Southern California CSU DNP Consortium

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California State University, Long Beach
California State University, Los Angeles

AGE AND PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS IN WOMEN: A PILOT STUDY

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By

Lisa Marie Wheadon

Doctoral Project Committee Approval:

David E. Kumrow, EdD, RN, Project Chair
Beth Keely, PhD, RN, Committee Member

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ABSTRACT

Sexually transmitted infections (STIs) represent a significant public health and financial burden in the United States. The rate of STIs diagnosed in older populations has more than doubled in the past decade; however, the reason for this phenomenon is unclear. Adults are sexually active well into old age, yet many have never discussed sexual activity or received education about sexual health from a healthcare provider. Since a significant role of the nurse practitioner is to educate individuals and communities regarding health promotion and disease prevention, it is important to take a fresh look at what role nurse practitioners currently play in the prevention of STIs in older women and how they can become better advocates for this population.

This study examined the relationship between a woman's age and whether a nurse practitioner provides education about prevention of STIs. Associated factors of gender, age, marital status, ethnicity, specialty, level of education, and years of experience of the nurse practitioner were examined as possible issues affecting sexual health care and education provided to women about prevention of STIs.

Results indicated that the age of female patients significantly affected education about prevention of STIs. A bias exists related to education of sexual health for women ages 40 or more compared to women ages 20–39, suggesting that older women are less likely than younger women to receive preventative sexual education from nurse practitioners.

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BACKGROUND

Problem Statement

Sexually transmitted infections (STIs), also known as sexually transmitted diseases (STDs) represent a significant public health and financial burden in the United States. The CDC estimates that 19 million new cases are diagnosed in the United States annually, at a cost of approximately 17 billion dollars (Centers for Disease Control and Prevention [CDC], 2012a). The rate of STIs in the middle-aged and older populations has more than doubled in the past decade. In 2000 there were 1,743 cases of syphilis documented in 40–65+ group; that number increased to 4,318 in 2011. Chlamydia cases reported in this same age category in 2000 were 14,004; in 2011 more than 45,000 cases were reported (CDC, 2000, 2011b). The reason for the increased incidence of STI in older Americans is unclear. Accurate data are difficult to obtain as there is very little research available that investigate sexual behaviors or trends in this population.

STIs are caused by a variety of bacteria, viruses, and parasites. They can be passed between individuals through vaginal, oral, and anal sexual activity. However, they are more readily spread from men to women, where early symptomology is less likely to be noted and consequently diagnosis and treatment becomes more difficult (Drew & Sherrard, 2008; Idso, 2009; Kuehn, 2008).

The most frequently diagnosed bacterial STIs in the United States are chlamydia, gonorrhea, and syphilis. Common viral STIs include human papillomavirus (HPV), which causes genital warts and is linked to cervical and anal cancers; human immunodeficiency virus (HIV); acquired immunodeficiency syndrome (AIDS); and

herpes simplex type II. Trichomoniasis is an example of a frequently observed STI caused by a parasite (Matteucci & Schub, 2012b).

Commonly Seen STIs

Chlamydia trachomatis or chlamydia is the most commonly reported notifiable disease in the United States; it infects women at a rate of more than 2.5 times that of men. Chlamydial infections may go unreported as they are usually asymptomatic in women (CDC, 2011b). With this in mind, it is important to note that the numbers of diagnosed cases of chlamydia have steadily risen since 1991. In 2011, overall chlamydia rates increased by 8% from the previous year; although the rates for females 40 years and older remained at approximately 2.1% of diagnosed cases; this represents an increase of 2,182 cases of chlamydia from 2010 to 2011 within this population (CDC, 2011b).

Neisseria gonorrhoeae or gonorrhea is the second most commonly reported notifiable disease in the United States. The CDC (2011b) stated that gonorrhea rates increased for both male and female populations since 2009. Among women, the largest increase was seen in those ages 40–44 years, at 8.4%. In 2011, 3.2% of diagnosed cases of gonorrhea in women occurred in those age 40 years or older. This represents an increase of 519 cases diagnosed from 2010 totals for this population (CDC, 2011b).

The overall numbers of cases of primary and secondary syphilis have increased since 2001, but reported cases in women have declined for the past 2 years. The majority of syphilis cases are seen in men, at a rate approximately 8 times that in women. The 40+ years category for women represented 257 or 1.7% of cases diagnosed for females in 2011 (CDC, 2011b).

HPV rates are difficult to capture as they are not listed as reportable STIs by the CDC. However, it is known that HPV can remain dormant for long periods of time and is a causative factor in both low-risk types (6 and 11, which cause genital warts) and high-risk types (16 and 18, which cause cervical cancer; CDC, 2012c; Hariri et al., 2011). A study by Hariri et al. (2011) documented the prevalence of genital HPV in women ages 14–59 in the United States. It was found that the occurrence of any HPV type remained steady at a level of about 38–40% for women ages 30 to 59 years. Given that HPV-associated cancers can develop many years after infection, this leaves a large population of older women at risk for additional disease. In an earlier study by Lindau, Drum, Gaumer, Surawska, and Jordan (2008), it was reported that nearly 1 in 16 women ages 57–85 were found to have a high-risk HPV type.

Although the CDC does not retain information regarding HPV incidence and prevalence, it tracks incidence of HPV-associated cancers in the United States. The median age at diagnosis of HPV-associated cancers in women is 48 years for cervical cancer, 60 years for anal cancer, 61 years for oropharyngeal cancer, 66 years for vulvar cancer, and 69 years for vaginal cancer (CDC, 2012c).

Herpes Simplex Virus type II (HSV-2) is the most prevalent viral STI, causing 99% of all cases of genital herpes. More women than men are infected with HSV-2, at a rate of about 1 in 4. The virus stays in the body indefinitely; those who are infected with HSV-2 have periods of dormancy and flares or outbreaks throughout their lives. The CDC does not have statistics on incidence and prevalence of HSV-2, although it is estimated that 500,000 cases of genital herpes are diagnosed annually in the United

States. Initial visits to physician offices for genital herpes have decreased since 2009 (CDC, 2012b).

Women are more likely than men to acquire HIV through heterosexual activities. According to the CDC (2012b), surveillance data collected in 2009 revealed that women represented 24% of all diagnoses of HIV among adults and adolescents. Approximately 34% of all females diagnosed with HIV in 2009 were age 45 or older. Further, it is projected that 1 in 139 women will be diagnosed with HIV at some time in her life (CDC, 2011a).

Trichomoniasis is a very common STI caused by a protozoan parasite. This STI is more common in women than in men, and older women are more likely than younger women to be infected (CDC, 2012d). A study by Johns Hopkins Medicine (2011) revealed that women age 50 or older had the highest incidence of trichomoniasis at 13%, followed by an 11% infection rate in women 40–49 years old.

Older Women Are at Increased Risk

Behaviorally associated risk factors for STIs in older women are the same as those for adolescents and young adults. These include drug use, lack of barrier protection (condom use), and multiple sex partners (Matteucci & Schub, 2012b).

Certain physiological changes put older women at increased risk for STIs. These include decreased immune function; comorbid diseases-advanced age, which can mask signs and symptoms associated with STIs; and decreased estrogen levels, which cause atrophy, thinning, and drying of the vaginal mucosa, predisposing the tissue to tears during intercourse and easier entry for bacteria and viruses (Idso, 2009; Kuehn, 2008;

Levy, Ding, Lakra, Kostes, & Niccolai, 2007; Matteucci & Schub, 2012a; "Sex and the Older Woman," 2012).

Background of the Problem

Although the U.S. population continues to age, health care providers have little knowledge of sexual function and behaviors of their older patients. Recent studies have indicated that adults continue to be sexually active well into old age (Gass et al., 2011; Katz, 2012; Kuehn, 2008; Lindau et al., 2007). In a study by Lindau et al. (2007), it was found that frequency of sexual activity was linked to health status and prevalence of sexual "problems" associated with older people. In other words, decreased sexual activity was correlated with poorer overall health and with issues of sexual dysfunction: erectile difficulties in men and decreased libido along with vaginal dryness in women.

In one study (Lindau et al., 2007) of male and female adults ages 57–85 years, 73% of those ages 57–64, 53% of those ages 65–74, and 26% of those ages 75–85 reported being sexually active. Persons who were in good physical health were more likely to have a spousal or other intimate relationship and were more likely to be sexually active with that person.

Older women are having and enjoying active sex lives. In a study of sexual activity conducted during the Women's Health Initiative's hormone therapy trials, baseline sexual activity was reported at 61% for women ages 50–59, 45% for ages 60–69, and 28% for ages 70–79. Sixty-three percent were satisfied with their current sexual activity; of those dissatisfied, 57% preferred more sexual activity (Gass et al., 2011).

Studies have shown that women perceive an active sex life as an important part of good health. They agree that sexual satisfaction is key to having a feeling of fulfillment

and contentment in life (Lindau, Leitsch, Lundberg, & Jerome, 2006; Lindau et al., 2007).

Reports such as these are not surprising, since women who are currently in their 60s and 70s grew up during the sexual revolution. Menopause for older women means freedom from pregnancy. Hormone therapy can rejuvenate a lagging libido. Issues of sexual dysfunction can be helped with products such as topical estrogens and lubricants for treating vaginal dryness. Medications for treatment of male erectile dysfunction are available. The ease of accessibility of these treatments has enhanced enjoyment of sexual activity and prolonged the sex lives of older women. These are the same women who may now be divorced or widowed and are entering into new sexual relationships (Idso, 2009; "Sex and the Older Woman," 2012).

Decreased condom practices have been reported in post-menopausal or older populations of women as they are no longer concerned with pregnancy and continue to relate use of condoms to contraception (Idso, 2009; Lindau et al., 2006; Matteucci & Schub, 2012b). Low rates of condom use may be reflective of hesitancy in older women to discuss safer sexual practices with new partners ("Sex and the Older Woman," 2012). Many older adults have never been educated on safer sex practices because they became sexually active prior to the first diagnosed cases of HIV-AIDS (Idso, 2009; Kuehn, 2008; Matteucci & Schub, 2012a, 2012b; "Sex and the Older Woman," 2012).

Statement of the Problem

Traditionally, educational programs regarding prevention of STIs have been aimed at adolescent and young adult populations—those within the age range 15–24 years. This is certainly justified, as this age group comprises approximately 50% of all

STI diagnoses. Also, as those in this younger category age, they will have the skills necessary to choose safer sex options for protection in future relationships.

However, life events such as divorce, death of a spouse, and delaying or forgoing marriage for a career may have created a population of older women who are without a safety net when it comes to knowledge and understanding of methods of protection against STIs. Women over 40 years old have become an almost invisible segment of health care concern regarding their sexual well-being.

Health care providers have reported a lack of understanding of sexual activity practices in the older population. Some report embarrassment about broaching the subject, while others admit to a personal deficiency in understanding of content and methods for educating regarding the subject. As the graying of America progresses and rates of STIs-HIV in older adults continue to climb, the medical community must cease denying its older adults their sexual identity. Sexual health can no longer remain a public health issue of the young.

Statement of Purpose

The purpose of this study was to determine whether there is a need for a defined educational program for STI prevention specifically for women over the age of 40 years. This was determined by exploring the various health promotion and disease prevention interventions utilized by nurse practitioners who care for this population of patients.

It is important to learn what, if any, STI prevention strategies are being communicated to older women. Thus, the study investigated whether thorough sexual histories are taken during office visits, whether the educational content or frequency of delivery is different than that addressed to a younger category of women, whether similar

content is taught by all health care providers, whether that information is presented to patients consistently, and whether it is the patient or health care provider who is initiating conversations about sexual health.

Significance of the Study

Research suggests that older women are interested in discussing sexual health concerns with their health care providers; however, if the provider does not initiate this conversation, the patient is not very likely to do so on her own (Kuehn, 2008; Lindau et al., 2006; Lindau et al., 2007). In a study by Lindau et al. (2006), 79% of women over age 65 said that they would discuss their sexuality if the provider brought up the topic; 81% said that they would be willing to schedule an additional appointment specifically to address their sexual concerns.

Health care providers are less likely to address questions of sexual activity with older adults or to discuss safer sex practices because they may not perceive of this population as being sexually active and at risk for STIs (Levy et al., 2007; Matteucci & Schub, 2012a; Slinkard & Kazer, 2011). A study by Lindau et al. (2007) showed that only 38% of men and 22% of women reported ever having discussed sex with their health care provider after the age of 50. Similarly, research by Nurutdinova, Rao, Shacham, Reno, and Overton (2011) found that 44% of male and female participants ages 18 to 91 had never been asked about their sexual health by their primary provider.

In a study of women ages 58–93 by Lindau et al. (2006), the majority of unmarried women, including those who were sexually active, reported that they had never had a conversation with their health care provider about their sexuality. Those who

had engaged in a discussion about sexual health reported that they had relied on the physician to initiate the conversation.

When a health care provider misses the opportunity to discuss sexual behaviors and sexual dysfunctions with older patients, the provider may be sending the message that sexual activity, which is a normal part of good health at this developmental stage, is unimportant or shameful at an advancing age. The provider may also be missing teachable moments that could aid in prevention, early diagnosis, and treatment of STIs in this population (Kuehn, 2008).

Poor communication regarding sexual health of older women and their health care providers occurs for several reasons: unwillingness of patients or providers to initiate the discussion, sex and age differences between the patient and their provider, negative attitudes from society towards women's sexuality, and negative attitudes about sexuality of older people in general (Katz, 2012; Lindau et al., 2007; Morton, Kim, & Treise, 2011; Politi, Clark, Armstrong, McGarry, & Sciamanna, 2009).

