

Spring 5-2017

Sexually Transmitted Infection Prevention in 18 to 24-Year-Old Heterosexual Men: Pilot Study

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DOI: <https://doi.org/10.31979/etd.k5xf-ecys>

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ABSTRACT

SEXUALLY TRANSMITTED INFECTION PREVENTION IN 18 TO 24-YEAR-OLD HETEROSEXUAL MEN: PILOT STUDY

The CDC reported that there were over 20 million cases in the United States and half affected young adults, 15 to 25-year olds. Strategies STD prevention have been developed by the CDC but does not include avoiding alcohol or other similar agents in the context of a sexual encounter. The purpose of this study was to assess the effectiveness of STD prevention education intervention by improving Condom Use Self-Efficacy in heterosexually 18 to 24-year old men. It was hypothesized self-efficacy would improve with a face-to-face brief educational intervention. A quasi-experimental, pre-/post-test design with simple randomization of subjects into control and intervention groups was selected. A brief, individualized, face-to-face discussion with a provider was designed to educate the heterosexual, young men about common STDs, treatments, and risks for infection, strategies to decrease risk, and a demonstration correct condom use and an opportunity to practice applying a condom on a suitable plastic model. Results: CUSES scores for the intervention group significantly improved ($p < .05$). However, condom and water soluble lubricant collection behaviors did not change for either group. Conclusions: Face-to-face educational intervention about STD prevention had a statistically significant effect on the intervention group.

KEYWORDS: Sexually transmitted disease, prevention, heterosexual, 18 to 24-year old men, quasi-experimental design, face-to-face discussion, Condom Use Self Efficacy Scale

Susan P. McKeefrey
May 2017

SEXUALLY TRANSMITTED INFECTION PREVENTION IN 18
TO 24-YEAR-OLD HETEROSEXUAL MEN: PILOT STUDY

by

Susan P. McKeefrey

A project

submitted in partial

fulfillment of the requirements for the degree of

Doctor of Nursing Practice

California State University, Northern Consortium

Doctor of Nursing Practice

May 2017

APPROVED

For the California State University, Northern Consortium
Doctor of Nursing Practice:

We, the undersigned, certify that the project of the following student meets the required standards of scholarship, format, and style of the university and the student's graduate degree program for the awarding of the master's degree.

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ACKNOWLEDGMENTS

Albert Bandura suggested that social efficacy, that is the development of social relationships bring fulfillment in our lives, eases the challenges, and serve to cushion stressors. It is with great appreciation that I recognize and thank Ms. Sondra Lawrence for reminding me of the importance of these social relationships that allowed me to successfully complete this project. It has been a long journey.

It started in 1976 when the Rotary Club of Rhinebeck, NY awarded me a nursing scholarship. Keuka College honed the skills necessary for life-long learning. The University of Rochester provided the fledgling skills in nursing, the curiosity to explore, and mentors, Dr. Lee Ford and Jo Anne Bell-Isle. The University of Washington, Phyllis Zimmer and Dr. Marie Annette Brown instilled a thirst for excellence as a nurse practitioner. The rich and challenging practice environment serving as a family nurse practitioner in primary care as a naval officer for twenty years allowed me to touch the lives of those who served and their families. Drs. Diane Katsma, Christine Ortiz, and Patricia Alvarez mentored and supported me at CSU Fresno. These professional experiences and the support of family, Jim and Connie Fredrickson, Carole and Winn Aldrich, Elliott and Ellen Aldrich and Ben and Phoebe and friends, Sondie Lawrence and her loving family are what made this possible. Many thanks!

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CHAPTER 1: INTRODUCTION

The year 2015 was a banner year for sexually transmitted diseases (STD) in the United States. The Centers for Disease Control and Prevention (CDC) reported that there were over 20 million new STD cases in United States (Centers for Disease Control and Prevention (CDC), 2016). Half of these cases occurred in young adults, 15 to 25-year

Chlamydia

The Chlamydia rate in United States was 478.8 cases per 100,000 population but among 15 to 19-year olds was 1,857.8 cases per 100,000 population and the rate among 20 to 24-year olds was 2,574.9 cases per 100,000 population in the United States in 2015 (CDC, 2016a, p.62). Chlamydia rate in California for the same period among 15 to 19-years old was 1,359.9 cases per 100,000 population and for 20 to 24-year olds 2,393.5 cases per 100,000 population (California Department of Public Health (CDPH), 2016a). The rates for 15 to 19-year olds and 20 to 24-years olds in Tulare County, California were 1282.2 and 2192.0 per 100,000 population, respectively in 2015 (CDPH, 2016a).

Gonorrhea

Gonorrhea rates in the U.S. in 2015 was 123.9 gonorrhea cases per 100,000 population but among 15 to 19-old was 341.8 cases per 100,000 population and for 20 to 24-year olds was 543.8 cases per 100,000 population (CDC, 2016b). California Gonorrhea rates among 15 to 19-years old was 231.1 cases per 100,000 population and for 20 to 24-year olds 475.6 cases per 100,000 population in 2015 (CDPG, 2016b). Tulare County, California reported that in 2015, 15 to 19-

year olds and 20 to 24-years olds rate of Gonorrhea was 118.6 and 462.7 per 100,000 population, respectively (CDPH, 2016b).

Syphilis

Syphilis made a significant resurgence in the U.S. in 2015. There were 23,872 primary and secondary syphilis cases nationally or a rate 7.5 cases per 100,000 population (CDC, 2016a). Congenital syphilis emerged with 487 cases in 2015 in the U.S. (CDC, 2016a). American young adults also experienced an increase in primary and secondary syphilis with 15 to 19-year olds reported 5.4 cases per 100,000 and 20 to 24-year olds reported 20.8 cases per 100,000 (CDC, 2016a, p. 121). The rate of primary and secondary syphilis in California was 12.5 cases per 100,000 (CDPH, 2016c). Young adults 15 to 19-years old experienced a rate of 7.6 cases per 100,000 and for 20 to 24-year olds a rate of 28.2 cases per 100,000 in 2015 in California (CDPH, 2016c, p. 4). Tulare County, California experienced a rate of 5.2 cases per 100,000 in 2015 and preliminary data for 2016 indicated that young adults, 20 to 24-years old accounted for 19.8% of all early syphilis, defined as primary, secondary and early latent cases. This age group was surpassed by the 35 to 44-year olds (22.9%) and 45+year old groups (20.8%) in Tulare County (S. Minnick, personal communication, April 10, 2016).

Viral Sexually Transmitted Diseases

Human immunodeficiency virus (HIV) is the only common viral STD that is reportable or notifiable and thus is monitored by the CDC. HIV infection rate in the United States is 12.3 case per 100,000 population, while 15 to 19-year olds experience a rate of 8.0 cases per 100,000 population while 20 to 24-years olds account for 31.2 cases per 100,000 population (CDC, 2016c). California reports a rate of 12.1 cases per 100,000 population (CDC, 2016c). Tulare County reported

preliminary data suggests that young adults, those less than 25-years old account for over 25% of the new cases of HIV/AIDS in Tulare County in 2016 (S. Minnick, personal communication, April 10, 2016).

Hepatitis B virus (HBV) is transmitted sexually but since 1991 the incidence of HBV has decreased by 82% to 0.9 cases per 100,000 population since childhood immunization for HBV was recommended (CDC, 2016d). HBV is a notifiable or reportable disease.

