Chronic conditions can cause many functional limitations that result in an inability to maintain normal daily activities (e.g. walking, bathing, and dressing). Over time, living with a chronic condition can lead to isolation, depression and physical pain which affect mental health, social involvement, and employment status. Individuals managing multimorbidity are at greater risk for disability and activity limitations (Anderson, 2010) and therefore have a unique task to cope with multiple conditions through adherence to a variety of self-care approaches and practices (Ayers & Kronenfeld, 2007). Individuals with multiple chronic conditions are in need of resources to help with the complex task of self-managing multimorbidity. In today’s technological world, digital health communication resources are available to help adults with chronic disease better self-manage multiple conditions.

**Digital Health Communication**

The Internet has changed the way people communicate and is a powerful and important resource for information. While access to the Internet remains unequal, its overall use has grown rapidly. Today, 82% of U.S. adults use the Internet, representing a 300% increase since 2008 (Fox, 2012). The rise in Internet usage has resulted in a concurrent increase in the amount of available online health information. The amount of
Internet usage and other Internet activities are also consistent factors explaining online health seeking (Rice, 2006). Health has been noted as the sixth largest content area on the Internet (Ayers & Kronenfeld, 2007). At present, thousands of health-related websites covering a wide variety of content areas such as: fitness, prescription drugs, disease management, medical treatments, alternative medicine, and doctor reviews can be accessed online.

The Internet provides a forum for capturing, archiving, and retrieving a vast quantity of current information regarding health, health care and disease-specific pathology (Powell et al., 2011). Research suggests that web-based applications can be used to promote healthy lifestyles and support self-care (Nijland et al., 2011). The Internet is an effective tool for sharing health information since individuals can anonymously search the Internet for relevant health information at their convenience, free from the limitations of location, time and social judgment. In turn, providers attempting to curb rising health care costs have increasingly begun to see the Internet as an effective and efficient delivery system for health information and services (Zajac et al., 2012). By connecting users to line services such as banking, shopping, library borrowing, and social chat groups the Internet serves to enable instrumental activities of daily living (Zajac et al., 2012). However, additional research is needed to determine if the Internet can contribute positively to long-term healthcare benefits for patients with chronic disease.

Within the past 10 years, public perceptions of the importance of the Internet as a source for health information have risen dramatically among adults in the U.S. (Fox, 2012). Individuals are using the Internet to supplement traditional sources of health
information (e.g., healthcare providers, family) for the purpose of improving their own health and the health of those whom they care for (Ayers & Kronenfeld, 2007; Fox & Purcell, 2010). Couper and colleagues (2010) found that, among Internet users, health information gathered from the Internet has surpassed health information from television, magazine, books and newspapers. This work cited the Internet as second only to health care providers as a source important to making health decisions. Among U.S adults who use the Internet, 80% have searched online for health related information at least one time (Fox, 2012). This online health information searching is not limited to traditional desktop computers, but includes 31% of the 85% U.S. adult cell phone owners who report having used their cell phone to look for health or medical information online (Fox & Duggan, 2013). While older adults lag behind younger generations in terms of using the Internet, as the baby boomers age and their health needs increase the proportion of older adults who use the Internet is expected to increase dramatically (Sinden & Wister, 2008).

With the immense amount of health information and resources available on the Internet, the World Wide Web has the capacity to empower patients to improve their health behaviors and to become more active participants in their own healthcare. Findings from a 2006 meta-analysis of seven major datasets from the Pew Internet and American Life Project revealed that, of adults who use the Internet for health information, 91% reported they had learned something new about their health, had improved their health, and/or their level of medical information (Rice, 2006). Previous research has shown health searches are often based on individuals’ specific health needs and conditions. In fact, gaining knowledge via the Internet has been shown to
relate very closely to the formal health care systems since individuals can check for prescription drug side effects, they can manage their chronic diseases and can compare their symptoms to a diagnosis (Ayers & Kronenfeld, 2007).

In addition to being a resource for health information, the Internet has become a significant source of social support. The use of the Internet has been found to enhance health-related quality of life through improving communication with family and friends (Wagner et al., 2004). Virtual communities (e.g. online support groups) and the anonymity that is often associated with asynchronous communication on the Internet allows for increased social interaction among peer groups (Powell et al., 2011; Wangberg et al., 2007). The Internet has also become a common way to obtain assistance for coping with medical conditions through emotional and practical support (Ayers & Kronenfeld, 2007). Internet users with chronic disease are more likely to go online to interact with other individuals experiencing their illness than Internet users with no chronic conditions (Fox, 2011). A recent survey indicated that one in four Internet users living with a chronic illness say they have gone online to find others with similar health conditions (Fox, 2011). Online social networking can provide information, support, acceptance, a sense of immediate understanding, and can alleviate loneliness and alienation that often results because of age-related health issues (Nayak, Priest, & White, 2010). An increase in social interactivity has the potential to increase social capital when individuals are able to communicate with friends, family, or others with similar health conditions who they may not have otherwise been able to communicate with (Nayak, Priest, & White, 2010; Wangberg et al., 2007). In addition, the Internet has the potential to change the way patients communicate with their physicians. Research
has shown that health information individuals receive from the Internet enables patients
to ask their physicians new questions, making them feel more empowered and better
able to make healthcare decisions (Rice, 2006).

**Older Adult Internet Use for Health Information**

Elderly persons with poor health remain the least likely to use computers and the
Internet (Wright & Hill, 2009). A common fear is that eHealth technologies may only
reach those who need them the least (ceiling effect) and will fail to reach individuals
who need health information the most. Older adults with multiple chronic diseases are
one population not currently being reached by eHealth (Nijland et al., 2011). Numerous
barriers in this population limit widespread adoption of the Internet. Research suggests
that older adults underutilize the Internet as a tool for obtaining health information
because they (a) lack confidence in their computer abilities, (b) have concerns about the
privacy of health information transmitted over the Internet, (c) only trust health
information provided by clinicians, and (d) have difficulty understanding health
information (Miller & Bell, 2012; Zulman et al., 2011). Other widespread concerns have
also been raised about the following related issues: credibility of health information on
the Internet (Habel, Liddon, & Stryker, 2009), the potential for unhelpful peer-to-peer
interactions (Boulos, 2012), and excluding individuals who experience barriers to
Internet access (Powell et al., 2011). A Pew Internet study found that 76% of Internet
users with chronic conditions do not consistently check the source and date of the
health information they locate (Fox, 2007).

**Chronic Disease and Internet Use**

While the actual proportion of older adults with chronic disease who use the
Internet may be low (Miller & Bell, 2012), the general consensus is that the number of
users is growing rapidly (Wright & Hill, 2009; Zajac et al., 2012). The 2010 Pew Internet Research Survey, *Chronic Disease and the Internet*, reported that 83% of Internet-users with chronic disease(s) have looked online for health information (Fox & Purcell, 2010).

Research indicates that individual Internet use for health information retrieval increase with the number of chronic conditions diagnosed (Ayers & Kronenfeld, 2007). The complex management of multiple chronic conditions prompts patients to seek new resources which can be quickly accessed for quality health information to cope with multimorbidity (Crabb et al., 2012). Still, there remains limited data on how and why individuals with chronic disease use/don’t use online health information, especially among older populations (Powell et al., 2011; Wright & Hill, 2009).

It is unclear whether health status influences use of eHealth technologies. A meta-analysis conducted by Rice (2006) found that Internet use for health information seeking was higher in individuals with poorer health; however, Cotton and Gupta (2004) and Fox and Purcell (2010) findings differ since in their studies they found adults who reporting better health used the Internet more often.

**Health Literacy and eHealth Literacy**

*Health literacy* is vital to making appropriate health decisions and plays an important role in a person’s health status. The Affordable Care Act of 2010 operationally defined health literacy as “the capacity to obtain, communicate, process and understand basic health information and services needed to make appropriate health decisions”. The National Institutes of Health (2012) further explained health literacy in the following way:

Similar to our traditional understanding of literacy, health literacy incorporates a range of abilities: to read, comprehend, and analyze information; decode instructions, symbols, charts, and diagrams; weigh
risks and benefits; and, ultimately, make decisions and take action. The concept of health literacy extends to the materials, environments, and challenges specifically associated with disease prevention and health promotion (n.p.).

The 2003 National Assessment of Adult Literacy found that only 12% of US adults and 3% of US older adults are proficient (i.e., can understand and use health information effectively) in health literacy (Kutner et al., 2006). The Institute of Medicine (IOM) (2004) reported that half of the U.S. population finds it challenging to understand health information; and most people will have difficulty understanding health information at some point in their lives. Research has supported that health ‘illiteracy’ is associated with higher rates of hospitalization, more use of emergency services, and billions of dollars spent on helping individuals recover from preventable health conditions (IOM, 2004). Older adults are the largest group with limited general and health literacy skills (White, 2008); thus the population group with the highest prevalence of chronic disease and the greatest need for health care has the least ability to comprehend information needed to protect and maintain their health (Aspinall, Bechnett, & Ellwood, 2012). Since improving health literacy has the potential to help address issues of health care access, quality and cost, it has become the objective of several national policy initiatives, including the National Action Plan to Improve Health Literacy and Healthy People 2020. Several studies (Aspinall, Bechnett, & Ellwood, 2012; Federman et al., 2009) have determined that health literacy is correlated with health outcomes in adults. According to the American Medical Association Foundation (AMA, 1999), health literacy skills are a stronger predictor of a person’s health than age, income, employment status, education level and race. Individuals with low levels of health literacy have less health knowledge,
worse self-management of chronic disease, lower use of preventive services, and poorer overall health (Baker et al., 2007).

The increased use of ICTs in healthcare presents new challenges and opportunities for population health literacy. Many eHealth services intended for public consumption cannot be fully used because the public does not have the skills to use such resources or services (Gottlieb & Rogers, 2004). Being health literate in a technological world requires additional sets of skills above and beyond being able to access to the Internet. Because of the emerging use of electronic resources to access health information, the construct of eHealth literacy has been studied to determine whether individuals have the ability to seek, find, understand, and appraise health information with electronic resources and apply that knowledge to a health problem (Norman & Skinner, 2006a).

According to Norman and Skinner (2006a), eHealth literacy is a foundational skill set that combines many different literacy skills that extend beyond health literacy and numeracy. Norman and Skinner (2006a) categorized the following six forms of literacy as fundamental analytic and context-specific skills needed to effectively use ICTs to locate and evaluate health information:

The six components operate as part of a learning system and are not easily amenable to subdivision (Norman, 2011). To optimize eHealth literacy, it is believed that the individual must develop each set of skills equally. For instance, if an individual has the ability to use computers but does not have the skills to read and understand health information, then they would not be considered eHealth literate.
1. **Traditional literacy** – the basic ability to read and understand written passages

2. **Informational literacy** – the ability to understand how knowledge is organized and how to find answers and teach others

3. **Media literacy** – ability to critically assess the media, and “enables people to place information in a social and political context and to consider issues such as the marketplace, audience relations, and how media forms in themselves shape the message that gets conveyed” (Norman & Skinner, 2006a, p. 3).

4. **Health literacy** – ability to read and understand information in the health care environment

5. **Scientific literacy** – ability to understand “the nature, aims, methods, applications, limitations, and politics of creating knowledge in a systematic manner” (Norman & Skinner, 2006a, p. 4)

6. **Computer literacy** – ability to use computers to solve problems

Norman & Skinner (2006a) conceptualized eHealth literacy by depicting it as a lily model. Within the model, there are six independent literacy skills (or petals) that work together and overlap to influence eHealth literacy, which is the core of the pistil (Figure 2-1).

At the time of each health information search, eHealth literacy is influenced by health status, motivation, education level, and the particular technology being used. eHealth literacy is not static; rather, it is a process that evolves and consistently has to be developed and evaluated based on literacy concepts and technologies that change over time (Norman & Skinner, 2006b).
Numerous research studies have evaluated the reading grade level and/or readability of information on the Internet, and uniformly found the information too difficult to be understood by the average adult, let alone those with the most limited literacy skills (Baur, 2008). Older adults generally have low health and computer literacy, making it challenging for them to function well in the eHealth era where technology is increasingly being used in health care (Xie, 2011). Older adults tend to have poor navigational skills, an inability to distinguish between sponsored and non-sponsored web links, and difficulty explaining (in their own words) the information they find on the Internet (Baur, 2008). They are often overwhelmed by the sheer volume of different online methods, and often lack of awareness and confidence in learning Internet skills (Sheaves et al., 2011). However, the literature has suggested that people who spend more time online will generally acquire more knowledge about the Internet and develop better online skills with experience (Norman & Skinner, 2006b; Van Deursen & Van Dijk, 2011).

**Social Media and Health Information Seeking**

Coinciding with the surge in Internet use, there has also been a dramatic increase in participative Internet among adults in the United States. Participative Internet is frequently referred to as Web 2.0, which is “an umbrella term that is used to refer to a new era of Web-enabled applications that are built around user-generated or user-manipulated content, such as wikis, blogs, podcasts and social networking sites” (Pew Internet & American Life Project, 2011, para 2). The main attributes of Web 2.0 are social media and social networking. Social media allows users to add information or content to the Internet, while enabling interaction, information sharing, and collaboration (Eysenbach, 2008; Gibbons et al., 2011). Social media has emerged as the leading
channel for political and consumer matters, and for primary sources for health, healthcare, and science-based information (Eysenbach, 2008; Jones & Fox, 2009).

Participation in social networking (e.g. Facebook, Twitter, MySpace) has more than quadrupled from 2005 to 2009 (Chou et al. 2009), currently reaching four out of five U.S. Internet users (Boulos, 2012). It is important to note that this increase has not just been observed among young adults. A 2011 Pew Internet survey revealed that from 2009 to 2011 growth in the use of social networking rose 150% among Internet users ages 65 and older (Madden & Zickuhr, 2011). This has led some to describe this migration as ‘the graying of social networking sites’ (Boulos, 2012).

Social media has the potential to reduce the financial and overcrowd burdens currently being experienced by conventional healthcare systems. The social 2.0 nature of the Internet has transformed health communication patterns (Chou et al., 2009). As stated by the CDC (2012), social media “helps to reach people, when, where, and how it’s convenient for them, which improves the availability of content and might influence satisfaction and trust in the health messages delivered” (p.2). The use of social media for health communication allows personalized health information to be disseminated rapidly and expands opportunities for peer-to-peer support (Fox, 2011). For example, a randomized web-based walking program conducted by Richardson et al., (2010) found that participants who had access to the online community (could post and read messages with other participants) were more likely to stay engaged in the walking program over a longer period of time compared to the control group that did not have access to the online community.
Among social networking users, a growing number (22%) report sharing and receiving health information from friends within their online social networks (Fox & Jones, 2009). A recent national survey found that 96% of Americans used Facebook to gather information about health care, and 40% noted that social media was “likely” or “very likely” to impact their future health care decisions (Fuscaldo, 2011). Public health communication practitioners have begun utilizing social media sites for a number of health education programs, interventions, and outreach efforts (Kontos et al. 2010). As a result, there has been a substantial migration of public health campaigns (e.g. The Heart Truth®, It’s Your (Sex) Life©) to social media and social networking websites (Kaiser Family Foundation & MTV, 2012; Long et al., 2010). Accordingly, the CDC has issued guidelines for best practices for using social media in health promotion and disease prevention programs (CDC, 2012).

Through enhanced information sharing capabilities and increased connectivity among adults, social media offers new opportunities for impacting the population’s health. Social networking integrates people into virtual communities and builds support channels, social capital, and trust that can “potentially improve users’ capacity to (1) obtain, and (2) process and understand health information and services needed to make appropriate health decisions” (Boulos, 2012, p.3). For individuals managing chronic disease, social media provides a new and valuable channel for facilitating social support and patient engagement (Madden, 2010). Social media provides the potential for individuals to connect with others who have similar interests and health concerns. A cancer support group on Facebook has the ability to easily bring cancer patients and caregivers together to share ideas, concerns and support. It has been suggested that
Internet-mediated social networking may have a beneficial impact on both perceived social support and psychological wellbeing (Chou et al., 2009). Social media promotes patient engagement in their own care by involving the individual to monitor their health behaviors (Gibbons et al. 2011). Social media also has the capacity to improve users’ ability to obtain, process, and understand health information and services by increasing the number of options that patients have to access and communicate with their healthcare team (Boulos, 2012). Through monitoring real-world events and public health issues, social media has the potential to provide the public-health community valuable and inexpensive real-time statistics, the opportunity to study patient health behaviors, and gather data on health topics not normally included in public-health data (Dredze, 2012).