The CDC recommends annual screening for chlamydia and gonorrhea for older women with risk factors such as a new or multiple sex partners (CDC, 2012a). CDC recommendations for HIV testing are at least once during a lifetime for adults. Few middle-aged or older adults report being notified of these recommendations by their health care providers, even as their STI risk factors change.

Wiesenfeld et al. (2005) concluded that inadequacies in physician knowledge may be a barrier to appropriate diagnosis and treatment of STIs. Results indicated that only 60% of physicians in their study who provided gynecologic or reproductive health care within their practices could correctly answer 75% of questions posed in a questionnaire

regarding clinical scenario, testing, and treatment of common STIs. These results convey that a considerable number of women who have STIs or are at risk of STIs may receive less-than-optimal care (Wiesenfeld et al., 2005).

A deficiency in knowledge or avoidance of recognition of normal older adult sexual activity habits by health care providers is problematic. Health care professionals who are reluctant to perform a thorough sexual health history are depriving this population of proper medical care. Nurse practitioners, as formidable health advocates in the community, should be promoting healthy aging lifestyles for older women. This includes providing a forum for comfortable, nonjudgmental, and open communication about sexual health.

The CDC has estimated that there are currently 110.2 million STIs among men and women in the United States (CDC, 2013). Since STIs are preventable, the high incidence and prevalence of STIs in the United States implies a disconnect somewhere between the education currently provided and these safer sex methods being put into practice. Perhaps one reason for rising STI rates is that a growing segment of the population has historically been excluded from research studies and public health campaigns involving issues of sexuality.

The significance of the current study is twofold; it contributes to the scientific knowledge base in the field of nursing as it brings attention to the disparities in health care practices related to the sexual health of women over the age of 40, and it addresses current gaps in knowledge regarding STI prevention for this population, as well as nurse practitioners' understanding about attitudes and sexual behaviors of older women.

Summary

As the aging of America progresses, so will the economic demands on the health care system. Programs that address the educational needs of both the patient and health care provider will lower overall costs of health care while advancing Healthy People 2020 objectives. By eliminating disparities and achieving health equity across all life stages, nurse practitioners can educate and empower women to make informed social, behavioral, and health care choices that will allow them to live longer, healthier lives free of preventable disease.

LITERATURE REVIEW

The literature review is presented in five major subject areas: (a) sexual activity in older adults, (b) STI risk in adults, (c) sexual health knowledge, (d) sex education in older adults, and (e) communication with health care providers. Research publications for this literature review include primary sources extracted using Cumulative Index to Nursing and Allied Health Literature Plus with Full Text (CINAHL), PubMed, Cochrane Library, and PsycInfo databases. Strategy key words and phrases used for searches were *women and sex, recently single, aging, sexual activity, older population, older adults, menopause, sexually transmitted infections, sexually transmitted diseases, HIV, sex education and women, sex education and older adults, safe sex practices, sexual health, ageism,* and *prevention of STI*-STD. The literature reviewed includes peer-reviewed research studies from sources published between 2005 and 2012.

The section concludes by introducing the Adult Learning Theory (ALT) by Malcolm S. Knowles as the theoretical framework. Its application to the study is explained.

Sexual Activity in Older Adults

Lindau and Gavrilova (2010) conducted a cross-sectional study to examine the relationship between health and dimensions of sexuality and to estimate years of sexual activity across gender and health of middle-aged and older adults. The study populations were drawn from two publicly available health surveys as follows: (a) the National Survey of Midlife Development in the United Sates (MIDUS), which included 3,032 adults ages 25–74 chosen by random digit dial sampling; and (b) the National Social Life, Health, and Ageing Project (NSHAP), which used a probability sample of 3,005 adults

ages 57–85. The NSHAP defined *sexual activity* as mutual voluntary activity with another involving sexual contact, with or without intercourse or orgasm. The MIDUS definition of *sexual activity* included the above definition plus sex with anyone, heterosexual or homosexual. Results showed that 50.9% of older women who were sexually active reported having a good-quality sex life. Those who reported very good or excellent health were more likely to be sexually active ($p < .01$). Health was strongly associated with a partner for men and women in late life ($p < .001$). Sexual activity, interest in sex, and quality of sex life were higher for males and positively associated with health during middle-old age.

The aim of a study conducted by Gass et al. (2011) was to identify patterns and predictors of sexual activity in clinical hormone therapy (HT) trials of the Women's Health Initiative (WHI). A sample of 27,347 postmenopausal women ages 50 to 79 years was enrolled in the trial. Those with no history of hysterectomy were randomized to the estrogen plus progestogen trial (EPT), which included daily conjugated equine estrogens plus medroxyprogesterone acetate or placebo; those with a history of hysterectomy were randomized to the estrogen therapy trial (ET). All participants completed questionnaires on demographics, health, risk factors, quality of life, and symptoms at baseline and 1 year after randomization. A random subsample also completed questionnaires at 3 and 6 years follow-up. Results of baseline sexual activity was reported at 61% for women ages 50–59, 45% for ages 60–69, and 28% for ages 70–79. Sixty-three percent were satisfied with their current sexual activity; 57% of those dissatisfied preferred more sexual activity. Vaginal atrophy was correlated with sexual inactivity at baseline ($p < .001$). Poor-fair self-rated health, lack of satisfaction with quality of life, depression, and loss of a partner

were correlated with ceasing sexual activity after 1 year ($p < .001$). The subset analysis of women at 3 and 6 years was associated with higher percentages of participants reporting sexual activity who were adherent with HT ($p = 0.01$; Gass et al., 2011).

STI Risk in Adults

A study by Lindau et al. (2008) used a nationally representative probability sample of community-dwelling adults to estimate the prevalence, genotypes, and individual-level correlates of high-risk HPV among women ages 57–85. The sample of 1,010 women participated in a variety of in-home interviews and bio measures that included a self-obtained vaginal specimen. Results showed that 1 in 16 women ages 57–85 had a high risk of HPV. There was no significant difference in prevalence by age, race, education, or insurance status. Prevalence was significantly higher among those who were divorced and among those who reported two or more sexual partners over a lifetime (OR 2.54, 95% CI 1.07–6.02, $p = .04$). Few of the women reported condom use: 1.5% (95% CI 0.9–2.6) overall and 3.4% (95% CI 1.96–5.98) of sexually active women (Lindau et al., 2008).

Minichiello, Rahman, Hawkes, and Pitts (2012) examined epidemiological data and research studies comparing STI rates, with the focus on older people from North America, Australia, China, Korea, Africa, and the United Kingdom (UK). Results showed a global rise of STIs among older populations. Incidence of chlamydia, genital herpes, genital warts, gonorrhea, and syphilis doubled in the UK from 1996 to 2003 in those ages 45 or older ($p < .0001$; Matteucci & Schub, 2012a). In the United States there was a 43% increase in syphilis and chlamydia among those ages 55 or older between 1999 and 2002 (Minichiello et al., 2012). Twenty-three percent of infected women were

widowed. Australia surveillance showed that cases of chlamydia in the over-50 age group doubled from 2004 to 2010. HIV rates in populations over 50 years increased from 10.6% in 1999 to 15.3% in 2008 in Canada. In the Kenya AIDS Survey of 2007, a higher rate of HIV was reported in the ages 50–54 population (8%) compared to those ages 15–24 (4.1%). Increased divorce rates, limited knowledge about modes and risks of transmission, and lack of health care provider awareness of sexuality in the older population were cited as factors for these changes (Minichiello et al., 2012).

A study conducted by K. P. Smith and Christakis (2009) assessed whether there was an association between widowhood and the risk of diagnosis of STI among older adults. They also examined whether associations in men differed after introduction of sildenafil for erectile dysfunction. The study sample consisted of 420,790 Medicare-eligible couples ages 67–99 years. Of those widowed during the 9-year study, 21% were male and 43% were female. Results showed that widowhood was associated with an increased risk of STI diagnosis for men but not for women and that these effects increased after the introduction of sildenafil. A possible explanation for the lower rate of STI diagnosis in widowed women, as compared to men, is the understanding that STIs are more commonly asymptomatic in women, suggesting that the results may reflect higher levels of underdiagnosis in females. It was also reported that the role of differential mortality is unknown, with an estimated 46% of women and only 16% of men widowed at age 65 and 64% of women compared to 22% of men widowed at age 75 and older (Smith, K. P., & Christakis, 2009).

Sexual Health Knowledge

The aim of a qualitative focus group study led by Morton et al. (2011) was to explore health risk perceptions and sexual health knowledge in sexually active women ages 50 years or older. The study utilized 27 female participants, recruited from the local area of a large southeastern university, with inclusion criteria of being single-unmarried, 50 years or older, actively dating, and sexually active during the previous 12 months. Self-selection and snowball sampling were used. Recruitment was ongoing until enough groups were administered to reach saturation of information. Four research questions were investigated: What were the attitudes toward self of women ages 50 and older at this stage of life? What did they feel about sex, dating, and selection of a partner? What was their sexual health knowledge and how did it shape behavior? Where did they get health information?

The results of the study conveyed five themes. First, age was empowering. Confidence meant dating without having to negotiate terms of a long-term relationship. Second, women in this age group were cautious about dating due to the threat of venereal disease; HIV-AIDS were high on their list of concerns. Third, choosing a partner had different meanings. A dating partner might be chosen for physical and financial attributes; a sexual partner was chosen for monogamy, and some required that a potential partner be tested for HIV-AIDS prior to sexual intimacy. The fourth theme was use of condoms; participants felt strongly about protection but were not confident in negotiating their use. Fifth, participants identified their doctor as a negative resource or barrier for obtaining sexual health information in that the doctors did not initiate conversations about sexual activity. The study recommended improved communication with physicians and

better social marketing campaigns for this population. It was concluded that women over 50 generally have a positive sense of self; they are aware of sexual health risks but have low self-efficacy in condom use. No limitations were discussed (Morton et al., 2011).

A prospective study by Langer-Most and Langer (2010) sought to measure the level of knowledge and attitudes of gynecologists regarding sexuality in older adults. A total of 141 gynecologists from five hospitals were surveyed using the Aging Sexual Attitudes and Knowledge Scale (ASKAS). No correlation was found between respondents' knowledge and attitude scores. A positive correlation was found between respondents' age and attitude; a poorer attitude score was found in physicians who were over age 40 (p = .02). Although gynecologists demonstrated adequate knowledge of sexuality in aging, diminished permissive attitudes were noted as the age of the physician increased. This age-related attitude was pervasive regardless of ethnicity, gender, level of medical experience, or location of hospital (Langer-Most and Langer, 2010).

Grant and Ragsdale (2008) conducted a qualitative and quantitative research study of a sample of 44 recently single women ages 45–68 years and 31 residents or attending primary care physicians in a Florida community. Female participants were asked to describe frequency of sexual activity, safer sex practices, and perception of risk for HIV-STIs. Physicians were questioned regarding their awareness of patients' knowledge regarding HIV-STI, sexual health risk, physician versus patient responsibility regarding the discussion of sexual health, and whether their professional education had prepared them to address HIV-STI prevention with their patients. Results showed that approximately 40% of women over the age of 45 had been involved in new sexual relationships within 6 to 12 months of becoming single. Eighty-two percent of those who

were sexually active considered themselves to be at risk for HIV-STIs. The physicians considered 80% of their patients to be either partially or poorly informed about HIV-STIs; however, their general perception was that risk of HIV-STI declined with patient age, gender (female), and marital status. A majority of the physicians (58%) reported that they were educationally prepared to address HIV and STIs with their patients. However, 74% considered it to be both the patient's and physician's responsibility to broach questions about sexual health. Although many women regarded sexual health to be a personal responsibility, they responded that physicians should "open the door" by initiating conversation. The findings suggest that physicians bring societal age and gender biases into their practices that affect communication about sexual health with their mature female patients (Grant & Ragsdale, 2008).

Sex Education in Older Adults

Levy et al. (2007) conducted a systematic review of 143 STD risk reduction clinical trials for older populations, published in English language journals listed on MEDLINE from January 1994 to January 2005. The objectives of the study were to determine whether older people are excluded from clinical control trials on STD risk reduction and, if so, whether the exclusion could be explained by trial characteristics. The total of all samples in all clinical trials examined was 188,586. Studies with aims of targeting risky sexual behavior were included as well as keywords *interventions aimed at preventing STIs*, phases I-IV of controlled and randomized clinical trials, and clinical trials that did not provide reasons for exclusions of older people. Mean age of clinical trials participants was 26.5 years (*SD* = 8.1 years). Few clinical trials for STD risk reduction included older people, and those that did failed to report the percentage of

people over the age of 50 or failed to report race or gender distribution. No clinical trials were found specifically for people over the age of 50. Results showed that clinical trials that were government funded were less likely to exclude people over the age of 50, OR = 0.08 (95% CI = 0.01–0.65); studies that had a biologic outcome were less likely to exclude participants over 50, OR = 0.42 (95% CI = 0.20–0.89). The conclusion of the systemic review was that exclusion of older people from clinical trials may suggest to health care providers and the public that this population is not at risk for STDs. No limitations were addressed in the study.