Human papilloma virus (HPV) that causes genital warts and cervical and other similar cancers is not a reportable or notifiable disease. Evaluation of HPV prevalence is estimated using National Health and Nutrition Examination Survey (NHANES). Data suggests that the incidence of high-grade cervical intraepithelial neoplasia in 18 to 20-year olds and cervical cancer has decrease from 2008 to 2012, which is attributable to the introduction of the HPV immunization (CDC, 2016a, p.43). Cervical cancer is nearly a preventable disease.

Herpes simplex virus infections are common viral STDs and not reportable or notifiable to the CDC. Estimates are generated through NHANES and other studies. Young adults seem particularly susceptible to these infections due to the relative nativity of their immune systems and oral sexual practices (CDC, 2016a).

Trichomonas Vaginitis

Trichomonas is another common STD but is not reportable or notifiable. It is caused by protozoa rather than a bacteria or virus. It can result in poor outcomes such as symptomatic vaginitis and preterm births

Gender

Gender affects STDs. Incidence data is skewed since females were 240% more likely to receive STD screening compared to men ($p = .001$) (Lau, Adams,

Irwin, & Ozer, 2013). Young female chlamydia rates may be higher compared to males due to increased susceptibility to infection because of greater cervical ectopy in young women (CDC, 2016a). Relationship power, the individual in the sexual dyad who most influences the sexual behavior of the dyad, dominates safer sex practices. Safer sex practices, such as condom use will be abandoned if the dominate partner does not endorse these behaviors (Pulerwitz, Amaro, Jong, Gortmaker, & Rudd, 2002). The CDC now recommends that women with only one partner use male condoms since the male sexual risks place her at higher risk for STDs (CDC, 2016a).

Condom use in men is problematic. Sanders, Hill, Crosby, and Janssen (2014) evaluated condom-associated erection problems (CAEP) in 18-24-year old, heterosexual men. Condom fit, self-efficacy, perceptions, and motivation had a statistically significantly effect on condom use and CAEP. Hensel, Stupiansky, Herbenick, Dodge, and Reece (2012) found that pleasure with complete condom use was lower with CAEP and with partner discomfort.

The United States Preventive Services Task Force (USPSTF) suggested that all sexually active adolescents are at increased risk for STDs. Adults with current STDs or other infections within the past year, adults who have multiple sex partners, and adults who do not consistently use condoms are at higher risk (LeFevre, 2014). USPSTE recommended that all sexually active women less than 25-years old be screened for STDs at least annually. However, no screening recommendations were made for heterosexual men. Strategies for the prevention of STDs have been developed by the CDC (2016). Abstinence appears first on the list followed by use of condoms, limiting the number of sexual partners, immunization against HPV and HBV, and talking to the partner are listed. The list

does not include avoiding alcohol or other similar agents in the context of a sexual encounter.

Costs to the Community

It was estimated that the cost of STDs treatment in 2010 was 15.6 billion dollars annually (Owusu-Edusei, et al., 2013). Women are at risk for loss of work and productivity since STD infection can lead to infertility, ectopic pregnancy, pre-term birth, and chronic pelvic pain.

Purpose

The purpose of this study was to assess the effectiveness of an education intervention in improving Condom Use Self-Efficacy. It was hypothesized self-efficacy would improve with a face-to-face brief educational intervention.

Many STD prevention studies have used large university campuses and large urban areas. No STD prevention study was identified that selected participants from an isolated, agricultural geographic area, and in a small city like this project.

Theoretical Framework

Social cognitive theory was informative to STD prevention. Bandura (1999, 2001, 2004, & 2012) described the individual as an active participant in the process of living. The individual in conjunction with the environment, previous experiences, knowledge, perceptions that the individual formulates effects the behavior that the individual exhibits. Information accessed, integrated and weighed as a risk/benefit outcome oriented process contributes to the resulting behavior. The individual is the agent of his being with purpose. The individual is not a solitary, isolated being but is part of a greater whole, a community with

social structure that has influence on the individual and is influenced by the individual, reciprocal causation (Bandura, 1999). A sense of self-efficacy, the belief in the capacity of an individual to respond to challenges effect the resulting behavior. If the individual evaluates the challenge as manageable or that it can be managed by modifying the effort necessary to master the challenge then, the effort will make to accomplish the task. The individual in the face of failure can care on and try again perhaps is resilience. Bandura (2004) indicated that for health promotion to be successful, it must include knowledge and acknowledge perceived self-efficacy, outcome expectations, goals, perceived facilitators and social and structural impediments.

Rhodes et al. (2015) included the concept of reciprocal causation as part of a community based HIV/STD prevention intervention targeting Hispanic/Latino men who have sex with men (MSM). Bandura's concept of self-efficacy was included in reviewed research. Dale, Raftery, and Locke (2013) acknowledged that social cognitive theory contributed the concept of self-efficacy in their work of evaluating a nationalized sex and relationships education programs for secondary schools in Scotland.

Social cognitive theory informs this study since sex is inherently a social activity that is guided by the dynamic interface of past experiences, the current situation, knowledge, the willingness of participants to take risks and face rejection from the partner, the community, and self. The male is called upon to not only find a potential sex partner but to integrate what is known to be health protecting strategies into the sex act. These behaviors are guided by what Dr. Bandura called self-efficacy. Brafford and Beck (1991) embraced these ideas and developed the Condom Use Efficacy Scale to measure self-efficacy as it related to

behaviors associated with condom use, a STD prevention strategy in college-age students.

CHAPTER 2: LITERATURE REVIEW

The STD prevention intervention are informed through a variety of themes that will be reviewed. The CDC has developed a limited list of strategies but this list will be expanded. Some of the recommendations overlap, such as limiting the number of partners, talking to your partner condom use and postponing sex. The intervention of 10-minute face-to-face interview with an experienced clinician then will be explored.

CDC Recommended Prevention Strategies

Abstinence

The CDC recommends “Practice Abstinence” as the only way to prevent STDs by avoiding vaginal, anal and oral sex. Abstinence has been the fundamental message in schools since 1996 when Title V funding became available for the State Abstinence Educational Grant Program that was re-authorized in 2010. Teen pregnancy rate in the U.S. has decreased to 22.3 births per 100,000 population to mothers aged 15 to 19 years in 2015. This is an 8% decrease from 2014 and a 46% decrease from 2007 (Martin, Hamilton, Osterman, Driscoll, & Mathews, 2017). This might be an indicator that abstinence only education has been effective. Unfortunately, STDs increased during this same time for this age group and has continued to increase despite teen pregnancy rate making a significant decrease.

Condom use

The CDC in 1987 published recommendations that most health care providers are familiar with the practice of “Universal precautions” that were developed because of a then new viral infection caused by the HIV but “also apply to semen and vaginal secretions” (CDC, 1988). It assumed that body fluids are at

risk for contamination with infectious matter, bacteria and/or viruses. Latex or vinyl were considered appropriate barriers then. CDC has reiterated this recommendation that correct and consistent condom use is necessary to prevent STDs (2016a). Condom use in heterosexual college age (18-24-year old) men typically is about 40% (LaBrie, Pedersen, Thompson, & Earleywine, 2008; Camilleri, Kohut, & Fisher, 2010). Condom use was dependent on relationship type. Those in a serious relationship tended to use condoms about 41% of the time while those in casual relationships tended to use condom over 76% of the time (Hock-Long et al., 2014).

Latex male condoms are not without problems. Over 40% of participants in one study had some complaint about condom use, such as decrease sensation, poor fit, discomfort associated with condom use (Crosby, Milhausen, Mark, Yarber, Sanders, & Graham, 2013). Men reported condom associated erectile problems with perceived poor condom fit (Sanders, Hill, Crosby, & Janssen, 2014). Half of the heterosexual men interviewed reported that high sexual arousal resulted in risky sexual behaviors, that is sex without condoms (Strong, Bancroft, Carnes, Davis, & Kennedy, 2005).

