

Predictors of Intention for Safer Sex Practices Among Single Women Fifty Years of Age
and Older that Date Online

by

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Dedication

This dissertation is dedicated to my children Oliver and Lindsey Pelland, my father Dr. George A. Stepanian (1930-1968), my stepfather Dr. William H. Harvey (1931-2015), and my brother Dr. Marshall W. Stepanian, who traveled this journey before me. I would not have been able to accomplish my goals without their continuous love, encouragement, and understanding of the importance of education.

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Table of Contents

	Page
List of Tables	vii
List of Figures	viii
List of Abbreviations	ix
Abstract	x
Chapter One: Introduction	1
Background and Significance of the Study	1
Purpose Statement	7
Conceptual Framework	7
Chapter Two.....	12
Synthesis of the literature	12
Single Women Fifty and Older That Date Online.....	14
Knowledge of Risk for Sexually Transmitted Infections.....	16
Attitudes Toward Safer Sex Practice	20
Normative Beliefs about Safer Sex Practices.....	21
Intentions to Practice Safer Sex	23
Conclusion.....	24
Chapter Three.....	26
Research design.....	26
Population.....	26
Research questions:	27
Sample size.....	28
Power analysis.....	29
Setting.....	29
Data collection.....	29
Definition of Concepts and Operational Definitions.....	30
Instruments	32

Demographics and Online dating questionnaire (Appendix I).....	32
Sexual Risks Scale.....	32
Procedure.....	34
Data analysis	35
Human subjects considerations	37
Chapter Four	39
Data Analysis	39
Bivariate Analysis.....	45
Regression Analysis.	49
Chapter Five.....	52
Discussion	52
Limitations: Lessons learned.....	53
Appendix I	57
Appendix II.....	60
Appendix III.....	62
Appendix IV.....	65
Appendix V.....	67
Appendix VI.....	69
Appendix VII	70
Appendix VIII.....	72
References.....	73

List of Tables

Table	Page
Table 1 Conceptual and Operational Definitions of Terms	11
Table 2 Measurement Scale (Appendix III).....	33
Table 3 Measurement Scale (Appendix III).....	34
Table 4 Analysis of Missing Data (Yes/No) by Study Variables (N=87)	Error!
Bookmark not defined.	
Table 5 Descriptive Analysis of the Categorical Study Variables (N=54).....	42
Table 6 A Descriptive Analysis of the Continuous Study Variables (N=54)	44
Table 7 Bivariate Analysis of Safe Risk Intention by Categorical Study Variables (N=54)	46
Table 8 Correlational Analysis of Continuous Study Variables or Bivariate Analysis of Intention to practice safer sex Scores with knowledge of safer sex practice, attitude of safer sex practice, and normative belief of safer sex practice (N=54).....	48
Table 9 Multiple Linear Regression Analysis Examining Intention to Practice Safer Sex (N=54).....	50

List of Figures

Figure	Page
Figure 1-Conceptual Model	10

List of Abbreviations

Acquired Immune Deficiency Syndrome.....	AIDS
Center for Disease Control and Prevention.....	CDC
Human Immunodeficiency Virus.....	HIV
Sexually Transmitted Disease.....	STD
Sexually Transmitted Disease Surveillance Report.....	STDSR
Sexually Transmitted Infection.....	STI
Sexual Risk Scale.....	SRS
The Sexually Transmitted Disease Knowledge Questionnaire	STD-KQ
Theory of Reasoned Action	TRA
Women’s Health Initiative	WHI
World Health Organization.....	WHO

Abstract

PREDICTORS OF INTENTION FOR SAFER SEX PRACTICES AMONG SINGLE WOMEN FIFTY YEARS OF AGE AND OLDER THAT DATE ONLINE

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George Mason University, 2016

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This predictive correlational study explores the intention of safer sex practices among single women fifty years of age and older that date online. A literature review discusses the significant recent rise in the diagnosis of sexually transmitted infections (STIs) among this age group along with changing perceptions of aging, availability of performance enhancers, and access to a significant larger pool of possible romantic partners through online dating. Single women fifty years of age and older that date online, were surveyed about their demographics, STI knowledge, and sexual risk behavior through an online survey. A regression model revealed that specifically, as normative belief scores increased, intention to practice safer sex scores also increased at a statistically significant level. Understanding normative beliefs as a driving force of intention to practice safer sex is critical in designing interventions that will move this vulnerable group of women to commit to practicing safer sex.

Chapter One: Introduction

Background and Significance of the Study

According to the Centers for Disease Control and Prevention (CDC) 2014 Sexually Transmitted Diseases Surveillance Report (STDSR), the incidence of sexually transmitted infections (STIs) in the United States (U.S.) is 20 million annually with a prevalence of 110 million (CDC, 2015a). Direct health care expenditures cost a total of 16 billion dollars annually (CDC, 2013; CDC, 2015a). Indirect costs, including loss of productivity, along with intangible costs (including pain, suffering and shame) are not included in this estimate. According to the STDSR 2014 report, the most recent data available, the prevalence of the three nationally reported diseases had increased since 2006. This includes an increase of 2.8% in cases of Chlamydia, and a 5.1% increase in Gonorrhea. Primary and secondary Syphilis has increased significantly in the recent years. The lowest rates of Syphilis were reported in 2000-2001. The incidence and prevalence has continued to increase annually. In 2014, the rate had increased 15.1% in a one year period, and was 40% higher than rates recorded in 2010. Congenital Syphilis rates traditionally rise when primary and secondary Syphilis rates increase. Between 2013 and 2014, a 27.5% increase occurred. (CDC, 2015a).

According to the U.S. Bureau of Census there are 75.4 million “Baby Boomers” in the United States. “Baby Boomers” are defined as individuals born post World War II from

1946 through 1964 (U.S. Census Bureau, 2015). Baby Boomers represent a new generation of sexual awareness and behaviors. A new, emerging cohort of single female Baby Boomers who are pursuing romantic partners online are potentially at risk for contracting STIs (Fileborn, Thorpe, Hawkes, Minichiello, Pitts & Dune, 2015; Malta & Farquharson, 2014; McWilliams & Barrett, 2014).

In the U.S., the incidence of STIs among adults fifty years of age and older has dramatically increased in recent years (CDC, 2015a). Many of the cases of STIs go undiagnosed among single women fifty years of age and older due to lack of symptoms and health care provider's lack of routine screening for this population (CDC, 2015a; Montemuro, & Siefken, 2014). Sexuality in the aging population is a topic not routinely discussed in well women visits, despite the need for education and counseling in this age group (CDC, 2015a; Montemuro, & Kiefken, 2014; Negin, Rozea, & Martiniuk, 2014).

The Center for Disease Control and Prevention (CDC) shows data that primary and secondary Syphilis has more than quadrupled among older adults: age 45-54 from 706 rate per 100,000 population in 2000 to 2,966 per 100,000 population in 2014, age 55-64 from 179 rate per 100,000 population in 2000 to 897 per 100,000 population in 2014; and age 65 plus 76 per 100,000 to 179 per 100,000 population in 2014. Early latent Syphilis has increased: age 45-54 from zero rate per 100,000 in 2000 to 3,405 per 100,000 population in 2014, age 55-65 from zero rate per 100,000 population to 976 per 100,000 population, and age 65 plus from zero rate per 100,000 population to 229 rate per 100,000 population in 2014. Chlamydia has more than quadrupled among older adults: age 45-54 from 5,620 rate per 100,000 population in 2000 to 24,773 rate per 100,000

population in 2014, age 55-64 from 1,115 rate per 100,000 population to 6,527 rate per 100,000 in 2014, and age 65 plus from 1,005 rate per 100,000 in 2000 to 1,449 rate per 100,000 in 2014. Gonorrhea has also risen age 45-54 from 10,427 rate per 100,000 population in 2000 to 15,322 rate per 100,000 population, age 55-64 from 2,316 rate per 100,000 in 2000 to 4,549 rate per 100,000 population in 2014, and age 65 plus 913 rate per 100,000 in 2000 to 911 rate per 100,000 population in 2014 (CDC, 2015b). Human Papillomavirus has had an increase rate of first occurrence from 2002 to 2010 among older adults age 45-64 and among those age 65 years and older (45.4 percent rate per 100,000 population) (CDC, 2014).

HIV infection trends indicate that transmission of HIV in adults over the age of 50 is increasing due to multiple etiologies. According to CDC in 2013, 21% (8,575) of an estimated 47,352 human immunodeficiency virus (HIV) diagnoses in the United States were among people age fifty and older. More specifically, “in 2013, people aged 50 and over accounted for 21% (8,575) of an estimated 47,352 HIV diagnoses in the United States. Of these, the largest number (44%, 3,747) were among those aged 50 to 54” (CDC, 2015b). Of the estimated 26,688 Acquired Immunodeficiency Syndrome (AIDS) diagnoses in the United States in 2013, adults fifty and older accounted for 27% or 7,108 (CDC, 2015b). Increased rates in transmission in this age group are influenced by a number of factors including increased dating opportunities for single status (never married, divorced or widowed) individuals, lack of fear of pregnancy, performance enhancing agents for men with erectile dysfunction, and lack of professional education surrounding safer sex practices (CDC, 2015a). While HIV transmission is less common

in heterosexual sexual contact, women accounted for 19% of those newly affected with HIV. Of the 8,328 women affected, 87% (n=7,242) were infected through heterosexual sexual contact (CDC, 2016).

In a study conducted by Ginocchio and colleagues (2012), of the 7,500 women enrolled in the study, 13% of women over fifty had been or were currently infected with the parasite trichomoniasis, which causes significant concern since it is also associated with an increased risk of infection with HIV (CDC, 2014; Ginocchio et al., 2012; Kissinger, Amedee, Clarke, Dumestre, Theall, Myers, Hagensee, Farley, & Martin, 2009).

The Centers for Disease Control and Prevention (CDC) has estimated that by 2015, one-half of Americans with HIV will be above the age of fifty. The HIV rate among this age group has been attributed to: the success of antiretroviral therapy in prolonging the lives of people with HIV and the fact that people age fifty years of age and older show many of the same HIV risk behaviors that are found among younger people (Nakagawa, May, & Phillips, 2013; UNAIDS, 2013). According to CDC, people age fifty-five and older in 2010 accounted for 19% of the estimated 1.1 million people living with HIV infection in the U.S. (CDC, 2014). This age group also accounted for 5% of the estimated 47,500 new HIV infections in 2010 (CDC, 2014). “The term diagnosis of HIV infection according to the CDC HIV/AIDS Surveillance Report is defined as a diagnosis of HIV infection regardless of the stage of disease (Stage 0, 1, 2, 3, [AIDS], or unknown) and refers to all persons with a diagnosis of HIV infection,” (CDC, 2014). While HIV

infection in this age group is predominately comprised of men, women with HIV still represents a public health concern.