Slinkard and Kazer (2011) conducted a qualitative study to explore health care provider interactions regarding HIV and STI screening among adults in Connecticut. Convenience samples of adults ages 66 to 90 were divided by gender to form two focus groups. Each group, comprised of 6 to 12 members, met for 1 hour at two separate senior centers. Questions for focus group discussions were developed following Krueger and Casey focus group question guidelines and reviewed by two advanced practice nurses (APNs) and two older adults for content, clarity, and readability. Questioning was designed to identify type of health care provider used, how the older adult learned of health and disease, whether the health care provider discussed STIs at visits, what was taught about STI prevention, and whether the discussion was comfortable. Results of the focus groups revealed three main themes: perceptions of sexual health care and HIV-AIDS screening, seeking health care information, and patient-provider dynamic. Both groups reported that their health care providers had never asked about sexual health in general or STIs in specific. None of the participants had been educated about HIV-AIDS because “HIV was not around when we were younger” nor had they received information

about STIs. Both focus groups stated that it was the media—television and radio—rather than their health care provider that was their primary source of health care information. Most described their relationship with their health care provider as "they're the doctor and you're the patient" in that they did not feel that their (patients') opinion was valued. A general feeling was that the patient should question the provider and be given more information about medications, tests, and medical conditions (Slinkard & Kazer, 2011).

Communication With Health Care Provider

A qualitative study by Politi et al. (2009) focused on the experiences of 40 unmarried women when discussing issues of sexual health and intimate relationships with their health care providers. The sample was comprised of heterosexual, lesbian, and bisexual women, ages 40 to 75. Results of the study included five recurring themes. First, answers regarding definition of personal information varied from general health history to those of a sexual nature. Definition of intimate relationship varied from emotional to sexual. The second theme arose when participants were asked whether questions of sexual history from their provider were appropriate. Some participants said that a sexual history was important to an overall health history, and others thought that this line of questioning was appropriate only when seeking attention for issues related to their sexual health. Many participants stated that they had never discussed sexual health at any time with their provider but wished that they could do so. The third recurring theme related an unmarried woman's likeliness to give information about sexual health to the provider only if she perceived the provider to be nonjudgmental. Fourth, the women stated they were more comfortable talking about sexual health with a female provider. Fifth, the participants were neutral or negative about medical intake forms. The majority

saw intake forms as opening the line of communication with their providers; lesbian participants said that forms were irrelevant to them, and others objected to having to write out personal information. This study identified a perceived barrier of health care providers in their assumption that older unmarried women were not sexually active or were exclusively heterosexual and monogamous. Limitations to the study related to the sample as small, nonrandom, and lacking minority participation.

The aim of a qualitative research study by East, Jackson, O'Brien, and Peters (2011) was to report the health care experiences of women associated with diagnosis and treatment of an STI. The participants were 10 women ages 21 to 39 diagnosed with genital herpes, HPV, and/for chlamydia. This sample was extracted from a larger study of women's stories about having an STI. Data were collected via online interviews until developed themes were identified by consensus of experienced researchers. Rigor was further enhanced, limiting bias and naming, by use of the principles of reflexivity. Three main themes summarized participant experiences: insensitivity and feeling judged, left to flounder, and connecting with care. Eight women described health care encounters as negative, noting that physicians were either insensitive or negatively judged them for having an STI. They reported receiving inadequate health care regarding diagnosis and treatment of STIs. This was explained as not being provided information about the infection, inaccurate diagnosis, or incomplete information. Further, they stated that they were unable to discuss results with their doctors and were generally unsupported. In contrast, two women reported connecting with their health care provider, receiving positive health care, being treated professionally and therapeutically, and receiving emotional support. It was noted that perceived negative judgment, along with inadequate

information and support from health care professionals, can increase emotional burden for women diagnosed with STIs. The study limitation was that findings were extracted from a larger study that focused solely on women's health care experiences with STIs and lacked the insight of male experiences (East et al., 2011).

A cross-sectional study was conducted by Nurutdinova et al. (2011) to evaluate risk for STD-HIV among people using a primary care setting and to determine their willingness to discuss sexual health questions with their primary care physicians. The sample included 718 adults, ages 18 to 91, who sought care at a large, urban, publically funded Midwestern university primary care clinic. The median age of the sample was 47 years, 63% female, and 18% married. Results showed that 55% of the respondents reported having been sexually active in the previous 3 months. Of these, 20% reported their frequency of condom use as *always* or *very often*; 15% reported *never* having used a condom. Further, 33% stated they would not use a condom with their next sexual contact. Of these, one third reported past or recent history of STD (Nurutdinova et al., 2011).

In order to explore responses by age, gender, and marital status, subgroup bivariate analyses were performed only for those whose age was less than 45 years. The results showed that persons younger than 45 were more likely to be unmarried (61% vs. 22%, $p < .05$), more likely to have always used condoms in the previous 3 months (15% vs. 6%, $p < .05$), more likely to plan to use condoms with next sexual activity (41% vs. 33%, $p < .05$), and more comfortable in discussing STDs with their provider (56% vs. 48%, $p < .05$). Men had a younger age at first sexual intercourse than women (15 ± 4 vs. 16 ± 3, $p < .05$), had more lifetime partners (19 vs. 6, $p < .05$), had more partners in the

previous 3 months (2 ± 5 vs. 1 ± 1, $p < .05$), and were less likely to have used condoms in the past 3 months (36% vs. 33%, $p < .05$). Those who were never married were more likely to have used condoms in the previous 3 months (16% vs. 6%, $p < .05$) and to plan to use them in the future (42% vs. 33%; Nurutdinova et al., 2011).

The study concluded that the majority of participants were sexually active, not consistently using condoms, and reported a high rate of previous STDs. Despite these data, 44% of participants had never been asked about sexual health by a health care provider. Limitations of the research were attributed to voluntary participation, self-report data collection, and use of a single-site location for the study (Nurutdinova et al., 2011).

Relationship of the Study to the Current State of Research

Although numerous peer-reviewed informational articles and non-peer-reviewed editorial materials were easily located on various databases, the literature search revealed very few current research studies, in any category, regarding the subject of sexuality in older adults. Rarer still was research directed specifically at populations of older women and their experiences in discussing sexual health issues with or receiving sexual health information from their health care providers.

Healthy and gratifying aging has been associated with the ability and freedom to express one's sexuality well into the later years. However, because recent history confirms and future projections suggest a continued rise in the diagnosis of STIs in older populations, opportunity exists for exploration of this phenomenon. STI risks, health practices, knowledge deficits, discomfort of health care practitioners, and persistent stereotypes regarding sex and the elderly have combined to create the perfect scenario for

increased risk in this population. The focus of this study, then, was to provide insight into the current environment of women's health by investigating existing practices of nurse practitioners in their approaches to addressing the sexual health of older women.

Statement of the Theoretical Framework

Andragogy was defined by Malcolm S. Knowles as the "art and science of helping adults learn" (Knowles, 1970, p. 38). According to Knowles's ALT, the perception of andragogy is based on the psychological definition of an adult: that point in development that begins when a person arrives at the self-concept that he or she must be self-driven and responsible for his or her own life (Knowles, 1970; Smith, M. K., 2002). Knowles's ALT illustrates the differences between learning styles of children and adults while identifying ways in which to make adult learning successful. Understanding andragogy and the ALT was instrumental in the development of educational strategies aimed at both the nurse practitioner as the educator and the patient as the recipient of health care information.

Introduction to the Theoretical Framework

The ALT was constructed on the basis of Knowles's conviction that adults learn differently from children. The basis for the ALT was andragogy—learning strategies of adults—versus pedagogy, or strategies of learning and teaching generally associated with the education of children. Initially, Knowles offered four assumptions regarding andragogy, or adult learner characteristics, that differed from traditional educational practices used for primary instruction. As a person matures, assumptions can be made that the person (a) moves from being dependent toward being self-directed, (b) accumulates a reservoir of experience that becomes a resource for learning,

(c) develops a readiness to learn associated with the developmental tasks of social roles, and (d) shifts the orientation of learning to immediate application of problem centeredness (Knowles, 1970). These assumptions can be explained by using the original categories provided by Knowles.

Self-Concept

In traditional pedagogy, the role of the learner is dependent. The teacher takes responsibility for what, when, how, and whether information has been learned. Andragogy explains that, with normal maturation, a person moves from this dependency to self-concept or self-directedness. This occurs at different rates and during various dimensions of life. It is the responsibility of teachers to nurture and encourage this movement of increasing self-concept (Knowles, 1970).

Experience

Pedagogy asserts that learners bring little experience to the learning situation. Learners gain most from the experience of teachers, textbook writers, film makers, and other experts. Knowles's andragogy teaches that, as people grow and gain experiences, these experiences become a valuable resource for learning for themselves and others. More meaning is attached to personal experience than learning that is acquired passively. Primary learning methods for this group include experiential techniques such as experiments, discussion, simulation, and field experiences (Knowles, 1970).

Readiness to Learn

Readiness to learn is defined by society in pedagogy. Children start school at a predetermined age and are taught a fairly standardized curriculum. Adults are ready to learn when they experience a need to learn. This need to learn is generally associated

with the ability to cope satisfactorily with real-life situations such as learning how to prepare meals for a family member with diabetes or how to care for a new baby. The responsibility of the educator is to provide tools for helping learners discover what they need to know while including specialized life application curricula (Knowles, 1970).

Orientation to Learning

Orientation to learning in pedagogy is subject centered; curriculum is organized by subject-course and is seen as a process of acquiring subject matter content that will be useful at a later time in life. With an andragogy approach, education is seen as a process for developing a person's full potential in life. People are performance centered in their approach to learning and therefore learning experiences should involve competency development categories (Knowles, 1970).

Additional Assumptions

In later writings, based on his original work of andragogy versus pedagogy, Knowles (1984) added two assumptions related to the maturation process: (a) people become more motivated by internal incentives, and (b) they want to know why they need to learn something (Boeve, 2012; Keesee, 2010). In pedagogy, the motivation to learn is based on external rewards and punishments; in andragogy, motivation to learn is centered on internal reasons such as self-esteem or satisfaction (Knowles, 1984). Relevance to learning is not questioned in pedagogy, whereas with adult learners there is an increasing need to know *why* they need to know something (Boeve, 2012; Keesee, 2010; Knowles, 1984).

Application of the Theoretical Framework

As individuals define themselves as adults, they distance themselves from being full-time learners and settle into their normal role in society as producer or doer (Knowles, 1970). Adults make decisions, accept consequences, and become self-directing while managing their own lives. It is important to be perceived by others as being self-directing. According to Knowles (1970), adults resist and resent situations in which they feel that they are being told what to do or what not to do, are talked down to, or are judged. With this in mind, it is important that the nurse practitioner take a thorough sexual health history that is nonjudgmental and void of personal bias-stereotype. In this way, the nurse practitioner can understand where the patient may be lacking in knowledge and "help" the patient to learn.

Knowles (1970) considered adult learners to be proactive learners. Those who acquire knowledge in a proactive manner have greater motivation, learn more, have a tendency to make use of their new skills, and retain information better than reactive learners who passively wait to be taught. Therefore, adult women who are helped to master the skills for prevention of STIs can be expected to take increasing responsibility for their own lives and initiate good personal health practices. These women are mature and moving toward a self-directed independence, can draw on past experience for resource, have a broader self-empowerment, and are interested in learning about subjects that have immediate relevance in their personal lives. When these women are guided by the nurse practitioner to learn why they need to know about safe sexual practices, they are likely to become more accepting of the education. This will assist them in fulfilling the

need to be seen by others as being capable of taking responsibility for themselves (Knowles, 1984).

Using the ALT as a theoretical framework is evident from the patient perspective; however, adult learning may also be applied to the nurse practitioner. By assessing and defining a need for an STI prevention program for the adult female population, the nurse practitioner will experience dual roles. In the early process, the nurse practitioner will be the adult learner. Any gap in homogeneity of what, how, and when STI prevention is being taught to women will be examined in this study and, if a need is defined, consistent substance and methods of teaching must be learned by the nurse practitioner. After this is accomplished, the nurse practitioner will return to the role of educator in order to assess patient needs and facilitate transition of leaning into daily practice or self-directedness (Knowles, 1970).

Summary

The increased rate of STIs in the aging population indicates a need for further exploration into specific causes and plausible solutions for the problem. Although studies exist regarding sexual activity and sexual health practices of older populations, much of the research is outdated. As the aging of America's Baby Boomers nears full force, STI rates are expected to continue on their current upward climb. It is important to take a fresh and current look at this phenomenon in order to learn what role nurse practitioners currently play in the prevention of STIs in older women and how they can become better advocates for this population.

As Knowles' ALT in the learning processes of both female patients and nurse practitioners is infused, its virtues become clear. While mature women, as proactive and

self-directed learners, have the ability to absorb and observe new, assertive sexual health techniques, nurse practitioners can help to define the need and educate clients regarding better sexual health practices.

METHODS

This section provides information regarding the design of the study, research questions, operational definitions, and assumptions of the study. Independent, dependent, and extraneous variables are introduced, followed by identification of the study setting and inclusion-exclusion criteria for the participant sample. Also included is a description of instruments used in the study, procedures of data collection, protection of human participants, and statistical analysis procedures.

Research Design

A pilot study employing a descriptive correlational research design was used to study relationships between gender, age, marital status, ethnicity, specialty, level of education, and years of practice of nurse practitioners with the consistency and content of education for prevention of STIs provided to their female patient population, of various age groups, during well women examinations. Information was collected via self-administered questionnaires. According to Polit and Beck (2012), surveys must be worded in a simple, clear fashion and may not be suitable for certain populations. A self-report survey was appropriate for use in this research study, as the participants of this convenience sample were adults who spoke, read, and wrote in English. The research sample was comprised of college-educated nurse practitioners; therefore, a certain understanding of written instructions and an ability to answer a written survey satisfactorily at this educational level was reasonably presumed.