Lubricant use with condoms has been recommended to minimize breakage and discomfort (CDC, 2016). One study reported that about 40% of the heterosexual men had never heard of using lubricant with condoms (Reece, et al., 2012). Less than 25% of men and women used condoms and lubricant (Herbenick, et al., 2013; Reece, et al., 2012).

Condom use is also influenced by the ability to apply the condom correctly. Written instruction tends not to adequately inform users (Lindemann & Harbke, 2013). Teaching individuals to accomplish this task can take the form of a group learning activity where the participants are told to use condoms, the leader

demonstrates applying a male condom to a model, or the participants are told to use condoms, a demonstration of correct condom application on a model is provided and includes an opportunity for the participant to use a model to demonstrate condom application proficiency (Calsyn et al., 2010; Crosby et al., 2014). Calsyn et al. (2010) demonstrated that participants whose intervention included a recommendation to use condoms, were provided a demonstration of correct condom application using a plastic model and an opportunity to practice these skills had statistically significant different condom application competency compared to participants who had condom application demonstrated without an opportunity for practice. Furthermore, condom use skill persisted in the practice group (Calsyn et al., 2010). The value of a provider telling a client about safer sex practices, that is using condom, can have significant impact on the behavior of the client and should not be underestimated. One study reported that 76% of participants who were told by their primary care provider to practice safe sex in fact followed the advice (D'Amore, Cheng, Allensworth-Davies, Samet & Saitz, 2012).

Fewer partners

The phenomenon of sexual concurrency, having more than one sex partner during a particular time frame is not serial monogamy or having one sex partner for a time, and ending the first relationship before beginning sex a new partner. Aral (2010) clarified the significance of sexual concurrency by demonstrating that increasing the frequency of sexual intercourse, decreasing the time between encounters, and increasing the number of partners increased the opportunity of introducing STDs into this network of sexual partners. The concurrency becomes a powerful predictor for STDs. Concurrency was reported in up to 47% STD clinic

clients who were diagnosed with an STD and only 23.0 % of the sample (n=717) neither partner had other partners (Neaigus, Jenness, Hagan, Murrill, & Wendel, 2013). Men have greater concurrency than women (Lilleston, et al., 2015).

Long term, mutually monogamous sexual relationships assume each partner of the sexual dyad has one partner which is with other member of the dyad for a long period of time. CDC recommends this as STD preventive strategy and encourages STD testing and open and frank conversations between the partners (2016). However later in 2016, CDC stated “Because it may be her male partner’s risk, rather than the woman’s that increases a woman’s risk for STDs, even a woman who has only one partner may be obliged to practice safer sex, such as using condoms” (2016c, p.53). This statement suggests that the woman unknowingly may not be in a long term mutually monogamous sexual relationship. The American Sexual Health Association further differentiates between life-long monogamous as two people have sex with only each other for the duration of the lifetime of the partners and serial mutual monogamy when the sexual dyad has sex only each other for a period of time (2017).

Getting Vaccinated

The CDC recommends that Americans are immunized against preventable infectious diseases as outlined by the Advisory Committee for Immunization Practices (ACIP). Two STDs were specifically identified, Hepatitis B and Human Papilloma Virus (HPV) infections.

Hepatitis B immunization guidelines and recommendations state that 3 injection series for Hepatitis B immunization begin within 24 hours of birth for medically stable neonates and is completed by 15-months of age (CDC, 2017). The immunization results in immunity for at least twenty years and may result in

an immune response to Hepatitis B antigen even without serological evidence of immunity in the previously immunized client.

HPV immunization is available and recommended by the ACIP.

Immunization may begin as early as 9-years old and should be completed by age 15 for both girls and boys. Immunization can be begun prior to age 26 for most unimmunized people. Those who are high risk, such as men who have sex with men, transgender people and for those who are immunocompromised and have not been immunized for HPV should receive the immunization through age 26.

Testing

This STD prevention strategy speaks to two phenomena. One is scientifically based and the second are psychosocial. Primary prevention are activities that avert infection. Condom use and abstinence should be described as primary preventive practices. Testing identifies infection prior to symptom development and is secondary prevention. This is particularly important since Chlamydia and Gonorrhea infections are often asymptomatic. Test results confirms the diagnosis when symptoms and clinical findings are present and drives appropriate treatment which is tertiary prevention (Institute of Work and Health, 2015).

The psychosocial phenomena of testing effects behavior of people. Testing may be incorrectly considered as a primary prevention strategy by the general-public. Negative results may be interpreted that an individual is a safe sex partner that do not require condoms as a protective barrier (Mevissen, Ruiters, Meertens, Zimbile, & Schaalma, 2011; Balfe, Brugha, & Brugha, 2009). Testing may be a precursor or surrogate of trust for decisions by the sexual dyad to proceed with unprotected, condom free sex when the partners each report negative STD test

results (Abraham, Macaуда, Erickson, & Singer, 2011). Test results may drive unsafe sex practices (Mevisse, et al., 2011). The supposed negative testing may in fact not be accurate depictions of the health of the individual (Davis, et al., 2014).

Barriers to testing have been identified. Specimen collection meant that the client had to expose his genitals and endure having a swab inserted 2-3 cm into the urethra that was exquisitely painful. Men knowing about this process could avoid or postpone testing (Shoveller, Knight, Johnson, Oliffe, & Goldenberg, 2010). This type of sampling has been replaced with a less invasive urine collect. Availability of the service often is limited (Shoveller, et al., 2010; Goldenberg, Shoveller, Koehoorn, & Ostry, 2008). Social networks may decrease testing or enhance testing (Balfe & Brugha, 2010). Some men are fearful of friends or family discovering that he was tested regardless of the test results. Others fear that their sex partner will discover that he was test and explanations will be required.

Talking with the partner

The importance for the sexual dyad to talk to each other cannot be over emphasized. Risk reduction strategies already discussed should be talked about. If these subjects are discussed, such as HIV status and condom use, condom use is more likely to occur. (Gilmore, Granato, & Lewis, 2013; Lewis, Kaysen, Rees, & Woods, 2010).

Honesty within the sexual dyad is necessary for this strategy to be effective. Horan reported that over 60% of his study respondents lied about the number of sex partners that they had in pre-coitus conversations (2016). Little research was found exploring communication in the context of risk reduction in heterosexual partners.

Avoid Alcohol and Drugs in the Context of Sex

The CDC has not included recommendations about refraining from alcohol and drugs as a strategy for decreasing the risk of STDs. However, the preponderance of evidence would suggest its benefit. Risky behaviors have been associated with alcohol and drug use by other authors (Gilmore, Granato, & Lewis, 2013; Kerr, Washburn, Morris, Lewis, & Tiberio, 2015; Woolf-King & Maisto, 2015; Wray et al., 2015). It is suggested that individuals should refrain from intoxicating substances in the context of sex to decrease the chance of poor decision making and risky behavior.

Face-to-face Provider Influence on Client Behavior

Time in the clinic setting with the client and provider have positive effects on health outcome measures (Alexander, Hearld, Mittler, & Harvey, 2012; Berry et al., 2008). It has been found that in the adolescent care setting brief preventive messages change behavior to the client. Ozer et al. (2011) evaluated the effect of brief prevention messages from a provider about high risk behaviors, bicycle helmet use, tobacco, alcohol and drug use, and sexual behavior. They found statistically significant improvement in helmet use and tobacco, alcohol, and drug use behaviors after provider delivered brief preventive messages. However, sexual behavior modification was not found to be statically improved but did have a more positive outcome compared to controls. Another study reported statistically significant improvement in male condom use after a 20-minute face-to-face intervention in African American women (Jemmott, Jemmott, & O'Leary, 2007). Brief, individualized, face-to-face, STD prevention interventions studies were not found for heterosexual 18 to 24-year old men.