The diagnosing of HIV is frequently delayed among older adults because they attribute symptoms to the aging process and are not routinely screened by their health care providers. This delay in diagnosis has been associated with an increased risk of both AIDS and death among undiagnosed HIV infected individuals (CDC, 2014; Ginocchio et al., 2012). As the impact of aging and HIV become critical, there is a need for education, routine screening, and the development of treatment guidelines for older adults (CDC, 2014; Nakagawa, May, & Phillips, 2013).

Morton, Kim, & Treise, (2011), conducted a qualitative study that included 27 women aged 50-70 to examine older women's sexual attitudes and behaviors toward sexual health practices. The participants were divided into four focus groups. The significant themes that emerged in this study identified two main risks within these participants: lack of self efficacy in addressing safer sex practices with their potential partners (negotiating condom use) and their hesitancy in using their primary care physicians as a source for sexual health information, which could perpetuate risky sexual behaviors (Morton, Kim, & Treise, 2011).

In a study of 3,005 older single adults in the U.S., Jeffers & DiBartolo (2011) examined adults over the age of 57 to determine if they were sexually active. Of those age 57 to 64 years old, 73% were sexually active. Of the older adults age 64 to 74 years, 53% were sexually active; and of the oldest of adults surveyed, age 75 to 84 years, 26% reported themselves as being sexually active. This study also revealed the reason for

being single over the age of fifty was primarily due to divorce or the death of a spouse (Jeffers & DiBartolo, 2011).

Women's sexual activity and desire is dependent on a variety of factors related to relationship status, physical health, responsibilities towards others, and the attitudes and health of partners (Fileborn et al., 2015; Lodge, & Umberson, 2012; Trudel, Turgeon, & Piche, 2010). The current Baby Boomers view themselves as sexually liberated, without the need to worry about unintended pregnancy, and feel there is an increased societal acceptance of sexual behavior among aging adults (Montemurro, & Siefken, 2014; Stewart, & Graham, 2013). As women enter into older age some experience increased sexual desire and activity or find that they have increased opportunities, which is in direct contrast with the 'decline' model of sexuality and aging (Fileborn et al., 2015). Women in this group do not use condoms and continue to hold the belief that condoms are used for contraceptive purposes only (CDC, 2014; Corneille, Zyzniewski, & Belgrave, 2008; Morton, Kim, & Treise, 2011). Potential male sexual partners in this age group also have the same perceptions about condom use, along with co-existing issues like erectile dysfunction and complaints of decreased sensation with condom use (CDC, 2014; Corneille, Zyzniewski, & Belgrave, 2008; Morton, Kim, & Treise, 2011).

Online dating has become increasingly popular among people that are interested in finding romantic partners (Fileborn et al., 2015; Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). Many of these online dating sites such as dating.aarp.com, Ourtime.com, SeniorMatch.com, SeniorMeet.com, SilverSingles.com, and SeniorMeetPeople.com cater to older adults.

Healthcare providers need to pay attention to this previously unidentified group of single women, fifty years of age and older, that are seeking romantic relationships through online dating (Smith, 2016a; Stewart & Graham, 2013). With this increased opportunity and access for sexual encounters, the risk for negative health outcomes is present, unless these women receive education, regular screening, and access to sexual healthcare (CDC, 2010; Ginocchio et al, 2012). Health care providers need more education on the topic of sexuality among older adults to ensure that sexual counseling and testing is carried out for this at risk population (CDC, 2014; Negin, Rozea, & Martiniuk, 2014).

A recent Pew study on dating examined 2,252 dating adults. Of those adults that identified themselves as single and looking for a partner, 34% were women. Of the woman surveyed, 20% were between the age of 50 and 64, and 6% were 65 years of age and older (Lenhart & Duggan, 2015). The number of 55-64-year-olds who use online dating has doubled in the last two years from 6% in 2013 to 12% in 2015 (Smith, 2016a).

Purpose Statement

The purpose of this study is to examine knowledge, attitude, and normative beliefs about safer sex practices as predictors of intention to practice safer sex among single women fifty years of age and older that date online.

Conceptual Framework

The conceptual framework for this study is based on The Theory of Reasoned Action (TRA) (Ajzen, 1991). TRA was originally developed as a model of behavioral prediction stating that a behavior is more likely to happen when a person has strong intentions to

perform that behavior (Ajzen, 1991). The model states that behavior is a function of intention to behave in a certain way and intention is a function of a person's attitude about the act and the norms about the behavior (Fishbein, & Middlestadt, 1989; Fishbein, & Ajzen, 2010; Fisher, 1984).

Intentions and behaviors are not always correlated because in some situations a person's intention doesn't always lead to specific behaviors since certain behaviors can occur without previous intentions; however, intentions are an indication of a person's preparedness to perform a specific behavior that occurs immediately prior to that behavior. Stronger intentions tend to be more predictive of future behavior than those that are weaker, thus intentions can vary (Ajzen, 1991). Attitudes and normative beliefs are a result of the intent according to the TRA. The perceived normative beliefs include the perceived social pressure to perform or refrain from a specific behavior. The normative beliefs also include the perception that people who are important to the individual would be supportive of the behavior. The attitudinal part of TRA includes a person's perception about susceptibility and evaluation of potential outcomes of engaging in a certain behavior (DeHart & Birkimer, 1997). TRA proposes that if the normative beliefs are more favorable than the attitudes towards engaging in a behavior, the behavior is more likely to occur. The stronger the intentions are, the more likely they will lead to engagement in a specific behavior. TRA has been applied in predicting many sexual and non-sexual behaviors, such as condom use (Albarracin, Johnson, Fishbein, & Muellerleile, 2001), HIV prevention (Burton, Darbes, & Operario, 2010), job application

decisions (Van Hooft, Born, Taris, & Van der Flier, 2006), premarital sex (Chitamun, & Finchilescu, 2003), and contraceptive use (Doll, & Orth, 1993).

The conceptual framework clarifies how the changing attitudes and normative beliefs experienced by single female Baby Boomer's can show support for later life sexual activity choices for aging women. Because intention has both attitude and normative components, it is the best predictor of sexual behavior. Many older single women who are dating may lack the knowledge and education to make safe choices about their intention to practice safer sex (Ross, Humble, & Blum, 2013; Slinkard, & Kazer, 2011; Somes, & Donatelli, 2012; Smith, 2016b). When a person's intent to perform a behavior is strong, she is likely to engage in that behavior (Ajzen, 1991).

A critical part of the conceptual framework is the interface of normative beliefs and attitudes with intent to act, which is where educational interventions can be targeted to affect behavioral outcomes. This could include teaching sexually active aging single women how to: adopt safer sex practices and take actions to prevent STIs. Clinical support is a critical component of effective behavioral control. Attentive healthcare providers can educate, screen, and reinforce positive behaviors or provide immediate corrective action for behaviors that are unsafe or inappropriate.

Figure 1 shows the conceptual framework developed for this study, based on TRA. This conceptual framework shows external variables and their relationships between the concepts of knowledge of risk for STIs, attitude toward safer sex practice, normative beliefs about safer sex practices and their trajectory, which leads to intention to practice safer sex among single women fifty years of age and older.

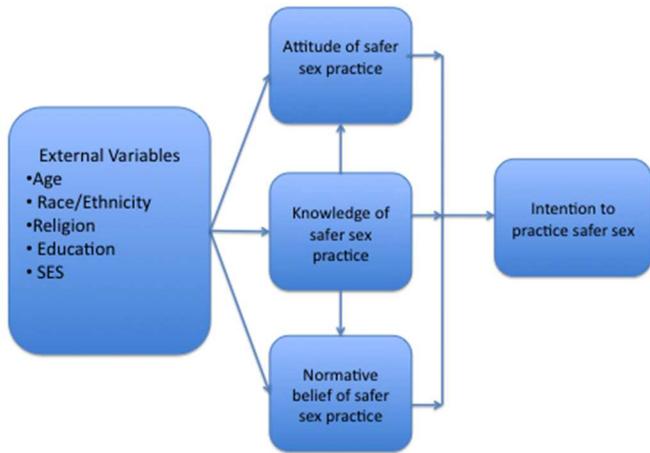


Figure 1-Conceptual Model

Table 1 Conceptual and Operational Definitions of Terms

Concept	Conceptual Definition	Operational Definition
Knowledge of risk for sexually transmitted infections (STIs)	An individual's acquired knowledge of STIs (Fishbein & Ajzen, 1975; Jaworski & Carey, 2007).	Knowledge of STIs will be measured with the Sexually Transmitted Disease Knowledge Questionnaire (STD KQ) that is a 27 item (yes, no, don't know). The STD KQ has an internal consistence of $\alpha = .82$ (Jaworski & Carey, 2007).
Attitude toward safer sex practices	An individual's mental state including beliefs, feelings, values, and nature to act in certain ways. It is a function of the individual's beliefs about the behavior and the individual's beliefs about the susceptibility or risk, and consequences of outcomes of performing the behavior (Ajzen, 1991).	Attitudes will be measured with the Sexual Risk Scale (SRS) sub-scale: Attitudes toward safer sex: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13. These are 13 items of a 38 item, likert scale, with an internal consistency of $\alpha = .88$ (DeHart & Birkimer, 1997). Susceptibility (risk) will be measured with the Sexual Risk Scale (SRS) sub-scale: Susceptibility (or risk): 1, 2, 3, and 4. These items are 4 items of a 38 item, likert scale, with an internal consistency of $\alpha = .84$ (DeHart & Birkimer, 1997).
Normative Belief about safer sex practices	An Individual's perception of social norms or his/her peers' beliefs about a behavior. A function of the individual's normative beliefs and motivation to comply with beliefs (Ajzen, 1991).	Normative belief will be measured with the Sexual Risk Scale (SRS) sub-scale: Peer norms toward safer sex: 6, 10, 14, 18, 21, 28 and 32. These are 7 items of a 38 item, likert scale, with an internal consistency $\alpha = .83$ (DeHart & Birkimer, 1997).
Intention to practice safer sex	A function of an individual's attitude about the act and the perceived norm regarding the behavior (Ajzen, 1991).	Intentions will be measured with the Sexual Risk Scale (SRS) sub scale: Expectation to practice safer sex: 1, 11, 22, 27, and 35. These items are 5 items of a 38 item, likert scale, with an internal consistency of $\alpha = .80$ (DeHart & Birkimer, 1997).

Chapter Two

Synthesis of the literature

The purpose of this study was to examine knowledge, attitude, and normative beliefs about safer sex practices as predictors of intention to practice safer sex among single women fifty years of age and older that date online. This study examined the current state of the science in this area of inquiry.

The following research strategies were used to perform the literature review. First, a comprehensive search using the research terms: older women, Baby Boomer, sexuality, knowledge of STIs, STIs, risky sexual behavior, and online dating was performed. English language databases searched included EBSCOHost, Cochran Collection, Medline, PsychInfo, and ProQuest using primary studies that were published in the last five years and a few seminal research studies because this phenomena is so current.