Despite the many potential benefits of using social media in public health, there are several disadvantages inherent when used as a source of health information. These barriers include, but are not limited to, blind authorship, lack of source citation, and presentation of opinion as fact (Vance, Howe, & Dellavalle, 2009). Given that social media often allows for an open and unrestricted forum for health information sharing, there is increased risk for rapid dissemination of non-credible and potentially erroneous health information (Boulos, 2012; Chou et al., 2009). In addition, the lack of face-to-face contact between health professionals and patients can lead to confusion and contribute to misdiagnosis (Pulman, 2010).

Social media use patterns vary by age; however, no racial, ethnic, education or health status differences have been reported among social media users. In fact, reverse trends have been noted. In a study conducted by Chou and colleagues (2009), it was
found that, among Internet users, African Americans were more likely than non-Hispanic whites to use a social networking site (odds ratio [OR] = 1.51, 95% CI = [1.01-2.24]). Researchers have even suggested that among Internet users, “social media…” penetrate[s] the population regardless of education, race/ethnicity or health care access” (Chou et al. 2009, p.7). The statistically non-significant group differences also hold when considering the use of social networking sites for health. Fox and Jones (2009) noted that, “women, men, e-patients of various levels of education, whites, African Americans, Latinos- all are equally likely, once they are using social networking services, to use them for health queries and updates” (p.18). In this respect, social media may offer public health practitioners the opportunity to eliminate health disparities, reduce health communication inequalities, and reach underserved populations.

The use of social media has become an efficient way to reach target populations regardless of socioeconomic and health-related characteristics. Social media websites have the potential to become a powerful tool to attract and engage a large proportion of Internet users (Eysenbach, 2008). Given that the use of social media will likely continue to grow (Madden, 2010) these tools can be used to maximize the reach and impact of health communication and eHealth interventions. Among older adults with chronic disease, social media offers forums for patient engagement and social support (Hall et al., 2012; Madden, 2010). Because of its ease of use, low cost, and wide reach, using social media as a health communication strategy for older adults has great potential to improve public health.
Theoretical Explanations for Health Information Seeking

There are three conceptual frameworks that informed the research project that is described herein. First, the Self-Efficacy Theory will be used to explain the origins of eHealth literacy and examine if an individuals’ skills developed using social media influences his or her eHealth literacy. Second, the Technology Acceptance Model (TAM) will be used to explain and predict health ICT use among older adults with chronic disease. Finally, the Structural Influence Model of Health Communication (SIMHC) will explore the effects of different individual-level factors on communication outcomes.

Self-Efficacy Theory

The definition of eHealth literacy by Norman and Skinner was built upon the Self-Efficacy Theory, which proposes that self-confidence is a precursor to behavior change and skill development (2006a). As a central construct of Bandura’s Social Cognitive Theory (1997), self-efficacy is defined as an individual’s sense of confidence in his or her capability to perform a particular behavior when faced with a variety of challenges. The theory developed from the basic idea that an individual’s performance, feelings, choices, and motivation regarding behavior change are determined, in part; by how effective they believe they can be (Bandura, 1982). A key principle of the Self Efficacy Theory is that individuals are more likely to engage and put forth more effort and persistence in activities when they have higher feelings of efficacy and less likely to engage in those activities if they do not (Van der Bijl & Shortridge-Baggett, 2002). Research has shown that self-efficacy has an indirect, but positive relationship to overall and condition-specific health outcomes (Sue, 2012). High self-efficacy is important for the initiation and maintenance of behavior change including the management of chronic
conditions. Patients with higher self-efficacy have better problem solving skills and exhibit better self-care (Sue, 2012). Regarding Internet use, high self-efficacy is positively associated with (a) willingness to choose and participate in computer-based activities, (b) expectations of success of computer use (c) perseverance when faced with computer use difficulties and (d) computer-based performance (Eachus & Cassidy, 2006).

The concept of self-efficacy is derived from four major sources of information: (1) mastery experience, (2) vicarious experience or modeling, (3) emotional or physiological arousal, and (4) verbal persuasion (Bandura, 1997). The most influential source of information comes from mastery experience. Mastery experience refers to when an individual succeeds through a series of gradual steps that solicit the performance of desired behaviors often through incremental goal setting (McAlister, Perry, & Parcel, 2008). When specific tasks are completed successfully, perceived self-efficacy is enhanced, confirming an individual's capabilities; however when repeated failure occurs, feelings of mastery are diminished. For example, when teaching older adults how to properly search the Internet to learn about chronic disease self-management, participants should be presented with easily mastered steps (e.g. Internet basics, using a mouse, evaluating a website while working with an instructor) to reinforce mastery experience.

The second source of efficacy, vicarious experience or social modeling, is less influential than mastery experience (Chu et al., 2009). Vicarious experience occurs when learning is achieved through observing behavior performed by others. According to Bandura (1994), “seeing people similar to oneself succeed by sustained effort raises
observers’ beliefs that they too possess the capabilities to master comparable activities required to succeed” (p.80). The impact of peer modeling on perceived self-efficacy is subject to the perceived similarity those acting as models. If individuals see themselves as very different from the models they are observing, then they will not be influenced to a high degree by the models' behavior (Bandura, 1994). For older adults with chronic disease, it may be necessary to have their peers demonstrate effective eHealth literacy rather than a younger more tech savvy individual (Chu & Chu, 2010).

Efficacy arousal is another source of information gathered through improving physical and emotional states. This includes responses such as anxiety, stress and fatigue. Bandura (1977) theorizes that, “people rely upon their state of physiological arousal in judging their anxiety and vulnerability to stress” (p.82). Older adults with chronic disease may believe they can accurately perform Internet searches to help self-manage their disease; however, those who do not believe they can navigate the Internet to find health information related to their disease(s) may experience high anxiety arousal regarding their perceived deficiencies (Chu et al., 2009).

The fourth source of efficacy information is acquired through verbal persuasion. Verbal persuasion includes suggestions, positive appraisal, and social encouragement. Feedback should be corrective and framed in a positive way to create higher self-efficacy (Bandura, 1977). Verbal persuasion is more than positive appraisals; it also includes structuring situations in ways that are set up for success to avoid situations that are likely to result in failure (Bandura, 1994). For older adults, social support is important in forming self-efficacy (Chu & Chu, 2010; Woodgate, Brawley, & Shields, 2007); it has been suggested that social media could serve as a positive source of
social support and persuasion for improving eHealth literacy among older adults with chronic diseases (Hall, Stellefson, & Bernhardt, 2012).

**Technology Acceptance Model**

The Technology Acceptance Model (TAM) (Davis, 1989) is an intention-based model developed specifically to explain and/or predict user acceptance of computer technology. The TAM was adapted from the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980) for modeling user acceptance of information technology with the aim of explaining future behavioral intention to use the system (Lederer et al., 2000). TRA posits that perceived ease of use and perceived usefulness can predict attitudes toward technology that can then predict technology usage (Lederer et al., 2000). According to TAM, a potential user’s overall intention toward using a given system is hypothesized to be a determinant of whether or not he/she actually uses it. The dependent variable, actual usage, is typically a self-reported measure or frequency of employing the application (Lederer et al., 2000). Following the rationale of TRA, behavioral intention to use the system is a measure of the likelihood a person will employ the application, which is ultimately influenced by an individual’s attitude toward using the system. Attitude, an individual’s evaluative judgment of the target behavior, in turn, is a function of two major determinants: perceived usefulness and perceived ease of use (Holden & Karsh, 2010; Davis, 1989) (Figure 2-2).

It has been asserted that perceived usefulness and perceived ease of use are especially important variables that influence system use, because they can be viewed as independent constructs without the need to model what explains or predicts them (Kukafka et al., 2003). Perceived usefulness is referred to as the degree to which a person believes that using technology will enhance his/her performance. In contrast,
perceived ease of use is the degree to which a person believes that using a particular technology would be free of effort (Davis, 1989). The importance of perceived ease of use is based on Bandura’s (1982) research on self-efficacy (Davis, 1989). The TAM suggests that perceived ease of use is central to explaining the variance in perceived usefulness. According to Davis (1989), a system perceived to be easy to use is also likely to be useful by users. It could be argued that if older adults with chronic disease perceive the Internet to be easy to use, they will likely perceive it to be useful.

The TAM model has gone through a number of modifications over time, and some authors have considered additional relationships. Some researchers have ignored intention to use or attitude toward use, and instead focused on the effect of perceived ease of use directly on usage, since research has shown inconsistent findings regarding the effect of attitude and intention on actual use (Holden & Karsh, 2010; Lederer et al., 2000). The current research will examine the relationship between perceived ease of use and usefulness, as well as, the levels perceived usefulness among older adults with chronic disease who use the Internet for health information.

**Structural Influence Model of Health Communication**

The SIMHC is an emerging framework that draws the connection between social determinants and health outcomes through a range of interpersonal communication factors (Viswanath, Ramandahan, & Kontos, 2007). The model identifies the role of communication in linking social determinants with health outcomes. It is founded on the idea that media communications can influence health by raising awareness, focusing attention, highlighting issues, providing information, and reinforcing knowledge, attitudes, and behaviors. Furthermore, the SIMHC is based on the assertion that control of communication is power, and whoever has the capacity to generate, access, use,
and distribute information, benefits from it (Viswanath, Ramandahan, & Kontos, 2007). This model suggests that differences among social and racial groups in the use of communication channels, such as social networking sites, could result in both an indirect and direct effect on health, which could ultimately lead to an exacerbation of existing health disparities among vulnerable groups (Kontos et al., 2010). SIMHC acknowledges that different forms of mass media and different genres within a medium, such as the using the Internet for email, social media, or just as a search engine may differentially influence behaviors (Ackerson & Viswanath, 2009). The model posits that the different communication outcomes, in turn, may affect health outcomes, including health behaviors, comprehension and quality of life (Viswanath, Ramandahan & Kontos, 2007).

While previous research has shown differences among demographic groups when considering the use of social networking sites for health (Chou et al., 2009; Fox & Jones, 2009), this study will examine if eHealth literacy and/or social media use is associated with perceived health status.

The SIMHC will also be used to help determine whether social determinants, such gender, and age are predictive of different communication outcomes, such as using the Internet and social media to find health information and if those health communication outcomes affect their perceived health outcomes (Figure 2-3). In addition, this study will examine how individuals’ social determinants and mediating factors influence Internet and social media use and eHealth literacy and their corresponding perceived health status.
Conclusion

eHealth applications are developing rapidly; however, they are only useful if the user has adequate eHealth literacy. To date, Internet use among older adults with chronic disease has not been widely examined. We still have much to learn about how the Internet and social media is being used by various populations to harness the explosion of social networking that is being used to inform health decisions (Kreps & Neuhauser, 2010). It is highly likely that the full social potential of the Internet for health promotion and disease management has not yet been met in this population. If older adults become empowered to access the Internet and use social media to obtain and evaluate health information, they may benefit from the social support and sense of empowerment. It could be the case that older adults who have exposed themselves to social media have higher eHealth literacy than other older adults with no such experience. Therefore, it is important to understand the association between social media use and eHealth literacy.
Figure 2-1. eHealth Literacy Lily Model.

Figure 2-2. Technology Acceptance Model.
Figure 2-3. The Structural Influence Model of Health Communication.

- Social Determinants: Education, Income, Employment, Marital Status
- Mediating/moderating conditions: Age, Gender, Race/ethnicity
- Health Communication outcomes: eHealth literacy, Social media use
- Health Outcomes: Chronic disease status, Health status
CHAPTER 3
METHODS

The purpose of this study was to investigate eHealth literacy and social media use among older adults with one or more chronic disease(s). Chapter 3 describes the research methods used to examine associations between various demographic variables, chronic disease presence, number of chronic diseases, types of chronic diseases, eHealth literacy, social media use, perceived ease of use and usefulness of the Internet for health information, and perceived health status. This chapter includes a description of the research design, independent and dependent variables, the study population, the telephone survey instrument, data collection procedures, the data analysis procedures, and study limitations. Data was collected from participating adults age 50 and older in the state of Florida during the spring of 2013.

Research Design

The approach selected for this research study was quantitative, specifically descriptive research, in which adults in the state of Florida were surveyed by telephone. An advantage of using a quantitative approach in research is the ability to generalize to a larger population, as well as collect a large amount of data with relative ease, in a relatively short period of time (Neutens & Rubinson, 2002). A cross sectional survey design was implemented in this research study. Cross-sectional design refers to gathering data all at one point in time, as opposed to a longitudinal survey design, which collects data multiple times over a given period of time (Dooley, 2001). This cross-sectional study recorded, described, analyzed and interpreted conditions and trends that presently exist (Neutens & Rubinson, 2002) by examining the association between eHealth literacy and various non-manipulated variables (i.e., demographic variables,
chronic disease status, perceived health status). Survey research is conducted by gathering information from a small sample of people in order to identify trends in characteristics, attitudes, opinions or behavior of a population (Creswell, 2012). To ensure that inferences are as accurate as possible, it is important to reduce both coverage and sampling error (Creswell, 2012). This study addressed these considerations by selecting a large sample from a representative target population of older adults.

**Research Variables**

This study investigated associations between the following variables: eHealth literacy, social media use, the number of chronic conditions, chronic disease status, perceived usefulness, perceived ease of use, perceived health status, and demographic variables, including age, gender, income, education, and marital status. Each measure was categorized as either an independent or dependent variable, as appropriate for the research question (Table 3-1).

Participation in the study was limited to Florida residents aged 50+ years who self-reported Internet use. Research question #1 seeks to determine the extent to which older adults living in the state of Florida believe the Internet is a useful resource for health information. For this question perceived usefulness was measured through use of a supplemental item.

Research questions #2, 4, 6, 7, and 9 involved measuring eHealth literacy. This was accomplished using a composite score composed of items from eHEALS, a validated instrument. Research questions #3, 5, 6, 8, and 10 focus on social media use which was measured by participants’ self-reported use of social networking, blogging or online support groups for locating or sharing health information. Research questions #2
and 3, compare different generations’ eHealth literacy scores and social media use by age groups. Respondents were placed in one of three age groups based on their self-reported age. Age grouping were necessary for comparisons to detect differences between age groups previously labeled by (Strauss & Howe, 1992) as the “Baby Boomers” (50-64 years), the “Silent Generation” (65-74 years) and the “G.I. Generation” (75 years and older).

To answer research question #4 and 5, a dichotomous independent variable “chronic disease status” was used to measure chronic conditions. Dependent variables were eHealth literacy and social media, respectively.

A binary independent variable (use of social networking, blogging or online support groups) was used in the analyses for research question #6 with the dependent variable eHealth literacy. For research questions #7 and 8, eHealth literacy and social media use was represented as the independent variables respectively with health status serving as the dependent variable. Health status was reported as excellent, very good, good, fair or poor.

For research questions #9 and 10, the demographic variables of gender, age, income, education, marital status, number of chronic diseases, and types of Internet device used, represented the independent variables. Age was measured as a self-reported number, and analyzed as a continuous variable. Gender was reported as either male or female. Race was reported as White, Black/African-America, Asian or Pacific Islander, American Indian or Alaska native, other, or multi-racial or mixed race. Participants’ self-identification as of Spanish or Hispanic origin indicated their ethnicity. Education was reported by the highest grade of school or year in college completed.
Participants’ self-report as currently married, separated, divorced, widowed, or never been married indicated their marital status. Income was measured by participants’ self-reported family’s household income level from all sources. The number of chronic diseases was constructed by adding the total number of chronic conditions a respondent reported having out of eight possible chronic illnesses or conditions (diabetes, high blood pressure, asthma, heart disease, cancer, stroke, arthritis or other). Participants reported what type of Internet devices (desktop computer, laptop computer, cell phone, mobile handheld device like an e-reader or tablet) they used to look for health or medical information. eHealth literacy and social media use for health information represented the dependent variables respectively. For research question #10, technology acceptance factors were added as additional independent variables. They included perceived usefulness as measured by a supplemental eHEALS item and perceived ease of use measured using an average of items from the eHealth literacy scale.