Research Questions

RQ1. Will participants who took part in a face-to-face discussion with a health care provider demonstrate a greater change in condom use self-efficacy as compared to the control group?

RQ2. Will participants who took part in the face-to-face discussion with a health care provider collect more condoms compared to the control group?

CHAPTER 3: METHODOLOGY

Study Design

A quasi-experimental, pre- and post-test design with simple randomization of subjects into control and intervention groups was selected for this pilot study (Suresh, 2011). Protection of human subjects was assured by review of the study prospectively by both sponsoring institutions.

Sampling

A convenience sample of heterosexual men was recruited from a community college in a medium rural area in Central California. Participants were recruited using handbill advertisements (Appendix A) and announcements from faculty.

A convenience sample of heterosexual men was recruited from a community college in a medium rural area in Central California. Participants were recruited using handbill advertisements (Appendix A) and announcements from faculty.

Participants were randomized into two groups by assigning an Assigned Identification Numbers (AIN). One hundred random numbers were generated by using an iPhone application (Tucker, 2016). Each number (AIN) was recorded on an index card. The cards were sorted into odd and even categories. There were 50 odd and 50 even numbers. Each index card was placed in an envelope and sealed. The envelopes were mixed together in a container. An envelope was removed and attached to a packet containing an informed consent, and pretest. Odd number AINs were assigned to the control group. Even number AINs were assigned to the intervention group.

Procedures

Enrollment into the study for both intervention and control groups was conducted over seven eight-hour sessions held at the college student health center. Eligibility was determined by age-18 to 24-years old, gender-male, sexual activity in past three months and partner preference-female only. Prospective subjects were given an eligibility survey (Appendix B). Eligible participants were invited to join the study. The packet containing the envelope containing the AIN, an informed consent (Appendix C) and pretest was obtained from a storage box. Informed consent was signed by the participant and the researcher. Each participant was asked to complete a pre-test (Appendix D). The AIN envelope was opened after the pre-test was completed. A business card was developed to emphasize strategies of prevention outlined by the CDC and alcohol/drug avoidance and free STI testing locations (Appendix E). This was placed in a coin envelop with the incentive and given to the participant prior to his departure at the completion of the first visit. Incentives for participation were decided upon to urge participants to join the study (\$10.00 gift card) and to return (\$25.00 gift card). All participants were given brown paper lunch bag containing educational handouts (Appendices F and G). All participants were given the opportunity to collect condoms and water soluble lubricant packets from individual bowls in a private location. All participants were thanked, given his incentive, and urged to return when he received his emailed invitation. The number of condoms and water soluble lubricant packets were counted and recorded after the participant departed.

Participants who were randomly assigned to the intervention group after completing his pre-test participated in a one-on-one 10-minute educational intervention with the researcher who was a board-certified family nurse practitioner, in addition to being offered educational materials, free condoms and

water soluble lubricant. This was unscripted to customize the interaction to the needs of the participant. It was designed to educate the participant about common STDs outlined above, treatment, and risk for infection, strategies to decrease risk, and a demonstration of the correct condom application on a suitable plastic model and an opportunity to practice via return demonstration.

Participants were assigned to the control group were those identified by an odd AIN. The control group participants were provided a brown paper lunch bag with educational handouts (Appendices E and F) and were given an opportunity to collect condoms and water soluble lubricant packets from individual bowls in private. They were thanked, given their incentive, and urged to return when they received their emailed invitation. The number of condoms and water soluble lubricant packets were counted and recorded after the participant departed.

All participants, both in the control and intervention groups, were contacted after one-month via email. They were invited to return to complete a second survey, the post-test (Appendix H) at the college student health center. The participants were greeted, escorted to a private work area, and asked to complete the survey. They were again invited to collect condoms and water soluble lubricant packets in private. The researcher departed and returned approximately 10 minutes later to collect the completed post-test and to give the participant his incentive. Again, the remaining condoms and water soluble lubricant packets were counted and recorded after the departure of the participant.

Data Collection

The pre-test consisted of demographic data, age, gender, ethnicity, sexual preference, college experience and grade point average, education of parents, partner information, and the Brafford and Beck (1991) Condom Use Self Efficacy

scale (CUSES). The post-test contained only the CUSES but in reverse order. The scale consisted of 28 questions that used a 5-item Likert scale ranging from 1-strongly agree to 5-strongly disagree to score responses. The scale measured negotiation and condom use skills as perceived by the subject, feelings about condom use, and perception of level of expertise. Lower scores indicated higher self-efficacy. Brafford and Beck (1991) reported the internal consistency using Cronbach alpha=0.91 and test-retest reliability as 0.81. Several studies reported similar consistency and reliability (Artistico, Oliver, Dowd, Rothenberg, & Khali, 2014; Sanders, Hill, Crosby, & Janssen, 2014; Forsyth, Carey, Fuqua, & Krantz, 1997). The Brafford and Beck instrument was copyright protected by Taylor and Francis Publications. Permission to use this instrument had been obtained (Appendix I).

Data Analysis

Eligibility survey data and pre- and post-test data was analyzed using descriptive statistics and paired t-tests, equal variance was assumed. The sample was divided into intervention and control groups and analyzed for differences. Data comparing intervention and control groups were only considered for those individuals who return after one month. Data from individuals who completed the pretest but failed to return for the post-test were excluded from the intervention and control group analysis. Another analysis was conducted on the sample when it was determined that five men revealed on the pre-test survey that they had sex only with men. SPSS version 24 was used to expedite the computation of the results.

CHAPTER 4: RESULTS

Eligibility Survey

Eligibility surveys were collected from 57 men. All surveyed men reported that they spoke English, and were genetically male. Potential participants were turned away for a combination of factors, not sexually active in the preceding 3 months (31.6%), not participating in penetrating vaginal intercourse with women (15.8%), outside the pre-establish age range (17.5%), sex with men (8.8%), and sex with men and women (5.3%). Thirty-four men (59.6%) were invited to participate in the study based on eligibility survey findings. All participants of the study reported on the eligibility survey that they participated in penetrating vagina intercourse with women only.

Demographic Analysis

Responses of all 34 participants were used for the demographic analysis (See Table1). The mean age was 20.35 years ($SD=1.889$). The majority identified themselves as Hispanic/Latino (64.7%), white/Caucasian (17.6%), mixed race (8.8%), African American (2.9%), Filipino (2.9%). One (2.9%) respondent did not reveal his ethnicity. They had a mean of 1.36 years of college ($SD=1.0756$). Their mean grade point average was 2.82 ($SD=0.564$). The men traveled an average of 7.5 miles to attend college classes ($SD=9.15409$).

Mothers of the participants completed high school (29.4%), had some college (23.5%) with 11.8% having at least an undergraduate education. Subjects reported that 5.9% of fathers had some high school education, 35% completed high school, 26 % some college 2.9 % has undergraduate education and 14.7% had graduate education. The subjects did not know the education status of 5.9% of their mothers and 14.7% of their fathers.