The current study examined the conceptual framework based on Azjen's (1991) Theory of Reasoned Action (TRA) and explored possible predictors of intention to practice safer sex. The conceptual framework proposes relationships between external variables, knowledge of sexually transmitted infections (STIs), attitude toward safer sex practice, normative beliefs about safer sex practice, and the intention to practice safer sex among women fifty years of age and older that online date. The intention to practice safer sex is an immediate precursor to performing the sexual behavior (Fishbein, &

Azjen, 2010). The framework predicts that intention to practice safer sex would be a function of beliefs about the outcomes of safer sex practice (Fishbein, & Azjen, 2010).

The literature shows that Baby Boomers are not like previous generations with respect to their attitudes towards sexuality (Fileborn et al., 2015; Montemurro, & Siefken, 2014; Morton, Kim, & Treise, 2011; Smith, 2016b; Tomlan, Diamond, Bauermeister, George, Pfaus, & Ward, 2014). Single women (divorced, widowed, or never married) fifty years of age and older in recent years are healthier and often are actively dating (Fileborn et al., 2015; Montemurro, & Siefken, 2014; Morton, Kim, & Treise, 2011; Smith, 2016b).

Online dating sites have become more popular among adults fifty years of age and older. Research has shown that almost a third of older adults who were married between 2005 and 2010 met their spouses on an online dating site. Research is also showing that older adults utilize the Internet to pursue both romantic and sexual encounters or relationships (Perrin, 2015; Tolman et al, 2014).

Single women have embraced technology to increase dating opportunities through the availability of multiple online dating sites. Online dating has provided a comfortable and reasonably secure venue for meeting potential romantic partners before committing to a face-to-face meeting (Kisilevich, & Last, 2011; Madden, 2010; Perrin, 2015). This increased availability of a larger pool of potential romantic partners accessed through the Internet has caused a significant change in the last few years in dating among older adults. This paradigm shift from traditional dating methods (meeting in bars, in social gatherings, or through mutual friends) has lead to increased sexual opportunities with potentially risky sexual behaviors (Ginocchio et al., 2012; Tolman et al., 2014).

Greater Access to Internet Resources

The availability of Internet access has grown significantly in the past 25 years, leading to significant social change. Internet access has increased in all regions of the world, and as expected, industrialized countries have the highest rates of use. As of November, 2015, more than 3.3 billion people worldwide had Internet access (Internet World Stats, 2016). The highest number of users are in North America where 87.9% of the population reported having Internet access. Although North America has the largest percentage of users; it had the lowest reported growth rate. This indicates that more developing countries are showing gains in obtaining Internet access (Internet World Stats, 2016).

In a Pew study, 87% of adults use social media, a tenfold increase in the last 10 years. In adults age 65 and older living in the United States, 27% reported using social media; which is up 6% in the last year (Adams, 2016a). This indicates that as Internet and social media use increases in older adults, the opportunity for online dating will continue to increase as well.

Single Women Fifty and Older That Date Online

For single women over the age of fifty finding available and suitable romantic partners can be challenging and frustrating (McIntosh, Locker, Briley, Ryan, & Scott, 2011; Montemurro, & Siefken, 2014; Smith, 2016b; Perrin, 2015). McIntosh and colleagues (2011) examined 200 women and found that 24% of single females aged 64 and older were currently dating through an online dating site. One of the appeals of online dating sites is that they do not limit a search to a single social network or geographic location. They offer a wide variety of selection criteria that can be used on

the online dating site search. Many Internet dating sites allow for an initial viewing of biographical information, photographs, and personal histories before making contact with the potential partner (McIntosh et al., 2011; Perrin, 2015; Zickuhr, & Madden, 2012). In the United States, a Pew Research Center survey revealed that 15% of American adults had used an Internet dating site (Smith & Anderson, 2016). The use of online dating has doubled since 2013, with 12% of adults aged 55 to 64 reporting utilizing online dating sites to find romantic partners (Smith & Anderson, 2016).

Commercial dating web sites continue to develop and provide services for people that are looking for romantic partners. Recognizing the unique possibilities afforded by the Internet, these companies have recently developed over the past 15 to 20 years. The online dating businesses have been categorized and have expanded into three generations: online personal advertisement sites, algorithm-based matching sites, and smart phone-based dating applications. The first sites began in 1995 when Match launched their initial site, followed by many other sites with a broad range of options that has expanded choices for potential online daters. These dating sites function as search engines that allow users to post and browse posted profiles for a fee (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). Online dating sites vary in their services and their targeted audience. Some sites target broad user populations, whereas others cater specifically to identified and targeted sub-populations. There are several sites that have been created in recent years specifically for people fifty years of age and older. Ourtime.com, SeniorMeetPeople.com, dating.aarp.com, SilverSingles.com, SeniorMeet.com, and SeniorMatch.com are just a few of the current sites that are available.

Online dating companies have developed sites that cater specifically to people that live in rural settings, Farmersonly.com, has increased access to potential romantic partners to this sub-set of the population who previously had limited access (Perrin, 2015). A Pew study that examined 2,225 older adults living in rural areas showed that online dating use had more than doubled in this population (Perrin, 2015). This research implies that people fifty years of age and older are embracing and incorporating information technology into their daily lives. PEW research reported that 15% of all American adults have used online dating sites or apps, which up from 11% in 2013. In the age group from 45-54 it increased from 8% to 13%, age group 55-64 it increased from 6% to 12% and age 65 plus it remained steady at 3%. This shows that Internet dating is steadily increasing in popularity among older adults (Smith, 2016a).

Knowledge of Risk for Sexually Transmitted Infections

Women over the age of fifty, have a lower level of knowledge and risk perception of the actual transmission of STIs compared to their younger counterparts (Andany, Kennedy, Aden, & Loutfy, 2016; CDC, 2015; Morton, Kim, & Treise, 2011). This can be linked with risky sexual behaviors, a decrease in the intent to use condoms during sexual encounters, and a reduced likelihood of STI screening in this population (Akers, Bernstein, Doyle, & Cobie-Smith, 2008; Andany et al, 2016; Maves, Cachay, Young, & Fierer, 2008; CDC, 2015; Morton, Kim, & Treise, 2011).

Condom use is low among women age fifty years and older (Andany et al, 2016; CDC, 2015; Negin et al., 2014). The current recommendation from the CDC to prevent STIs is to use condoms during sexual activity (CDC, 2016). Studies have suggested that

many older adults do not use condoms regularly because they felt they were not susceptible to STIs or that they interfered with sexual pleasure (Andany et al, 2016; CDC, 2015; Johnson, 2013). In a cross sectional correlational study of 106 adults age 50-74 that consisted of 50 women and 56 men, 78 of the participants were not able to verbalize the steps involved in condom placement, even though they had the perception that they were capable of doing so. This suggests that older adults were unaware of their inability to use condoms correctly (Foster, Clark, McDonnell, & Burgess, 2012).

Older adults and healthcare providers remain reluctant to discuss sexuality and STIs. Many healthcare providers view older adults as asexual or not at risk for STIs, which has led to limited discussion with older adults that many affect their perceived risk for STIs (Andany et al., 2016; Foster, Clark, McDonnell, & Burgess, 2012; Pilowsky, & Wu, 2015).

While single women fifty years of age and older have matured with the Internet, many of these dating single women are uninformed or ill prepared for the risks they may face. For example, many older women who are sexually active do not realize they are at an increased risk for contracting sexually transmitted infections (STIs). STIs are transmitted more easily to women than to men and are difficult to diagnose because many STIs are asymptomatic (Andany et al., 2016; Castaneda, & Denmark, 2013). Many older women lack knowledge of STIs and are not fearful of contracting them (Andany et al., 2016; Negin et al., 2014; Taylor, Weedon, Golub, Karpiak, Gandhi, Cohen, Levine, Minkoff, Adedimeji, Goparaju, Holman, & Wilson, 2015).

Older women are also at an increased risk of contracting STIs during heterosexual contact due to post-menopausal physiological changes. The cessation of menses and decline in the production of estrogen leads to changes in the female sexual anatomy. These changes include thinning of the vaginal tissues and a decrease in vaginal lubrication that may lead to small skin tears during intercourse, which can increase the risk of STIs and HIV entering the bloodstream (Andany et al., 2016; Levine, 2009; National Institute on Aging, 2015).

Post-menopausal women may have an increase in sexual activity since they are no longer fearful of unplanned pregnancy (Andany et al., 2016; Hillman, 2008; Pilowsky & Wu, 2015). With pregnancy no longer being a concern, many women feel that condoms are no longer necessary and are at greater risk to start practicing risky sexual behaviors when new romantic opportunities arise. Bateson and colleagues (2012) conducted an online survey for women that had logged onto an Internet dating site in the previous 6 months to a survey that explored demographic factors, STI-related knowledge and attitudes towards safer sex practices. Of the 1,788 women, 62.2% were over the age of 40 while 64.8% were seeking a long-term partner. In the previous year, 41.5% of all women met a new sexual partner via the Internet. Women age forty and older were more willing to discuss STIs with a new partner but less likely to refuse sex if the partner did not have a condom compared to younger women. By engaging in sexual activity without condoms, they increase their risk of STIs (Andany et al., 2016; Bateson, Weisberg, McCaffery, & Luscombe, 2012).

Sexual health has been defined by the World Health Organization (WHO) as a “state of physical, emotional, mental, and social well-being in relation to sexuality; it is not just the possibility of having pleasurable and safe sex experiences, free of coercion, discrimination, and violence. For sexual health to be attained and maintained the sexual rights of all persons must be respected, protected, and fulfilled” (WHO, 2015).

Knowledge about safer sex, access to sexual healthcare, and resources to help individuals make informed decisions about romantic partners and safer sex should be readily available. Healthcare providers frequently neglect to assess the sexual concerns of older female patients. There is an ongoing need to incorporate education on sexuality and older adults to healthcare providers (Maciel, & Lagana, 2014; Pilowsky & Wu, 2015). Sexuality education within nursing schools and medical schools is lacking particularly with sexuality among older adults (Hughes & Whitman, 2015). In a systematic review that was done by Haesler, Bauer and Fetherstonhaugh (2016) about the knowledge and attitudes of health care professionals about sexuality, sexual health, and older adults the findings indicated that healthcare professionals often feel that older adults sexuality is out of their scope of practice and that they acknowledge that they lack the knowledge and confidence in this area. The study also identified that many of the reasons behind these attitudes are related to cultural norms, the amount of time they have to work with older adults, their previous education, and familiarity to sexual diversity (Haesler, Bauer, & Fetherstonhaugh, 2016).