**Instrumentation**

Data collection employed the eHealth Literacy Scale (eHEALS) (Appendix A items 5-12). The scale was “developed to measure consumers’ combined knowledge, comfort, and perceived skills at finding, evaluating, and applying electronic health information to health problems” (Norman & Skinner, 2006b, p. 1). The scale was designed to be simple and easy to administer and can be used alone or in conjunction with other measures of health (Norman & Skinner, 2006b). The main scale has eight items (Appendix A items 5-12) with 1-to-5 point Likert scale response options using the following anchors: 1) strongly disagree; 2) disagree; 3) undecided; 4) agree; 5) strongly agree. Psychometric testing on the eHEALS has revealed high internal consistency.
(α=.88) and demonstrated satisfactory test-retest reliability (r = .68) (Norman & Skinner, 2006b). The instrument is a reliable and easy-to-use self-report tool which has been used to measure eHealth literacy in several studies with diverse populations (Knapp et al., 2011, Norman & Skinner, 2006b; van der Vaart et al., 2011, Xie, 2011). Norman and Skinner (2006b) do not provide guidelines for the interpretation of scores other than the higher score of the summation of responses indicates a higher level of eHealth literacy. Missing values and don’t know responses were recoded as undecided in this study.

Data was collected on Internet use, Internet use for health information, and social media use for health information by items adapted from the Health Information National Trends Survey (HINTS) 2012 (Appendix A items 1-3). The participants responded to each item as either yes, no, don’t know or refused.

**Data Collection**

An application was submitted to the University of Florida Institutional Review Board-02 (UFIRB-02) prior to beginning any portion of this study. Approval from the UFIRB-02 indicated that the study was judged to be ethical in its proposed treatment of participants and that was acceptable to begin data collection.

Data was collected as part of a larger telephone survey. During February 2013 the Florida Consumer Confidence Index (CCI) Survey (Appendix B, conducted by the Survey Research Center in the Bureau for Economic and Business Research (BEBR) at the University of Florida was contracted to administer the additional items and eHEALS as part of the CCI. Items measuring Internet use for health information, social media use for health information, eHEALS, and an item regarding chronic disease status were appended to the end of the CCI. The employees of BEBR undergo rigorous training in
professional conduct during telephone interviews and surveys. This training includes ongoing monitoring with respect to confidentiality, as well as training specific to each survey that is fielded. Telephone survey administrators understand (and sign) a code that documents the consequences of failing to comply with standards for confidentiality.

For any set of survey items fielded as part of the CCI, a series of specific steps occur. First, the researcher meets with BEBR senior staff, including the director and survey center supervisor, to discuss the survey, population, and research design. Second, several iterations of survey development occur that include programming the survey, testing the survey and item sequences, and finally pilot testing the survey among the interviewers. Third, once the item programming is complete, a series of training sessions are held among the survey center supervisor and surveyors to go over issues related to the survey and population. The training sessions also covered issues involving sensitivity and confidentiality and practice time for survey administration. Finally, when the survey is officially launched, the survey center supervisor observes the interviewers and randomly listens in on selected telephone surveys to ensure adherence to the research protocol.

**Study Population**

A minimum of four hundred households in Florida were surveyed via the telephone. The sample used for the monthly administration of the CCI constitutes the sample for this study. During February 2013, surveys were conducted between 9am and 9pm Monday through Friday, between 12pm and 6pm on Saturdays, and between 3pm and 9pm on Sundays. The CCI survey length is typically twelve minutes. It is estimated that the appended survey items for this study added an extra 8 minutes to the average length of time necessary for participants to complete the survey.
Data Analysis

SPSS version 21.0 was used to compute both descriptive and inferential statistics. Descriptive statistics were used to summarize demographic characteristics and examine frequencies and means according to group, and thereby answered research question, #1; results are presented with the mean and standard deviation. Inferential statistics were used to answer research questions # 2-10.

Research questions #2, 4 and 6 were answered using a composite score of the eight items from the eHEALS. To ensure the reliability of eHEALS data collected in this sample, internal consistency statistics were computed. For research question #2 descriptive analyses were performed and an analysis of variance was conducted to more fully explore variations in eHealth literacy across the Baby Boomers, the Silent Generation, and the G.I. Generation. For research question #3 descriptive analyses were performed and a chi-square test was conducted to determine if social media use differed between the Baby Boomers, the Silent Generation, and the G.I. Generation.

For research question #4 an independent t-test was used to determine if older adults with chronic disease exhibit higher levels of eHealth literacy than older adults without chronic disease. Research question #5 was answered by conducting a chi-square test for independence to explore the relationship between the two categorical variables (Pallant, 2010).

Research question #6 an independent t-test was used to determine if older adults who use social media for health information exhibit higher levels of eHealth literacy than non-social media users.

Research question #7 was answered using a bivariate correlation to determine if eHealth literacy is associated with perceived health status. In this analysis, perceived
health status was treated as a continuous variable. Each health status was assigned a corresponding numeric value; poor=1, fair=2, good=3, very good=4, excellent=5. Research question #8 health status was again treated as a continuous variable and was answered using a t-test to determine if social media use for health information is associated with perceived health status.

Research question #9 was answered using multiple linear regression, chosen because it is designed to determine if the independent variables can predict the dependent variable (Thompson, 2008). Research question was #10 answered using logistic regression due to the binary nature of the dependent variable. To conduct the logistic regression three variables were recoded to adjust for small sample sizes in categories; education (categorized as less than high school, high school, some college, college graduate, and post graduate), income (categorized as household income less than $20,000, $20,000 - $49,999, $50,000 - $99,999, and over $100,000), and race (dichotomized as white and nonwhite). Research question #10 was answered using a composite score of some of items within the eHEALS. Perceived ease of use was calculated by averaging the scores from three eHEALS items; (1) I know where to find helpful health resources on the Internet, (2) I know how to find helpful resources on the Internet, and (3) I know how to use the Internet to answer questions about my health. Perceived usefulness of the Internet to find health information was measured with an eHEALS supplemental item.

**Research Qualifications and Bias**

This study was conducted by a single researcher as part of her dissertation. The researcher has previous experience assisting in the design, implementation and analysis of large sample health surveys as part of her job at a university health
education and promotion department. The researcher has taken numerous graduate level quantitative statistics courses, survey development courses, as well as a chronic disease epidemiology course. The researcher has also assisted in drafting several manuscripts regarding eHealth literacy and the self-management of chronic disease. The researcher conducted the project with some bias since she has an outsider perspective and does not have personal experience with chronic disease management. She is already proficient in using eHealth technologies. In addition, data was collected by an outside agency (BEBR) and the researcher was not able to control the validity of telephone survey implementation.

**Delimitations**

- This study utilized a cross-sectional, random digit dialing telephone survey research design.
- This study focuses on perceived eHealth literacy only.
- Data was collected in February 2013.
- Participants were able to understand the directions, questions and response options necessary to complete the survey.
- The eHEALS instrument was used to assess eHealth literacy.

**Limitations**

- The use of self-report surveys may have lead participants to provide responses that they believe are socially desirable.
- Findings in this study cannot be generalized to other populations.
- Data collected during February 2013 may differ from data collected during other time periods.
- Data collected from this cross-sectional survey reflects responses from participants at a specific point in time and cannot establish causation.
- Demographic information obtained may not include all pertinent information about participants.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
</tr>
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<tbody>
<tr>
<td>1. What is the extent to which older adults living in the state of Florida believe that the Internet is a useful resource for health information?</td>
<td>Age, Residence</td>
<td>Perceived usefulness</td>
</tr>
<tr>
<td>2. What are the eHealth literacy scores of older adults living in the state of Florida?</td>
<td>Age, Residence</td>
<td>eHealth Literacy</td>
</tr>
<tr>
<td>3. What is the extent to which older adults in the state of Florida use social media to locate or share health information?</td>
<td>Age, Residence</td>
<td>Social media use</td>
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<tr>
<td>4. Do older adults living with one or more chronic disease(s) exhibit higher eHealth literacy than older adults without chronic disease(s)?</td>
<td>Chronic disease status</td>
<td>eHealth Literacy</td>
</tr>
<tr>
<td>5. Do older adults living with one or more chronic disease(s) exhibit greater use of social media than older adults without chronic disease(s)?</td>
<td>Chronic disease status</td>
<td>Social media use</td>
</tr>
<tr>
<td>6. Does the use of social media for health information predict overall eHealth literacy in older adults living in the state of Florida?</td>
<td>Social networking Blogging Online support group</td>
<td>eHealth Literacy</td>
</tr>
<tr>
<td>7. What is the extent to which eHealth literacy is associated with perceived health status among older adults living in the state of Florida?</td>
<td>eHealth literacy</td>
<td>Health status</td>
</tr>
<tr>
<td>8. What is the extent to which using social media for health information associated with perceived health status among older adults living in the state of Florida?</td>
<td>Social media use</td>
<td>Health status</td>
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<td>Research Question</td>
<td>Independent Variable</td>
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<td>9. What are the socio-demographic, chronic disease, and Internet device use factors that predict eHealth literacy among older adults in the state of Florida?</td>
<td>Gender Age Race/Ethnicity Income Education Marital status Number of chronic diseases Internet device used</td>
<td>eHealth Literacy</td>
</tr>
<tr>
<td>10. What are the socio-demographic, chronic disease, Internet device use, and technology acceptance factors that predict using social media for health information among older adults in the state of Florida?</td>
<td>Gender Age Race/Ethnicity Income Education Marital status Number of chronic diseases Internet device used Perceived ease of use Perceived usefulness</td>
<td>Social media use</td>
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CHAPTER 4
RESULTS

Chapter 4 presents the results from an investigation surveying 283 older adults in the state of Florida. Sample demographics are discussed, followed by results from data analyses for each of the ten research questions.

Study participants were adults in the state of Florida who were 50 years of age or older who had some previous experience using the Internet. Trained interviewers working for the Florida Survey Research Center at the University of Florida contacted households using a random digit dialing (RDD) sampling frame. A total of 6695 telephone calls were placed between February 1st and February 28th, 2013. A minimum of five attempts per household were made. From these call attempts, a total of 493 individuals agreed to complete the telephone survey. Among these respondents, 393 (79.7%) were 50 years of age or older, meeting the age inclusion criteria for participation in this study. Of these 393 willing participants, 283 (72%) responded yes to the question “Do you ever go on-line to access the Internet or World Wide Web, or to send and receive email?”, affirming that they had some previous experience using the Internet. Responses from these 283 records were compiled and analyzed in this study.

Demographic Profile of Respondents

Table 4-1 presents the demographic characteristics of study participants. Respondents ranged in age from 50 to 91 years, with a mean age of 67.46 years ($SD=9.98$ years). The largest group of respondents were adults ages 50-64 years classified as the “Baby Boomer generation” ($n=111$, 39.2%), followed by the Silent Generation (65-74 years) ($n=98$, 34.6%), and the G.I. Generation (75 years and older) ($n=74$, 26.1%). The sample was fairly even in distribution with respect to sex, with
45.2% of study participants being female \((n=128)\) and 54.8% being male \((n=155)\). The vast majority of respondents self-identified as White \((n=252; 90.3\%)\), while notably smaller percentages self-identified as Black/African American \((n=10; 3.6\%)\), Multi-racial \((n=7; 2.5\%)\), American Indian or Alaska Native \((n=3; 1.1\%)\), Asian or Pacific Islander \((n=1; 0.4\%)\) and Other \((n=6; 2.2\%)\). The final sample included 16 participants (5.7%) who self-identified as being of Hispanic or Spanish ethnicity. The majority of respondents \((n=186; 66.9\%)\) reported being married, while 16.2% \((n=45)\) were widowed, 12.9% \((n=36)\) were divorced or separated, and 4.0% \((n=11)\) reported never being married.

Education levels of the final sample were fairly high. Ninety-three percent \((n=263)\) of participants reported completing at least high school; 29.1% \((n=82)\) reported completing some college; 24.8% \((n=70)\) reported having a Bachelor’s or 4-year degree; 22.3% \((n=63)\) reported completion of graduate school or a graduate/professional degree; 17% \((n=48)\) reported completing a high school education or received their GED; and only 6.7% \((n=19)\) reported they did not complete high school. With regard to household income level, the largest number of respondents fell into the $20,000 to $49,999 household income bracket \((n=82; 32.8\%)\), followed by the $50,000 to $99,999 bracket \((n=80; 32.0\%)\), and the ≥$100,000 bracket \((n=58; 23.2\%)\). Over half the sample \((n=138; 55.2\%)\) reported a higher household income than the 2011 median household income in the state of Florida \($44,299\) (U.S. Census Bureau, 2012).

The majority of participants (72%) used the Internet to find health or medical information. Table 4-2 describes the technological devices used by study participants when looking for health or medical information. Approximately half of respondents said
they used a desktop computer \((n=143, 50.5\%)\) to access the Internet, followed by 42.4\% who used a laptop computer \((n=120)\). Over one-third of the sample reported using a mobile device to look for health information: 20.5\% used a cell phone \((n=58)\) and 14.5\% used a tablet \((n=41)\). 59\% \((n=124)\) of the sample reported using one device, while 41\% \((n=86)\) reported using two or more devices to locate health information.

**General Health Status of Respondents**

Table 4-3 describes a summary profile of the health status of study participants. The vast majority of the sample was healthy, with 84.3\% indicating good health \((n=62)\), very good health \((n=103)\), or excellent health \((n=62)\). Only 14.7\% of the sample reported having fair \((n=30)\) or poor \((n=14)\) health.

More than two thirds of respondents \((n=197, 69.6\%)\) reported living with at least one chronic disease. Among those who reported reporting living with a chronic condition, over half 54.3\% \((n=107)\) reported multimorbidity, or experiencing two or more chronic conditions concurrently. Arthritis or joint problems \((n=109, 38.5\%)\) was the most commonly cited condition, followed by high blood pressure \((n=99, 35.0\%)\), diabetes \((n=46, 16.3\%)\), heart disease \((n=35, 12.4\%)\), asthma or other lung conditions \((n=29, 10.2\%)\), cancer \((n=20, 7.1\%)\), stroke \((n=7, 2.5\%)\), and other chronic health conditions not specified \((n=17, 6\%)\).

**Research Questions**

**Research Question #1**

*What is the extent to which older adults living in the state of Florida believe that the Internet is a useful resource for health information?* The majority of respondents found the Internet to be useful \((n=123; 43.5\%)\) or very useful \((n=53; 18.7\%)\) in helping make decisions about health. Sixteen percent of the sample \((n=47)\)
was unsure if the Internet was helpful, 12.7% \((n=36)\) found the Internet to not be useful, and 8.5% \((n=24)\) found the Internet not to be useful at all in helping make decisions about health. The mean score on the perceived usefulness was 3.51 points \((SD=1.180\) points) on a scale of 1 (not useful at all) to 5 (very useful).

**Research Question #2**

What are the eHealth literacy scores of older adults living in the state of Florida? The distribution of the total scores on the eHEALS was examined to determine the extent to which data met normality assumptions. The Shaprio-Wilk test of normality suggested a violation of this assumption \((S-W = .964, df =283, p = .000)\). An inspection of the normal Q-Q plots of total eHEALS scores and skewness \((-0.393, SE = .145)\) and kurtosis \((0.620, SE = .289)\) statistics revealed the distribution was not seriously violated. However, to account for the non-normal distribution, non-parametric data analysis techniques were used where appropriate (Field, 2009).

In the present study, the internal consistency of the data collected using the eHEALS was high (Cronbach’s \(\alpha = .902\)) indicating the items making up the eHEALS scale produced similar scores when measuring the underlying eHealth literacy construct. The reliability statistic computed in this study is comparable to Cronbach’s alpha values previously reported by Norman and Skinner (2006b) \((\alpha = .88)\) and van der Vaart et al. (2011) \((\alpha = .93)\) in their studies that utilized the eHEALS to measure eHealth literacy.