Research Question

The main research question addressed in this study was, *Does the age of a woman affect whether a nurse practitioner provides education about prevention of sexually*

transmitted infections? Associated factors of gender, age, marital status, ethnicity, specialty, level of education, and years of practice of the nurse practitioner were addressed. Further, perception of sexual activity in various age groups of women, importance and comfort in addressing sexual health issues, and whether it was the nurse practitioner or the patient who initiated conversation about sexual health were studied in order to identify correlations between any of these areas and the consistency and content of education provided.

Operational Definitions

Nurse practitioner: An advanced practice nurse within one of the following specialties: Family Practice, Adult-Gerontology, Women's Health, or Midwifery.

Sexually transmitted infection (STI): An infection that can be transferred from one person to another through sexual contact, including sexual intercourse (vaginal or anal) or oral-genital contact. The term STI is the currently accepted replacement of the older term *sexually transmitted disease* (STD). The following STIs are reported in this study: (a) bacterial: chlamydia, gonorrhea, and syphilis; (b) viral: human papilloma virus (HPV), human immunodeficiency virus (HIV), herpes simplex virus 2 (HSV2); and (c) protozoan: trichomoniasis.

Assumptions

The following assumptions were made for this study:

1. It was assumed that all participants would be honest in meeting participation criteria.
2. It was assumed that the sample of research participants in this study was representative of nurse practitioners in urban practice settings and that the

results of the study therefore had a reasonable degree of generalizability to a similar population.

3. It was assumed that all participants would respond truthfully and to the best of their ability according to instructions.
4. It was assumed that the instruments of measurement were reliable and valid indicators of the constructs studied.
5. It was assumed that data would be accurately recorded and analyzed.

Variables

This study investigated whether provision of STI education by a nurse practitioner to a female patient is influenced by the patient's age. Other variables considered were the age, gender, ethnicity, marital status, specialty, and level of education of the nurse practitioner. The independent variables of the study were the age of the woman (female patient) and the age, gender, ethnicity, marital status, specialty, and level of education of the participant (nurse practitioner). The dependent variable was education for prevention of STIs provided by the nurse practitioner.

The major extraneous variables associated with the nurse practitioner (participant) in this study were STI history of the participant, participant work environment (i.e., clinic versus private office), time allowed with each patient, policies and procedures at the place of employment, knowledge of what to present as education components, and comfort level in discussing sexual activity with patients. Extraneous variables that were possibly associated with the patient included insurance status, interest in receiving education, and forthrightness in sharing sexual history with the nurse practitioner.

Setting

The convenience sample of nurse practitioner participants received their demographics questionnaire and practice survey by one of two methods. Research items were personally given by the researcher to participants who were personal acquaintances of the researcher. Snowballing participants received research items from acquaintances of the researcher. Participation in the pilot study took place at various private settings convenient to each participant.

Sample

A convenience sample of 50 nurse practitioners was recruited via snowball sampling, beginning with nurse practitioners who were acquaintances of the researcher. Additional participants, anonymous to the researcher, were referred to the researchers because they were (a) known by other nurse practitioners to have met inclusion criteria, and (b) interested in participating in a nursing research study. The sample was limited to English-speaking nurse practitioners who care for the population under investigation: women ages 40 and older. Nurse practitioners in the following specialty areas were included in the study: Family, Adult-Gerontology, Women's Health, and Nurse Midwifery.

Instruments

In addition to the Script for Invitation to Participate in a Research Study (Appendix A), Consent to Participate in a Research Study (Appendix B), and Survey Instructions (Appendix C), two instruments were developed and used to obtain data from each participant: (a) a self-report demographics questionnaire (Appendix D) and (b) a self-report research survey regarding participant current typical-usual professional

practice (Appendix E). According to Polit and Beck (2012), the self-report is strong in directness and versatility and is an important part of the nurse researcher's data collection process.

Data Collection Procedure

Permission to conduct the pilot study was obtained from the Institutional Review Board (IRB) of California State University, Long Beach (CSULB). Approval was granted on October 23, 2013. The study commenced on October 24, 2013, and continued to January 15, 2013.

A script (Appendix A) was read to potential participants who were acquaintances of the researcher. After verbal consent was obtained, the participants were handed the research packet. The research packet included (a) a written consent form, and (b) a self-report demographics and practice survey. Written consent was obtained by the participant signing a two-page document titled "Consent to Participate in a Research Study" (Appendix B). This document included explanation of consent, purpose of the study, and potential risks and benefits of the research. A white legal-size envelope was provided for collection of the written consent. The research packet also contained survey instructions (Appendix C); a demographics questionnaire (Appendix D) that gathered data related to the participant's gender, age, ethnicity, marital status, specialty, education, and years of practice; and a research survey (Appendix E) collecting data associated with consistency and content of participant current professional practice provided to patients regarding STI prevention. A manila envelope was provided for collection of the questionnaire and survey. Completed consents and surveys were placed in their

corresponding envelopes and returned to the researcher in sealed envelopes either in person, directly to the researcher, or by mail with postage paid by the researcher.

Protection of Human Subjects

The researcher's committee members, along with the IRB of CSULB, reviewed the research proposal to safeguard the protection of participant rights and to ensure that the research was to be conducted in an ethical manner.

In order to ensure anonymity, no participant signature, name, telephone number, address, or other specific individual identifier was collected on survey materials or envelopes. Although written consent to participate in this pilot study was required by the IRB of CSULB, survey materials and consents were collected separately. Explanation of consent included the purpose, risks-benefits of participation in the study, and rights of research participants. Participants were informed that their involvement in the research study was voluntary, that they could choose to leave certain questions blank if they were uncomfortable in responding, and/or they could withdraw from participation at any time during the research process without consequence. Any information obtained in connection with the study, which could be identified with a participant, remains confidential, being disclosed only with participant permission or as required by law.

Raw data were available only to the researcher, the faculty committee, and the statistician. All data from the study, including surveys and research results, were kept in a locked filing cabinet in the researcher's home, to be shredded at the end of 3 years.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS™) Version 20.0 for Windows and Statistical Analysis System (SAS™) Version 9.3 for

Windows. Frequency distributions were used to describe gender, age, ethnicity, practice specialty, education, and years of practice of nurse practitioner participants based on data collected via the demographics questionnaire. Typical-usual professional practice survey questions were evaluated by comparing the means of each of the four age groups using the analysis of variance (ANOVA) model. In order to address the primary research question, paired-samples *t* tests were performed to examine whether content and consistency of education regarding the prevention of STIs was the same for all categories of women 40 years of age and older and for women of younger ages. Using a total score from the 13 professional practice survey questions, further ANOVAs were run to determine whether additional factors of gender, age, ethnicity, specialty, education, or experience of the nurse practitioner were associated with educating women about prevention of STIs. The level of significance for all analyses was set at 5% ($p = .05$).

Summary

The purpose of this study was to investigate the correlation between the age of a woman and the provision of education by the nurse practitioner for the prevention of STIs. This pilot study, with a descriptive correlational design, utilized a survey method to identify differences in consistency and content of education afforded to female patients of various age groups. Four age groups were investigated. Group 1 included usual-typical practice of patients in young adult to mid-child bearing years, ages 20–39. Group 2 included pre- and post-menopausal patients, ages 40–60. Group 3 included middle-age patients, ages 61–70. Group 4 included older patients, ages 71 and above. The target population of this study was nurse practitioners who provide well-women examinations for their patients.

Participants were acquaintances of the researcher or those found via a snowball sampling technique. The rights of study participants were protected by obtaining written informed consent while maintaining anonymity by requiring consent and survey responses to be returned separately. Access to raw data was limited to the research team to ensure security and confidentiality. Statistical analyses were conducted on collected data.

RESULTS

Descriptive statistics are used in this section to present demographic data and sample characteristics of the study participants. Results related to the primary and secondary research questions are reported using inferential statistics.

Demographic Characteristics of the Sample

A convenience sample of nurse practitioners was recruited via snowball sampling. A total of 50 nurse practitioners voluntarily participated and were included during the collection period from October 24, 2013, through January 15, 2014. One additional consent and survey form was received after the deadline and was excluded from data analysis. Responses were made to all demographic and practice survey items; no omissions were noted. Thus, the final sample for analysis was $N = 50$.

Gender

Gender distribution was unbalanced. This finding is not uncommon when considering the practice specialties incorporated in this study. As shown in Figure 1, the sample included 47 female nurse practitioners (94%) and 3 male nurse practitioners (6%).

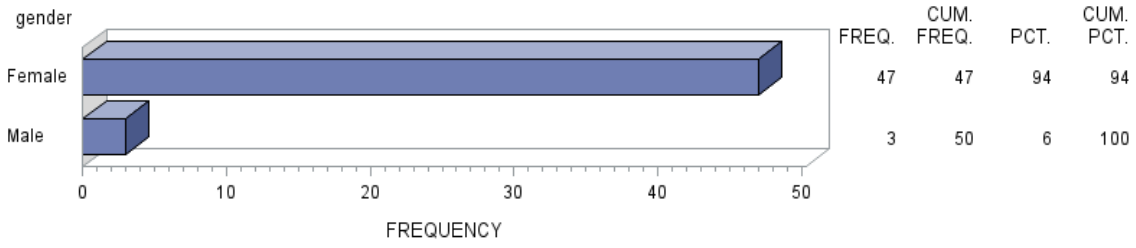

Figure 1. Gender distribution of nurse practitioner participants included in the study.

Age

The age of nurse practitioner participants was normally distributed, with a mean 50.34 years and standard deviation of 8.75 years (Figure 2). The mean age of female participants was 50.81 years and the mean age of male participants was 43.00 years.

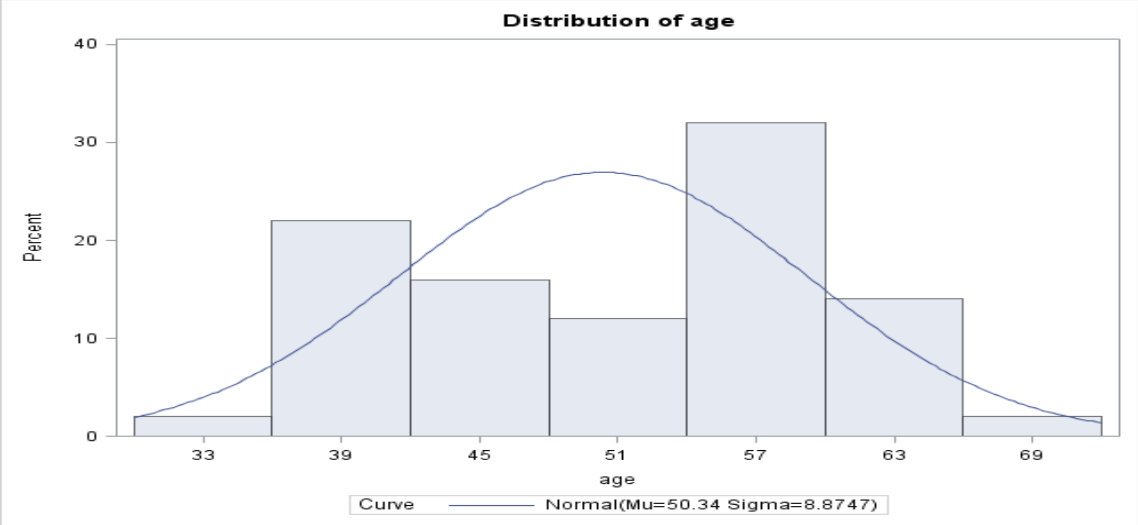

Figure 2. Normally distributed age of participants.

Marital Status

Marital status was reported as single (never been married), married, separated, divorced, or widowed. The majority (76%) of the study participants self-identified as currently married (Table 1).

Ethnicity

Study participants were asked to self-report ethnicity by choosing one ethnic background with which they most identified. As shown in Table 2, the most commonly identified ethnicity of the nurse practitioner participants was White-Caucasian (48%),

Table 1

Self-Reported Marital Status of Participants (*N* = 50)

Marital status	*f*	%
Single (never been married)	4	8.0
Married	38	76.0
Separated	2	4.0
Divorced	4	8.0
Widowed	2	4.0

followed by Hispanic-Latino (20%). The sample also included 1 Native Americans (2%), 6 Asians (12%), 3 Black-African Americans (6%), 10 Hispanic-Latinos (20%), 3 Middle Easterners (6%), 2 Pacific Islanders (4%), 24 White-Caucasians (48%), and 1 Indian-Eastern Asians (2%).

Practice Specialty

Participants were asked to specify their area of advanced practice specialty. As shown in Figure 3, the majority worked in Family Practice (*n* = 22; 44%), followed by Women's Health (*n* = 17; 34%), Adult-Gerontology (*n* = 8; 16%), Midwifery (*n* = 2; 4%), and Other (*n* = 1; 2%) (Figure 3).

Education

The highest level of participant education was surveyed. The majority (78%) reported a Master's degree, which is the current minimum standard required for entry into practice (Figure 4).