Attitudes Toward Safer Sex Practice

Attitudes toward sexual relationships have changed over the past few decades. There has been a significant shift in the attitudes of people over the age of forty-five related to premarital sex. In a nationally representative General Social Survey, U.S. Adults (N=33,380 in 2000-2012), the percentage who believed premarital sex among adults was “not wrong at all” was 29 % in the early 1970s, 42 % in the 1980s and 1990s, 49 % in the 2000s, and 58 % between 2010 and 2012 (Twenge, Sherman, & Wells, 2014).

Acceptance of sexuality as part of the normal aging process and a continuation of the life cycle helps remove barriers and increases knowledge of sexual behaviors in older adults. (Tolman et al., 2014).

Despite lack of research, there has been an underlying cultural belief that older women lose interest in sex after menopause (Gass, Cochran, Larson, Manson, Barnabei, Brzyski, Lane, Lavalleur, Ockene, Mouton, & Barad, 2011). According to recent data from The Women’s Health Initiative (WHI), which included data from 27,347 postmenopausal women age 50-79 from clinics across the nation; 63.2% said they were happy with their current level of sexual activity. Of those dissatisfied, 57% preferred more sexual activity (Gass et al., 2011). Other studies have yielded similar findings. For example, Huang, and colleagues (2009) examined 1,977 women ages 45-80 years, of which, 60% were sexually active in the previous three months. Among sexually inactive women, 39% was lack of interest, 36% was due to lack of a partner, 23% was due to physical problem of a partner, 11% was the lack of interest of a partner and 9% were due to personal physical limitations (Huang, Subak, Thom, Van Den Eeden, Ragins, Kuppermann, Shen, &

Brown, 2009). These and findings from similar studies show that a primary reason for sexual inactivity is due to the lack of a capable partner interested in sex rather than having physical or mental health problems that diminished the drive for sexual behavior (Huang et al., 2009; Tolman et al., 2014).

This represents important data because it serves to inform clinicians and public health educators that for a significant number of older women, there is interest; but sometimes there is limited opportunity to have a partner that is able to meet their needs. A study in the United Kingdom examined associations between sexual behaviors and quality of life in 137 older adults ranging in age from 65-92 years old, with a mean age of 74 years, the frequency of sexual activity was a significant predictor of Quality of Life (QOL) in the social relationship domain ($\beta = 0.255, p < 0.05$). The importance of sexual behaviors were also associated with the psychological domain ($\beta = 0.151, p < 0.05$), independent of the presence of a spouse/partner and self-reported health (Flynn & Gow, 2015). Sexuality is an important element within the lifecycle that adds quality to the lives of many older adults (Tolman et al., 2014; Pilowsky & Wu, 2015).

Normative Beliefs about Safer Sex Practices

There are traditional ideas and beliefs about sexuality among aging adults that are rooted in family, religion, culture, outdated health practices and norms that contribute to long-standing biases against women and sexuality (Morton, Kim, & Treise, 2011; Pilowsky & Wu, 2015). Many believe that sex is not appropriate or desirable for women after menopause or that single women should not engage in pre-marital sexual activity (Morton, Kim, & Treise, 2011; Tolman et al., 2014).

In the past, the sexual health of single women over the age of fifty would probably have not have warranted discussion. Contrary to the celibate, single grandmother image, many modern aging women see their post-menopause years as a time to regain their sexual freedom and to explore their sexuality without the fear of pregnancy (Pilowsky & Wu, 2015; Schafer, Mustillo, & Ferraro, 2013).

Without a doubt, the Baby Boomers are not of their parent's generation. Significant population differences continue to emerge over time and across the life spans of this large aging population. The National Social Life, Health, and Aging Project (NSHAP) underscore the population differences between those individuals who reached maturity during the Sexual Revolution of the 1960s and the previous generation that came of age during the 1940s when there were more conservative views of sexuality (Waite & Das, 2010). Aging Baby Boomers are often depicted as youthful, energetic, more health conscience, diet conscience, and fit, and defy many stereotypes that exist for aging adults (Morton, Kim & Treise, 2011). Specifically, with respect to sexual activity, Baby Boomers report high levels of satisfaction with their sexual activity, and low levels of dysfunction (Beckman, Waern, Gustafson, & Skoog, 2008; Tolman et al., 2014). It is often when poor health or loss of a partner occurs that the decline in sexual activity becomes problematic for those who wish to remain sexually active (Ginocchio et al., 2012).

Unfortunately, these changes in attitudes and desire to maintain an active sexual life are not without risk. A sexually active single woman age fifty and older, who is free to seek a sexual partner or partners and embraces contemporary dating mechanisms such

as online dating sites, may find herself practicing risky sexual behavior. Single women age fifty and older may be ill-prepared to take preventative measure, unable to find appropriate resources and education, and are at risk of inadequate social support when adverse events occur, such as acquiring sexually transmitted infections (STIs) (Ginocchio et al., 2012).

Intentions to Practice Safer Sex

Having an understanding of the factors associated with decreasing risky sexual behavior is of critical importance to the design of effective, age-appropriate interventions to stop the spread of STIs among women fifty years of age and older. In a recent longitudinal study, Taylor et al., (2014), examined 742 women who were HIV negative, despite having risk factors, and found their risk behaviors did not change as the women grew older.

Research shows that there is a correlation between the positive intention to use condoms, favorable attitudes towards condom use, motivation to practice safer sex, perceived norms and self-efficacy for performing behavioral skills such as condom use. These correlations positively contribute to the adoption and maintenance of safer sexual practices to prevent STIs (Bandura, 1997; Fisher, & Fisher, 2000).

There is a need for further research to identify the factors that predict behavioral changes among single women fifty and older. Some factors may be necessary prerequisites in order to adopt less risky sexual behavior but may not be sufficient for behavioral change to occur. Examining online dating practices among single women

fifty years of age and older should provide the components that will be essential in the reduction of risky sexual behavior in this population.

Conclusion

As people age, both mental and physical health, impact the capacity and motivation for sexual activity. Healthy aging appears to have a direct impact on sexual well-being, which in turn develops and changes within intimate partnerships (Waite, & Das, 2010). Acknowledging and understanding the new Baby Boomer single women and their knowledge of safer sex practices, attitudes of practicing safer sex, normative beliefs of safer sex, and intention to practice safer sex will provide the necessary information so health care providers can intervene and provide sexually competent care.

Nurses are trusted members of the healthcare team and are in a position to conduct research to identify and develop appropriate interventions that are age specific to decrease risky sexual behaviors among single women fifty years of age and older. Nurses are also in clinical situations where it is appropriate to initiate and improve discussion about sexuality during routine nursing assessments, create awareness, provide education, and increase access to preventative health measures (Foster, Clark, McDonnell, & Burgess, 2012).

The current literature has shown that many single women fifty years of age and older have embraced this new venue for meeting larger pools of romantic partners and are exploring numerous online dating sites that are specifically designed for older adults. They have not had the same sexual health education as younger women and frequently do not practice safer sex. The CDC data shows that STIs among these women are on the rise

(CDC, 2015; National Institute on Aging, 2015); therefore, significant inquiry to examine the relationships between knowledge of sexually transmitted infections (STIs), attitudes of safer sex practice, normative beliefs of safer sex practice, and intention to practice safer sex will be examined. The following chapter will identify specific strategies for healthcare workers to implement the proposed sexual health education and routine screening for STIs among single women fifty years of age and older.

Chapter Three

Research design

This study used a predictive correlational design to assess factors that predict intention to practice safer sex among single women fifty years of age and older that date Online.

Population

The population for this study consisted of single women fifty years of age and older that date Online. The inclusion criteria included heterosexuality, residency in the United States, single status (single, divorced, or widowed), had been dating online for the past month, had an online profile on a dating site, were sexually active or planned to be by self-report, and were able to read and write English at a minimum of at least a sixth grade level.

Sexually active defined as having vaginal, oral, or anal sex in the past two years, or planned to be sexually active in the future (Simms, & Byers, 2011; WHO, 2015).

Exclusion criteria consisted of persons who currently had a diagnosis of an STI or if they were receiving medication that would indicate a diagnosis of cognitive impairment.

Participants that met the criteria for the study were asked for consent by a multiple-choice question at the beginning of the survey, which asked for consent with a yes/no answer choice. If the respondent answered no, they were terminated from the survey and

thanked for their time through Qualtrics. If they answer yes they proceed to the questionnaire.

Research questions:

1. Is there a relationship between knowledge of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online?
2. Is there a relationship between attitude of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online?
3. Is there a relationship between normative beliefs of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online?
4. Is there a relationship among knowledge of safer sex practice, attitude of safer sex practice, normative belief of safer sex practice, and intention to practice safer sex among single women fifty years of age and older who date online?

Hypothesis 1:

H₀: There is no relationship between attitude of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online.

H_a: There is a relationship between attitude of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online.

Hypothesis 2:

H₀: There is no relationship between normative beliefs of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online.

H_a: There is a relationship between normative beliefs of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online.

Hypothesis 3:

H₀: There is no relationship between normative beliefs of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online.

H_a: There is a relationship between normative beliefs of safer sex practice and intention to practice safer sex among single women fifty years of age and older who date online.

Hypothesis 4:

H₀: There is no relationship among knowledge of safer sex practice, attitude of safer sex practice, normative belief of safer sex practice, and intention to practice safer sex among single women fifty years of age and older who date online.

H_a: There is a relationship among knowledge of safer sex practice, attitude of safer sex practice, normative belief of safer sex practice, and intention to practice safer sex among single women fifty years of age and older who date online.

Sample size

A convenience sample of 115 volunteer participants were used for this study. The participants were recruited from various sites to included gynecology offices, women's health offices, independent living facilities, public health departments, women's social organizations, and announcements posted on websites and electronic bulletin boards such as Craigslist©, Facebook© and Blogher©.

Power analysis

Power analysis was calculated at www.danielsoper.com an online statistical calculator for multiple regression studies with one dependent variable, three independent variables and four covariates. Cohen's convention was used to anticipate medium effect size $f^2 = .15$ the desired statistical power level 0.8, the number of predictors = 7, and the probability level = 0.05. The minimum required sample size = 103.

The sample size was adjusted to consider dropout rates according to the literature approximately 10% of participants can be expected to drop out almost immediately, with a 2% drop out for every 100 items of survey content (Jain, & Ross, 2008; Van Horn, Green, & Martinuseen, 2009). The targeted sample size was = 115.

Setting

Potential participants were recruited online through nationally accessible sites as well as in gynecology offices, women's health offices, independent living facilities, public health departments, and women's social organizations. All advertising for this study included a Uniform Resource Locator (URL) that directed potential participants to the survey online.