The eHEALS scale was scored on a 5-point Likert scale, with total scores being the sum of the 8 items (with a total possible score ranging from 8 to 40), with a higher score suggesting higher eHealth literacy. Item-scale correlations ranged from \(r = .49\) to \(r = .79\). Table 4-4 lists the mean score and correct item-total correlation for each eHEALS
item in the current sample. In the current study, scores on the eHEALS ranged from 11 (n=1) to 40 points (n=16), with the total mean score being 29.05 points (SD = 5.749 points) in the sample. The average mean score on each item was 3.63 points (SD = .72 points) on a scale from 1 (strongly disagree) to 5 (strongly agree).

Additional analyses were run to determine whether eHealth literacy differed by the older adult age generations specified above (Baby Boomers, Silent Generation, and G.I. Generation). A Kruskal-Wallis Test was conducted to compare the eHealth literacy scores among the three generations. There was a statistically significant difference in eHEALS score across the three generations, $H(2, n=283) = 16.354, p = .000$. The Baby Boomers (50-64 years) recorded the highest median eHEALS score ($Mdn = 31.0$, $n = 111$), followed by the Silent Generation (65-74 years) ($Mdn = 30.0$, $n = 98$), and the G.I. Generation (75 years and older) ($Mdn = 27.5$, $n = 64$). Mann-Whitney tests were used as a post-hoc test for this analysis to determine which of the generations were statistically different from one another. To adjust for Type I errors, a Bonferroni correction was applied, with all effects reported at a .0167 level of significance ($\alpha = .05/3$). eHealth literacy scores among older adults in the Baby Boomer generation were significantly higher than older adults from the Silent Generation ($U = 4395.5$, $z = -2.4$, $p = .016$, $r = -.17$) and the G.I. Generation ($U = 2672.0$, $z = -4.032$, $p = .000$, $r = -.30$); yet, eHealth literacy scores were not different between the Silent Generation and G.I. Generation ($U = 3129.0$, $z = -1.543$, $p = .12$, $r = -.12$). Thus, the Baby Boomers reported significantly higher eHealth literacy scores than either the Silent Generation or the G.I. Generation, with no differences observed between the Silent and G.I. Generations.
Research Question #3

*What is the extent to which older adults in the state of Florida use social media to locate or share health information?* Table 4-5 describes the distribution of social media use in the sample. Over one-third of the sample (35.7%; *n*=101) indicated using at least one type of social media to locate or share health information in the last 12 months. Almost 90% of social media users (*n*=90) reported using only one social media tool, while only 10.9% (*n*=11) reported using two or more types of social media. Among social media users, most participants used social networking technologies (e.g. Facebook, Twitter) to locate or share health information (*n*=96, 95%). Using online support groups (*n*=11, 10.9%) or writing in an online diary or blog (*n*=6, 5.9%) were reported far less often.

Additional analyses were conducted to determine whether social media use differed by age. Approximately 40% (*n*=45) of the Baby Boomers (50-64 years), 39.85% (*n*=39) of the Silent Generation (65-74 years), and 23.0% (*n*=17) of the G.I. Generation (75 years and older) reported using social media to locate or share health information. A chi-square test was conducted to compare social media use in these three age generations. The analysis indicated a statistically significant difference between generations regarding social media use, $\chi^2 (2, n=283) = 7.072, p=.029$, Cramer’s $V=.158$. Additional between-groups chi-square tests were conducted as a post hoc test with Yates Continuity Correction to adjust for Type 1 error (Field, 2009) to check for statistical significance between groups. No statistically significant differences were found between the Baby Boomers and the Silent Generation ($\chi^2 (1, n=209) = .00, p=1.0, \phi=.008$); however, Baby Boomers were more likely to use social media than the G.I. Generation ($\chi^2 (1, n=185) = 5.387, p=0.20, \phi=.182$). Older adults in the Silent
Generation were also more likely to use social media than the G.I. Generation ($\chi^2 (1, n=172) = 4.695, p=.030, \phi=-.178$). These results indicated that social media use for locating and sharing health information also decreased with advanced age. The decreased use in social media was especially evident in the adults over seventy-five years of age, and not as apparent between the Baby Boomers and the Silent Generation.

Research Question #4

Do older adults living with one or more chronic disease(s) exhibit higher eHealth literacy than older adults without chronic disease(s)? To determine whether older adults living with one or more chronic disease had higher eHealth literacy than older adults without chronic disease(s), an independent sample Mann-Whitney U test was conducted. The test revealed no statistically significant differences in eHealth literacy when comparing older adults with ($Mdn= 30.0, n=197$) and without ($Mdn= 30.0, n=86$) chronic disease chronic disease, $U = 8470.5, z = -.001, p = .99, r=.00$. This finding suggests that chronic disease status did not influence eHealth literacy in this sample of older adults.

Research Question #5

Do older adults living with one or more chronic disease(s) exhibit greater use of social media for health information than older adults without chronic disease(s)? A Chi-square test for independence, with Yates Continuity Correction, was conducted to determine if older adults with chronic disease were more likely to use social media for health information than older adults without chronic disease. The analyses indicated no significant association between social media use and the presence of chronic disease(s), $\chi^2 (1, n=283) = 1.279, p=.258, \phi=.075$. These results
imply that having at least one chronic disease does not influence an older adult’s decision to use social media for locating and sharing health information.

Research Question #6

*Does the use of social media for health information predict overall eHealth literacy in older adults living in the state of Florida?* A Mann-Whitney *U* Test was conducted to determine if social media use was associated with eHealth literacy. As expected, eHealth literacy scores of older adults who used social media (*Mdn* = 31.0 points, *n* =101) were significantly higher than eHealth literacy scores of older adults who did not report social media use for health information (*Mdn* = 29.0 points, *n*=182), *U* = 7001.5, *z* = -3.330, *p* = .001, *r* = -.20.

Several additional Mann-Whitney *U* Tests were conducted to determine whether use of specific social media outlets (e.g., social networking, online support groups, or online blogs) was associated with overall eHealth literacy. eHealth literacy levels of older adults who used social networking sites (*Mdn* = 31.0 points, *n*=96) were statistically significantly higher than eHealth literacy levels of older adults who did not use social networking sites (*Mdn* = 29.0 points, *n*=187), *U* = 7174.0, *z* = -2.774, *p* = .006, *r* = -.17. eHealth literacy levels of older adults who used online support groups (*Mdn* = 32.0 points, *n*=11) were also statistically significantly higher than eHealth literacy levels of older adults who did not use online support groups (*Mdn* = 30.0 points, *n*=272), *U* = 937.5, *z* = -2.106, *p* = .035, *r* = -.13. Interestingly though, eHealth literacy levels of older adults who used online diaries or blogs (*Mdn* = 31.5 points, *n*=6), did not differ to a statistically significant degree compared to older adults who did not use online diaries or blogs, (*Mdn* = 30.0 points, *n*=277), *U* = 528.5, *z* = -1.530, *p* = .126, *r* = -.09.
Research Question #7

What is the extent to which eHealth literacy is associated with perceived health status among older adults living in the state of Florida? The Spearman’s rho coefficient between eHealth literacy and perceived health status was examined to determine the relationship between the two variables. The analysis revealed the relationship between perceived health status and eHealth literacy was not statistically significant ($r_s=.016$, $n=280$, $p = .785$), indicating that eHealth literacy was not related to health status in this sample of older adults.

Research Question #8

What is the extent to which using social media for health information is associated with perceived health status among older adults living in the state of Florida? An independent t-test was conducted to assess differences in perceived health status among older adults who used social media ($n=100$) and those who did not use social media ($n=180$) to locate and share health information. On average, older adults who were non-users of social media reported slightly higher perceived health status ($M= 3.71$, $SD= 1.082$) when compared to social media users ($M= 3.42$, $SD=1.103$). This difference was statistically significant, $t(278)= 2.102$, $p = 0.03$; however, the effect size of this statistically significant difference was small, $d=0.267$.

Research Question #9

What are the socio-demographic, chronic disease, and Internet device use factors that predict eHealth literacy among older adults in the state of Florida? To answer this research question, a multiple linear regression was conducted to determine whether covariates included in the model [i.e., gender, age, income, ethnic group, educational background, marital status, Internet device use (desktop, laptop, cell phone, ...
tablet), chronic disease status and number of chronic diseases] predicted overall eHealth literacy. Prior to conducting the multiple linear regression analysis, intercorrelations were computed between all independent variables to determine if multicollinearity would bias the model, making it difficult to assess the importance of an individual predictor (Field, 2009). Multicollinearity may arbitrarily explain more variability in the dependent variable by allocating predictive credit to two or more predictor variables at the same time (Thompson, 2006). After examining intercorrelations between the independent variables, chronic disease status was removed from the regression model because it was highly correlated with number of chronic diseases \((r=.72, p<.01)\). After removing the chronic disease status variable from the model, collinearity diagnostics between the independent variables indicated collinearity was not present. Both the variance inflation factors (VIF) \((\leq1.483)\) and tolerance statistics \((\leq0.887)\) were compliant with the recommended cut-off points of less than 10 and greater than 0.10 respectively (Pallant, 2010), which suggested that the model would not be influenced by collinearity.

All other variables were simultaneously entered into the regression model, which accounted for 18.2% of the variance in eHEALS scores, which was statistically significant \((R^2=.182, R^2_{adj} = .139, F(12, 228) = 4.241, p<.001)\). Table 4-6 presents a summary of the regression coefficients generated by this analysis. The statistically significant predictors of eHealth literacy were age, education, desktop computer use, and laptop computer use. The beta weights \((\beta)\) of the independent variables suggested that all four statistically significant predictors made relatively large contributions to the regression model.
The model showed that as age \((b = -.105)\) increased by one year, the total eHEALS score decreased by .105 points. As education level \((b = .934)\) increased, the total eHEALS score increased by .934 points. The model also showed that use of different Internet devices had a statistically significant effect on eHealth literacy. The use of a desktop computer \((b = 2.231)\) increased total eHEALS scores by 2.231 points and the use of a laptop computer \((b = 1.725)\) increased total eHEALS scores by 1.725 points, holding all other factors in the model constant. Gender, marital status, race, ethnicity, income, cell phone use, tablet use and total number of chronic diseases were not statistically significant predictors in the model.

Research Question #10

What are the socio-demographic, chronic disease, Internet device use, and technology acceptance factors that predict using social media for health information among older adults in the state of Florida? Logistic regression was conducted to determine factors associated with use and non-use of social media to locate and share health information. Covariates included in the model were: gender, age, income, ethnic group, educational background, marital status, chronic disease presence, number of chronic diseases, type of Internet device used, and technology acceptance factors (perceived ease of use, and perceived usefulness of the Internet for health information). Social media use was dummy coded “0” to categorize participants who had never used social media for health information and “1” to categorize participants who had reported using some type of social media for health information. Before conducting the logistic regression analysis, intercorrelations between independent variables were examined to determine if multicollinearity would bias the model. Chronic disease status was removed from the model, because it was highly
correlated with the number of chronic diseases ($r=.72, p<.01$). While Spearman’s rho correlations indicated that perceived usefulness and ease of use variables were correlated ($r_s=.45, p=.000$), additional collinearity diagnostics were computed to determine if the model would be influenced by collinearity. Both the variance inflation factors (VIF) ($\leq 1.275$) and tolerance statistics ($\leq 0.785$) met their respective cut-off points of less than 10 and greater than 0.10 (Pallant, 2010) and thus could be reasonably included in multivariable analyses.

A two-step hierarchical logistic regression was performed to evaluate the socio-demographic, chronic disease, and Internet device type factors on social media use, as well as, the effect of technology acceptance factors on social media use including all other predictors. Specifically, the covariates included in step 1 were: gender, age, income, ethnic group, educational background, marital status, number of chronic diseases, and type of Internet device used. At step 1, the model was statistically significant ($\chi^2 [df=19] = 42.973, p=.001$) and explained 22.3% (Nagelkerke $R^2 = .223$) of the variance. To assess the Technology Acceptance Model, technology acceptance factors (perceived ease of use and perceived usefulness) were added in Step 2 to see if they had an effect above and beyond measures included in the first step, and to see if their inclusion added significantly to the total ability of the model to predict social media use for health information. Overall, the full model was also statistically significant ($\chi^2 [df=21] = 50.362, p<.001$), indicating the model was able to distinguish between those who did and did not use social media for health information. Technological acceptance factors improved the model, as the model as a whole explained 25.7% (Nagelkerke $R^2$) of the variance in social media use. Thus, the technology acceptance factors added
3.4% predictive power to the model. The full model at step 2 was able to correctly classify 71.8% of the cases.

Table 4-7 contains the regression coefficients for each variable and their 95% confidence intervals at each step. The entire model found five of the independent variables made unique, statistically significant contributions to the final model and predicted social media use; sex ($b = 1.007$), a high school education ($b = -1.564$), a post graduate education ($b = -1.575$), using a laptop ($b = .876$), and perceived usefulness of the Internet to find health information ($b = .435$). Sex and laptop computer use were statistically significant at each step, although the beta weights became attenuated after the additional variables were added to the model. Race ($b = -1.214$) was statistically significant at Step 1, but not in Step 2 after including the technology acceptance factors.

The strongest predictor was found to be sex (OR= 2.737, Wald= 8.272, $df =1$, $p=.004$), with females almost three times more likely to use social media for health information than men, even after controlling for all other factors in the model. Older adults reporting use of a laptop were 2.4 times more likely to use social media for health information than those who did not report using a laptop (OR= 2.402, Wald= 5.929, $df =1$, $p=.015$), all other factors being equal. High school graduates (OR= .209, Wald= 4.527, $df =1$, $p=.033$) and individuals with post college graduate education (OR= .207, Wald= 4.706, $df =1$, $p=.030$) were less likely to use social media than those who did not graduate high school.

Another statistically significant predictor of using social media for health information was perceived usefulness (OR =1.545, Wald= 6.610, $df =1$, $p=.010$). The model found that for every one point increase on the perceived usefulness scale, the
odds of using social media for health information increased by a factor of 1.5 when controlling for all other factors in the model. Perceived ease of use (OR=.915, Wald = .126, df =1, p=.722) did not predict social media use to a statistically significant degree, all factors being equal.

Summary

Chapter 4 presents telephone survey responses from older adults in the state of Florida regarding eHealth literacy and use of social media to locate or share health information. The study participants, aged 50-91 years, were primarily white and well educated. While the majority of participants reported being in good health, more than two thirds of the sample reported suffering from a variety of chronic diseases.

The present study found that the majority of respondents used the Internet to find health information, and believed the Internet was useful in helping make health decisions. Almost one third of the sample used some form of social media to locate or share health information. eHealth literacy scores and use of social for health information decreased with advanced age. Baby boomers and the Silent generation had higher eHealth literacy scores and social media use as compared to adults 75 and older. Older adults in the sample who used social media, especially those who used social networking sites (e.g., Facebook, Twitter) and online support groups, reported higher eHealth literacy than non-users of social media.

Data collected during this study revealed no association between either chronic disease status or the number of chronic diseases with eHealth literacy or social media use for health information. In addition, bivariate analyses revealed no statistically significant association between eHealth literacy and health status; however, non-users of social media reported higher perceived health status than social media users.
In multivariable analyses, age, education, desktop computer use, and laptop computer use were significant predictors of eHealth literacy, while sex, level of education, using a laptop, and perceived usefulness of the Internet were significant predictors of using social media for health information among this sample of older adults.