Table 2

Ethnicity of Participants (*N* = 50)

Ethnicity	*f*	%
Native American	1	2.0
Asian	6	12.0
Black-African American	3	6.0
Hispanic-Latino	10	20.0
Middle Eastern	3	6.0
Pacific Islander	2	4.0
White-Caucasian	24	48.0
Indian-Eastern Asian	1	2.0

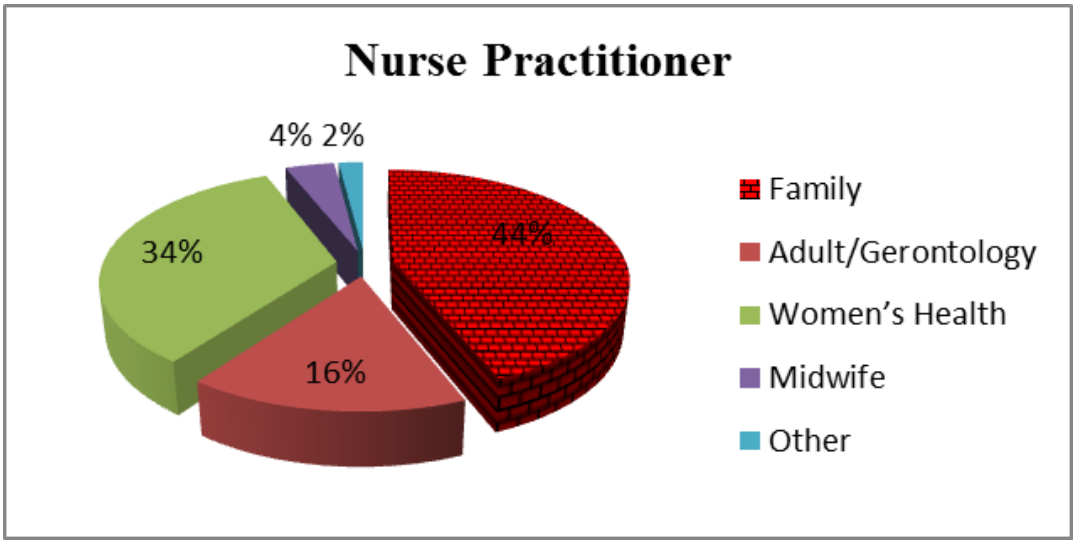

Figure 3. Distribution of participant practice specialty.

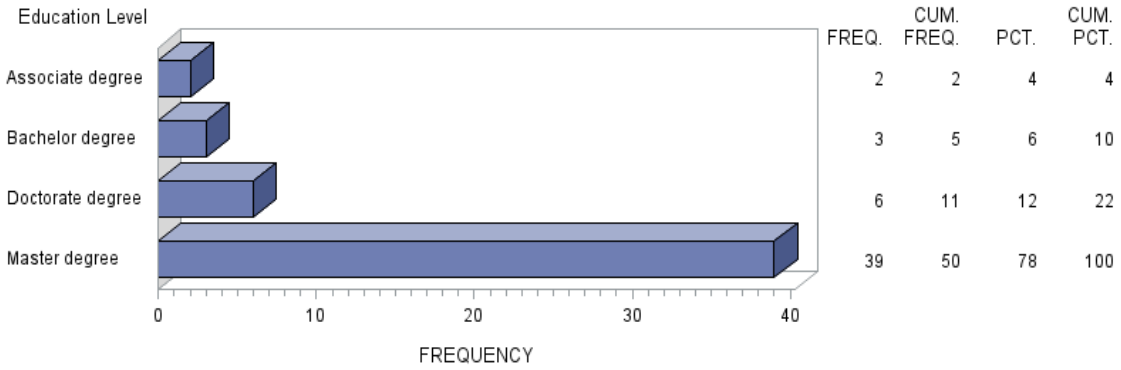

Figure 4. Highest level of education achieved by participants.

Experience

The experience level of the participant nurse practitioners who work with women age 40 years and older, the population of interest in this study, was about evenly distributed among the five categories listed in the demographics questionnaire. Eleven participants reported 0–5 years of experience (22%), 10 reported 6–10 years of experience (20%), 8 reported 11–15 years of experience (16%), 11 reported 16–20 years of experience (22%), and 10 reported more than 20 years of experience as a practitioner (20%) (Figure 5).

Inferential Statistics: Data Addressing the Primary Research Question

The primary research question addressed in this study was, "*Does the age of a woman affect whether a nurse practitioner provides education about the prevention of STIs?"* In examining scores related to patient age groups, an increase in the average score was observed. The two older groups of patients, which included all patients ages 61 and above, did not show a statistically significant difference in mean scores. Therefore, a valid assumption can be made that these older patients were less likely to

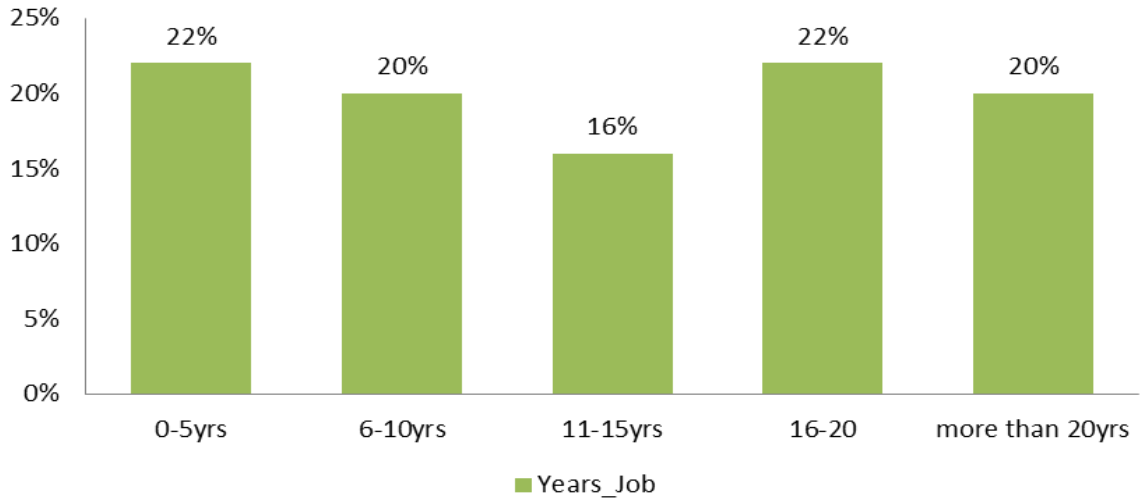

Figure 5. Participants' reported years of practice experience.

receive preventative education or receive the same information from nurse practitioners. Figure 6 shows the overall mean score difference ($F = 43.01$, $p < .0001$).

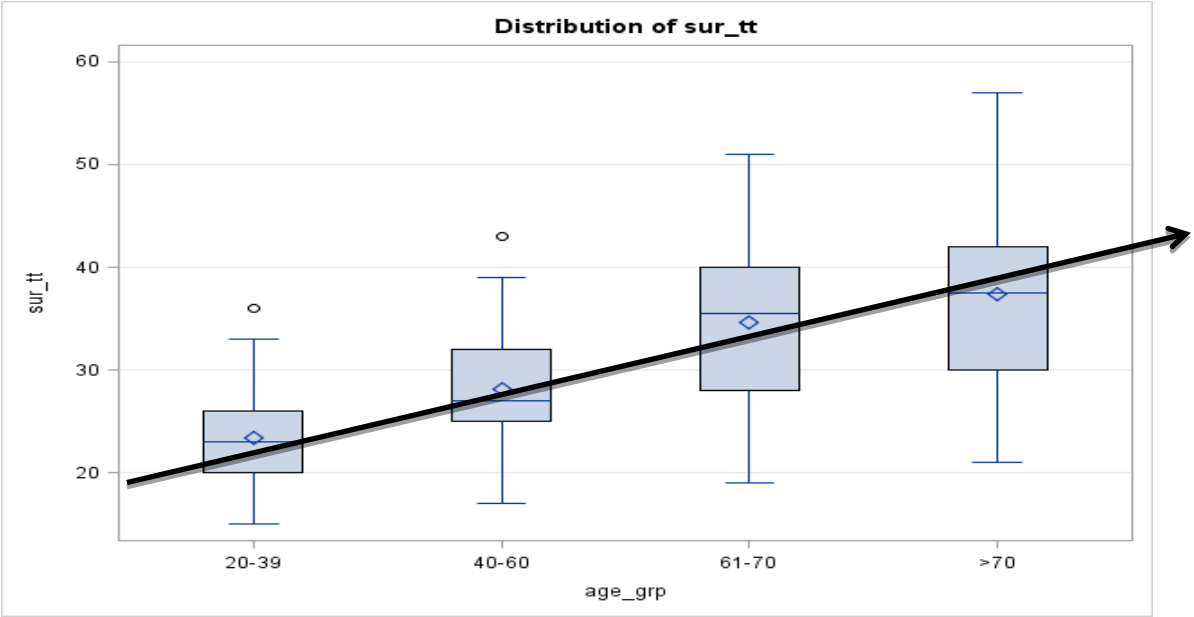

Figure 6. Mean scores related to patient age groups.

Paired-samples *t* tests were performed to examine whether content and consistency of education regarding the prevention of STIs was the same for all categories of women ages 40 and over compared to women of younger ages. The null hypothesis was that the average difference between the total scores of the 20–39 age group and the other age groups would equal zero. The *p*-values shown in Table 3 indicate that the null hypothesis was rejected for each age group pairing. The data suggest that the average difference between the total scores of the 20–39 age group and the other age groups was significantly different from 0. The negative mean difference for each pairing indicates that the following age groups had significantly higher total scores than the 20–39 age group: 40–60 ($t = -7.496$, $p < .0001$), 61–70 ($t = -9.609$, $p < .0001$), and 70+ ($t = -10.090$, $p < .0001$). This suggests a bias related to the way in which nurse practitioners inform their patients about sexual health for women ages 40 or more compared to women ages 20–39.

Table 3

Paired-Samples t tests Comparing Education About Sexually Transmitted Infections Provided by Study Participants to All Categories of Women Ages 40 and Above Compared to Women Ages 20–39 ($N = 50$, $df = 49$)

Paired differences	Mean	*SD*	*t*	*p*
Total 20-39 and Total 40-60	-4.740	.632	-7.496	< .0001
Total 20-39 and Total 61-70	-11.220	1.168	-9.609	< .0001
Total 20-39 and Total 70+	-13.960	1.384	-10.090	< .0001

Data Addressing the Secondary Research Questions

The research study included a survey of the professional-clinical practices of each nurse practitioner participant to identify consistency and content of sexual health care and education of female patients in the nurse practitioner setting. This approach provides insight into possible correlations between STI education and nurse practitioner perception of sexual activity in various age groups of women, importance and comfort in addressing sexual health issues, and initiation of conversations about sexual health.

Participants were asked 13 personal practice items related to four age groups of hypothetical female patients. They were directed to choose the modified Likert-type response that most closely reflected their current usual-typical clinical practice (1 = *strongly agree*, 2 = *agree*, 3 = *neither agree or disagree*, 4 = *disagree*, 5 = *strongly disagree*). The total score of responses to the 13 items showed that ethnicity ($F = 4.27$, $p = .0002$), nurse practitioner's experience ($F = 3.73$, $p = .0061$), and age group of patients ($F = 46.87$, $p < .0001$) were significantly associated with provision of education about prevention of STIs.

Mean scores for responses for the four age groups were compared using the ANOVA model. For purposes of data analysis, age groups were labeled: (G1) 21–39 years, (G2) 40–60 years, (G3) 61–70 years, and (G4) 71+ years. For each item (1–13), the null hypothesis was that the mean response would be the same for each age group, while the alternative hypothesis was that at least one mean would be different. It was assumed that the variance in each level was constant. The data demonstrated that the mean score for each item was not the same for each age group.

Individual Item Analyses

Item 1

Item 1 was, "It is very important to discuss issues of sexual health, sexual activity, and STI prevention with this population of women." The claim was rejected that the mean responses were equal throughout age groups ($F = 30.51$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 4).

Table 4

Comparison of Responses Throughout Age Groups for Item 1

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	65.7800000	21.9266667	30.51	< .0001
Error	196	140.8400000	0.7185714		
Corrected	199	206.6200000			

The mean score for each age group was compared against the mean score for all other age groups. The data indicate significant differences in the mean scores for each age group at Bonferroni corrected 5% significance level, which is .0083, except age groups 20 versus 40. The Bonferroni comparisons showed significant differences in age groups 20 versus 61 ($t = -5.78$, $p < .0001$), 20 versus 71 ($t = -8.97$, $p < .0001$), 40 versus 61 ($t = -3.30$, $p = .0011$), 40 versus 71 ($t = -6.49$, $p < .0001$), and 61 versus 71 ($t = -3.19$, $p = .0017$). For each comparison, nurse practitioners agreed more about the importance of discussing issues of sexual health, sexual activity, and STI prevention with the younger age groups than with the older age groups (Table 5).

Table 5

Bonferroni Correction for Item 1

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age group 20 versus 40	-0.42000000	0.16953719	-2.48	.0141
Age group 20 versus 61	-0.98000000	0.16953719	-5.78	< .0001
Age group 20 versus 71	-1.52000000	0.16953719	-8.97	< .0001
Age group 40 versus 61	-0.56000000	0.16953719	-3.30	.0011
Age group 40 versus 71	-1.10000000	0.16953719	-6.49	< .0001
Age group 61 versus 71	-0.54000000	0.16953719	-3.19	.0017

Item 2

Item 2 was, "I feel comfortable discussing issues of sexual health with this population of women." The claim was rejected that the mean responses were equal throughout the age groups ($F = 9.66$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 6).

The data indicated significant differences in the means for age groups at Bonferroni corrected 5% significance level. The Bonferroni comparisons showed significant differences between age group 20 versus 61 ($t = -3.63$, $p = .0004$), 20 versus 71 ($t = -5.06$, $p < .0001$), and 40 versus 71 ($t = -3.24$, $p = .0014$). For each of the significant differences, the nurse practitioners reported that they were more comfortable in discussing issues of sexual health with the younger age groups (Table 7).