Table 1

Demographic Description

Variables	N	Minimum	Maximum	M	SD
Age of subjects	34	18	24	20.35	1.89
Years of college	33	0	4	1.36	1.08
Grade Point Average	24	2	4	2.82	0.56
Distance to class (miles)	34	0.2	40	7.50	9.15
Duration of current relationship	28	0	10	2.36	2.31
No. of current partners	32	0	5	1.13	0.87
Total life partners	34	1	20	5.32	4.95
Age at first intercourse	32	12	22	16.59	2.18

Fifty-nine percent of the men reported that they considered themselves to be in a serious relationship while the remainder did not. The mean age of first sex was 16.59 years ($SD=2.183$) with 5.32 life partners ($SD=4.947$). Consistent use of condoms occurred depending on the relationships but were used less than 45% of the time with women other than the girlfriend and less often with girlfriends. (See Table 2).

Table 2

Pre-test Reported Condom Use (%) (n=34)

Relationship	Always	Usually	Sometimes	Never
Girlfriend	35.3	20.6	29.4	14.7
Other women	44.1	17.6	11.8	11.8

Self-Efficacy

The CUSES data was analyzed comparing pre- and post-test responses. Only 17 post-test participants answered the survey completely which resulted in 50% usable post-test surveys compared to the pre-test participation ($n=34$). The mean pre- and post-test CUSES scores were 69.06 and 64.41 ($SD=7.73362$ and 6.83793 , respectively). Self-efficacy improved significantly after one month (t

(16) =2.530, $p=0.022$). Condom collection behavior did not change over time ($t(18) =0.0107, p=0.916$).

Analysis of Groups

Demographic data describing the intervention and control groups were analyzed (See Table 3). The intervention and control groups were similar except for GPA. The GPA of the intervention group was significantly greater compared to the control group ($p<0.05$). The pre- and post-test CUSES scores for the intervention group significantly improved over time (RQ1) (See Table 4). However, condom and water soluble lubricant collection behaviors did not change for either group (See Table 5) (RQ2).

Table 3

Demographic Comparison Intervention and Control: M(SD), 2 tail T-test

Variable	Intervention	Control	t	df	p
Age (yr)	21 (1.41)	20.36 (2.11)	0.738	17	0.47
Years in college	2.25 (1.03)	1.21 (1.62)	2.02	17	0.06
Grade point average	3.12 (0.27)	2.52 (0.51)	2.67	12	0.02
Distance to class (miles)	12.86(13.39)	4.73 (5.02)	1.64*	8.44	0.14
Duration of current relationship	2.74 (2.31)	2.68 (3.12)	0.42	14	0.97
Current partners	1.00 (0.00)	1.30 (0.48)	-1.75	16	0.10
Total life partners	3.75 (2.49)	5.82(4.85)	-1.1	17	0.29
Age at first intercourse	16.88 (2.70)	16.45(1.7)	0.418	17	0.68

Note.*Equal variance not assumed

Table 4

Pre- and Post-CUSES Scores: M, SD, 2 tail T-test

Groups	Pre-CUSES	SD	Post-CUSES	SD	t	df	p
Intervention (n=8)	72.38	8.83	63.38	8.30	3.00	7.00	0.02
Control (n=11)	66.09	5.25	63.91	6.72	1.49	10.00	0.17

Table 5

Pre- and Post- Condom Collection: M, SD, 2 tail T-test

Groups	Pre- Condom	SD	Post-Condom	SD	t	df	p
Intervention (n=8)	10.50	11.66	12.00	12.34	0.56	7.00	0.59
Control (n=11)	10.73	14.37	9.09	9.42	0.34	10.00	0.74

Unexpectedly, five participants revealed that they had sex with men (MSM) when sexual preference was re-evaluated on the pre-test survey. The data was re-analyzed taking this finding into account (see Table 6). The demographic data for the MSM and MSW groups were similar. Neither MSW nor MSM groups demonstrated a statistically significant difference in their CUSES scores or condom or water soluble lubricant collecting behaviors.

Table 6

Demographic Comparison of Men Who Report Sex with Women (n=29) and Those Who Report Sex with Men (n=5): M, SD, and 2-tailed T-test

Variables	Sex with women	Sex with men	t	df	p
Age of subjects	20.41 (1.97)	20.00 (1.41)	0.48	32	0.658
Years of college	1.37 (1.06)	1.30 (1.30)	0.13	31	0.899
Grade Point Average	2.77 (.57)	3.10 (.56)	-0.93	22	0.361
Distance to class (miles)	7.83 (9.80)	5.56 (3.73)	0.51	32	0.616
Yrs. In current relationship	2.6 (2.35)	0.87 (1.42)	1.42	26	0.167
No. of current partners	1.04 (0.90)	1.6 (.55)	-1.35	30	0.189
Total life partners	5.07 (5.09)	6.8 (4.21)	-0.72	32	0.478
Age at first intercourse	16.7 (2.25)	16 (1.87)	0.66	30	0.517
Condoms taken (pre-)	8.83 (9.55)	14.25 (22.78)	-0.88	31	0.384
Lubricant packets (pre-)	5.62 (8.06)	1.50 (2.38)	1.00	31	0.323
Condoms taken (post-)	10.13 (11.57)	11.00 (5.83)	-0.14	17	0.888
Lubricant packets (post-)	3.67 (5.22)	3.5 (5.69)	0.06	17	0.956

CHAPTER 5: CONCLUSIONS

Inclusion based on eligibility criteria is reported in most studies. Davis, et al. reported that 47 % of the candidates for their study were included in their study (2014). Neaigus, Jenness, Hagan, Murrill, & Wendel (2013) reported recruiting about 70% of eligible candidates. Eligible candidates for this study of about 60% is consistent with other studies.

The demographic description of the sample is consistent with the campus population of Hispanic (63.51%), but the study sample is over represented by white/Caucasian (3.12%) and by Filipino (0.89%) and African American (0.49%). The age of the sample ($M=20.35$) was with the range of other studies (Lewis, Kaysen, Rees, & Woods, 2010; Gilmore, Granato, & Lewis, 2013). Gilmore, Granato, & Lewis also reported that 58% of their sample was in monogamous relationships which is consistent with our findings (2013).

Condom use reported by the participants of this study are consistent or better compared with others. Camilleri, Kohut, and Fisher (2010) reported that only 40% of their participants always used condoms while our participants always used condoms 44% of the time with women other than their girlfriend. Our participants reported having more than five partners since beginning coitus at almost 17 years old. Fisher reported that her participants from a large mid-western university had three partners since beginning coitus at 17 (2007).

CUSES scores improved significantly in the intervention group but not in the control. This indicates that the brief face-to-face intervention influenced the participants. However, the condom collection behaviors did not change. Forsyth, Carey, Fuqua, and Krantz, had similar findings and did not think that CUSES adequately predicted behavior (1997).

It is unknown why participants changed their report of sexual preference during the study. It did not affect the outcome of the study.

A provider delivered a brief, face-to-face, individualized, educational intervention had statistically significant impact on young adult, heterosexual men self-efficacy. More research is necessary to document the importance of face-to-face interventions in clinic settings.

STDs are a significant problem in the heterosexual population. Heterosexual men must be included in strategies to reverse this trend. Correct and consistent condom use must become normative. It is unacceptable that heterosexual men are a neglected population in an environment of a STD epidemic.

Limitations

The sample size was extremely small for this study. This may have influenced outcome, particularly documented condom collection behavior. It is important that a similar study is conducted with a large sample to further evaluate the outcome and generalizability of findings. Convenience sampling is efficient but inherently triggers sampling biases. Randomization of sampling is essential to assuring generalization of future study findings. The semi-structured face-to-face intervention might have been similar to an actual clinic intervention. However, it brings biases to the research environment. A future study should recruit providers in practice to participate. Ideally, recording and analyzing their interaction with the client may shed light on clinical outcomes. STD screening of participants and diary data of condom use over many months might prove to be valuable tools to assess outcome behaviors following intervention.