In Chapter 5, results will be discussed in depth, limitations will be identified, and implications for future health education research and practice will be suggested.
Table 4-1. Demographic characteristics of study participants.

|                      |  
|----------------------|---------------------|
|                      | n                  |
| **Gender**           | Valid %            |
| Female               | 128 45.2           |
| Male                 | 155 54.8           |
| **Age**              |                    |
| 50-64 (Baby Boomers) | 111 39.2           |
| 65-74 (Silent Generation) | 98 34.6           |
| 75 + (G.I. Generation) | 74 26.1           |
| **Marital Status**   |                    |
| Married              | 186 65.7           |
| Widowed              | 45 15.9            |
| Never Married        | 11 3.9             |
| Divorced or separated| 36 12.7            |
| No response          | 5 1.8              |
| **Ethnicity**        |                    |
| Yes- Spanish or Hispanic | 16 5.7          |
| No – Spanish or Hispanic | 264 93.3         |
| No response          | 3 1.1              |
| **Race**             |                    |
| White                | 252 89.0           |
| Black                | 10 3.5             |
| Asian or Pacific islander | 1 0.4           |
| American Indian or Alaska native | 3 1.1   |
| Other                | 6 2.1              |
| Multi-racial or mixed race | 7 2.5         |
| No response          | 4 1.4              |
| **Education**        |                    |
| Less than High school graduate | 19 6.7      |
| High school graduate/ GED | 48 17.0       |
| Some college/Assoc. degree | 82 29.0     |
| College graduate     | 70 24.7            |
| Postgraduate         | 63 22.2            |
| No response          | 1 0.4              |
| **Income**           |                    |
| Less than $19,999    | 30 10.6            |
| $20,000 to $49,999   | 82 29.0            |
| $50,000 to $99,999   | 80 28.3            |
| $ Over 100,000       | 58 20.5            |
| No response          | 33 11.7            |
Table 4-2. Devices used to look for health or medical information

<table>
<thead>
<tr>
<th>Device</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desktop Computer</td>
<td>143</td>
<td>50.5</td>
</tr>
<tr>
<td>Laptop Computer</td>
<td>120</td>
<td>42.4</td>
</tr>
<tr>
<td>Cell Phone</td>
<td>58</td>
<td>20.5</td>
</tr>
<tr>
<td>Mobile handheld (tablet, e-reader)</td>
<td>41</td>
<td>14.5</td>
</tr>
<tr>
<td>None or Didn’t know</td>
<td>73</td>
<td>25.8</td>
</tr>
</tbody>
</table>

Note: Participants could select more than one device.

Table 4-3. General health status of study participants.

<table>
<thead>
<tr>
<th>Health Status</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>62</td>
<td>21.9</td>
</tr>
<tr>
<td>Very Good</td>
<td>103</td>
<td>36.4</td>
</tr>
<tr>
<td>Good</td>
<td>71</td>
<td>25.1</td>
</tr>
<tr>
<td>Fair</td>
<td>30</td>
<td>10.6</td>
</tr>
<tr>
<td>Poor</td>
<td>14</td>
<td>4.9</td>
</tr>
<tr>
<td>Refused to answer</td>
<td>3</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Chronic Disease Status

| Yes                           | 197 | 69.6|
| No                            | 86  | 30.4|

Total Number of Chronic Diseases

| 0                             | 86  | 30.4|
| 1                             | 90  | 31.8|
| 2                             | 67  | 23.7|
| 3                             | 27  | 9.5 |
| 4 or more                     | 13  | 4.7 |

Type of Chronic Disease

| Arthritis or joint problems   | 109 | 38.5|
| High blood pressure           | 99  | 35.0|
| Diabetes                      | 46  | 16.3|
| Heart disease                 | 35  | 12.4|
| Asthma or other lung conditions | 29 | 10.2|
| Cancer                        | 20  | 7.1 |
| Stroke                        | 7   | 2.5 |
| Other chronic health condition | 17 | 6.0 |
Table 4-4. Means and standard deviations for eHEALS items among older adults in sample (n=283).

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
<th>Item-Total Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know what health resources are available on the Internet.</td>
<td>3.61</td>
<td>.906</td>
<td>.494</td>
</tr>
<tr>
<td>I know where to find helpful health resources on the Internet.</td>
<td>3.76</td>
<td>.855</td>
<td>.741</td>
</tr>
<tr>
<td>I know how to find helpful health resources on the Internet.</td>
<td>3.80</td>
<td>.862</td>
<td>.716</td>
</tr>
<tr>
<td>I know how to use the Internet to answer questions about my health.</td>
<td>3.82</td>
<td>.876</td>
<td>.702</td>
</tr>
<tr>
<td>I know how to the health information that I find on the Internet to help me.</td>
<td>3.81</td>
<td>.850</td>
<td>.767</td>
</tr>
<tr>
<td>I have the skills I need to evaluate the health resources I find on the Internet.</td>
<td>3.72</td>
<td>.933</td>
<td>.787</td>
</tr>
<tr>
<td>I can tell high quality health resources from low quality health resources on the Internet.</td>
<td>3.35</td>
<td>1.063</td>
<td>.682</td>
</tr>
<tr>
<td>I feel confident in using information from the Internet to make health decisions.</td>
<td>3.19</td>
<td>1.088</td>
<td>.594</td>
</tr>
</tbody>
</table>

Mean eHEALS score 3.63 .72

Note: Items rated on a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly Agree.

Table 4-5. Social media use for health information among older adults in sample (n=283).

<table>
<thead>
<tr>
<th>Social Media</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any form of Social Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>182</td>
<td>64.3</td>
</tr>
<tr>
<td>Yes</td>
<td>101</td>
<td>35.7</td>
</tr>
<tr>
<td>Social Networking Sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>187</td>
<td>66.1</td>
</tr>
<tr>
<td>Yes</td>
<td>96</td>
<td>33.9</td>
</tr>
<tr>
<td>Online Support Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>272</td>
<td>96.1</td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>3.9</td>
</tr>
<tr>
<td>Online Blogs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>277</td>
<td>97.9</td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Table 4-6. Multiple Linear Regression Predicting eHealth Literacy

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>30.116</td>
<td>4.567</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1.117</td>
<td>0.729</td>
<td>0.099</td>
</tr>
<tr>
<td>Age</td>
<td>-0.105</td>
<td>0.038</td>
<td>-0.187**</td>
</tr>
<tr>
<td>Marital status</td>
<td>-0.265</td>
<td>0.360</td>
<td>-0.049</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-0.276</td>
<td>1.430</td>
<td>-0.012</td>
</tr>
<tr>
<td>Race</td>
<td>0.047</td>
<td>1.230</td>
<td>0.002</td>
</tr>
<tr>
<td>Education level</td>
<td>0.934</td>
<td>0.313</td>
<td>0.197**</td>
</tr>
<tr>
<td>Income</td>
<td>0.069</td>
<td>0.427</td>
<td>0.012</td>
</tr>
<tr>
<td>Desktop computer use</td>
<td>2.231</td>
<td>0.739</td>
<td>0.199**</td>
</tr>
<tr>
<td>Laptop computer use</td>
<td>1.725</td>
<td>0.787</td>
<td>0.152*</td>
</tr>
<tr>
<td>Cell phone use</td>
<td>0.880</td>
<td>0.995</td>
<td>0.064</td>
</tr>
<tr>
<td>Tablet use</td>
<td>-0.014</td>
<td>1.106</td>
<td>-0.001</td>
</tr>
<tr>
<td>Total # of chronic diseases</td>
<td>0.038</td>
<td>0.307</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Note. $R^2 = .182$, $R^2_{adj} = .139$. * $p<.05$, ** $p<.01$. 
### Table 4-7. Logistic Regression Predicting Use of Social Media for Health Information

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th></th>
<th>Step 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>SE B</td>
<td>Exp (β)</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>.948</td>
<td>1.465</td>
<td>2.580</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-.033</td>
<td>.018</td>
<td>.968</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td>-.528</td>
<td>.635</td>
<td>.590</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td>-1.214</td>
<td>.574</td>
<td>.297*</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td></td>
<td>-.356</td>
<td>.502</td>
<td>.700</td>
</tr>
<tr>
<td>Never married</td>
<td></td>
<td>.120</td>
<td>.794</td>
<td>1.128</td>
</tr>
<tr>
<td>Divorced or separated</td>
<td></td>
<td>.535</td>
<td>.477</td>
<td>1.707</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduate</td>
<td></td>
<td>-1.309</td>
<td>.695</td>
<td>.270</td>
</tr>
<tr>
<td>Some college</td>
<td></td>
<td>-.808</td>
<td>.630</td>
<td>.446</td>
</tr>
<tr>
<td>4 years of college</td>
<td></td>
<td>-.625</td>
<td>.645</td>
<td>.535</td>
</tr>
<tr>
<td>Post graduate</td>
<td></td>
<td>-1.150</td>
<td>.666</td>
<td>.317</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$20,000 to $49,999</td>
<td></td>
<td>.855</td>
<td>.568</td>
<td>2.351</td>
</tr>
<tr>
<td>$50,000 to $99,999</td>
<td></td>
<td>.700</td>
<td>.612</td>
<td>2.014</td>
</tr>
<tr>
<td>Over $100,000</td>
<td></td>
<td>.940</td>
<td>.667</td>
<td>2.561</td>
</tr>
<tr>
<td>Desktop computer</td>
<td></td>
<td>.350</td>
<td>.329</td>
<td>1.420</td>
</tr>
<tr>
<td>Laptop computer</td>
<td></td>
<td>1.013</td>
<td>.347</td>
<td>2.753**</td>
</tr>
<tr>
<td>Cell phone</td>
<td></td>
<td>.064</td>
<td>.422</td>
<td>1.066</td>
</tr>
<tr>
<td>Tablet</td>
<td></td>
<td>-.287</td>
<td>.465</td>
<td>.751</td>
</tr>
<tr>
<td># of chronic diseases</td>
<td></td>
<td>.193</td>
<td>.137</td>
<td>1.213</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Ease of Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ R^2 \]  
\[ \Delta \ln R^2 \]  

*p < 0.05, ** p < 0.01
CHAPTER 5
DISCUSSION

Older adults in the United States, especially those with chronic disease(s), are a growing population in need of support for disease self-management. Given that the Internet is a readily available source for health information, new online health resources have emerged to improve older adult health. Therefore, the purpose of the present study was to explore eHealth literacy and social media use for health information seeking among older adults in the state of Florida. To date, the literature lack studies examining factors among older adults especially those with one or more chronic disease(s) that predict or explain eHealth literacy and use of social media for obtaining health information. To contribute to the identified gap in the literature, research using a cross-sectional survey sampled older adults to investigate the interrelationships between socio-demographic characteristics, device use, perceived health status, chronic disease status, eHealth literacy, and social media use for health information.

This chapter discusses study findings, along with acknowledged study limitations and recommendations for future health education research and practice in the field of health literacy research.

Discussion of Findings

Demographics

The study population consisted of mostly White (89%) males (54.8%), aged 50 - 91 years. The majority of the sample (93%) had at least a high school degree. Most participants (67%) were married, with 29% reporting being widowed or divorced. Thus, almost one third of the sample within this study reported not having a spouse.
Approximately 84% of participants described their overall health as good, which is comparable to national data, indicating 75.6% of U.S. adults 55 and older report good or better health (CDC, 2011). In spite of this, more than two thirds of the sample reported suffering from a variety of chronic diseases, and over half reported living with more than one chronic disease. Given that the presence and number of chronic disease increases with age, this was expected due to the age restriction of the study examining adults over the age of 50.

Over one third of participants reported living with arthritis (38.5%) and high blood pressure (35%), followed by diabetes (16.3%), heart disease (12.4%), asthma or other lung conditions (10.2%), cancer (7.1%) and stroke (2.5%). This data is similar to 2011 national data of adults 55 years and older, in which that almost half of older adults reported living with high blood pressure (54.1%) and/or arthritis (45.9%) (CDC, 2011).

Factors Associated with eHealth Literacy

Almost three-quarters of this sample (72%) reported using the Internet, which is also similar to findings from a nationally representative study of Americans reporting that 71% of adults 50-64 and 58% of older adults 65 and older use the Internet (Zickuhr & Madden, 2012). Among Internet users in this sample, nearly three fourths (72%) reported having used the Internet for health or medical information in the past 12 months. Interestingly, this finding is identical to findings reported in a larger national survey investigating adults’ use of the Internet and their use of the Internet for health information (Fox, 2012).

The samples’ eHealth literacy, as measured by eHEALS scores ($M=3.34$, $SD=.88$) reported in this sample are slightly higher, yet comparable to the eHEALS scores of older adults reported by Choi and DiNitto (2013) ($M=3.22$, $SD=.85$) and Neter
and Brainin (2012) \((M=3.34, \ SD=.88)\). Overall, respondents in the current study were confident in their ability to use the Internet to find health resources. However, this confidence did not extend to their ability to evaluate the quality of online health information or use online health information to make health decisions. These results mirror recent findings reported by Manafo and Wong (2012). Lack of confidence when using online health information suggests a need for effective eHealth literacy interventions focusing on increasing eHealth literacy capabilities and confidence in older adults (Miller & Bell, 2012; Xie, 2011) as opposed to addressing only computer access and technological skills (Manafo & Wong, 2012). Access and availability of the Internet are not the sole determinants of older adults’ ability to use the Internet effectively for health information (Zajac et al., 2012). If older adults have inadequate skills to discern which websites can be trusted, then there is a need for interventions and educational programs that teach older populations to search for online health information that is relevant, accurate, and tailored to their health needs and skills.

**eHealth literacy and demographic, device factors**

In this study, eHealth literacy in older adults was found to be influenced by age, education, and the use of desktop and laptop computers. These findings support the notion that demographics, educational background, and use of specific technologies all influence health literacy (IOM, 2004) and eHealth literacy (Norman & Skinner, 2006a). Not surprisingly, bivariate and multivariable analyses found an indirect relationship between eHealth literacy and advanced age. The Baby Boomers had significantly higher eHealth literacy scores than both other older generations; however, there was no significant difference between the Silent Generation and the G.I. Generation. This suggests that eHealth literacy scores may begin to decline after 65 years of age. This
may also be explained by the fact that abnormal cognition increases with age, which has also been found to be significantly associated with inadequate health literacy (Federman et al., 2009). Older adults in this age group may also have significantly less Internet experience and exposure.

Education level was another statistically significant predictor of eHealth literacy, with higher education level predicting higher eHEALS scores. This is not surprising considering education level has been shown to be a significant influence on both health literacy (IOM, 2004) and eHealth literacy (van der Vaart et al., 2013). Although having a higher level of education has been associated with more frequent health-related Internet use (Neter & Brainin, 2012; Powell et al., 2011), previous research has shown that higher education does not necessarily predict better Internet skills (van Deursen et al., 2011; Neter & Brainin, 2012). Therefore, more research is needed to determine whether educational level and eHealth literacy are associated.

Desktop and laptop computer use were significantly associated with increased eHealth literacy among older adults in this sample. As previously stated, eHealth literacy is thought to be comprised of six core literacies: traditional, health, information, scientific, media and computer (Norman & Skinner, 2006a). The notion that computer literacy is “dependent upon what type of computer is used” (Norman & Skinner, 2006a, p.3), is partially supported and explained by the results from this cross-sectional study. Findings from this study suggest computer literacy may be a larger “petal” or perhaps even the “stem” of eHealth literacy in older adults. However, it is likely the developers of eHealth literacy Lily Model would argue that eHealth literacy is a “learning system” and should not be examined in parts (Norman, 2011). Regardless, an updated definition of
eHealth literacy or an additional ‘eHealth literacy 2.0’ term is needed to add to account for the changing literacies and evolving participative online social context of health information (Norman, 2011).

Another interesting finding among the older adults in this study relates to the lack of association between certain socio-demographic variables and eHealth literacy. Findings reveal a lack of association between eHealth literacy and race, ethnicity, and income which suggests factors influencing eHealth may be those that traditionally have influenced health literacy (i.e. age, education), and not necessarily factors historically believed to negatively influence the digital divide (i.e. race, ethnicity, income). These results provide further evidence that “eHealth literacy hinges not on the digital divide by rather on the knowledge gap, thus… information technology is creating a new social inequality, rather than leveling out social discrepancies” (Neter & Brainin, 2012, p.2). Data from this study demonstrate the need for health programs and interventions that promote additional engagement, practice, and education regarding Internet health information for older adults rather than just promoting access to the Internet (Choi & DiNitto, 2013; Manafo & Wong, 2012).

**eHealth literacy and chronic disease/health status**

Having a chronic disease appears to promote Internet use for health information, yet none of the health related variables in this study were associated with eHealth literacy. eHealth literacy was not related to the presence of chronic disease, the number of chronic diseases a respondent reported living with, or self-reported perceived health status. These findings contradict the claim that eHealth literacy “is influenced by a person’s presenting health issue” and “health status at the time of the eHealth encounter” (Norman & Skinner, 2006a, p.3). Previous research indicates that the
frequency of seeking health information on the Internet increases with the number of specific health problems (Rice, 2006; Ayers & Kronenfeld, 2007; Choi & DiNitto, 2013). It has been suggested that eHealth literacy is “static” (Norman & Skinner, 2006a) and individual skills and health status are constantly changing, thus additional longitudinal studies are needed to assess the relationship between eHealth literacy and health outcomes.