Data collection

An Online questionnaire was administered to collect demographic data and information about the major variables. This was accomplished by directing potential participants to a published URL linked to the web survey. The potential participants were screened to determine eligibility online through a series of questions related to inclusion and exclusion criteria. If the participants were excluded they were directed to a page

thanking them for their interest and time. If the potential participants matched the inclusion criteria they were invited to participate and were directed to the electronic consent page, once they consented to the study they were directed to the demographic questions, The Sexually Transmitted Disease-Knowledge Questionnaire (STD-KQ) (Jaworski & Carey, 2007), and The Sexual Risk Scale Questionnaire (SRS) (DeHart & Birkimer, 1997).

The dependent variable is the intention to practice safer sex. The independent variables were knowledge about safer sex practice, attitudes about safer sex practice, and normative beliefs about safer sex practice. The covariates were age, race/ethnicity, socioeconomic status, education, and religion.

The findings from this study provide the foundation for future STI preventive interventions and education among single women fifty years of age and older.

Definition of Concepts and Operational Definitions.

This study included constructs from the demographics, knowledge of safer sex practice, attitudes about safer sex practice, normative beliefs of safer sex practice, intention to practice safer sex and risky sexual behavior.

Knowledge of risk for sexually transmitted infections (STIs) or an individual's acquired knowledge of STIs (Fishbein & Ajzen, 1975; Jaworski & Carey, 2007).

Operationalizing knowledge of safer sex practice was accomplished by using the survey questions that were adopted from the Sexually Transmitted Disease-Knowledge Questionnaire (STD-KQ) (Jaworski, & Carey, 2007).

Attitudes of safer sex practices or An individual's mental state including beliefs, feelings, values, and nature to act in certain ways. It is a function of the individual's beliefs about the behavior and the individual's beliefs about the susceptibility or risk, and consequences of outcomes of performing the behavior (Ajzen, 1991). Attitude of safer sex practice was the sum of beliefs about safer sex practice was weighted by evaluations of these beliefs (Glanz, Rimer & Viswanath, 2008). Attitudes of safer sex practice of single women fifty years of age and older, evaluation of safer sex practice, or feelings of favorability or unfavorability toward performing safer sex practice was operationalized by using questions from the Sexual Risk Scale (13 items) on attitudes about safer sex practice (DeHart, & Birkimer, 1997).

Normative beliefs of safer sex practices or an individual's perception of social norms or his/her peers' beliefs about a behavior that impact the function of the individual's normative beliefs and motivation to comply with beliefs (Ajzen, 1991). Normative belief of safer sex practice was operationalized by using questions from the Sexual Risk Scale (SRS) sub-scale: Peer norms toward safer sex, which were 7 items of a 38 item scale.

Intention to perform safer sex is a function of an individual's attitude about the act and the perceived norm regarding the behavior (Ajzen, 1991). Intention to perform safer sex practice was operationalized by administering the survey questions adopted from The Sexual Risk Scale (SRS) (DeHart, & Birkimer, 1997).

Safer sex practice for this study is defined as using condoms the right way every time you have sex, oral, vaginal, or anal (CDC, 2016).

The definition of risky sexual behavior includes unprotected sexual activity, inconsistent use of condoms, selection of high risk partners, or sex with a partner who had other partners or more than one partner at a time (CDC, 2016; Parks, Hsieh, Collins, Levonyan-Radloff, & King, 2009).

Instruments

Demographics and Online dating questionnaire (Appendix I). The demographic and online dating questionnaire was used to gather demographic data and dating factors. The demographic questionnaire asked about age, race/ethnicity, socioeconomic status, educational level, and religion. The items on the online dating questionnaire asked participants to report their dating frequency, relationship status, and Internet dating usage and history. This was administered in order to gain important data about the participant's dating practice, amount of Internet use, and Internet dating use.

Sexual Risks Scale. The Sexual Risk Scale (SRS) (DeHart & Birkimer, 1997) was a 38-item scale that had six subscales that were used individually or collectively to measure an individual's risky sexual behavior including their attitudes about safer sex practice (13 items), normative beliefs of safer sex practice (7 items), intention to practice safer sex (7 items), expectations of risky sexual behavior (5 items), perceived susceptibility to STIs/HIV/AIDS (4 items), and substance abuse (2 items).

Table 2 Measurement Scale (Appendix III).

Name	Number of items	Psychometric properties
Sexual Risk Scale (SRS)	38	DeHart, D.D. & Birkimer, J.C. (1997), developed the Sexual Risk Scale, which was used among college age students and adults. Internal reliability: Attitude $\alpha = .88$, normative $\alpha = .83$, Expectation $\alpha = .80$, intention $\alpha = .80$, susceptibility $\alpha = .84$, and substance use $\alpha = .76$. The final 38-item scale $\alpha = .86$.

(DeHart, & Birkimer, 1997).

Sexually Transmitted Disease Knowledge Questionnaire (STD-KQ) was a current validated research instrument that assesses STD or STI knowledge. It consisted of 27 questions that were answered as true, false, or don't know. The questions assessed general knowledge of Chlamydia, Genital herpes, Gonorrhea, Hepatitis B, HIV, and HPV including causes, cures, transmission, and prevention (Jaworski, & Carey, 2007). The STD-KQ had an internal consistency of $r = .86$ and test-retest reliability of $r = .88, p < .01$, which compared favorably to other HIV-specific, single STD and multiple STD questionnaires (e.g., Brown, 2000; Carey et al., 1997; Jaworski, & Carey, 2001). Scoring of the questionnaire consisted of giving 1 point for every correct answer and 0 points for every incorrect answer or response of don't know. The total number of correct answers were summed for a final score. The possible range of scores was 0 to 27.

Table 3 Measurement Scale (Appendix III).

Name	Number of items	Psychometric properties
Sexually Transmitted Disease-Knowledge Questionnaire (STD-KQ)	27	The STD-KQ, which has been used among college age students and adults. This tool has demonstrated internal consistency ($\alpha = .86$) and test-retest reliability ($r = .88$) over a brief period. Evidence for the validity of the STD-KQ was obtained through a comparison with a validated HIV knowledge questionnaire.

(Jaworski & Carey, 2007).

Procedure

Participants were recruited through announcements posted on websites, electronic bulletin boards such as Craigslist©, Facebook© and Blogher©, and through flyers posted in women's health clinics, gynecology offices and primary care physicians offices. The advertisement and flyers stated that the researcher was studying online dating among women age fifty and older. Potential participants were advised that participation involved completing three questionnaires, which would take about 15-25 minutes in total. The advertisement and flyer also stated that the researcher was recruiting single female participants age fifty years of age and older that were currently seeking romantic partners online. The advertisement and flyer indicated that the participant could consent to participate in the study by going to the provided link and clicking on a link. The URL led to Qualtrics (www.Qualtrics.com) where the participants completed the questionnaires in the study.

Once the participants had accessed Qualtrics they were taken to a page with more

detailed information about the study, human subject procedures were followed through George Mason Universities Institutional Review Board, and then to the consent form where they clicked to proceed if they consented to the study or if they did not they were moved to a page that thanked them for their time and closed their access to the study. Potential participants were told about their option to continue with the study as well as informed them about their option to exit the study at any point by closing the page. If they clicked on the link to continue they were asked to complete a screening questionnaire, which addressed all of the criteria for participation in the study with true or false questions. The screening questionnaire ended with instructions to click on a link to proceed if the potential participant answered true to all of the questions. If the potential participant answered false to any of the questions, they were taken to a page that thanked them for their interest in the study. Eligible participants were then led to a page with a series of questions about the participant's demographics in order to obtain some background information. They were then directed to the online Sexually Transmitted Disease-Knowledge Questionnaire (STD-KQ) and the online the Sexual Risk Scale (SRS). Once this was submitted, participants were taken to a page that provided them with a debriefing and thanked them for their participation.

Data analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS). The data was cleaned and analyzed for errors and missing data. Missing data was analyzed to see if there were any apparent patterns. Different options were identified

on how to handle the missing data, which included discarding the questionnaire, coding, or imputing by using mean scores (Polit & Beck, 2012).

Data analysis was calculated for each of the demographic variables (age, SES, race/ethnicity, educational level, and religion). Cronbach's Alpha coefficients were calculated for the components of each measurement scale to verify internal consistency. Nunnally and Burnstein's (1994) recommended alpha value of .70 was be utilized to evaluate the internal consistency of each subscale. Descriptive statistics were calculated for each of the demographic variables. Frequency distributions, bivariate correlation, and multiple regression were anticipated to conducted to predict the intention of safer sex practice from knowledge of sexually transmitted infections, attitude of safer sex practice, and normative belief of safer sex practice.

Frequency distributions were used to review how different categories of values were distributed in the sample between the independent variables: knowledge of sexually transmitted infections, attitude toward safer sex practice, and normative belief of safer sex practice. Bivariate correlation was done with Pearson Correlation (r) and scatter plots to see if there was a relationship between the independent variables and dependent variable. Question one, which inquired about knowledge of sexually transmitted infections, was analyzed by doing descriptive statistics. Question two, which inquired about attitude and safer sex practice, was analyzed by using descriptive statistics. Question three inquired about normative beliefs towards safer sex practice. Bivariate correlation was conducted to see if there were relationships between the independent variables as well as the dependent variable, intention to practice safe sex. Question four

looked at knowledge of sexually transmitted infection, attitudes toward safer sex sex practice, normative beliefs towards safer sex practice, and intention to practice safer sex. Multiple regression was anticipated to used to evaluate potential predictors of the outcome: intention to practice safe sex. Multiple linear regression is a method of regression analysis that uses more than one independent variable to predict a single dependent variable (Vogt, 2005). The multiple regression would include stratifying for age in increments of five years from fifty to ninety.

Assumptions for multiple regression were (a) the variables have normal distributions, (b) the relationships between the independent and dependent variables are linear in nature, (c) the measurement instruments are reliable, and (d) the variance errors are the same across all levels of the independent variable (Pedhazur, 1997; Tabachnick & Fidell, 2001).

The participants were instructed on the importance of completing the survey and being sure to answer all questions to the best of their ability.

Human subjects considerations

The human rights of the research participants were fully protected. Approval for this study was obtained through the George Mason University Institutional Review Board (IRB) prior to initiation of the study (Appendix V).

Due to the sensitive nature of the questions posed by this topic, I anticipated potential participant discomfort and the possibility that responses could be influenced by social norms and perceptions of online dating. Using the link to the online survey provided anonymity for the participants. The participants were notified that they could discontinue

involvement at any time. Each participant received an online copy of the consent with contact information of the principal investigator if needed. No names appeared on study questionnaires or were reported in the findings. The questionnaires were stored through Qualtrics online encrypted file storage.