Table 6

Comparison of Responses Throughout Age Groups for Item 2

Source	*df*	Sum of squares	Mean square	*F* value	*Pr* > *F*
Model	3	17.2150000	5.7383333	9.66	< .0001
Error	196	116.3800000	0.5937755		
Corrected	199	133.5950000			

Table 7

Bonferroni Correction for Item 2

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.28000000	0.15411366	-1.82	.0708
Age Group 20 versus 61	-0.56000000	0.15411366	-3.63	.0004
Age Group 20 versus 71	-0.78000000	0.15411366	-5.06	< .0001
Age Group 40 versus 61	-0.28000000	0.15411366	-1.82	.0708
Age Group 40 versus 71	-0.50000000	0.15411366	-3.24	.0014
Age Group 61 versus 71	-0.22000000	0.15411366	-1.43	.1550

Item 3

Item 3 was, “Women of this age are sexually active.” The claim was rejected that the mean responses were equal throughout the age groups ($F = 62.45$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 8).

Table 8

Comparison of Responses Throughout Age Groups for Item 3

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	74.5750000	24.8583333	62.45	< .0001
Error	196	78.0200000	0.3980612		
Corrected	199	152.5950000			

For this item, there was a significant difference in means in every comparison at the Bonferroni corrected 5% significance level. The nurse practitioners were asked whether their patients in each group were sexually active. The Bonferroni comparisons showed significant differences in age groups 20 versus 40 (t = -2.69, p = .0077), 20 versus 61 (t = -8.08, p < .0001), 20 versus 71 (t = -12.52, p < .0001), 40 versus 61 (t = -5.39, p < .0001), 40 versus 71 (t = -9.83, p < .0001), and 61 versus 71 (t = -4.44, p < .0001). This indicates that the nurse practitioners considered older age groups to be less sexually active than younger age groups (Table 9).

Item 4

Item 4 was, "Women of this age are not very concerned with safe sex practices." The claim was rejected that the mean responses were equal throughout the age groups (F = 6.81, p = .0002), which implies significant differences in the means over the four age groups (Table 10).

When asked to respond to Item 4, that women of each age group are not very concerned with safe sex practices, the Bonferroni comparison showed that the answers

Table 9

Bonferroni Correction for Item 3

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.34000000	0.12618419	-2.69	0.0077
Age Group 20 versus 61	-1.02000000	0.12618419	-8.08	< .0001
Age Group 20 versus 71	-1.58000000	0.12618419	-12.52	< .0001
Age Group 40 versus 61	-0.68000000	0.12618419	-5.39	< .0001
Age Group 40 versus 71	-1.24000000	0.12618419	-9.83	< .0001
Age Group 61 versus 71	-0.56000000	0.12618419	-4.44	< .0001

Table 10

Comparison of Responses Throughout Age Groups for Item 4

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	25.4000000	8.4666667	6.81	.0002
Error	196	243.7200000	1.2434694		
Corrected	199	269.1200000			

given by the nurse practitioners in the 20 versus 61 (t = -3.41, p = .0008), 20 versus 71 (t = -3.68, p = .0003), and 40 versus 71 (t = -2.87, p = .0046) groups were statistically significantly different. These nurse practitioners agreed that women in later years were not very concerned with safe sex practices (Table 11).

Table 11

Bonferroni Correction for Item 4

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.18000000	0.22302192	-0.81	.4206
Age Group 20 versus 61	-0.76000000	0.22302192	-3.41	.0008
Age Group 20 versus 71	-0.82000000	0.22302192	-3.68	.0003
Age Group 40 versus 61	-0.58000000	0.22302192	-2.60	.0100
Age Group 40 versus 71	-0.64000000	0.22302192	-2.87	.0046
Age Group 61 versus 71	-0.06000000	0.22302192	-0.27	.7882

Item 5

Item 5 was, "Women in this age group need education regarding prevention of STIs." The claim was rejected that the mean responses were equal throughout the age groups ($F = 17.50$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 12).

The nurse practitioners were asked whether their patients in the four age groups needed education for the prevention of STIs. The Bonferroni comparisons showed significant differences in age groups 20 versus 40 ($t = -2.66$, $p = .0086$), 20 versus 61 ($t = -5.86$, $p < .0001$), 20 versus 71 ($t = -6.31$, $p < .0001$), 40 versus 61 ($t = -3.21$, p = .0016), and 40 versus 71 ($t = -3.65$, $p = .0003$). Each of these significant differences suggests that the nurse practitioners agreed that older age groups required less education regarding prevention of STIs (Table 13).

Table 12

Comparison of Responses Throughout Age Groups for Item 5

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	42.9000000	14.3000000	17.50	< .0001
Error	196	160.1200000	0.8169388		
Corrected	199	203.0200000			

Table 13

Bonferroni Correction for Item 5

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.48000000	0.18076933	-2.66	.0086
Age Group 20 versus 61	-1.06000000	0.18076933	-5.86	< .0001
Age Group 20 versus 71	-1.14000000	0.18076933	-6.31	< .0001
Age Group 40 versus 61	-0.58000000	0.18076933	-3.21	.0016
Age Group 40 versus 71	-0.66000000	0.18076933	-3.65	.0003
Age Group 61 versus 71	-0.08000000	0.18076933	-0.44	.6586

Item 6

Item 6 was, "I routinely offer STI testing to this population." The claim was rejected that the mean responses were equal throughout the age groups ($F = 37.86$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 14).

Table 14

Comparison of Responses Throughout Age Groups for Item 6

Source	*df*	Sum of squares	Mean square	*F* value	*Pr* > *F*
Model	3	117.1750000	39.0583333	37.86	< .0001
Error	196	202.2200000	1.0317347		
Corrected	199	319.3950000			

The nurse practitioners were asked whether they agree that they routinely offered STI testing across all age groups. The Bonferroni comparisons showed significant differences in age groups 20 versus 40 (t = -5.12, $p < .0001$), 20 versus 61 ($t = -8.47$, p < .0001), 20 versus 71 ($t = -9.75$, $p < .0001$), 40 versus 61 ($t = -3.35$, $p = .0010$), and 40 versus 71 ($t = -4.63$, $p < .0001$). Each of these significant differences suggests that the nurses did not routinely offer STI testing for the older age groups as often as they did for the younger age groups (Table 15).

Item 7

Item 7 was, "I let the patient determine if they want to talk about sex and wait for patients of this age to bring up the subject before I address it." The claim was rejected that the mean responses were equal throughout the age groups ($F = 4.78$, $p = .0031$), which implies significant differences in the means over the four age groups (Table 16).

The nurse practitioners were asked whether they agreed that they allow the patient of a certain age group to bring up the subject of sex first before talking about it. The Bonferroni comparisons showed significant differences in age groups 20 versus 71 ($t = 3.67$, $p = .0003$). Each of these significant differences suggests that these nurse

Table 15

Bonferroni Correction for Item 6

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-1.04000000	0.20314868	-5.12	< .0001
Age Group 20 versus 61	1.72000000	0.20314868	-8.47	< .0001
Age Group 20 versus 71	-1.98000000	0.20314868	-9.75	< .0001
Age Group 40 versus 61	-0.68000000	0.20314868	-3.35	.0010
Age Group 40 versus 71	-0.94000000	0.20314868	-4.63	< .0001
Age Group 61 versus 71	-0.26000000	0.20314868	-1.28	.2021

Table 16

Comparison of Responses Throughout Age Groups for Item 7

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	19.7200000	6.5733333	4.78	.0031
Error	196	269.4000000	1.3744898		
Corrected	199	289.1200000			

practitioners tended to agree with allowing the older age group to bring up the subject of sex versus the younger age groups. In other words, the nurse practitioners seemed more obligated to bring up the subject of sex with younger age groups (Table 17).

Table 17

Bonferroni Correction for Item 7

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	0.34000000	0.23447727	1.45	.1486
Age Group 20 versus 61	0.56000000	0.23447727	2.39	.0179
Age Group 20 versus 71	0.86000000	0.23447727	3.67	.0003
Age Group 40 versus 61	0.22000000	0.23447727	0.94	.3493
Age Group 40 versus 71	0.52000000	0.23447727	2.22	.0277
Age Group 61 versus 71	0.30000000	0.23447727	1.28	.2023

Item 8

Item 8 was, "I perform a thorough sexual history with this population of patients at every well woman exam." The claim was rejected that the mean responses were equal throughout the age groups ($F = 10.54$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 18).

Table 18

Comparison of Responses Throughout Age Groups for Item 8

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	35.4550000	11.8183333	10.54	< .0001
Error	196	219.7400000	1.1211224		
Corrected	199	255.1950000			

The nurse practitioners were asked whether they performed a thorough sexual history at every well woman exam for each age group. The Bonferroni comparisons showed significant differences in age groups 20 versus 61 (t = -4.25, p < .0001), 20 versus 71 (t = -5.01, p < .0001), and 40 versus 71 (t = -3.21, p = .0015). Each of these significant differences suggests that these nurse practitioners did not agree that they perform a thorough sexual history at every well woman exam for the older age groups compared to the younger age groups (Table 19).

Table 19

Bonferroni Correction for Item 8

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.38000000	0.21176614	-1.79	.0743
Age Group 20 versus 61	-0.90000000	0.21176614	-4.25	< .0001
Age Group 20 versus 71	-1.06000000	0.21176614	-5.01	< .0001
Age Group 40 versus 61	-0.52000000	0.21176614	-2.46	.0149
Age Group 40 versus 71	-0.68000000	0.21176614	-3.21	.0015
Age Group 61 versus 71	-0.16000000	0.21176614	-0.76	.4508

Item 9

Item 9 was, “When I perform a sexual health history of this population, it always includes: Current sexual activity-number of sexual partners within the past 12 months.” The claim was rejected that the mean responses were equal throughout the age groups

($F = 12.94$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 20).

Table 20

Comparison of Responses Throughout Age Groups for Item 9

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	43.2200000	14.4066667	12.94	< .0001
Error	196	218.2800000	1.1136735		
Corrected	199	261.5000000			

The nurse practitioners were asked whether their sexual health history always includes asking patients of each age group about sexual activity or number of sexual partners. The Bonferroni comparisons showed significant differences in age groups 20 versus 61 ($t = -4.17$, $p < .0001$), 20 versus 71 ($t = -5.59$, $p < .0001$), 40 versus 61 ($t = -2.75$, $p = .0066$), and 40 versus 71 ($t = -4.17$, $p < .0001$). Each of these significant differences suggests that these nurse practitioners were not asking their older groups of patients about their sexual activity-number of sexual partners as much as they were asking the younger age groups (Table 21).

Item 10

Item 10 was, "When I perform a sexual health history of this population, it always includes: Gender-sexual orientation of sexual partners." The claim was rejected that the mean responses were equal throughout the age groups ($F = 11.77$; $p < .0001$), which implies significant differences in the means over the four age groups (Table 22).

Table 21

Bonferroni Correction for Item 9

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.30000000	0.21106146	-1.42	.1568
Age Group 20 versus 61	-0.88000000	0.21106146	-4.17	< .0001
Age Group 20 versus 71	-1.18000000	0.21106146	-5.59	< .0001
Age Group 40 versus 61	-0.58000000	0.21106146	-2.75	.0066
Age Group 40 versus 71	-0.88000000	0.21106146	-4.17	< .0001
Age Group 61 versus 71	-0.30000000	0.21106146	-1.42	.1568

Table 22

Comparison of Responses Throughout Age Groups for Item 10

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	42.4150000	14.1383333	11.77	< .0001
Error	196	235.4600000	1.2013265		
Corrected	199	277.8750000			

The nurse practitioners were asked whether their sexual health history always includes asking patients of each age group about the gender-sexual orientation of their sexual partners. The Bonferroni comparisons showed significant differences in age groups 20 versus 61 (t = -4.47, p < .0001), 20 versus 71 (t = -5.47, p < .0001), and 40 versus 71 (t = -3.10, p = .0022). Each of these significant differences suggests that these

nurse practitioners did not ask their older patients about the gender-sexual orientation of sexual partners as consistently as they did with the younger age groups (Table 23).

Table 23

Bonferroni Correction for Item 10

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.52000000	0.21921008	-2.37	.0187
Age Group 20 versus 61	-0.98000000	0.21921008	-4.47	< .0001
Age Group 20 versus 71	-1.20000000	0.21921008	-5.47	< .0001
Age Group 40 versus 61	-0.46000000	0.21921008	-2.10	.0371
Age Group 40 versus 71	-0.68000000	0.21921008	-3.10	.0022
Age Group 61 versus 71	-0.22000000	0.21921008	-1.00	.3168

Item 11

Item 11 was, "When I perform a sexual health history of this population, it always includes: Type of sexual contact (genital, anal, oral)." The claim was rejected that the mean responses were equal throughout the age groups ($F = 6.88$, $p = .0002$), which implies significant differences in the means over the four age groups (Table 24).

The nurse practitioners were asked whether their sexual health history always includes asking patients of each age group about what type of sexual contact they engage in. The Bonferroni comparisons showed significant differences in age groups 20 versus 61 ($t = -3.05$, $p = .0026$), 20 versus 71 ($t = -4.26$, $p < .0001$), and 40 versus 71 ($t = -2.78$,

Table 24

Comparison of Responses Throughout Age Groups for Item 11

Source	*df*	Sum of squares	Mean square	*F* value	*Pr* > *F*
Model	3	24.0950000	8.0316667	6.88	.0002
Error	196	228.9000000	1.1678571		
Corrected	199	252.9950000			

p = .0060). Each of these significant differences suggests that these nurse practitioners ask younger age groups about type of sexual contact more consistently than they ask older age groups (Table 25).