It is somewhat surprising that eHealth literacy did not influence health status, especially given that previous research has shown limited health literacy leads to worse overall health status and higher mortality rates among older adults (Berkman et al., 2011). In fact, low health literacy has been found to affect a person’s health status more than any other factor, including education, income, employment or race (AMA, 1999). Given that eHealth literacy is influenced by many of the same socio-demographic factors of health literacy, one may expect that they the health consequences of health literacy and eHealth literacy would be similar, but it seems the “outcomes and benefits of using the Internet for health purposes may extend the traditional outcomes of health literacy” (Neter & Brainin, 2012, p. 2). Therefore, additional research is needed to determine the health outcomes of eHealth literacy, opposed to just the health outcomes of health literacy.

Chronic disease status has also been previously associated with eHealth literacy. Neter and Brainin (2012) found that participants (independent of age) who were chronically ill had significantly lower eHealth literacy scores as compared to respondents with no reported chronic illness, even though perceived health did not vary with eHealth literacy. Another study utilizing the eHEALS instrument found negative
associations between chronic disease (depression diagnosis) and eHEALS scores (Choi & DiNitto, 2013). Data from the current study revealed no relationship between chronic disease status and eHealth literacy. These contradictory findings warrant additional research exploring relationships between chronic disease, health status, health literacy, and eHealth literacy.

Factors Associated with Social Media Use for Health Information

Over one third of participants (35.7%) indicated that they used some form of social media to locate or share health information in the last 12 months. This finding is in line with prior research of U.S. adults, in which 40% of the sample indicated that social media was “likely” or “very likely” to impact their future health care decisions (Fuscaldo, 2011).

Among social media users the vast majority (90%) reported using only one form of social media, namely social networking technologies such as Facebook and Twitter. This is similar to findings from a 2011 Pew Internet survey which found among Internet users ages 50 and older 42% had used online social networking tools in the past year (Madden, 2010).

Demographic, device factors, and social media use

Social media use for health information was found to be influenced by age, sex, education, and laptop computer use. Bivariate analyses showed social media use differed among generations, with use among older adults decreasing with age, with use especially declining after the age of 75. This is not surprising since, Kontos and colleagues (2010) also found younger age to be the “primary driving factor” (p.7) of social networking use among adults, with use decreasing with age. Interestingly, there were no statistically significant differences between the Baby Boomers (50-64 years)
and the Silent Generation (65-74 years) in terms of social media use, yet the Silent Generation respondents were more likely to use social media than the G.I. Generation (75 and older). While social media use declines with age, this finding suggests that the use of social media for health information does bridge some generational gaps and its use extends beyond just Baby Boomers. These findings provide evidence of ‘the graying of social networking sites’ (Boulos, 2012), and that it may be an opportune time to utilize social media as a health promotion tool for older adults.

Females were almost three times more likely to use social media for health information than men. Relatively few studies have explored gender differences in regards to social media use. Cho and colleagues (2009) found gender was not associated with general social media, while Elkin (2008) found men were more likely than women to use online social media to research health and wellness issues. However, a national survey found that since 2009, women have been more likely than men to use social networking sites in general. A December 2012 study found that women use social media 9% more than men do (Duggan & Brenner, 2013). In this study, it was also noted that women use social media for health information almost 22% more than men. This may be a result of the fact that women are the “primary (health) information seekers not only for themselves but also for loved ones” (Baur, 2008). Now, in the age of social media, researchers should consider developing social media applications that target women’s personal health needs, as well as, their needs as caregivers. Additional research is needed to determine the role gender plays in social media use for health information.
Interestingly, race and ethnicity were not statistically significant predictors of social media use for health information among older adults. This finding matches trends in larger surveys which noted that Whites, African Americans, and Latinos are equally likely (once online) to use social networking sites (Fox & Jones, 2009). Kontos et al. (2010) found reverse trends in social networking site use, with higher frequencies of use seen among racial/ethnic minorities and those with lower education and income levels. In fact, Chou and colleagues (2009) found non-white Americans Internet users were more likely to use social media than white Internet users. In the current study race and ethnicity may not have emerged as significant predictors due to the age restriction and lack of diversity in the sample. Nevertheless, social media is consistently used regardless of many socio-demographic characteristics (Kontos et al., 2010) and thus should be leveraged as a health promotion tool for older adults.

Surprisingly, using a laptop computer was a statistically significant predictor of older adults using social media for accessing health information. However, over one-third of the sample (35%) reported using mobile devices (cell phones, tablets, etc) to look for health information and a recent Nielsen study found that 40% of social media consumption was via a mobile application or the mobile web (Nielsen Company, 2012). Thus, it will be interesting to observe changes in mobile technology use in next several years, as mobile Internet usage is projected to overtake conventional desktop Internet use by 2015 (Charlton, 2012). The type of Internet device used for health information continues to change rapidly, as there are a growing number of seniors who own cell phones (Zickuhr & Madden, 2012). Currently, 12% of adults age 65+ and 32% of those ages 50-64 years old own a Smartphone (Fox, 2012). Evidence suggests minority
populations may have an even higher uptake of mobile technology (Gibbons et al., 2011). Smartphones and their apps are rapidly transforming healthcare, especially the care of patients with chronic conditions (Boulos, 2012). Therefore, additional research is needed to see how the adoption of mobile technology affects social media use for health information.

Of note, income was not a significant predictor of social media use for health information in the multivariate analyses. This challenges recent research which found income to be a significant factor predicting the use of social media for health information among older adults. Households earning $75,000 or more were found to be more likely to turn to social media for health care information than households with smaller incomes (Fuscaldo, 2011). Additional empirical studies are needed to determine which socio-demographic and device use factors predict social media use for health information in order to develop and promote health via social media.

Social media use and chronic disease/health status

In this study, older adults who did not use social media had better perceived health status than those who did use social media. Previous research found that older adults with poorer self-reported health status had higher rates of using online support groups (Chou et al., 2009). Social media may be a good source of outreach and support among those with lower self-reported health status. Additional research is needed to understand the benefits from online health promotion programs and support groups that target individuals with lower health status.

Data obtained in this study reveal no statistically significant association between social media use and the presence of chronic disease. This finding contradicts the review of the National Health Information National Trends Survey data which showed
individuals with a history of cancer had a 43% lower odds of using social networking sites compared to individuals with no history of cancer even after controlling for age (Kontos et al., 2010). However, among the sample, living with a chronic disease did not predict an individual’s decision to use social media for health information. These findings contrast with Pew Internet data which showed that living with chronic disease increases the probability that an Internet user will blog or contribute to an online discussion or group forum about health (Fox & Purcell, 2010). Additional research is needed to determine how social media use can influence older adults’ perceived health status and affect self-management of a variety of chronic diseases.

**Perceived Usefulness and Perceived Ease of Use**

The Technology Acceptance Model (TAM) posits that perceived ease of use and perceived usefulness are fundamental determinants predicting application usage (Lederer et al., 2000). Perceived usefulness and perceived ease of use are independent constructs that influence technology usage behavior (Kufafka et al., 2003). Models of technology acceptance recognize demographic factors and perceptions play a role in people’s decisions to adopt or reject technologies (Miller & Bell, 2012). This study used the principle of the TAM to explore individuals’ perceived ease of use and usefulness of the Internet for health information to determine whether these perceptions were associated with the use of social media for health information.

Results of this study are in part consistent with TAM. The majority of respondents (62.2%) found the Internet to be useful or very useful in helping to make decisions about their health. However, 37% of Internet users were unsure or did not find the Internet to be useful in helping with health decision making. These results are comparable with other studies such as Manafo and Wong (2012) who found that 67% (n=32 of 48) of
older adults found the Internet useful or very useful in helping to make health decisions. In another study of Medicare website usability (Czaja, Sharit, & Nair, 2008), 95% of older adults reported that the Internet was a valuable tool for finding health information.

In the present study, perceived ease of use was significantly correlated with perceived usefulness of the Internet to find health information. A logistic regression analysis found that only perceived usefulness predicted social media use for health information among older adults; however, ease of use of the Internet for health information was not statistically significant. This finding is comparable to other TAM studies that noted ease of use did not significantly impact usage (Nayak, Priest, & White, 2010; Martinez-Torres et al., 2008). Previous researchers suggest that once an older adult begins use of the Internet for health information, they may not diversify to other activities. Older adults may become proficient in using simpler Internet activities (email, using search engines) and stick to those activities as opposed to using more advanced technologies, such as social media and thus not be affected by the ease of use (Nayak, Priest, & White, 2010). Earlier research also suggests that “perceived ease of use may be a causal antecedent to perceived usefulness, as opposed to a parallel, direct determinant of usage” (Davis, 1989). This may explain why ease use of not a significant predictor of social media use for health information in this study. For older adults to fully embrace and benefit from social media use, social media applications should focus more on user friendliness in the design of the application to increase user acceptance of platforms that promote health information on chronic disease.

**Relationship between eHealth Literacy and Social Media Use**

As expected, older adults who reported using social media also had higher eHealth literacy scores, especially among those who reported use of social networking
and online support group applications. However, access to the Internet and Web browsing does not guarantee that an individual will be able to properly understand and evaluate online health information and make competent decisions based on this information (Knapp et al., 2011; Stellefson et al., 2011). Although data from this study suggests that using social media may increase eHealth literacy among older adults. Older adults who utilize social media for health information may develop greater computer and media literacy skills than those who do not use social media. Previous eHealth literacy research indicates that the “more an individual uses technology, the more likely they are to develop skills in using that technology as a tool” (Norman & Skinner, 2006b, p. 3). Additional longitudinal research is needed to examine the frequency of social media use, the different types of social media tools that are used, and how social media use may influence on eHealth literacy among older adults over time.

**Health as an Outcome of Communication**

The Structural Influence Model of Health Communication (SIMHC) is based on the premise that communication is the critical link between social determinants and health outcomes. One of the key dimensions of the model is that health outcomes are affected by not only access to computers and the Internet, but also by the ability to properly navigate the Internet (Kontos, Bennett, & Viswanath, 2007). Among individuals with chronic disease in this study, there was no association found between eHealth literacy or social media use for health information and health status. In fact, among the entire sample, older adults who did not use social media reported slightly higher perceived health status than those who did use social media. Therefore, eHealth
literacy and social media use for health information may not affect health status of older adults as much as might be suggested by the SIMHC.

**Implications**

Although eHealth literacy, “is as much a process as an outcome and requires constant attention and upgrading” (Norman & Skinner, 2006a, p.5), the findings from this study highlights some of the opportunities and challenges that the public health community faces in moving forward with the design, implementation, and evaluation of online applications that improve self-management adherence among older adults with chronic disease.

**Recommendations for Future Research**

More empirical studies are needed to understand how and why older adults with chronic disease(s) use the Internet, as well as how the Internet affects health-related decision making. The data presented in this study clearly illustrates the importance of furthering research that examines the use of social media by older adults seeking for health information. There is much to learn about how social media can enhance health as there are a limited number of empirical studies that document the effects of social media use on health among older populations. In this study, more than a third of older adults used social media to locate or share health information. Older adults reporting lower perceived health status were more likely to turn to social media. It is expected that these trends will continue to grow; thus, additional research is needed to determine what particular social media applications are being used by older adult to locate and evaluate health information Health education researchers need to know how, when, where, why, and what social media is being used by older adults with chronic disease.
Future research should also focus on designing and validating programs to increase eHealth literacy, especially those aimed at improving health outcomes among older adults with chronic disease. Few would argue that being eHealth literate requires a skill set all its own (Norman & Skinner, 2006a). However, while eHealth literacy has been defined as a skill set that consists of six literacies that work together, data from this study highlighted a that two types of literacies (computer and media) may have a stronger impact on eHealth literacy than the other dimensions. Future research should assess how eHealth literacy is measured in older adults to determine whether all six literacy types are important to consider.

In addition, limited research has been conducted on the connection between disparities in health outcomes regarding eHealth literacy or social media use for health information. While the access gap is narrowing, research is needed to explore other dimensions of communication inequality (Kontos, Bennett, & Viswanath, 2007). Many of the known factors associated with low health literacy (income, race, health status, chronic disease status) were not associated with lower levels of eHealth literacy in this study. This may be because a new social inequality revolves around the knowledge gap in the skills associated with eHealth literary and not the digital divide (Neter & Brainin, 2012). eHealth literacy may constitute a second divide (Neter & Brainin, 2012), hence it is important for researchers to fully understand and measure eHealth skills in order to prevent further health inequalities. Furthermore, more research is needed to identify the role of eHealth literacy and social media use play in affecting overall health outcomes. The lack of studies in this particular area may be due to the relative infancy of investigating eHealth literacy and social media use in older adults.


**Implications for Health Educators**

This study’s findings provide important data for health education professionals who utilize health information technology to improve older adult health, particularly in chronic disease prevention and management. The utilization of health information technology to improve health outcomes is a national health priority (Healthy People 2020), which has shifted focus from the digital divide to concerns about digital usage and associated online skills (Neter & Brainin, 2012). Health educators need to focus their efforts on awareness, measurement, and education with regard to improving eHealth literacy skills for older adults and those with chronic disease(s). eHealth literacy has the capacity “to empower individuals and enable them to fully participate in health decisions informed by eHealth resources” (Norman & Skinner, 2006a, p.3). It is imperative for health educators to develop interventions and programs to increase eHealth literacy, especially among older adults with chronic disease who have much to gain from online health information resources.

As findings from this study suggest, older generations have already begun to adopt Internet technologies for health information; thus, health educators need to go where the people are. With almost half of older adults report living with high blood pressure and/or arthritis (CDC, 2011), it seems critical to have online resources for managing these conditions.

It is important that health educators and health providers collaborate at multiple levels (e.g., patients, nurses, health educators, doctors, web developers) to develop applications designed to meet the skill levels of older adults. In addition, doctor’s offices, libraries, senior centers, offer online eHealth literacy courses to improve eHealth literacy skills of older adults and those with chronic diseases. In addition to skill sets, as findings
from this study reveal, it is also important to consider age, education level, and gender when developing elder health resources on the Internet. When developing online applications, researchers should know their target audience and use plain language, large fonts, and clear messages to address the needs of older adults with different levels of education (CDC, 2012). When planning research studies, investigators should also recognize that women are more likely than men to use social media for health information. It is important to explore different ways to attract men to using social media as a health promotion tool.

**Limitations of the Study**

Although the current study extends prior research, study limitations must be acknowledged. First, because data were collected over the telephone, the types of items that could be included in the survey were somewhat restricted (i.e. more exploratory, open-ended questions were not able to be asked) However, this method did allow the researcher to reach a large sample of older adults throughout the state of Florida. Second, the cross-sectional design of the study does not allow for the formulation of causal conclusions. Also, due to limitations in the number of items that could be included in the telephone survey, this study did not account for participants’ Internet access or frequency of Internet use for health information. Previous research has found that significantly more frequent access to computers and the Internet resulted in higher eHealth literacy (Neter & Brainin, 2012; Choi & DiNitto, 2013) and positive health behavior changes (Ayers & Kronenfeld, 2007). Frequency of Internet use and type of Internet access could interact with the variables under consideration in this study.
The fourth limitation involves use of the eHEALS instrument to assess eHealth literacy. The eHEALS instrument is based on an individual’s perception of personal eHealth literacy skills and knowledge (van Deursen & van Dijk, 2011) rather than actual eHealth literacy skills. Recent research has questioned the validity of the eHEALS tool (Chan & Kaufman, 2011; van der Vaart et al., 2011). When eHEALS was developed, social media was still in its infancy. While the eHEALS is a valuable instrument for assessing Web 1.0 skills, it is unclear how it fits with Web 2.0 technologies (Norman, 2011). A more comprehensive research instrument is needed to assess frequency of use, types of information sought, and goals of online health information seeking, especially considering the new relevance of social media use (Miller & Bell, 2012).