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APPENDICES

APPENDIX A: HANDBILL

Attention COS MEN

Men are needed to participate in a study about preventing sexually transmitted infections, like Chlamydia, Gonorrhea, HIV, warts, Herpes and Syphilis.

Come to the Student Health Service Center on Mondays (all day) or Fridays (9am until 12:30 pm) starting 3 October to take part in this important study!

Benefits:

- Learn how to protect yourself
- Learn about using condoms
- Free condoms
- \$\$\$ for your time and participation

Contact the COS Student Health Service Center at the Visalia campus for more information.

APPENDIX B: ELIGIBILITY SURVEY

STI Prevention in College Age, Heterosexual Men: Pilot Study
Eligibility Instrument

1. Do you speak and read English fluently?	Yes	No
2. Are you genetically male?	Yes	No
3. Have you been sexually active in the past 3 months?	Yes	No
4. Do you have a cell phone that accepts? text messages?	Yes	No
5. Were you born between 1992 and 1998?	Yes	No
6. Do you have sex, penetrating, vaginal intercourse with women?	Yes	No
7. Do you have sex with men?	Yes	No
8. Do you have sex with men and women?	Yes	No

Thank you for completing this survey.

APPENDIX C: INFORMED CONSENT

California State University, Northern California Consortium Doctor of Nursing Practice

California State University

Northern Consortium Doctor of Nursing Practice

Sexually Transmitted Infection Prevention in 18-24-year-old Heterosexual Men

Principal investigators: Dr. Diana Katsma, D.N.P., N.P., F.N.P., CSU Stanislaus School of Nursing

&

Dr. Patricia Alvarez, D. N. P., R. N., College of the Sequoias

Student Investigator: Ms. Susan P. McKeefrey, M. N., N. P., F. N. P.-c

You are invited to participate in a study conducted by Dr. Diana Katsma, D.N.P., N.P., F.N.P.

CSU Stanislaus School of Nursing, Dr. Patricia Alvarez, D. N. P., R. N., College of the Sequoias, and Ms. Susan P. McKeefrey, M. N., N. P., F. N. P.-c, California State University, Northern Consortium Doctor of Nursing Practice. We hope to learn if clinic counseling can effect sexually transmitted infection (STI) prevention behaviors. You were selected because you are genetically male, heterosexual, speak and read English fluently, are sexually active and between 18 and 24 years old.

If you decide to participate, Ms. McKeefrey will ask you to complete a survey today and either stay for some counseling or depart. Then, you will be contacted in about a month to complete a second survey. The survey and the counseling may make you uncomfortable because sex and STI's and their prevention will be discussed. You may benefit from this experience since you may be better equipped to protect yourself from STI's. We cannot guarantee, however that you will receive any benefit from this study.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will disclosed only with your permission or as required by law. If you give us permission by signing this document, we plan to disclose only the responses on the

surveys you will complete as part of this project. Your identity will **not** be revealed to any person or agency.

You will be compensated for your participation with a \$10.00 gift after the completion to today's activities and with a \$25.00 gift card when you complete the second survey in about a month.

Your decision whether or not to participate will not prejudice your future relations with California State University, Fresno or the College of the Sequoias. If you decide to participate you are free to withdraw your consent and to discontinue participation at any time without penalty. The Committee on the Protection of Human Subjects at California State University, Fresno and the College of the Sequoias has reviewed and approved the present research.

- If you have questions, please ask us. If you have any additional questions later, Ms. McKeefrey, (361)230-0769 or spmckeefrey@mail.fresnostate.edu will be happy to answer them. Questions regarding the rights of research subjects may be directed to Constance Jones, Chair, CSUF Committee on the Protection of Human Subjects, (559)278-4468 or Dr. Mehmet "Dali" Ozturk or Christian Anderson, COS, Co-chairs, COS Institutional Review Board, (559)730-3790.

You will be given a copy of this form to keep.

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE. YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE, HAVING READ THE INFORMATION PROVIDED ABOVE.

Date

Signature of Participant

Date

Signature of Investigator

APPENDIX D: PRE-TEST SURVEY

STI Prevention in College Age, Heterosexual Men: Pilot Study

Pre-Test

1. _____
Last Name First Name

2. _____
Student email address

OFFICE USE ONLY

AIN: _____

Please circle your responses or fill in the blank. Thank you

1. Are you genetically male? Yes No
2. Do you have sex with:
 - a. MEN
 - b. WOMEN
 - c. BOTH
3. How old are you? _____
4. How would you describe your ethnicity?
 - a. Hispanic/Latino
 - b. African American
 - c. Asian
 - d. White/Caucasian
 - e. Other _____
5. How many years of college have you completed? _____
6. How many years have you attended COS?
 - a. Just started my first year.
 - a. Just started my second year.
 - b. Just started my third year.
 - c. Just started my fourth year.
7. What is your GPA? _____ (Write "n/a" if this is your first semester.)
8. Did your mother complete
 - a. Some high school
 - b. High School
 - c. Technical training
 - d. Some college
 - e. Undergraduate education
 - f. Graduate education
 - g. Doctorate education
 - h. I don't know
9. Did your father complete
 - a. Some high school
 - b. High School
 - c. Technical training
 - d. Some college
 - e. Undergraduate education
 - f. Graduate education
 - g. I don't know
10. How far do you travel to attend classes from where you are living? _____
11. Do you consider yourself in a serious relationship with your girlfriend?

Yes No
12. How long have you known this person? _____

13. Do you use condoms when you have vaginal/anal intercourse with your girlfriend?
Always Usually Sometimes Never
14. Do you have other women who you currently have vaginal/anal intercourse with?
Yes No
15. How many women do you have vaginal/anal intercourse with including your girlfriend? _____
16. Do you use condoms when you have vaginal/anal intercourse with this/these women?
Always Usually Sometimes Never
17. How many women have you had vaginal/anal intercourse with since you became sexually active?

18. At what age did you first have vaginal/anal intercourse? _____

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
19. I feel confident in my ability to put a condom on myself.	1	2	3	4	5
20. I feel confident I could purchase condoms without feeling embarrassed.	1	2	3	4	5
21. I feel confident I could remember to carry a condom with me should I need one.	1	2	3	4	5
22. I feel confident in my ability to discuss condom usage with any partner I might have.	1	2	3	4	5
23. I feel confident in my ability to suggest using a condom with a new partner.	1	2	3	4	5
24. I feel confident in my ability to suggest using a condom without my partner feeling "diseased".	1	2	3	4	5
25. I feel confident in my ability to maintain an erection while using a condom.	1	2	3	4	5
26. I would feel embarrassed to put a condom on myself.	1	2	3	4	5
27. If I were to suggest using a condom to a partner, I would be afraid that she would reject me.	1	2	3	4	5
28. If I were unsure of my partner's feelings about using a condom, I would not suggest using one.	1	2	3	4	5

	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
	1	2	3	4	5
29.. I feel confident in my ability to use a condom correctly.					
30. I would feel comfortable discussing condom use with a potential sexual partner before we ever had any sexual contact (e.g., hugging, kissing, caressing, etc.).	1	2	3	4	5
31. I feel confident in my ability to persuade a partner to accept using a condom when we have intercourse.	1	2	3	4	5
32. I feel confident I could gracefully remove and dispose of a condom when we have intercourse.	1	2	3	4	5
33. If my partner and I were to try to use a condom and did not succeed, I would feel embarrassed to try to use one again (e.g. not being able to unroll, putting it on backwards, or awkwardness).	1	2	3	4	5
34. I would not feel confident suggesting using condoms with a new partner because I would be afraid she would think I've had homosexual experience.	1	2	3	4	5
35. I would not feel confident suggesting using condoms with a new partner because I would be afraid she would think I have a sexually transmitted disease.	1	2	3	4	5
36. I would not feel confident suggesting using condoms with a new partner because I would be afraid she would think I thought she had a sexually transmitted disease.	1	2	3	4	5
37. I would feel comfortable discussing condom use with a potential partner before we ever engaged in intercourse.	1	2	3	4	5
38. I feel confident in my ability to incorporate putting a condom on myself into foreplay.	1	2	3	4	5
39. I feel confident that I could use a condom with a partner without "breaking the mood."	1	2	3	4	5
40. I feel confident in my ability to put a condom on myself quickly.	1	2	3	4	5