Table 25

Bonferroni Correction for Item 11

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.32000000	0.21613488	-1.48	.1403
Age Group 20 versus 61	-0.66000000	0.21613488	-3.05	.0026
Age Group 20 versus 71	-0.92000000	0.21613488	-4.26	< .0001
Age Group 40 versus 61	-0.34000000	0.21613488	-1.57	.1173
Age Group 40 versus 71	-0.60000000	0.21613488	-2.78	.0060
Age Group 61 versus 71	-0.26000000	0.21613488	-1.20	.2304

Item 12

Item 12 was, "When I perform a sexual health history of this population, it always includes: Current protection against STIs (abstinence, monogamy, and condoms)." The claim was rejected that the mean responses were equal throughout the age groups (F = 24.76, $p < .0001$), which implies significant differences in the means over the four age groups (Table 26).

Table 26

Comparison of Responses Throughout Age Groups for Item 12

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	76.8200000	25.6066667	24.76	< .0001
Error	196	202.6800000	1.0340816		
Corrected	199	279.5000000			

The nurse practitioners were asked whether their sexual health history always includes asking patients of each age group about their current use of protection against STIs. The Bonferroni comparisons showed significant differences in age groups 20 versus 61 (t = -6.39, $p < .0001$), 20 versus 71 (t = -7.57, $p < .0001$), 40 versus 61 (t = -4.03, $p < .0001$), and 40 versus 71 (t = -5.21, $p < .0001$). Each of these significant differences suggests that these nurse practitioners reported that they ask younger age groups of patients about their current protection against STIs with more consistency than they do older age groups (Table 27).

Table 27

Bonferroni Correction for Item 12

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.48000000	0.20337961	-2.36	.0193
Age Group 20 versus 61	-1.30000000	0.20337961	-6.39	< .0001
Age Group 20 versus 71	-1.54000000	0.20337961	-7.57	< .0001
Age Group 40 versus 61	-0.82000000	0.20337961	-4.03	< .0001
Age Group 40 versus 71	-1.06000000	0.20337961	-5.21	< .0001
Age Group 61 versus 71	-0.24000000	0.20337961	-1.18	.2394

Item 13

Item 13 was, "When I perform a sexual health history of this population, it always includes: Previous diagnosis and testing for HIV-STIs." The claim was rejected that the mean responses were equal throughout the age groups ($F = 13.54$, $p < .0001$), which implies significant differences in the means over the four age groups (Table 28).

Table 28

Comparison of Responses Throughout Age Groups for Item 13

Source	*df*	Sum of squares	Mean square	*F* value	*Pr > F*
Model	3	40.3600000	13.4533333	13.54	< .0001
Error	196	194.7600000	0.9936735		
Corrected	199	235.1200000			

The nurse practitioners were asked whether their sexual health history always includes asking patients of each age group about previous diagnosis and testing for HIV-STIs. The Bonferroni comparisons showed significant differences in age groups 20 versus 61 (t = -4.82, p < .0001), 20 versus 71 (t = -5.52, p < .0001), 40 versus 61 (t = -3.11, p = .0022), and 40 versus 71 (t = -3.81, p = .0002). These significant differences suggest that these nurse practitioners were not asking about previous diagnosis and testing of HIV-STIs of their patients in older age groups as consistently as they were of their younger age groups (Table 29).

Table 29

Bonferroni Correction for Item 13

Parameter	Estimate	SE	*t* Value	Pr > -t-
Age Group 20 versus 40	-0.34000000	0.19936634	-1.71	.0897
Age Group 20 versus 61	-0.96000000	0.19936634	-4.82	< .0001
Age Group 20 versus 71	-1.10000000	0.19936634	-5.52	< .0001
Age Group 40 versus 61	-0.62000000	0.19936634	-3.11	.0022
Age Group 40 versus 71	-0.76000000	0.19936634	-3.81	.0002
Age Group 61 versus 71	-0.14000000	0.19936634	-0.70	.4834

Summary

The demographic data associated with nurse practitioner participants showed ethnicity and experience to be factors that significantly affected sexual health evaluation

and education of older patients. Analyses of the 13 clinical practice survey items demonstrated statistical significance by age group of patients, demonstrating that age of female patients significantly affected the nurse practitioner's education services about prevention of STIs.

DISCUSSION

This section presents a discussion of the outcomes of the study as they relate to both the primary and secondary research questions. Evidence is provided to support the theoretical framework and comparisons are made between the findings in the current study and findings reported from studies examined in the literature review. Implications and limitations of the study and recommendations for future research are presented.

Findings Related to the Research Questions

Primary Question

The primary research question addressed in this study was, *Does the age of a woman affect whether a nurse practitioner provides education about the prevention of STIs?* The findings suggest a bias related to the way in which nurse practitioners provide education to their patients about sexual health for women ages 40 or more compared to women ages 20–39. The total score for the 13 items showed that the age group of female patients ($F = 46.87$, $p < .0001$) significantly affected education about prevention of STIs. Based on these results, it can be reasonably concluded that older patients are less likely to receive preventative education or receive the same information from nurse practitioners as that received by younger patients.

Secondary Questions

Associated factors of gender, age, marital status, ethnicity, specialty, level of education, and years of practice of the nurse practitioner were addressed as possible factors in sexual health care and education provided to patients related to prevention of STIs. The total score for the 13 items showed that ethnicity of the nurse practitioner ($F = 4.27$, $p = .0002$) and the nurse practitioner's length of experience ($F = 3.73$, $p = .0061$)

significantly affected education about prevention of STIs. Native American and Middle Eastern participants were the least likely to provide STI education to older patients, compared to White-Caucasian and Hispanic-Latino nurse practitioners. Results showed that, as the nurse practitioner's experience increased, so did the likelihood for consistency of evaluation and education of sexual health across all age groups of women.

Perceptions of the nurse practitioner regarding sexual activity in different age groups of women, importance and comfort in addressing sexual health issues, and initiation of conversation about sexual health were studied to examine possible correlations between these areas and consistency and content of education that the nurse practitioners provided. Analyses of response to individual items revealed statistically significant results related to age group for each of the 13 clinical practice items surveyed ($F = 46.87$, $p < .0001$).

Relationship to the Literature

The research studies reviewed in the Sexual Activity in Older Adults section of the literature review indicate that older women are having and enjoying active sex lives well into old age (Gass et al., 2011; Lindau & Gavrilova, 2010). However, results of the current study show that nurse practitioners (a) consider older age groups to be less sexually active than younger groups, (b) do not routinely (at well-women exams) perform the same thorough sexual health history for older age groups as for younger age groups, and (c) do not ask older patients about sexual activity or number of sexual partners in the previous year.

The studies reviewed in the section STI Risk in Adults noted the global rise of STIs among older populations (Lindau et al., 2008; Minichiello et al., 2012; Smith &

Christakis, 2009). Nurse practitioner responses in the current study confirmed that they the participants did not routinely ask older patients about gender-sexual orientation of sexual partners, type of sexual contact, current method of STI protection used, or previous diagnosis of HIV-STIs, nor did they offer STI testing for older age groups.

The review section on Sexual Health Knowledge cited several research articles in which older women expressed their fears about re-entering the dating scene; among their concerns were STIs and HIV-AIDS (Morton et al., 2011). Some physicians considered patients to be inadequately informed about HIV-STIs but had a general perception that this risk declined with age, gender, and marital status (Grant & Ragsdale, 2008). Results of the current study showed that the nurse practitioners agreed that it was more important to discuss issues of sexual health, sexual activity, and STI prevention with younger age groups and that they considered that women in their later years were not very concerned about safe sex practices.

Slinkard and Kazer (2011), in a study reviewed in the literature review section Sex Education in Older Adults, found that none of their research participants (ages 66 to 90) had ever been educated about HIV-AIDS nor had they received information about STIs. The current study showed that the nurse practitioners were of the opinion that the older age groups required less education regarding the prevention of STIs.

Studies cited in the literature review section Communication With Health Care Provider, including those by Slinkard and Kazer (2011), Politi et al. (2009), and Nurutdinova et al. (2011), reported that patients stated they had never been asked about sexual health by a health care provider. Results of the current study showed that these nurse practitioners reported that they were more comfortable discussing issues of sexual

health with younger age groups and felt more obligated to bring up the subject of sex with younger age groups.

Relationship to the Theoretical Framework

In Knowles's ALT, andragogy is based on the psychological definition of an adult (Knowles, 1970). However, adulthood or the point in development when a person recognizes that he or she must be self-driven and responsible for himself or herself happens at different life stages. For women who are newly single (separated, divorced, or widowed) "adulthood" may arrive at the time of that life-changing event. Entering into newfound sexual freedom after a monogamous relationship can be challenging for women; it can also present an opportunity for learning.

Application of ALT as a theoretical framework in this research is beneficial to the nurse practitioner as the care provider and to women ages 40 and older as potential patients. Research shows that older women have a need and desire to learn about STIs (Grant & Ragsdale, 2008; Morton, Kim, & Treise, 2011; Slinkard & Kazer, 2011). However, the current study suggests that nurse practitioners lack certain skills or understanding in providing sexual health care to this older population of women. Both groups of adult learners must be ready to learn, motivated to learn, and able to recognize their knowledge deficits so they can to be "helped" to learn.

Implications

Research studies cited in the literature review included medical doctors as health care providers. Those studies were directed at understanding specific beliefs, knowledge, and comfort levels of physicians who delivered sexual health care and education to older women.

The current study investigated attitudes and clinical practice aimed at the sexual health care provided by the nurse practitioner. At the onset of this study, no literature was located that specifically identified and examined the relationship between the age of a female patient and the education provided by the nurse practitioner about prevention of STIs. This research suggests that responses by nurse practitioners to issues of sexual health, sexual activity, and STIs in older women very closely resemble those found in previous medical studies.

This study is important in that it contributes to the scientific knowledge base related to the study of sexual health and education for older women. It also serves as a foundation for future research aimed at identifying knowledge gaps and assessing learning needs of nurse practitioners who provide sexual health care for this population. An important role of the nurse practitioner is to educate and influence individuals and communities regarding health promotion and disease prevention; therefore, results of this research may benefit communities by helping to define educational objectives needed to end sexual health disparities for older women.

Limitations of the Study

Several limitations of the study may restrict the generalizability of the results. A major limitation was lack of probability sampling. The study utilized a convenience sample recruited via snowball technique. Although this type of sampling is effective in increasing sample size, the quality of participants may be questioned. There is a community bias associated with snowball sampling in that the original participants have a potentially influential effect on the outcome of the research by means of whom they enlist to join the study.

The research format, a pilot study, was chosen due to advantages of low cost, abbreviated time constraints, reduced scale, and a goal to determine need and/or design improvements for a larger-scale study. The limitations inherent in this type of study due to small sample size and associated favorable conditions may further limit generalizability of the findings.

There was significant heterogeneity in the sample, which included broad ranges in experience, age, ethnicity, and specialty; conversely gender, marital status, education, and location of practice of participants (mainly Los Angeles and Orange County, California) may not be typical of the larger populace of nurse practitioners who care for the population studied, which may have affected research findings. However, the sample size of 50 was sufficiently large to address the research question, particularly in a pilot study.

The survey tool developed and employed in this study, a self-report questionnaire with a modified Likert-type response scale, had not been previously tested, and the reliability and validity of this instrument has not been established. Although Likert-type scales are the most widely utilized scaling technique for measuring attitudes, the validity and accuracy of a self-report instrument may pose limitations for this study. It is not possible to be certain that information provided by the respondents in this study is accurate or reliable. Participants may have provided inaccurate responses in order to please the researcher or due to difficulty with recall. However, the researcher assumed truthfulness in participants' answers and every effort was made to ensure anonymity and confidentiality in order to increase honesty of responses.

Recommendations for Future Research

Recommendations for future research focus on measures to improve the heterogeneity of the sample. A larger sample should be employed and random selection should be incorporated in future studies. A high percentage of married (76%), female (94%) participants in the current study may explain the lack of sensitivity or understanding of the sexual health and educational needs of older single, divorced, or widowed women.

Future investigations could build on this pilot study by asking questions related to the "why-why not" of the current sexual health practice bias toward women who are age 40 or older. Perhaps a qualitative portion of the study would provide insight into this question. For example, do nurse practitioners feel that their current practice is adequate, education of this population is unnecessary, or productivity does not allow for thorough exams, or is it possible that they have never been trained to care for this population in terms of sexual health needs?

The current study utilized a paper-and-pen questionnaire, which was a convenient method of surveying due to the nature of the snowball sampling technique. Acquaintances were given multiple copies of the questionnaire to distribute to their associates, who, in turn, completed the questionnaire and returned it by mail. Responses were manually entered onto flow sheets and statistical analyses were run. An online survey tool may be a more economical and time-saving alternative and a way to reach a potentially larger sample pool.

Summary and Conclusion

The purpose of this study was to examine the relationship between a woman patient's age and whether a nurse practitioner provides education about prevention of STIs to that patient. The results suggest that patients who are 40 years old and older are less likely to receive preventative education regarding STIs than younger age groups. These findings are particularly alarming as STI incidence in older Americans continues to increase.