Another limitation is related to the landline sampling frame. This sampling frame excluded a large proportion of the population who only own mobile phone. In 2011, model estimates found over a third (34.4%) of adults in the state of Florida only had wireless telephone and did not have household landlines (Blumberg et al., 2012). These individuals may have been more eHealth literate and social media savvy. In addition, given that all participants in the present sample reported having some prior Internet experience, it may have rendered some of the variables non-significant.

Finally, the sixth limitation has to do with the demographic makeup of the sample. Relatively few older adults from diverse racial and ethnic backgrounds were included in the sample, and the minority representation was somewhat lower than what would be expected in the state of Florida. In Florida, 15% of adults over the age of 50 are of Hispanic or Latino ethnicity (U.S. Census Bureau, 2011). In this study, only 5.7% self-identified as being Hispanic or Latino ethnicity. Alternative, non-landline telephone
survey, methods are needed to reach the this population given that Hispanic adults are more likely than non-Hispanic white adults to be living in households with only wireless telephones (Blumberg & Luke, 2012). Consequently, the findings from this study may not be representative of the older population as a whole, and the results should be generalized with caution.

**Conclusion**

Over half of older adults suffer from multiple chronic conditions, and need health information about multiple diseases/disorders. Older adults with chronic disease(s) are already turning to the Internet and social media for health information, and it is important to understand their skill sets to find and evaluate online health information among this underserved audience. Despite limitations, the present study is the first to provide a detail description of eHealth literacy and social media use for health information among older adults. This study represents a systematic effort to examine eHealth literacy and social media use for health information among older adults with chronic disease.

The present investigation revealed a link between using social media for health information and health status. The findings of this study also emphasize the importance of clarifying the role of health and socio-demographic factors as covariates explaining and/or predicting eHealth literacy and social media use for health information among older adults. Social media has become a leading communication platform and will continue to attract adult users across all segments; thus, it is important to understand social media’s impact on health information seeking in older adults.

The Internet, including social media applications, has the potential to improve health outcomes for older adults with chronic disease. Yet, much research is still
needed to further understand the full influence of online health information seeking and social media use on health behaviors and decision making in the older adult population.
APPENDIX A
EHEALS AND SOCIAL MEDIA SURVEY ITEMS

eHealth literacy and social media items added to the Florida Consumer Confidence Survey:  For adults age 50+

1. Do you ever go on-line to access the Internet or World Wide Web, or to send and receive e-mail?
   1 Yes
   2 No (Go to Question 14)
   -8 Don’t Know
   -9 Refused

2. In the past 12 months, have you used the Internet on any of the following devices to look for health or medical information for yourself? (Check all that apply)
   1 Desktop Computer
   2 Laptop Computer
   3 Cell phone
   4 Mobile handheld device like an, e-reader, or tablet
   -8 Don’t Know
   -9 Refused

3. In the last 12 months, have you used the Internet for any of the following reasons to locate or share health information? (Check all that apply)
   1 Participated in an on-line support group?
   2 Used a social networking site like Facebook, Twitter, or LinkedIn.com?
   3 Wrote in an online diary or blog?
   -8 Don’t Know
   -9 Refused

Now, I would like to ask you for your opinion and about your experience using the Internet for health information. For each statement, tell me which response best reflects your opinion and experience right now.

4. How useful do you feel the Internet is in helping you in making decisions about your health?
   1 Not useful at all
   2 Not useful
   3 Unsure
   4 Useful
   5 Very Useful
   -8 Don’t Know
   -9 Refused
5. I know **what** health resources available on the Internet.
   1 Strong Disagree  
   2 Disagree  
   3 Undecided  
   4 Agree  
   5 Strongly Agree  
   -8 Don’t Know  
   -9 Refused

6. I know **where** to find helpful health resources on the Internet.
   1 Strong Disagree  
   2 Disagree  
   3 Undecided  
   4 Agree  
   5 Strongly Agree  
   -8 Don’t Know  
   -9 Refused

7. I know **how** to find helpful health resources on the Internet.
   1 Strong Disagree  
   2 Disagree  
   3 Undecided  
   4 Agree  
   5 Strongly Agree  
   -8 Don’t Know  
   -9 Refused

8. I know **how to use** the Internet to answer questions about my health.
   1 Strong Disagree  
   2 Disagree  
   3 Undecided  
   4 Agree  
   5 Strongly Agree  
   -8 Don’t Know  
   -9 Refused

9. I know how to use **the health information** that I find on the Internet to help me.
   1 Strong Disagree  
   2 Disagree  
   3 Undecided  
   4 Agree  
   5 Strongly Agree  
   -8 Don’t Know  
   -9 Refused
10. I have the skills I need to **evaluate** the health resources I find on the Internet.
   1 Strong Disagree
   2 Disagree
   3 Undecided
   4 Agree
   5 Strongly Agree
   -8 Don’t Know
   -9 Refused

11. I can tell **high quality** health resources from **low quality** health resources on the Internet.
   1 Strong Disagree
   2 Disagree
   3 Undecided
   4 Agree
   5 Strongly Agree
   -8 Don’t Know
   -9 Refused

12. I feel **confident** in using information from the Internet to make health decisions.
   1 Strong Disagree
   2 Disagree
   3 Undecided
   4 Agree
   5 Strongly Agree
   -8 Don’t Know
   -9 Refused

The next question is about chronic health conditions that may affect you.

13. Are you now living with any of the following health problems or conditions?

   [CODE ALL THAT APPLY]
   [PROBE: Any others?]
   1 Diabetes or sugar diabetes
   2 High blood pressure
   3 Asthma, bronchitis, emphysema, or other lung conditions
   4 Heart disease, heart failure or heart attack
   5 Cancer
   6 Stroke
   7 Arthritis or joint problems
   -8 Don’t Know
   -9 Refused
APPENDIX B
FLORIDA CONSUMER CONFIDENCE SURVEY 2013

Question HELLO

Hello, my name is______________. I'm calling from the University of Florida. (This is not a sales call.)

(We're conducting research regarding the state of the economy and other issues in Florida.) (This is not a sales call.)

(INT: PRESS 1 TO CONTINUE SURVEY
PRESS 3 IF THIS IS A SPANISH SURVEY)

PRESS CTRL/END TO END SURVEY

Hello, this is______________ from the University of Florida. This is not a sales call.

(INT: THIS CALL COULD BE A PARTIAL-COMPLETE)

(INT: PRESS 1 TO CONTINUE SURVEY
PRESS 3 IF THIS IS A SPANISH SURVEY)

[IF (ANS = 1) SKIPTO HOME]

Question LANG

(INT: YOU CODED THIS SURVEY AS A *SPANISH* CASE. IF THIS IS NOT CORRECT, USE MOUSE TO CLICK ON BACK KEY IN THE LOWER LEFT HAND OF THE SCREEN AND RE-CODE THIS CASE CORRECTLY.)

(INT: PRESS 1 TO CONTINUE WITH SURVEY IN SPANISH
PRESS 2 TO END SURVEY; CODE CASE AS CALLBACK)

[IF (ANS = 1) ALTERNATE "spanish"]
[IF (ANS = 2) CTRLEND]

Question IRB1

The University is conducting research about economic conditions and other issues in Florida and we would like your opinion.

(We’re conducting research regarding the state of the economy and other issues in Florida.) (This is not a sales call.)

First, I need to know if you are 18 years old or older?

(INT: READ CHOICES IF NECESSARY)
1 YES, 18 YEARS OLD OR OLDER
2 NO, UNDER 18 YEARS OLD

[IF (ANS = 1) SKIPTO MALE]

Question ADLT
May I speak to someone 18 years old or older who lives there?

(INT:)
PRESS 1 IF PERSON PASSES THE PHONE
PRESS 2 IF ELIGIBLE ADULT IS NOT HOME, ASK FOR A CALLBACK DATE & TIME AND CODE CASE AS "CALLBACK"
PRESS 3 TO END SURVEY IF NO ELIGIBLE ADULTS LIVES THERE AND CODE CASE AS "NO ELIGIBLE RESPONDENT"

[IF (ANS = 1) SKIPTO HELLO]

Question MALE
According to the research method being used by the university I need to ask some questions of the YOUNGEST MALE age 18 or older who is currently home and lives there.

May I speak with him?

(The University is conducting research about economic conditions and other issues in Florida and we would like your opinion)

(INT:)
PRESS 1 TO CONTINUE WITH YOUNGEST MALE 18+ WHO IS CURRENTLY HOME
PRESS 2 IF YOUNGEST MALE NOT HOME OR NO ADULT MALE LIVES THERE
PRESS 3 IF PERSON PASSES THE PHONE
PRESS 4 IF YOUNGEST MALE IS HOME BUT UNAVAILABLE, ASK FOR A CALLBACK DATE & TIME AND CODE CASE AS "CALLBACK".
PRESS 5 IF YOUNGEST MALE OR PERSON REFUSES, OR YOUNGEST MALE IS PHYSICALLY/MENTALLY UNABLE, CODE CASE APPROPRIATELY)

[IF (ANS = 1) SKIPTO IRB2]
[IF (ANS = 2) SKIPTO FEMALE]
[IF (ANS = 3) SKIPTO HELLO]

Question FEMALE
May I speak with the OLDEST FEMALE age 18 or older that is currently home and lives there?

(The University is conducting research about economic conditions and other issues in Florida and we would like your opinion)

(INT: Press 1 to continue with YOUNGEST FEMALE 18+ who is currently home
Press 2 if person passes the phone
Press 3 if there is no adult age 18 or older available, ask for callback date & time and code case as "callback"
Press 4 if oldest female or person refuses, or oldest female is physically/mentally unable. Code case appropriately)

[IF (ANS = 1) SKIPTO IRB2]
[IF (ANS = 2) SKIPTO HELLO]

Question IRB2
Your phone number was selected at random by computer, and only your first name will be used to ensure confidentiality.

You do not have to answer any question you do not wish to answer and I want you to know this call may be recorded for quality control

(survey should take less than 10-15 minutes)

Have I reached you on your HOME telephone?

(INT: We can conduct interviews with home based business)

(INT: Press 1 if yes, home phone or home based business
Press 2 to end survey and code case appropriately
Press 3 if resp says we've reached them on their cell phone)

[IF (ANS < > 3) SKIPTO RNAM]

Question CALLFWD
Is this phone number being forwarded from your home landline telephone?

(INT: Press 1 if yes
Press 2 if no; code case as 'cell phone')

[IF (ANS = 2) CTRLEND]
Question RNAM
May I have your first name?

(INT: TYPE NAME THEN PRESS ENTER TO CONTINUE)

(Only your first name will be used to ensure confidentiality)

Question ISEX
RECORD SEX OF RESPONDENT

(INT: ASK IF NECESSARY)

Are you…

(INT: READ CHOICES IF NECESSARY)

1 Male
2 Female

Question AGE
And what is your age?

(18-110)
-9 Refused

Question CURFIN
We are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better off or worse financially than you were a year ago?

1 Better off
2 Same
3 Worse off
-8 Don't Know
-9 Refused

Question FUTFIN
Now, looking ahead -- do you think that a year from now you (and your family living there) will be better off financially, or worse off, or just about the same as now?
1 Better off  
2 Same  
3 Worse off  
-8 Don't know  
-9 Refused

Question USFUF1  
Now turning to business conditions in the country as a whole  
-- do you think that during the next 12 months we'll have good times financially, or bad times, or what?  

1 Good times  
2 Good with qualifications  
3 Uncertain; Good and Bad  
4 Bad times  
5 Bad with qualifications  
-8 Don't know  
-9 Refused

Question USNEX5  
Looking ahead, which would you say is more likely -- that in the country as a whole we'll have continuous good times during the next five years or so, or that we will have periods of widespread unemployment or depression, or what?  

1 Good times  
2 Good with qualifications  
3 Uncertain; Good and Bad  
4 Bad times  
5 Bad with qualifications  
-8 Don't know  
-9 Refused

Question GBTIME  
About the big things people buy for their homes -- such as furniture, refrigerators, stoves, televisions, and things like that. Generally speaking, do you think now is a good or a bad time for people to buy major household items?  

1 Good time  
2 Uncertain  
3 Bad time  

-8 Don't know  
-9 Refused

Question ZIPCOD
The next few questions are about living in Florida

What is your Zip Code in Florida (5-digit)?

(32000-35000)
-8 Don't Know
-9 Refused

Question SNOWBD
Is Florida your usual place of residence? By usual residence I mean your primary residence, or the place where you live and sleep most of the time.

(INT: READ CHOICES IF NECESSARY)

1 Yes
2 No
-8 Don't Know
-9 Refused

[IF (ANS = 1) SKIPTO PCOUNT]
[IF (ANS < 1) SKIPTO UNLST]

Question FLSNOHS
What kind of housing unit do you live in when you are IN Florida?
Is it a mobile home or trailer, a one family house detached from any other house, a one family house attached to one or more houses on one or more sides, an apartment building, hotel/motel, or other.

(INT: IF RESP. SAYS "ONE FAMILY 'UNATTACHED'" YOU MAY SELECT "ONE FAMILY DETACHED").

(INT: READ CHOICES IF NECESSARY)

1 Mobile home or trailer
2 One family detached
3 One family attached
4 Building with 2-4 apartments or condos
5 Building with 5 or more apartments or condos
6 Hotel/motel
7 Van/RV
8 Boat
9 Other
-8 Don't know
-9 Refused

Question FLSNOWN
Do you or your family own that housing unit?
(INT: READ CHOICES IF NECESSARY)
1 Yes
2 No
-8 Don't know
-9 Refused

Question PCOUNTSB
Including yourself, how many people who are not usual residents of Florida are currently living in this housing unit?

(1-20)
-8 Don't Know
-9 Refused

Question PCNPERM
Are any of the people living with you permanent residents of Florida?
(that is, Florida is their usual place of residence?)

(INT: READ CHOICES IF NECESSARY)
1 Yes
2 No
-8 Don't Know
-9 Refused

[IF (ANS < 1) SKIPTO MONTFL]

Question PCNPMNU
How many?

(1-20)
-8 Don't Know
-9 Refused

Question MONTFL
How many months do you intend to spend in Florida during your current visit?

(INT: IF LESS THAN ONE MONTH ENTER ‘0’
     IF MORE THAN 11 MONTHS ENTER ‘12’)

(0-12)
-8 Don't Know
-9 Refused
Question MONTHFL
   Which months will you be in Florida?

   (INT: IF RESPONDENT KNOWS WHEN THEY WILL BE IN FLORIDA
      BUT REFUSES TO ANSWER, ENTER ‘-9’)

   1  RESPONDENT GIVES LIST OF MONTHS

      -8  Don't Know
      -9  Refused

   [IF (ANS < > 1) SKIPTO RESTYR]

Question MONTHFL2
   (Which months will you be in Florida?)

   (INT: IF RESPONDENT KNOWS WHEN THEY WILL BE IN FLORIDA
      BUT REFUSES TO ANSWER, GO BACK TO PREVIOUS QUESTION AND
      ENTER ‘-9’)

   JANUARY
   FEBRUARY
   MARCH
   APRIL
   MAY
   JUNE
   JULY
   AUGUST
   SEPTEMBER
   OCTOBER
   NOVEMBER
   DECEMBER
   DON'T KNOW
   NO MORE

Question RESTYR
   What is your primary state or country of residence during the months
   you are not living in Florida?

   (INT: READ CHOICES IF NECESSARY)
   (INT: IF IT'S NOT A STATE IN THE U.S. JUST READ THE REST OF THE LIST)

   1  Alabama  21 Maryland  41 South Carolina  -9 Refused
   2  Alaska   22 Massachusetts 42 South Dakota
   3  Arizona  23 Michigan   43 Tennessee
   4  Arkansas 24 Minnesota  44 Texas
20 California 25 Mississippi 45 Utah
6 Colorado 26 Missouri 46 Vermont
7 Connecticut 27 Montana 47 Virginia
8 Delaware 28 Nebraska 48 Washington
9 DC 29 Nevada 49 West Virginia
10 Florida 30 New Hampshire 50 Wisconsin
11 Georgia 31 New Jersey 51 Wyoming
12 Hawaii 32 New Mexico 52 Canada
13 Idaho 33 New York 53 Central America
14 Illinois 34 North Carolina 54 Caribbean
15 Indiana 35 North Dakota 55 Europe
16 Iowa 36 Ohio 56 Asia
17 Kansas 37 Oklahoma 57 Africa
18 Kentucky 38 Oregon 58 South America
19 Louisiana 39 Pennsylvania 59 Other
20 Maine 40 Rhode Island 8 Don't Know

[IF (SNOWBD = 2) SKIP TO COUNTY]

Question PCOUNT
Including yourself, how many people usually reside at your place of residence?