	Strongly agree	Agree	Undecided	Disagree	,Strongly disagree
	1	2	3	4	5
41. I feel confident that I could use a condom during intercourse without reducing any sexual sensations.					
42. I feel confident that I would remember to use a condom even after I have been drinking.	1	2	3	4	5
43. I feel confident that I would remember to use a condom even if I were high.	1	2	3	4	5
44. If my partner didn't want to use a condom during intercourse, I could easily convince her that it was necessary to do so.	1	2	3	4	5
45. I feel confident that I could use a condom successfully.	1	2	3	4	5
46. I feel confident that I could stop to put a condom on myself in the heat of passion.	1	2	3	4	5
47. I feel confident that I could use a condom successfully.	1	2	3	4	5
48. I feel confident that I could stop to put a condom on myself in the heat of passion.	1	2	3	4	5

APPENDIX E: STRATEGIES OF STD PREVENTION CARD

Side 1

Decrease Your Risk!

- Talk with your partner!
- Postpone sex!
- Limit your number of partners!
- Use condoms!
- Don't drink and drive! (and that goes for sex, too!)
- Get immunized for HPV!
- Get Tested.

Side 2

Free Testing

Health Network-Health Center
400 [REDACTED], Ca (877) [REDACTED]

Planned Parenthood [REDACTED]
211 [REDACTED], Ca (877) [REDACTED]

Health Care Center
2611 [REDACTED], Ca [REDACTED]

APPENDIX F: STD HANDOUT

Sexually Transmitted Infection (Disease) Statistics
Not a pretty sight!

Chlamydia

In 2014, a total of **1,441,789** chlamydial infections were reported to CDC in 50 states and the District of Columbia. This case count corresponds to a rate of **456.1 cases per 100,000** population. During 1993–2011, the rate of reported chlamydial infection increased from 178.0 to 453.4 cases per 100,000 population. (CDC,

In 2014, in the U.S., the rate among **15–19 year olds** was **1,804.0 cases per 100,000** and the rate among **20–24 year olds** was **2,484.6 cases per 100,000**. **(2.1% for 15-24 years old)**
(CDC,

In California, Chlamydia rate: **459.9 cases per 100,000** (0.46%)
15-19 & 20-24 year olds: **1781.6 per 100,000** (1.7%)

In Tulare County, Chlamydia rate: 506.3 cases per 100,000 (0.5%)

In Tulare County, 15-19 & 20-24 year olds:

Female: 2,452.3 & 3,844.2 per 100,000 (2.45% & 3.84%)

Males: 497.1 & 1,071.8 per 100,000 (0.5% & 1.07%)

Calculated Chlamydia rate for men and women 15 to 24 years old **1.9%**

Gonorrhea

In 2014, a total of **350,062** cases of gonorrhea were reported in the United States, yielding a rate of **110.7 cases per 100,000** population. The rate increased 5.1% since 2013, and increased 10.5% since 2010.

In 2014, rates of reported gonorrhea cases continued to be highest among adolescents and young adults. In 2014, the highest rates among women were observed among those aged 20–24 years (**533.7 cases per 100,000 females**) and 15–19 years (**430.5 cases per 100,000 females**). Among men, the rate was highest among those aged 20–24 years (**485.6 cases per 100,000 males**) and 25–29 years (**370.5 cases per 100,000 males**).

In California, Gonorrhea rate: 116.8 per 100,000 (0.12%)

In California, in 15-19 & 20-24 year olds: 273.5 per 100,000 (0.27%)

In Tulare County, Gonorrhea rate: 84.9 cases per 100,000 (0.08%)

Syphilis

In 2014, a total of **19,999 cases of primary and secondary syphilis** were reported in the United States, yielding a rate of **6.3 cases per 100,000 population**. This rate represents a **15.1% increase** compared with 2013 (5.5 cases per 100,000 population), and a **40.0% increase** compared with 2010 (4.5 cases per 100,000 population).

As in previous years, in 2014 rates of reported primary and secondary syphilis cases were highest among persons aged 20–24 years and 25–29 years. During 2013–2014, the primary and secondary syphilis rate increased among all age groups aged 15–64 years. Rates **increased 11.6%** among persons aged 15–19 years and **13.1%** among persons aged 20–24 years.

In California, the primary and secondary syphilis rate: 9.9 per 100,000

In California, 15-24 year olds: 13.2 per 100,000 (0.01%)

In Tulare County, the primary and secondary syphilis rate: 6.1 per 100,000

HIV

In 2014, CDC reported U.S. HIV rate: 13.8 per 100,000

California HIV rate: 17.02 per 100,000

Female: 2.82 per 100,000

Male: 22.24 per 100,000

In 2013, Tulare County HIV rate: 6.89 per 100,000

Female: 3.09 per 100,000

Male: 10.52 per 100,000

Human Papillomavirus (Warts) (Cancer)

Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States. Over 40 distinct types can infect the genital tract; about 90% of infections are asymptomatic. Among women aged 20–24 years, genital wart

prevalence, which had been increasing from 2003 through 2007, was stable from 2007 to 2009 and then decreased in 2010.

Immunization available to prevent HPV related cancer.

Herpes Simplex (Herpes)

Herpes simplex virus (HSV) is among the most prevalent sexually transmitted infections, although most infections are subclinical, clinical manifestations are characterized by recurrent, painful genital and/or anal lesions. Most genital herpes infections in the United States are caused by HSV-2; however genital HSV-1 infections are increasing among college students and other populations. Case reporting data for genital HSV are not available [since this is not a *reportable disease*]. However, an overall increase in the number of visits for genital herpes over time, as suggested by the NDTI data, may indicate increased use of serologic testing and increased recognition of infection.

Trichomoniasis

Trichomonas vaginalis infection is a common sexually transmitted protozoal infection associated with adverse health outcomes such as preterm birth and symptomatic vaginitis. Trend data for this infection are limited [since this is not a *reportable disease*]. The NHANES data from 2001–2004 indicated an overall trichomoniasis prevalence of **3.1%** (95% CI: 2.3–4.3).