Nurse practitioners must be willing to explore their attitudes and beliefs and dispel any stereotypes that perpetuate negative attitudes regarding older adults and sex. They must be knowledgeable and prepared to address questions of sexual health and to educate older adults in safer sex practices. Perhaps there is a need for a defined educational program for STI prevention specifically for women over the age of 40. Research supports that these women want and need the education. This study suggests that nurse practitioners may need to be educated as well.

Adults are staying sexually active well into old age. This is a natural and satisfying part of the aging process. However, risky sexual behaviors can be found in all ages of people who engage in sexual activity. Sexual health is no longer a public health issue concerning only the young. Nurse practitioners must take the lead in promoting healthy aging lifestyles, including prevention of STIs.

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APPENDIX A

SCRIPT FOR INVITATION TO PARTICIPATE IN A RESEARCH STUDY

Hello, my name is Lisa Wheadon. I am a Doctorate of Nursing Practice student from the California State University Consortium program associated with the School of Nursing at California State University, Long Beach. I am conducting a research study to determine if the age of a woman affects whether a nurse practitioner provides education about the prevention of sexually transmitted infections.

You have been selected to participate in this study because you are attending this CANP meeting today. Are you (1) 18 years of age or older, and (2) able to speak, read, and write English, and (3) a nurse practitioner who works with women ages 40 years and older in your practice setting? Are you interested in volunteering to participate in this study today?

The surveys consist of seven (7) demographic questions and fifty-two (52) personal practice questions. The entire study should take about ten (10) minutes.

or

Snowballing Participants:

Hello, my name is Lisa Wheadon. I am a Doctorate of Nursing Practice student from the California State University Consortium program associated with the School of Nursing at California State University, Long Beach. I am conducting a research study to determine if the age of a woman affects whether a nurse practitioner provides education about the prevention of sexually transmitted infections.

You have been selected to take part in this study because you have been recommended by another nurse practitioner as someone who may be interested in participating in a nursing research study. Are you (1) 18 years of age or older, and (2) able to speak, read, and write English, and (3) a nurse practitioner who works with women ages 40 years and older in your practice setting? Are you interested in volunteering to participate in this study today?

The surveys consist of seven (7) demographic questions and fifty-two (52) personal practice questions. The entire study should take about ten (10) minutes.

APPENDIX B

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Consent to Participate in Research

Title of Study: A PILOT STUDY TO EXAMINE THE RELATIONSHIP BETWEEN A WOMAN'S AGE AND WHETHER A NURSE PRACTITIONER PROVIDES EDUCATION ABOUT PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS

My name is Lisa Wheadon. I am a Family Nurse Practitioner and a Doctorate of Nursing Practice (DNP) student from the California State University Consortium program associated with the School of Nursing at California State University, Long Beach. You are being asked to participate in a research study conducted by myself under the direction of Dr. David E. Kumrow, Associate Professor in the School of Nursing at California State University, Long Beach.

You have been selected as a possible participant in this study because you are (1) 18 years of age or older, and (2) able to speak, read, and write English, and (3) a nurse practitioner who works with women ages 40 years and older in your practice setting, and (4) attending a local CANP meeting, or (5) recommended by another nurse practitioner as someone who may be interested in participating in a nursing research study. If you volunteer to participate in this study you must meet the above qualifying criteria.

Purpose of the Study

The purpose of this study is to determine if the age of a woman affects whether a nurse practitioner provides education about the prevention of sexually transmitted infections. Associated factors of gender, age, marital status, ethnicity, specialty, level of education, and years of practice of the nurse practitioner will also be addressed as part of the study.

Procedures

Your participation is this study is voluntary. If you choose to participate, please fill out this survey which consists of seven (7) demographic questions and a research survey of fifty-two (52) personal practice questions. It is important that you answer each demographic question accurately and each personal practice question as closely as it applies to your current usual-typical professional practice. The entire survey should take about ten (10) minutes to complete.

The "Consent to Participate in a Research Study" must be signed, all pages placed in the letter sized envelope provided, sealed, and returned to the researcher separately from the survey, either (1) one site; by dropping the sealed envelope containing the

consent letter in the designated consent collection box, or (2) off site; by mail with postage paid by researcher.

The completed demographic questionnaire and survey should be placed back in the manila envelope, sealed, and returned to the researcher, either (1) on site; by dropping the sealed envelope containing the survey in the separate designated survey collection box, or (2) off site; by mail with postage paid by researcher. Please do not put your name, return address, or any other identifying information on the envelope or survey.

Potential Risks

There is minimal risk associated with self-report questionnaires. However, there may be a potential risk for breach of confidentiality, mild anxiety while recalling information, and risk related to privacy from being near other participants while answering the questionnaire.

Potential Benefits to Participants or Professionals

There will be no specific immediate benefits to individual participants expected from the research. This study is important in that it contributes to the scientific knowledge base in the field of nursing as related to the professional responsibility of nurse practitioners as providers and promoters of good health practices. Results of this research may help identify inconsistencies in practice and a need for improved sexual health education for certain populations of women.

Payment for Participation

There is no financial benefit for participation in this study.

Confidentiality

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Demographic questions will be limited to gender, age, ethnicity, marital status, specialty, level of education, and years of practice. Only group statistics will be reported. Only the researchers will have access to raw data. The surveys will be stored in a locked filing cabinet in the researcher's home for a period of three years after the completion of the study and will then be shredded.

Rights of Research Subjects, Participation and Withdrawal

Your participation in this study is voluntary. You may withdraw from participation at any time without consequence. Participation-non-participation does not affect your practice or other personal rights. You may choose to leave certain questions blank during this survey, if you feel uncomfortable in responding, yet remain in the study.

If you have questions regarding your rights as a research participant please contact:
The Office of University Research, CSULB
1250 Bellflower Blvd. Long Beach, CA 90840
University Phone: (562) 985- 8147
University E-mail: irb@csulb.edu

Advisor-Faculty Supervisor of Student Research Project
If you have questions regarding this study please contact:
Lisa Wheadon MSN, NP-C, Principal Researcher at (714) 742-3417 or
David Kumrow Ed.D., Assistant Professor, CSULB
University Phone: (562) 985-8082; Faculty E-mail: David.Kumrow@csulb.edu

Signature of Research Subject

I understand the procedures and conditions of my participation described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____
Printed Name

_____ _____
Signature Date

Please place this signed consent form in the envelope provided and return the sealed envelope to the researcher separately from the survey, either (1) on site; by dropping the sealed envelope containing the consent letter in the designated consent collection box, or (2) off site; by mail with postage paid by the researcher.

Thank you for your participation in this research study.

APPENDIX C

SURVEY INSTRUCTIONS

This research study consists of 2 parts:

1. A seven (7) question demographics survey. It is important that you answer each demographic question accurately. Select only one answer for each question.

EXAMPLE: Place an "X" in the bubble by your answer

What is your gender? Place an "X" next to your choice
- o Male
- **X** Female

2. A thirteen (13) question-four (4) age group professional clinical practice survey designed to identify sexual health care and education of female patients in the nurse practitioner setting. It is important that you answer each personal practice question as closely as it applies to your current usual-typical professional practice. Select only one answer for each question.

EXAMPLE: Place an "X" in the bubble above your answer

1. **It is very important to discuss issues of sexual health, sexual activity, and STI prevention with this population of women.**

O----------**X**----------O----------O----------O

strongly agree	agree	neither agree or disagree	disagree	strongly disagree

If it is your intent to participate in this research study; please complete the survey, place the survey in the envelope, and return it to the researcher, either (1) on site; by dropping the sealed envelope containing the survey in the designated survey collection box, or (2) off site; by mail with postage paid by the researcher.

Please do not put your name, return address, or any other identifying information on the envelope or survey.

APPENDIX D

PARTICIPANT DEMOGRAPHICS QUESTIONNAIRE

1. What is your gender?
   - Male
   - Female

2. How old are you? Please write your age in years.
   _____ Years old

3. What is your marital status?
   - Single (never been married)
   - Married
   - Separated
   - Divorced
   - Widowed

4. What is the ethnic background you identify with most? Check only one.
   - Native American
   - Asian
   - Black-African American
   - Hispanic-Latino
   - Middle Eastern
   - Pacific Islander
   - White-Caucasian
   - Indian-Eastern Asian

5. What is your nurse practitioner specialty?
   - Family
   - Adult-Gerontology
   - Women's Health
   - Midwife
   - Other

6. What is your highest level of education?
   - Associate degree
   - Bachelor degree
   - Master degree
   - Doctorate degree

7. How many years have you practiced as a nurse practitioner with this population of patients (women 40 years of age and older)?
   - 0-5 years
   - 6-10 years
   - 11-15 years
   - 16-20 years
   - More than 20 years

APPENDIX E

RESEARCH SURVEY

Please consider the following questions while thinking about your usual or typical professional clinical practices; then respond by identifying the care you currently provide within your practice setting for female patients, in each of these four (4) age groups.

The following questions are directed at your care of female patients from young adult to mid child bearing years; ages 20-39.

1. It is very important to discuss issues of sexual health, sexual activity, and STI prevention with this population of women.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

2. I feel comfortable discussing issues of sexual health with this population of women.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

3. Women of this age are sexually active.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

4. Women of this age are not very concerned with safe sex practices.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

5. Women in this age group need education regarding prevention of STIs.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

6. I routinely offer STI testing to this population.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

7. I let the patient determine if they want to talk about sex and wait for patients of this age to bring up the subject before I address it.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

8. I perform a thorough sexual history with this population of patients at every well woman exam.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

When I perform a sexual health history of this population, it always includes:

9. Current sexual activity-number of sexual partners within the past 12 months.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

10. Gender-sexual orientation of sexual partners.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

11. Type of sexual contact (genital, anal, oral).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

12. Current protection against STIs (abstinence, monogamy, and condoms).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

13. Previous diagnosis and testing for HIV-STIs.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

The following questions are directed at your care of pre and post-menopausal, female patients; ages 40-60.

1. **It is very important to discuss issues of sexual health, sexual activity, and STI prevention with this population of women.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

2. **I feel comfortable discussing issues of sexual health with this population of women.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

3. **Women of this age are sexually active.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

4. **Women of this age are not very concerned with safe sex practices.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

5. **Women in this age group need education regarding prevention of STIs.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

6. **I routinely offer STI testing to this population.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

7. **I let the patient determine if they want to talk about sex and wait for patients of this age to bring up the subject before I address it.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

8. I perform a thorough sexual history with this population of patients at every well woman exam.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

When I perform a sexual health history of this population, it always includes:

9. Current sexual activity-number of sexual partners within the past 12 months.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

10. Gender-sexual orientation of sexual partners.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

11. Type of sexual contact (genital, anal, oral).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

12. Current protection against STIs (abstinence, monogamy, and condoms).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

13. Previous diagnosis and testing for HIV-STIs.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

The following questions are directed at your care of middle aged female patients; ages 61-70.

1. **It is very important to discuss issues of sexual health, sexual activity, and STI prevention with this population of women.**

O----------O----------O----------O----------O
strongly agree neither agree disagree strongly
agree or disagree disagree

2. **I feel comfortable discussing issues of sexual health with this population of women.**

O----------O----------O----------O----------O
strongly agree neither agree disagree strongly
agree or disagree disagree

3. **Women of this age are sexually active.**

O----------O----------O----------O----------O
strongly agree neither agree disagree strongly
agree or disagree disagree

4. **Women of this age are not very concerned with safe sex practices.**

O----------O----------O----------O----------O
strongly agree neither agree disagree strongly
agree or disagree disagree

5. **Women in this age group need education regarding prevention of STIs.**

O----------O----------O----------O----------O
strongly agree neither agree disagree strongly
agree or disagree disagree

6. **I routinely offer STI testing to this population.**

O----------O----------O----------O----------O
strongly agree neither agree disagree strongly
agree or disagree disagree

7. **I let the patient determine if they want to talk about sex and wait for patients of this age to bring up the subject before I address it.**

O----------O----------O----------O----------O
strongly agree neither agree disagree strongly
agree or disagree disagree

8. I perform a thorough sexual history with this population of patients at every well woman exam.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

When I perform a sexual health history of this population, it always includes:

9. Current sexual activity-number of sexual partners within the past 12 months.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

10. Gender-sexual orientation of sexual partners.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

11. Type of sexual contact (genital, anal, oral).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

12. Current protection against STIs (abstinence, monogamy, and condoms).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

13. Previous diagnosis and testing for HIV-STIs.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

The following questions are directed at your care of older female patients; ages 71 and above.

1. **It is very important to discuss issues of sexual health, sexual activity, and STI prevention with this population of women.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

2. **I feel comfortable discussing issues of sexual health with this population of women.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

3. **Women of this age are sexually active.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

4. **Women of this age are not very concerned with safe sex practices.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

5. **Women in this age group need education regarding prevention of STIs.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

6. **I routinely offer STI testing to this population.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

7. **I let the patient determine if they want to talk about sex and wait for patients of this age to bring up the subject before I address it.**

O----------O----------O----------O----------O
strongly agree | neither agree or disagree | disagree | strongly disagree

8. I perform a thorough sexual history with this population of patients at every well woman exam.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

When I perform a sexual health history of this population, it always includes:

9. Current sexual activity-number of sexual partners within the past 12 months.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

10. Gender-sexual orientation of sexual partners.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

11. Type of sexual contact (genital, anal, oral).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

12. Current protection against STIs (abstinence, monogamy, and condoms).

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree

13. Previous diagnosis and testing for HIV-STIs.

O----------O----------O----------O----------O

strongly agree | neither agree or disagree | disagree | strongly disagree