INTERVIEWER, IF THE RESPONDENT IS CONFUSED ABOUT WHO COUNTS AS A USUAL RESIDENT, READ THE FOLLOWING IN ITS ENTIRETY.

PLEASE INCLUDE ALL BOARDERS, LODGERS, INFANTS AND OTHER FAMILY MEMBERS WHO USUALLY RESIDE HERE, INCLUDING THOSE WHO ARE TEMPORARILY AWAY ON VACATION, A BUSINESS TRIP, OR IN THE HOSPITAL.

DO NOT INCLUDE PERSONS WHO ARE JUST VISITING (I.E. STAYING LESS THAN 6 MONTHS) OR WHO ARE AWAY IN COLLEGE, MILITARY SERVICE, PRISON OR A LONG-TERM NURSING HOME.

(1-20)
-8 Don't Know
-9 Refused

[IF (ANS < 2) SKIP TO BLDTYP]

Question UNDER18
How many of these are under the age of 18?

(0-20)
-8 Don't Know
-9 Refused

Question PCOV R65
How many of these are over the age of 65?
(0-20)
-8 Don't Know
-9 Refused

Question BLDTYP
How would you describe the building where you are living?
Is it a mobile home or trailer, a one family house detached from any
other house, a one family house attached to one or more houses on
one or more sides, an apartment building, or other.

(INT: IF RESP. SAYS "ONE FAMILY 'UNATTACHED'". YOU MAY SELECT
"ONE FAMILY DETACHED")

1 Mobile home or trailer
2 One family detached
3 One family attached
4 Building with 2-4 apartments or condos
5 Building with 5 or more apartments or condos
6 Hotel/motel
7 Van/RV
8 Boat
9 Other (specify:)
-8 Don't know
-9 Refused

Question BLDRO
Is this house or apartment owned by you or someone in this household
(with or without a mortgage) or rented?

(INT: IF THIS IS A TIMESHARE IT SHOULD BE COUNTED AS RENTED,
EVEN IF THE RESPONDENT CONSIDER THEMSELVES AN OWNER.)

1 Owned
2 Rented
-8 Don't know
-9 Refused

Question COUNTY
In what Florida county do you live?

1 Alachua  22 Glades  43 Martin  64 Volusia
2 Baker  23 Gulf  44 Monroe  65 Wakulla
3 Bay  24 Hamilton  45 Nassau  66 Walton
5 Brevard  26 Hendry  47 Okeechobee  -8 Don't Know
6 Broward  27 Hernando  48 Orange  -9 Refused
7 Calhoun  28 Highlands  49 Osceola
8 Charlotte  29 Hillsborough  50 Palm Beach
9 Citrus 30 Holmes 51 Pasco
10 Clay 31 Indian River 52 Pinellas
11 Collier 32 Jackson 53 Polk
12 Columbia 33 Jefferson 54 Putnam
13 Miami-Dade 34 Lafayette 55 St.Johns
14 De Soto 35 Lake 56 St.Lucie
15 Dixie 36 Lee 57 Santa Rosa
16 Duval 37 Leon 58 Sarasota
17 Escambia 38 Levy 59 Seminole
18 Flagler 39 Liberty 60 Sumter
19 Franklin 40 Madison 61 Suwannee
20 Gadsden 41 Manatee 62 Taylor
21 Gilchrist 42 Marion 63 Union

[IF (SNOWBD = 2) SKIPTO VISIT]

Question LIVEFL
What year did you last move to Florida?

1 Always lived in Florida (Native)
2 Migrant -moved here from elsewhere
-8 Don't know
-9 Refused

[IF (ANS < > 2) SKIPTO CHRIS4]

Question YEARFL
RECORD YEAR: (1900-2006)

-8 Don't Know
-9 Refused

Question BFORFL
From which state or country did you move?

1 Alabama 21 Maryland 41 South Carolina -9 Refused
2 Alaska 22 Massachusetts 42 South Dakota
3 Arizona 23 Michigan 43 Tennessee
4 Arkansas 24 Minnesota 44 Texas
5 California 25 Mississippi 45 Utah
6 Colorado 26 Missouri 46 Vermont
7 Connecticut 27 Montana 47 Virginia
8 Delaware 28 Nebraska 48 Washington
9 DC 29 Nevada 49 West Virginia
10 Florida 30 New Hampshire 50 Wisconsin
11 Georgia 31 New Jersey 51 Wyoming
12 Hawaii 32 New Mexico 52 Canada
13 Idaho 33 New York 53 Central America
14 Illinois 34 North Carolina 54 Caribbean
15 Indiana 35 North Dakota 55 Europe
16 Iowa 36 Ohio 56 Asia
17 Kansas 37 Oklahoma 57 Africa
18 Kentucky 38 Oregon 58 South America
19 Louisiana 39 Pennsylvania 59 Other
20 Maine 40 Rhode Island -8 Don't Know

Question REAMOVE
What was your primary reason for moving to Florida?

(INT: READ CHOICES IF NECESSARY)

1 Job transfer, relocation, new job, business
2 Looking for a job
3 Low cost of living
4 Climate, weather
5 Family: marriage, be closer to relatives, moved with parents
6 Health
7 Enter/Leave college or school
8 Military
9 Political reasons
10 Other
-8 Don't know
-9 Refused

Question CHRIS4
How likely is it that you will move out of Florida during the next 12 months?

1 Very likely
2 Somewhat likely
3 Somewhat unlikely
4 Very unlikely
-8 Don't know
-9 Refused

Question VISIT
In the past month have you had any overnight visitors from outside the state?

(INT: READ CHOICES IF NECESSARY)

1 Yes
2 No
-8 Don't know
-9 Refused

[IF (ANS = 1) SKIPTO VISNUM]
[IF (ANS < 1) SKIPTO PSS44]

Question VISNUM
How many overnight visitors did you have?

(1-20)
-8 Don't know
-9 Refused

Question VISLEN
What was the length of their stay?

(INT: IF MORE THAN ONE VISITOR, ASK FOR THE MOST RECENT.)

(INT: READ CHOICES IF NECESSARY)

1 Less than one week
2 1 to 2 weeks
3 3 to 4 weeks
4 1 to 3 months
5 3 to 6 months
6 More than 6 months
-8 Don't know
-9 Not available

Question UNLST
Is this an unlisted phone number?

(INT: READ CHOICES IF NECESSARY)

(INT: IF RESPONDENT ASKS WHY YOU WISH TO KNOW, TELL THEM IT WILL HELP US MEASURE THE POTENTIAL BIAS OF SAMPLING METHODS WHICH EXCLUDE UNLISTED PHONE NUMBERS.)

1 Yes, is unlisted
5 No, is not unlisted
-8 Don't Know
-9 Refused

Question MARRY
The next set of questions I have will help us analyze your answers along with the answers of others.

Are you currently married, separated, divorced, widowed or have you never been married?

(INT: READ CHOICES IF NECESSARY)

1 Now married
2 Now widowed
3 Never married
4 Divorced or separated
-8 Don't Know
-9 Refused

Question HISPAN
Are you of Spanish or Hispanic origin?

(INT: READ CHOICES IF NECESSARY)

1 Yes (Spanish or Hispanic)
2 No (Not Spanish or Hispanic)
-8 Don't Know
-9 Refused

Question RRACE
What race do you consider yourself?

(INT: READ CHOICES IF NECESSARY)

1 White (Caucasian)
2 Black (African-American)
3 Asian or Pacific Islander
4 American Indian or Alaska native
5 Other
6 Multi-racial or mixed race
-8 Don't Know
-9 Refused

[IF (ANS < > 5) SKIPTO STBORN]

Question ALTRACE
And what would that be?

Question STBORN
In what state or country were you born?
1 Alabama 21 Maryland 41 South Carolina -9 Refused
2 Alaska 22 Massachusetts 42 South Dakota
3 Arizona 23 Michigan 43 Tennessee
4 Arkansas 24 Minnesota 44 Texas
5 California 25 Mississippi 45 Utah
6 Colorado 26 Missouri 46 Vermont
7 Connecticut 27 Montana 47 Virginia
8 Delaware 28 Nebraska 48 Washington
9 DC 29 Nevada 49 West Virginia
10 Florida 30 New Hampshire 50 Wisconsin
11 Georgia 31 New Jersey 51 Wyoming
12 Hawaii 32 New Mexico 52 Canada
13 Idaho 33 New York 53 Central America
14 Illinois 34 North Carolina 54 Caribbean
15 Indiana 35 North Dakota 55 Europe
16 Iowa 36 Ohio 56 Asia
17 Kansas 37 Oklahoma 57 Africa
18 Kentucky 38 Oregon 58 South America
19 Louisiana 39 Pennsylvania 59 Other
20 Maine 40 Rhode Island -8 Don't Know

Question EDUCAT
What is the highest grade of school or year in college you yourself completed?

(INTERN: READ CHOICES IF NECESSARY)


0 None/less than 1st grade....... 11 11th grade
1 1st grade 12 12th grade/GED/Highschool diploma
2 2nd grade 13 1 year of college
3 3rd grade 14 2 years of college/Associate’s degree (AA, AS)
4 4th grade 15 3 years of college
5 5th grade 16 4 years of college/Bachelor’s degree (BA, BS)
6 6th grade 17 Some Graduate School
7 7th grade 18 Graduate/Professional Degree: (Master’s: MA; MS, Doctorate: PhD; EdD; Medicine/MD; Dentistry/DDS; Law/ID/LLB, etc.)
8 8th grade -8 Don’t know
9 9th grade -9 Refused
10 10th grade

Question VOTER
Are you currently registered to vote in Florida?
Question PID
Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?

Question EMPLOY
Are you currently employed outside the home?

Question HOMEBUS
Do you yourself operate or work for a business from your home?
Question FULPRT
Are you employed full-time or part-time?

(INT: READ CHOICES IF NECESSARY)
1 Full time
2 Part time
-8 Don’t Know
-9 Refused

[IF (ANS = 1) SKIPTO EMP1]
[IF (ANS < 1) SKIPTO HEALTH1]

Question PT1
Would you prefer to be employed full time?

(INT: READ CHOICES IF NECESSARY)
1 Yes
2 No
-8 Don’t Know
-9 Refused

Question EMP1
Are you presently working more than one job?

(INT: READ CHOICES IF NECESSARY)
1 Yes
2 No
-8 Don’t Know
-9 Refused

[SKIPTO HEALTH1]

Question LOOKWK
Would you describe yourself as Unemployed but looking for work; Not looking for work, or Retired?

(INT: READ CHOICES IF NECESSARY)
1 Unemployed but looking for work
2 Not looking
3 Retired
-8 Don’t Know
-9 Refused

[IF (ANS = 3) SKIPTO HEALTH1]
Question UE1
How many weeks has it been since you were employed?

(INT: IF RESP IS UNSURE OF TIME IN WEEKS BECAUSE IT'S BEEN YEARS, YOU MAY REMIND HIM/HER THAT 1 YEAR = 52 WEEKS.)

1-500 (weeks)
-7 Never been employed
-8 Don't Know
-9 Refused

Question UE2
We're interested in the reasons people are currently unemployed. Would you say that…

1 You lost your job (i.e., laid off; Company shut down; terminated)
2 Your temporary job ended (it was short term or seasonal work)
3 You left the job voluntarily
4 You are/were disabled
5 Other (specify:)
-8 Don't Know
-9 Refused

Question HEALTH1
Now, I would like to ask you a few questions about your health status. Because of a health condition that has lasted for 6 or more months, do you have any difficulty going outside the home alone, for example, to shop or visit a doctor's office?

(INT: READ CHOICES IF NECESSARY)

1 Yes
2 No
-8 Don't know
-9 Refused

Question HEALTH2
Because of a health condition that has lasted for 6 or more months, do you have any difficulty taking care of personal needs such as bathing, dressing, or getting around inside the home?

(INT: READ CHOICES IF NECESSARY)

1 Yes
2 No
-8 Don't know
-9 Refused
[IF (PCOUNT = 1 or PCOUNTSB = 1) SKP HEALTH5]

Question HEALTH3
Other than yourself, do any members of your household have a health condition that has lasted for 6 or more months, that makes it difficult for them to go outside the home alone, for example, to shop or visit a doctor's office?

(INT: READ CHOICES IF NECESSARY)

1 Yes
2 No
-8 Don't know
-9 Refused

Question HEALTH4
Other than yourself, do any members of your household have a health condition that has lasted for 6 or more months, that makes it difficult for them to take care of personal needs such as bathing, dressing, or getting around inside the home?

(INT: READ CHOICES IF NECESSARY)

1 Yes
2 No
-8 Don't know
-9 Refused

Question HEALTH5
In general, would you say your health is excellent, very good, good, fair, or poor?

(INT: READ CHOICES IF NECESSARY)

1 Excellent
2 Very good
3 Good
4 Fair
5 Poor
-8 Don't know
-9 Refused

Question INCOM2
Now consider your family's household income from all sources. As I read a list, please stop me when I get to the income level that best describes your household income in YYYY (Before Taxes)
(INT: PLEASE READ CHOICES UNTIL RESPONDENT INDICATES APPROPRIATE INCOME RANGE.)

1 less than $10,000
2 $10,000 to $19,999
3 $20,000 to $29,999
4 $30,000 to $39,999
5 $40,000 to $49,999
6 $50,000 to $59,999
7 $60,000 to $79,999
8 $80,000 to $99,999
9 $100,000 to $150,000
10 Over $150,000
-8 Don't Know
-9 Refused

Question RET
Are you receiving retirement income?

(INT: READ CHOICES IF NECESSARY)

1 Yes
2 No
-8 Don't know
-9 Refused

******GOV1 and GOV2 rotate quarterly***********

Question GOV1
Overall, do you approve or disapprove of the way Rick Scott is handling his job as Governor?

(INT: READ CHOICES IF NECESSARY)

1 Approve
2 Disapprove
3 Unsure
-8 Don't know
-9 Refused

Question GOV2
Overall, do you approve or disapprove of the way the Florida Legislature is handling its job?

(INT: READ CHOICES IF NECESSARY)

1 Approve
2 Disapprove
3 Unsure
-8 Don't know
-9 Refused

Question THANKYOU
Thank you very much. That's all I need to know.

PRESS G TO
CONTINUE
DO NOT HIT CTRL/ENTER OR QUIT!!!!! IF YOU DO THIS WILL
NOT BE COUNTED AS A COMPLETE!!!!!
LIST OF REFERENCES


van der Vaart, R., van Deursen, A., Drossaert, C., et al. (2011). Does the ehealth literacy scale (eHEALS) measure what it intends to measure? Validation of a Dutch version of the eHEALS in two adult populations. Journal of Medical Internet Research, 13(4), e86. doi: 10.2196/jmir.1840


BIOGRAPHICAL SKETCH

Bethany Lynn Tennant was born and raised in Gainesville, FL. She earned her bachelor’s degree in business administration from the University of North Carolina, Chapel Hill in 2002. Upon graduating, she moved to the East Bay region of northern California and worked in the legal field for several years. In 2008, she moved back to Gainesville, FL, to pursue her graduate degree in health education at the University of Florida. While a master’s student, Bethany worked as a graduate assistant at GatorWell Health Promotion Services at the University of Florida. She received her master’s degree in health education and behavior in the Spring of 2010 and a certificate in Public Health in the Summer of 2011, both from the University of Florida. In the Fall 2010, Bethany began the Ph.D. program in Health and Human Performance at the University of Florida. While progressing through the doctoral program, she worked as a research and teaching assistant in the College of Health and Human Performance, and as a graduate assistant in the Clinical and Translational Science Institute at the University of Florida. Her dissertation research involves investigating eHealth literacy and use of social media for health information among older adults with chronic disease(s). Bethany will be granted a Doctor of Philosophy in Health and Human Performance with an emphasis in health education and behavior in August 2013.