Chapter Four

Data Analysis

Data analysis was conducted in three phases. First, all data were analyzed descriptively via univariate analysis. Second, the relationship between the dependent variable intention to practice safer sex with the independent variables (knowledge of safer sex practice, attitude of safer sex practice, and normative belief of safer sex practice) and possible covariate variables (age, marital status, race/ethnicity, religion, education level, and income level) were examined using bivariate analysis. Predictor variables (independent/covariate variables) associated with the dependent variable at a statistically significant level ($p < .05$) were planned to be entered in the final multivariate model. Third, a multiple linear regression model was used to model scores reflecting the dependent variable intention to practice safer sex as a function of all predictor variables included in the multivariate model.

Prior to data analysis an examination of test assumptions indicated a satisfactory level of homoscedasticity, linearity, and normality. Furthermore, multicollinearity did not present a significant problem for this analysis.

Missing Data. Overall, a total of 115 participants initiated the online survey through Qualtrics. Of the 115 that started the survey 28 did not move past the inclusion/exclusion criteria. The remainder 87 study participants provided some data on the study survey. Of

these, 15 only provided data regarding study demographic variables and did not complete any survey scales. Another 18 study participants provided data regarding the study demographic variables and Safer Sex Knowledge questions, but no data regarding the Sexual Risk Scale. Thus, because these 33 study participants neglected to provide any data upon key study scales, they were excluded from the current study. Subsequently, data analysis involved 54 study participants. However, after inferential analysis data indicated only one predictor was significantly related to the dependent variable. A post hoc power analysis indicated that at these same settings only 54 study participants were needed to provide sufficient power for the a regression model with only a single predictor. Thus, the current sample provided sufficient power for this analysis.

In order to assess bias related to missing data an analysis of missing data by study variables. Data indicated that evidencing missing data was not significantly related to marital status, $X^2(4)=4.88$, $p=.30$, religion, $X^2(5)=6.77$, $p=.24$, education, $X^2(6)=7.77$, $p=.26$, income, $X^2(6)=8.31$, $p=.22$, or age, $t(85)=-.65$, $p=.52$. Data did indicate that missing data was significantly related to study participant race/ethnicity, $X^2(4)=9.84$, $p<.05$, where a higher percentage of African Americans (75%; $n=6$) and Asian (100%, $n=2$) evidenced missing data and higher percentage of Caucasian (66.7%, $n=46$), Hispanic (66.7%, $n=4$), and other (100.0%, $n=2$) did not evidence missing data.

Results Descriptive Analysis. Table 4 presents a descriptive analysis of the categorical study variables involved in this study. The average study participant was divorced ($n=32$; 59.3%), Caucasian ($n=46$; 85.7%), and Christian ($n=35$; 64.8%). About one third of the

sample had a highest education level of a Bachelors Degree (n=21; 38.1%). About three-quarters of the sample had an annual income of \$74,999 or less (n=38; 70.3%).

Table 4

Descriptive Analysis of the Categorical Study Variables (N=54)

Variable	n	%
Marital Status		
Divorced	32	59.3
Never Married	8	14.8
Separated	7	13.0
Widowed	7	13.0
Race/Ethnicity		
African American	2	3.7
Caucasian	46	85.7
Hispanic	4	7.4
Other	2	3.7
Religion		
Christian	35	64.8
Jewish	7	13.0
Muslim	1	1.9
Agnostic	4	7.4
Atheist	3	5.6
Other	4	7.4

Table 4 (Continued)

Descriptive Analysis of the Categorical Study Variables (N=54)

Variable	n	%
Education		
High School Graduate	9	16.7
Associates Degree	11	20.4
Bachelors Degree	21	38.1
Masters Degree	11	20.4
Ph.D. or Doctorate	1	1.9
Other	1	1.9
Income		
\$24,999 or less	12	22.2
\$ 25,000 – 49,999	12	22.2
\$ 50,000 – 74,999	14	25.9
\$ 75,000 – 99,999	8	14.8
\$ 100,000 – 124,999	4	7.4
\$ 125,000 – or greater	2	3.7
Don't wish to specify	2	3.7

Table 5 presents a descriptive analysis of the continuous variables involved in the current study. The average study participant was 56.59 (SD=5.95) years of age (MIN/MAX=50.00-78.00). The average score on the Knowledge scale was 17.16 (SD=6.34; MIN/MAX=.00- 27.00).

Attitude	2.99 (0.32)	2.08-3.77
Normative	3.01 (0.84)	1.29-4.86
Intention	2.57 (0.61)	1.60-4.00

Table 5
A Descriptive Analysis of the Continuous Study Variables (N=54)

Variable	M (SD)	MIN/MAX	Potential Scores
Age	56.59 (5.95)	50.00-78.00	NA
Knowledge	17.16 (6.34)	.00-27.00	NA
Attitude	2.99 (0.32)	2.08-3.77	1-5
Normative	3.01 (0.84)	1.29-4.86	1-5
Intention	2.57 (0.61)	1.60-4.00	1-5

Bivariate Analysis. Table 6 presents a bivariate analysis of safer sex risk intention by categorical study variables. A series of one-way ANOVAs indicated that mean levels of safer sex practices were not significantly associated with marital status, $F(3, 50)=1.59, p=.21$, race/ethnicity, $F(3, 50)=0.55, p=.65$, religion, $F(5, 48)=0.31, p=.90$, education, $F(5, 48)=1.79, p=.13$, or income, $F(6, 47)=0.43, p=.86$.

Table 6**Bivariate Analysis of Safe Risk Intention by Categorical Study Variables (N=54)**

Variable	M (SD)	F (df)	p
Marital Status*			
Divorced	2.46 (.59)	1.59 (3,50)	.21
Never Married	2.58 (.63)		
Separated	3.00 (.28)		
Widowed	2.70 (.83)		
Race/Ethnicity*			
African American	2.60 (1.13)	0.55 (3,50)	.65
Caucasian	2.60 (.62)		
Hispanic	2.20 (.28)		
Other	2.50 (.71)		
Religion*			
Christian	2.54 (.58)	0.31 (5,48)	.90
Jewish	2.69 (.91)		
Muslim	2.40 (.00)		
Agnostic	2.65 (.34)		
Atheist	2.87 (.46)		
Other	2.35 (.77)		

Table 6 (continued)

Bivariate Analysis of Safe Risk Intention by Categorical Study Variables (N=54)

Variable	M (SD)	F (df)	p
Education*			
High School Graduate	2.80 (.68)	1.79 (5,48)	.13
Associates Degree	2.47 (.75)		
Bachelors Degree	2.71 (.50)		
Masters Degree	2.18 (.48)		
Ph.D. or Doctorate	2.40 (.00)		
Other	3.20 (.00)		
Income*			
\$ 24,999 or less	2.51 (.67)	0.43 (6,47)	.86
\$ 25,000 – 49,999	2.58 (.74)		
\$ 50,000 – 74,999	2.69 (.48)		
\$ 75,000 – 99,999	2.33 (.48)		
\$ 100,000 – 124,999	2.55 (.53)		
\$ 125,000 – or greater	2.90 (1.56)		
Don't wish to specify	2.80 (0.00)		

Table 7 presents a correlational analysis of intention to practice safer sex scores with continuous study variables. The data indicated that intention to practice scores were not significantly correlated with age, $r(52) = -.08$, $p = .56$, attitude of safer sex practice, $r(52) = -.70$, $p = .22$, sexual risk, $r(52) = -.10$, $p = .11$, or knowledge of safer sex practice $r(52) = .32$, $p = .11$. However intention to practice safer sex scores were correlated with normative beliefs, $r(52) = .32$ $p < .05$.

R^2 or the amount of variance showed that 10% of the variance in the dependent variable was explained so reflexively 90% is not explained that needs to be identified through further research.

Table 7

Correlational Analysis of Continuous Study Variables or Bivariate Analysis of Intention to practice safer sex

Scores with knowledge of safer sex practice, attitude of safer sex practice, and normative belief of safer sex practice (N=54)

Variable	1	2	3	4	5	6
1. Intention	--	-.08	.22	-.10	.32*	-.22
2. Current Age		--	.08	-.14	-.07	.01
3. Attitude			--	-.70**	.51**	-.12
4. Risk				--	.18	-.09
5. Normative					--	-.28*
6. Knowledge						--

* $p < .05$, ** $p < .01$

Regression Analysis. Table 8 presents a linear regression analysis examining scores reflecting safer sex practices. Data indicated that the overall model was statistically significant, $F(1, 52)=5.75, p < .05$. Furthermore, the model explained 10% ($R^2=.10$, Adjusted $R^2=.08$) of the variance in the dependent variable intention to practice safer sex. In terms of the single predictor, data indicated that normative beliefs of safer sex practice were significantly related to the dependent variable, $B=.23$, $SE=.10$, $\beta=.32$, $p < .05$. Specifically, as normative belief of safer sex practices scores increased, intention to practice safer sex scores also increased at a statistically significant level.

Multiple regression was conducted on the covariates of education of marital status and education which did not show a statistical difference at the level of .05. One author

(Jewell, 2004) indicated, all independent variables with at least $p < .3$ in the bivariate analysis were included as covariates in the multiple regression model. However, there were no changes in significance in this study so the significance level of $p < .05$ was maintained. From the literature review, it was suggested that there may be a relationship between education and marital status in relationship to intention to practice safer sex. Further inquiry into the possible relationship between education, marital status and intention to practice safer sex could be further examined in future research.

Because there was only one significant predictor in the bivariate analysis, which was normative beliefs of safer sex practice a multiple regression could not be done so a simple linear regression was completed. The simple linear regression showed that normative beliefs of safer sex practice were significant with a $p=.02$.

Table 8

Simple Linear Regression Analysis Examining Intention to Practice Safer Sex (N=54)

Variable	B	SE	β	p
Normative Beliefs	.23	.10	.32	.02

NOTE FOR MODEL: $R^2=.10$, ADJUSTED $R^2= .08$, $F(1,52)=5.75$, $P<.05$

Chapter Five

Discussion

The study revealed that normative beliefs of safer sex practice were significantly related to intention to practice safer sex. The regression model only explained 10% ($R^2=.10$, Adjusted $R^2=.08$) of the variance of the intention to practice safer sex, the single predictor normative beliefs of safer sex practice did show it was significantly related to the intention to practice safer sex, $B=.23$, $SE=.10$, $\beta=.32$, $p<.05$. Understanding that as normative belief of safer sex practices scores increased, the intention to practice safer sex scores also increased at a statistically significant level.

This important information is critical because it indicates that it is not necessarily just about knowledge that these single women lack it is about their normative belief that drives their intention to practice safer sex. According to Fishbein & Azjen, (2010), health care providers will need to provide this population with education that will help them change their normative beliefs. The effect of the education has to move the person through three processes in order to change the normative belief that is driving their intention to practice safer sex: acceptance, yielding, and impact (Fishbein & Azjen, 1981). The first step is to provide the education that will be accepted by the individual so that they will agree with it. Acceptance is not enough according to Fishbein & Azjen (2010), to change a person's normative belief. The person has to yield or show that the

change in beliefs were representative and the intended education effected the person's behavior. The health care provider has to take the education a step further and evaluate the impact of the education that was provided and follow up to evaluate the impact that it had or did not have on the persons behavior.