Putting things into prospective-For this we have seat belts! (HLDI, 2016)

In 2014, U.S. fatal motor vehicle crash rate: 10.2 deaths per 100,000

In 2014, California fatal motor vehicle crash rate: 7.9 deaths per 100,000

Summary of Sexually Transmitted Infection Data

Prevalence (15-24 year olds)

	U.S	Ca.	Tulare Co.	Treatable	Symptoms
Chlamydia	2.10%	1.80%	1.90%	Yes	None, discharge, pain
Gonorrhea	0.42%	0.27%	0.20%	Yes	None, discharge, pain
P & S Syphilis	0.01%	0.01%	NA	Yes	None, open sore, rash
HIV	0.01%	0.02%	NA	Manageable	None

HPV (Warts) (Cancer)	Most prevalent viral STI	NA	NA	Manageable/ Preventable	None, warty sore
Herpes	Very prevalent viral STI	NA	NA	Manageable	Painful, open sore
Trichomoniasis	Most prevalent STI	NA	NA	Yes	Discharge
Fatal auto crash	0.01%	0.01%	NA	No	

NA=data not
available

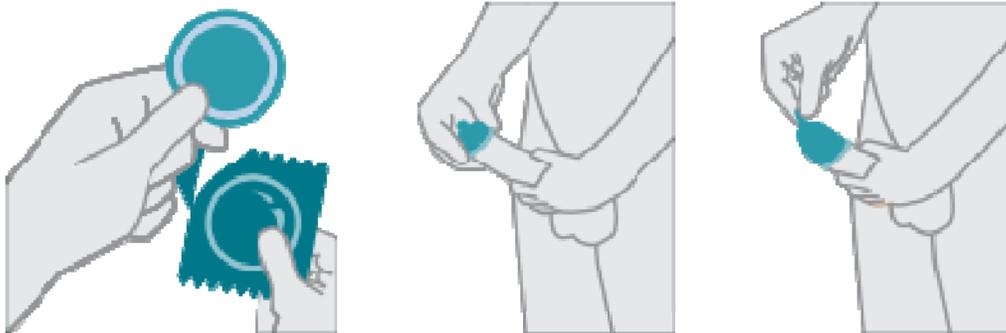
APPENDIX G: CORRECT CONDOM USE HANDOUT

The Right Way to Use a Male Condom

Condom Dos and Don'ts

- **DO use a condom every time you have sex.** [SEP]
 - **DO put on a condom before having sex.** [SEP]
 - **DO read the package and check the expiration date.** [SEP]
 - **DO make sure there are no tears or defects.** [SEP]
 - **DO store condoms in a cool, dry place.** [SEP]
 - **DO use latex or polyurethane condoms.** [SEP]
 - **DO use water-based or silicone-based lubricant to prevent breakage.** [SEP]
- **DON'T** store condoms in your wallet as heat and friction can damage them.
- **DON'T** use nonoxynol-9 (a spermicide), as this can cause irritation. • **DON'T** use oil-based products like baby oil, lotion, petroleum jelly, or cooking oil because they will cause the condom to break. • **DON'T** use more than one condom at a time. [SEP] • **DON'T** reuse a condom.

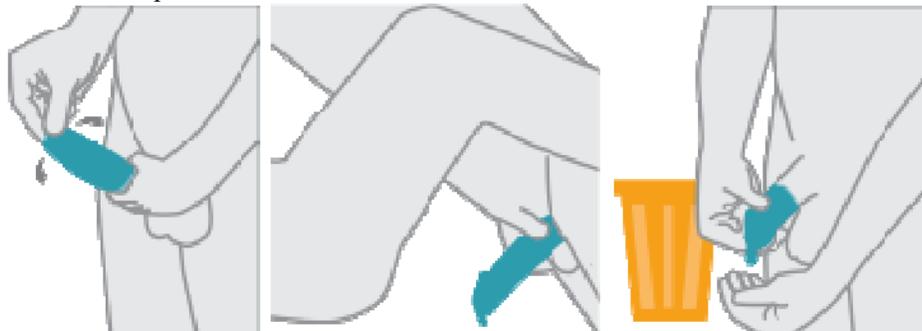
How to Put on and Take Off a Male Condom



Carefully open and remove condom from wrapper.

Place condom on the head of the erect, hard penis. If uncircumcised, pull back the foreskin first.

Pinch air out of the tip of the condom.



Unroll condom all the way down the penis.

After sex but before pulling out, hold the condom at the base. Then pull out, while holding the condom in place.

Carefully remove the condom and throw it in the trash.

For more information please visit www.cdc.gov/condomeffectiveness

APPENDIX H: POST-TEST SURVEY

STI Prevention in College Age, Heterosexual Men: Pilot Study

Post-Test

1. _____
Last Name First Name

2. _____
Student email address

OFFICE USE ONLY

AIN: _____

	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
16. I feel confident that I could stop to put a condom on myself in the heat of passion.	1	2	3	4	5
17. I feel confident that I could use a condom successfully.	1	2	3	4	5
18. If my partner didn't want to use a condom during intercourse, I could easily convince her that it was necessary to do so.	1	2	3	4	5
19. I feel confident that I would remember to use a condom even if I were high.	1	2	3	4	5
20. I feel confident that I would remember to use a condom even after I have been drinking.	1	2	3	4	5
21. I feel confident that I could use a condom during intercourse without reducing any sexual sensations.	1	2	3	4	5
22. I feel confident in my ability to put a condom on myself quickly.	1	2	3	4	5
23. I feel confident that I could use a condom with a partner without "breaking the mood."	1	2	3	4	5
24. I feel confident in my ability to incorporate putting a condom on myself into foreplay.	1	2	3	4	5
25. I would feel comfortable discussing condom use with a potential partner before we ever engaged in intercourse.	1	2	3	4	5
26. I would not feel confident suggesting using condoms with a new partner because I would be afraid she would think I thought she had a sexually transmitted disease.	1	2	3	4	5

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
	1	2	3	4	5
27. I would not feel confident suggesting using condoms with a new partner because I would be afraid she would think I have a sexually transmitted disease.	1	2	3	4	5
28. I would not feel confident suggesting using condoms with a new partner because I would be afraid she would think I've had homosexual experience.	1	2	3	4	5
29. If my partner and I were to try to use a condom and did not succeed, I would feel embarrassed to try to use one again (e.g. not being able to unroll, putting it on backwards, or awkwardness).	1	2	3	4	5
30. I feel confident I could gracefully remove and dispose of a condom when we have intercourse.	1	2	3	4	5
31. I feel confident in my ability to persuade a partner to accept using a condom when we have intercourse.	1	2	3	4	5
32. I would feel comfortable discussing condom use with a potential sexual partner before we ever had any sexual contact (e.g., hugging, kissing, caressing, etc.).	1	2	3	4	5
33. I feel confident in my ability to use a condom correctly.	1	2	3	4	5
34. If I were unsure of my partner's feelings about using a condom I would not suggest using one.	1	2	3	4	5
35. If I were to suggest using a condom to a partner, I would be afraid that she would reject me.	1	2	3	4	5
36. I would feel embarrassed to put a condom on myself.	1	2	3	4	5
37. I feel confident in my ability to maintain an erection while using a condom.	1	2	3	4	5
38. I feel confident in my ability to suggest using a condom without my partner feeling "diseased".	1	2	3	4	5

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
	1	2	3	4	5
39. I feel confident in my ability to suggest using a condom with a new partner.					
40. I feel confident in my ability to discuss condom usage with any partner I might have.	1	2	3	4	5
41. I feel confident I could remember to carry a condom with me should I need one.	1	2	3	4	5
42. I feel confident I could purchase condoms without feeling embarrassed.	1	2	3	4	5
43. I feel confident in my ability to put a condom on myself.	1	2	3	4	5

APPENDIX I: PERMISSIONS



Permissions

T & F Reference Number: P051316-02

5/13/2016

Susan P, McKeefrey
M.N., N.P., F.N.P.-c
CDR, NC, USN (ret)
Candidate, Doctor of Nursing Practice
California State University
Northern Consortium Doctor of Nursing Practice
CSU Fresno
spmckeefrey@mail.fresnostate.edu

Dear Ms. McKeefrey,

We are in receipt of your request to reproduce the Health Belief Model-Condom Use Efficacy Scale from the following article

Brafford, L. J. & Beck, K. H. (1991)
Development and validation of a condom self-efficacy scale for college students
Journal of American College Health, 39, 219-225.

For your educational use in a research project

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Mary Ann Muller
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