Limitations: Lessons learned

Accessing this particular population provided unforeseen challenges. Because of the nature of this study and the sensitive topic advertising through social media was more difficult than anticipated. Many social media sites have an approval systems for advertising on their web site. They do not allow excluding any one group so advertising to just women age fifty years of age and older was not feasible. The advertisement had to just list that you may be eligible to participate in a research study on sexuality and aging and once the potential participant accessed the online survey they were told more about the study which revealed the targeted population was single women fifty years of age and older. There was also a cost factor associated with advertising online that impacted the study because of limited financial resources. Advertising through flyers in offices, medical, women's clubs and organizations also posed to be difficult because the flyers reached one individual at a time. Arranging group presentations about the study were more successful in obtaining potential participants. Working with directors of aging programs proved to be successful because it was easier to follow up with reminders about participating in the study. For future studies seeking out retirement communities and more aging programs where older adults congregate may provide for more participation.

Providing an educational in-service and or appreciation gift cards may also help with interest in participation.

Data collection for this study took 9 months. In retrospect planning to improve recruitment strategies in reaching this population may decrease the data collection time frame. Considering face-to-face meeting with potential participants with paper questionnaires may improve participation in the study but this approach may also cause undue stress due to the nature of the sensitive question's. Applying for grant money so that further online and newspaper advertisement for the study may also be more effective.

This study lacked statistical power within the ANOVA's, where a larger sample size may have shown more statistical significance. In future studies increasing the sample size may increase the ability to assess the relationships between the dependent variable, independent variables and the covariates. Controlling the covariates in future studies may also improve the understanding within the variations.

The data analysis only showed significance in one of the predictors, which was normative belief of safer sex practice. This only allowed for a simple regression model to be used instead of a multiple regression model. This limitation may be changed by increasing the covariates and or increasing the sample size, which would strengthen the study.

The instrument used for measurement of knowledge could be changed to include other dimensions that are more appropriate for this age group. This study should lead to the development of a measurement tool that incorporates age specific questions.

In this study sample many of the participants had a higher level of education bachelors degree or higher, which may not capture details of single women fifty years of age and older with less education. For future studies accessing participants that have a wide range of educational levels may provide important information so that healthcare providers can customize education and follow-up to meet the specific needs of their patients.

The sample appeared to be on the homogeneous side as far as population, modest income levels, and as far as marital status; two-thirds were divorced. Measurement could be developed that would be specific for divorced women among this age group.

Conclusion

Many single women fifty years of age and older may not understand or be aware of the risks involved in online dating. Nurses are in the prime position to screen and educate women fifty years of age and older about these risks during routine physical assessments. Because health care providers may be uncomfortable addressing sexual health among this population and or they may not know they are seeking romantic relationships. Performing a sexual health assessment during routine health care visits will open the discussion and provide an opportunity to provide sexual health education that will promote and lead to safer sex practices. Health care providers then can plan to evaluate if the education provided actually changed the persons sexual risk behavior at later visits. The finding that women age fifty and older that date online evidenced that normative beliefs were significantly related to intention to practice safer sex, suggests that future research should examine this topic further. Specifically, future research might

benefit from incorporating a qualitative piece that includes probing qualitative questions that might better identify the reasons behind normative belief and safer sex practices.

Appendix I

Demographic Questionnaire

1. Age

- 50 – 59
- 60 – 69
- 70 - 79
- 80 – 89
- 90 >

2. Racial/Ethnicity Identity:

- Asian/Pacific Islander
- Black/Africa American
- Latino/a
- White/Caucasian
- Multiracial (please specify): _____
- Other (please specify): _____

3. Religion:

- Buddhist
- Christian
- Hindu
- Jewish
- Muslim
- Agnostic or Atheist
- None
- Other (please specify): _____

4. Highest degree held:

- Less than high school diploma
- High school/GED
- Associates Degree
- Bachelors Degree
- Masters Degree
- Doctoral Degree

5. Perceived socioeconomic status:

12. Are you currently in a relationship? Yes _____ No _____

13. What is your regular source of medical care? (Please check only one response)

- a. Personal doctor/general practitioner
- b. Health Clinic
- c. Hospital
- d. Other: _____

14. Do you have health insurance?

- a. Yes
- b. No

15. If yes, which of the following do you obtain your health insurance?

- a. From your employer
 - b. Medicare
 - c. Medicaid
 - d. Both Medicare and Medicaid
 - e. Don't know
-

Appendix II

**The Sexually Transmitted Disease Knowledge Questionnaire
(STD-KQ; Jaworski & Carey, 2007)**

Instructions: For each statement below, please circle true (T), false (F), or I don't know (DK). If you don't know, please do not guess; instead, please circle DK.

	True	False	Don't Know
1. Genital Herpes is caused by the same virus as HIV.	T	F	DK
2. Frequent urinary infections can cause Chlamydia.	T	F	DK
3. There is a cure for Gonorrhea.	T	F	DK
4. It is easier to get HIV if a person has another Sexually Transmitted Disease.	T	F	DK
5. Human Papillomavirus (HPV) is caused by the same virus that causes HIV.	T	F	DK
6. Having anal sex increases a person's risk of getting Hepatitis B.	T	F	DK
7. Soon after infection with HIV a person develops open sores on his or her genitals (penis or vagina).	T	F	DK
8. There is a cure for Chlamydia.	T	F	DK
9. A woman who has Genital Herpes can pass the infection to her baby during childbirth.	T	F	DK
10. A woman can look at her body and tell if she has Gonorrhea.	T	F	DK
11. The same virus causes all of the Sexually Transmitted Diseases.	T	F	DK
12. Human Papillomavirus (HPV) can cause Genital Warts.	T	F	DK
13. Using a natural skin (lambskin) condom can protect a person from getting HIV.	T	F	DK
14. Human Papillomavirus (HPV) can lead to cancer in women.	T	F	DK
15. A man must have vaginal sex to get Genital Warts.	T	F	DK
16. Sexually Transmitted Diseases can lead to health problems that are usually more serious for men than women.	T	F	DK
17. A woman can tell that she has Chlamydia if she has a bad smelling odor from her vagina.	T	F	DK
18. If a person tests positive for HIV the test can tell how sick the person will become.	T	F	DK
19. There is a vaccine available to prevent a person from getting Gonorrhea.	T	F	DK
20. A woman can tell by the way her body feels if she has a Sexually Transmitted Disease.	T	F	DK
21. A person who has Genital Herpes must have open sores to give the infection to his or her sexual partner.	T	F	DK
22. There is a vaccine that prevents a person from getting Chlamydia.	T	F	DK
23. A man can tell by the way his body feels if he has Hepatitis B.	T	F	DK
24. If a person had Gonorrhea in the past he or she is immune (protected) from getting it again.	T	F	DK
25. Human Papillomavirus (HPV) can cause HIV.	T	F	DK
26. A man can protect himself from getting Genital Warts by washing his genitals after sex.	T	F	DK
27. There is a vaccine that can protect a person from getting Hepatitis B.	T	F	DK

Scoring for the STD Knowledge Questionnaire:

Score 1 for each correct response.

False is the correct response for these items: 1, 2, 5, 7, 10, 11, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26.

True is the correct response for the remaining items: 3, 4, 6, 8, 9, 12, 14, 27.

Total scores range from 0—27.

Appendix III

Sexual Risks Scale

Safer sex means sexual activity which reduces the risk of AIDS virus transmission. Using condoms is an example of safer sex. Unsafe, risky, or unprotected sex refers to sex without a condom, or to other sexual activity which might increase the risk of AIDS virus transmission. For each of the following items, check the response which best characterizes your opinion.

- 1) If my partner wanted me to have unprotected sex, I would probably "give in."
- 2) The proper use of a condom could enhance sexual pleasure.
- 3) I may have had sex with someone who was at risk for HIV/AIDS.
- 4) If I were going to have sex, I would take precautions to reduce my risk of HIV/AIDS.
- 5) Condoms ruin the natural sex act.
- 6) When I think that one of my friends might have sex on a date, I ask them if they have a condom.
- 7) I am at risk for HIV/AIDS.
- 8) I would try to use a condom when I had sex.
- 9) Condoms interfere with romance.
- 10) My friends talk a lot about "safer" sex.
- 11) If my partner wanted me to participate in "risky" sex and I said that we needed to be safer, we would still probably end up having "unsafe" sex.
- 12) Generally, I am in favor of using condoms.
- 13) I would avoid using condoms if at all possible.

- 14) If a friend knew that I might have sex on a date, he/she would ask me if I were carrying a condom.
- 15) There is a possibility that I have HIV/AIDS.
- 16) If I had a date, I would probably not drink alcohol or use drugs.
- 17) "Safer" sex reduces the mental pleasure of sex.
- 18) If I thought that one of my friends had sex on a date, I would ask them if they used a condom.
- 19) The idea of using a condom doesn't appeal to me.
- 20) "Safer" sex is a habit for me.
- 21) If a friend knew that I had sex on a date, he/she wouldn't care if I had used a condom or not.
- 22) If my partner wanted me to participate in "risky" sex and I suggested a lower-risk alternative, we would have the "safer" sex instead.
- 23) The sensory aspects (smell, touch, etc.) of condoms make them unpleasant.
- 24) I intend to follow "safer sex" guidelines within the next year.
- 25) With condoms, you can't really "give yourself over" to your partner.
- 26) I am determined to practice "safer" sex.
- 27) If my partner wanted me to have unprotected sex and I made some excuse to use a condom, we would still end up having unprotected sex.
- 28) If I had sex and I told my friends that I did not use condoms, they would be angry or disappointed.
- 29) I think "safer" sex would get boring fast.
- 30) My sexual experiences do not put me at risk for HIV/AIDS.
- 31) Condoms are irritating.
- 32) My friends and I encourage each other before dates to practice "safer" sex.

- 33) When I socialize, I usually drink alcohol or use drugs.
- 34) If I were going to have sex in the next year, I would use condoms.
- 35) If a sexual partner didn't want to use condoms, we would have sex without using condoms.
- 36) People can get the same pleasure from "safer" sex as from unprotected sex.
- 37) Using condoms interrupts sex play.
- 38) It is a hassle to use condoms.

SCORING: Participants indicate agreement/disagreement using a Likert-type scale with 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided/Neutral, 4 = Agree, 5 = Strongly Agree. Reverse score odd-numbered items and item number 38. Higher scores indicate more positive attitudes toward safer sex. Subscales can be derived by aggregating the following items:

Attitudes toward safer sex: 2, 5, 9, 12, 17, 19, 23, 25, 29, 31, 36, 37, 38 (high score = more positive attitude)

Peer norms toward safer sex: 6, 10, 14, 18, 21, 28, 32 (high score = greater peer norm)

Perceived susceptibility to HIV: 3, 7, 15, 30 (high score = lower perceived susceptibility)

Substance use: 16, 33 (high score = lower substance abuse)

Intention to practice safer sex: 4, 8, 13, 20, 24, 26, 34 (high score = greater intention)

Expectation to practice safer sex: 1, 11, 22, 27, 35 (high score = greater expectation)

Further information on scale norms, factors, reliability, and validity can be found in DeHart, Dana D. & Birkimer, John C. (1997). Trying to practice safer sex: Development of the Sexual Risks Scale. The Journal of Sex Research, 34(1), 11-25.

Appendix IV

INFORMED CONSENT

Title of Research: Predictors of intention for safe sex practice among women fifty years of age and older that online date, George Mason University. Before agreeing to participate in this research study, it is important that you read the following explanation of this study. This statement describes the purpose, procedures, benefits, risks, discomforts and precautions of the program. Also described are the alternative procedures available to you, as well as your right to withdraw from the study at any time. No guarantees or assurances can be made as to the results of the study.

Explanation of Procedures: You are being asked to participate in a research project to investigate the predictors of intention for safe sex practice among women fifty years of age and older that online date. The approach of the research is through the use of an online questionnaire. You will complete the questionnaire that contains 65 questions that should take 20-30 minutes to answer. You are asked **not** to include any identifying information on the questionnaires in order to assure your confidentiality and anonymity.

Risks and Discomforts: You will not be at physical risk; however, you may experience some mental discomfort or embarrassment due to the nature of the study.

Benefits: There are no direct benefits by participating in this project. However, this research is expected to yield knowledge about intention of safe sex practices among single women fifty and older that online date. You may also benefit from knowledge that the information from the study will allow health care professionals to better plan for education and counseling of women fifty and older in the area of sexually transmitted infections.

Confidentiality: All information gathered from the study will remain confidential. Your identity as a participant will not be disclosed to any unauthorized persons. Only the researcher (myself) and George Mason University Institutional Review Board (the committee that approved this research project) will have access to the research materials, which will be kept in a locked file cabinet. Any references to your identity that would compromise your anonymity will not be included in the preparation of the research reports and publications.

Withdrawal Without Prejudice: Participation in this study is voluntary. Refusal to participate will involve no penalty. You are free to withdraw consent and discontinue participation in this project at any time without prejudice from George

Mason University.

Costs and Payments to Subject for Participation in Research: There will be no costs for participating in the research. Also, you will not be paid to participate in this research project but you will be eligible to participate in the raffle of a gift card for your participation.

Payment for Research Related Injuries: Although there are no risks of injury involved with this study, George Mason University has made no provision for monetary compensation in the event of injury resulting from the research.

Alternative Procedures: If a person chooses not to participate, an alternative procedure is not necessary.

Questions: Any questions concerning the research project should be directed to Dr. _____ at 703-XXX-XXXX, George Mason Universities Institutional Review Board.

Agreement: This agreement states that you have received a copy of this informed consent. Your signature below indicates that you agree to participate in this study.

Signature of participant _____

Date _____

Signature of Researcher _____

Date _____

Appendix V

Office of Research Integrity and Assurance

Research Hall, 4400 University Drive, MS 6D5, Fairfax, Virginia 22030
Phone: 703-993-5445; Fax: 703-993-9590



DATE: November 26, 2014

TO: Michele Davidson,
Ph.D. FROM: George
Mason University IRB

Project Title: [681105-1] Predictors of Intention for Safer Sex Practices Among Women
Fifty Years of Age and Older that Date Online

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF
EXEMPT STATUS DECISION DATE: November
26, 2014

REVIEW CATEGORY: Exemption category #2

Thank you for your submission of New Project materials for this project. The Office of Research Integrity & Assurance (ORIA) has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

Please remember that all research must be conducted as described in the submitted materials.

Please note that any revision to previously approved materials must be submitted to the

ORIA prior to initiation. Please use the appropriate revision forms for this procedure.

If you have any questions, please contact Karen Motsinger at 703-993-4208 or kmotsing@gmu.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within George Mason University IRB's records.

- 1 -
Generated on IRBNet

Appendix VI

Recruitment letter

Hello,

My name is Natalie Pelland, and I'm a doctoral student in the school of nursing at George Mason University, Fairfax, VA. I am in the process of writing my dissertation and am looking for participants for my study. My study will explore women fifty years of age and older who date online. You are eligible to participate in the study if you: Female, fifty years of age and older, and seeking romantic partners through online dating sites.

Participation includes completing a brief demographic questionnaire and 2 more in-depth questionnaires, which will take 15-25 minutes in total. If you are interested in participating, please click on the link below.

Thank you for your participation. It is much appreciated.

If you have any questions, please feel free to email me at: naphd2013@gmail.com.

Appendix VII

Consent

Thank you for your interest in this study on women fifty years of age and older that date online. This study is being conducted by Natalie Pelland, a doctoral student in the school of nursing at George Mason University, Fairfax, VA. This study involves anonymously completing:

A demographic questionnaire
(2minute)

A questionnaire on knowledge of STIs
(10-15 minutes)

A questionnaire on sexual risk taking in online dating
(10-15 minutes)

The risks associated with participating in this study are minimal.

Before beginning the first questionnaire, you will be asked to answer questions to ensure that you meet the requirements for participation in this study.

Participation is voluntary and participants may withdraw at any time and for any reason.

You may exit the study at any point by closing the page if you wish to discontinue your participation.

By clicking on the link below, you are consenting to participate in this study.

Thank you for your participation. If you have any questions, please email me at napphd2013@gmail.com

Appendix VIII

Debrief

Thank you for your participation.

This study is conducted by Natalie Pelland, a doctoral student in school of nursing at George Mason University, Fairfax, VA. This study is looking at knowledge of safer sex practices, attitudes of safer sex practices, normative beliefs of safer sex practice have on intention to practice safer sex among women fifty years of age and older that date online. It is expected that intention to practice safer sex will be associated with attitudes of safer sex, normative beliefs of safer sex, and knowledge of safer sex practice among women fifty years of age and older who date online.

It is not expected that participation in this study will cause you any distress. This study should be completed by March 2015.

If you have any questions or concerns or would like a summary of the results, please email me at napphd2013@gmail.com.

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Biography

Natalie A. Stepanian graduated from Science Hill High School, Johnson City, Tennessee, in 1978. She received her Associates Degree in Nursing in 1981 from the State University of New York, Morrisville, New York and a Bachelors of Science from Marymount University, Arlington, Virginia. She was employed as an Emergency/Critical Care/Home Health/Senior Public Health Nurse in a variety of settings in the Washington, D.C. and Northern Virginia area for over 30 years. She received her Masters of Nursing with a concentration in Education from the University of Phoenix, Phoenix, Arizona in 2008. She then became an Associate Professor at Northern Virginia Community College, Springfield, Virginia. In 2012 she accepted an appointment at Longwood University as a Nursing Educator while she was completing her doctoral work.

I. EDUCATIONAL & EMPLOYMENT DATA:

A. Academic Preparation:

<i>08/10 – present</i>	George Mason University, Fairfax, Virginia DOCTORATE OF PHILOSOPHY (NURSING) Focus: Gerontology, Public Health
<i>08/06 – 05/08</i>	University of Phoenix, Phoenix, Arizona MASTERS OF NURSING AND EDUCATION Focus: Nursing and Education
<i>08/86 – 05/89</i>	Marymount University, Arlington, Virginia BACHELORS OF SCIENCE Focus: Chemistry
<i>01/79 – 05/81</i>	State University of New York, Morrisville, New York ASSOCIATES DEGREE OF NURSING

B. Professional Licenses/certifications:

Registered Nurse	Commonwealth of VA	1989 – present
Registered Nurse	Washington, DC	1981 – present

BCLS
ACLS

American Heart Association 1981 – present
American Heart Association 1982 – present

C. Employment:

08/12 – present **Longwood University Department of Nursing, Farmville,
Virginia**

Instructor of Nursing (tenure-track)

2013 – 2014 **Centra Southside Community Hospital, Farmville, Virginia**

PRN Staff Nurse in the Emergency Department

- Responsible for triage and care of patients in a 17 bed rural emergency department

07/08 – 08/12 **Northern Virginia Community College, Springfield, Virginia**

Full-time Assistant Professor

07/04 – 08/08 **Department of Human Services, Aging and Disability Services
Division, Arlington County, Arlington, Virginia**

Senior Public Health Nurse/Contract Manager

01-04 **Inova Visiting Nurses Association Home Healthcare,
Springfield, Virginia**

Nursing Case Manager

97-01 **Otolaryngology, Head and Neck Surgery, and Facial Plastic
Surgery, Alexandria, Virginia**

Registered Nurse Manager: Surgical Practice

92-97 **U.S. Consulate General, Frankfurt, Germany**

Medivac Nurse Coordinator European Command/volunteer

81-92 **Georgetown University Hospital, Washington, D.C.**

Staff Nurse Emergency Department/Intensive Care Unit

D. Honors, Biographical Listings, Honorary Societies:

2014 – Present Longwood University Nursing Honor Society
2008 – Present Sigma Theta Tau International Honor Society

E. Membership in Learned Societies or Professional Memberships:

2015 – present American Gerontological Nurses Association

2013 – present Southern Nursing Research Society (SNRS)

2013 - present Research Consultant to CENTRA Southside Community Hospital’s Evidence Based Research Council. Provided counsel to the Chair of this committee to begin this council and future evidence-based projects.

2012 – present American Association of Colleges of Nursing (AACN)

2010 – present Doctoral Student Organization, George Mason University (DSO)

2008 – present National League of Nursing (NLN)

2004 – 2008 Virginia Association for Home Care and Hospice (VAHC)

2000 – present American Nurses Association (ANA)

2000 – present Virginia Nurses Association (VNA)

F. National/International

2000 – present American Nurses Association Member
Served in rolls as legislative liaison and Vice President of the 8th District 2008-2010.

06/2011 Nursing Administration Leadership Academy, Fairfax, VA.

06/2012 20th Annual Washington Health Policy Institute, Arlington, VA.
Attended a six week course on the understanding of how public policy affects the nation’s health care delivery system and resources.

G. Awards and Other Commendations

- Faculty Award from Alpha Delta Pi (2012) Longwood University, Farmville, Virginia
 - Finalist March of Dimes Nurse of the Year (2014) Richmond, Virginia
-

H. Funding/Grant Awards:

2014-present The Gertrude Hudson Research Scholarship for Dementia Care, \$30,000. Awarded to develop the gerontological research agenda Longwood University Department of Nursing.

2014-present The Drew and Risa Hudson family scholarship for the study of geriatric care: \$1,000. annually for gerontological research with undergraduate students.

NAS 03/16.