

Running Head: EVALUATION OF SEXUAL AWARENESS KIT

Young Adults' Evaluation of a Self-Administered Intervention  
to Reduce Sexual Risk Behaviors

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## Introduction

Risky sexual encounters can negatively impact a woman's biological, reproductive, and/or sexual health, and these adverse sequelae can have long term consequences for a woman (World Health Organization [WHO], 2007). Young adulthood is a time of strategic development in an individual's life, and for those in college, sexually transmitted infections (STIs) and unintended pregnancies can alter a person's education and life plans (Scholly, Katz, Gascoigne, & Holck, 2005).

Women are especially susceptible to the negative consequences of STIs and have higher rates of most STIs than do men (Centers for Disease Control and Prevention [CDC], 2007a). In 2006, the rate of Chlamydia in women was three times that of men, and for Gonorrhea, the rate in women was six percent higher than for men (CDC, 2007a).

Generally, age and risk for sexually transmitted infections are inversely related. Sexually-active adolescent and young adult men and women have the highest rates of STIs compared to other age cohorts. In 2006, Chlamydia and Gonorrhea rates in women were highest in the 15-19 year old age bracket, and second highest in the 20-24 age bracket. Among men, rates of Chlamydia and Gonorrhea were highest in the 20-24 age bracket (CDC, 2007a). Although adolescents and young adults make up only 25% of the sexually active population, they acquire approximately half of the newly diagnosed STIs (CDC).

The majority of college-aged men and women are in this 15-24 year old cohort. The collegiate environment presents additional challenges to practicing safe sex, and the results of the 2006 American College Health Association (ACHA) survey indicate a need to address college students' sexual practices. This survey of 23,863 college students found that 67% of the females in their sample had had at least one sexual partner within the previous 12 months (ACHA, 2007).

Forty-eight percent and 43.2% of the sample had had vaginal sex or oral sex respectively at least one time in the past 30 days (ACHA). Of the sexually active students (male and female) only 52.6% reported using a condom mostly or always in the past 30 days during vaginal sex, and only 3.3% reported this condom use during oral sex (ACHA). Only 46.0% of the sexually active students reported using a condom during their last episode of vaginal sex (ACHA).

Unfortunately, many young men and women choose not to practice safe sex or lack the knowledge and resources to have safe sexual encounters. Interventions which are population-specific, convenient, and effective (Lyles et al., 2007) are needed to protect this susceptible population.

The purpose of this study is to evaluate the feasibility of a sexual risk reduction intervention in young adults. The intervention, created from data collected in a prior research study (von Sadoyszky & Ryan-Wenger, 2007), was designed primarily for military women. However, it is desirable to know whether the intervention would be efficacious among young adult civilian men and women.

### **Review of the Literature**

Risky sexual behavior includes any sexual activity that increases the risk of contracting an STI. This includes: increasing number of partners, early initiation of sexual activity, and unprotected (without a barrier) oral, anal, or vaginal sex (Dilorio, Parsons, Lehr, Adame, & Carlone, 1992).

Analyses of STI rates reveal a high prevalence of risky sexual encounters occurring among young adult women. Approximately 50% of the 19 million newly diagnosed STIs each year are found in individuals aged 15-24 years (CDC, 2006). At baseline in a study of 682 African American and Latina females aged 12-19, 21.6% tested positive for an STI (Jemmott,

Jemmott, Braverman, & Fong, 2005). In a subsequent study of 564 African American females aged 18-45, 20.3% tested positive for an STI at baseline (Jemmott, Jemmott, & O'lear, 2007). In a non-clinical sample of 2288 adolescent and young adult women self-selecting into the US Marine Corps, 14.3% of women sexually active within the previous 3 months were positive for at least one STI (Boyer et al., 2006).

Data surrounding risky sexual behaviors have also been collected by researchers. In a study by Jemmott et al. (2007), 88.9% of the women participants (n=564) reported sexual encounters within the previous three months of baseline data collection. Only 23.5% percent of these women reported always using a condom during sexual intercourse (Jemmott et al., 2007). In another study, 87.1% of the women reported sexual encounters within the previous three months of baseline data collection (Jemmott et al., 2005). Among these women, 52.0% reported unprotected sex in the previous 3 months (Jemmott et al., 2005).

Peipert et al. (2007) found that 68.5% of women aged 20-24 in his study had had greater than or equal to 2 episodes of unprotected vaginal sex within the previous 30 days. Scholly et al.'s (2005) research found that less than 40% of sexually active undergraduate students affirmed using condoms during every vaginal intercourse episode, and 40% claimed never using condoms during vaginal intercourse during the previous 30 days.

With regard to oral sexual experience, a secondary analysis study with a sample of 1,402 women aged 15-21, 29.8% of virgin females reported oral sexual experience, and 94.1% of coital non-virgins reported oral sex experience (Brewster & Tillman, 2008). Chambers (2007) reports on oral sexual behaviors from her study of 1,928 college students. She found that 30% of virgins (never experienced penetration of a sex organ) had engaged in oral sexual experience.

Knowledge deficits regarding the health risks of oral sex and means of protection were noted (Chambers).

High-risk sexual behaviors by young women and men are concerning, as these behaviors can have serious consequences. STIs, and reproductive tract infections (RTIs) are consequences of risky sexual encounters, and these have further sequelae (CDC, 2007b; WHO, 2007). STIs and RTIs can result in complications such as: infertility, ectopic pregnancy, pelvic inflammatory disease (PID), preterm labor, miscarriage, increased risk for HIV/AIDs and cancer (CDC, 2007b; WHO, 2005).

Most Chlamydia infections are asymptomatic, and the CDC estimates that over half (approximately 1.6 million cases) of Chlamydia infections in 2007 were undiagnosed (CDC, 2007b). The majority of women (73.5%) were asymptomatic when diagnosed with an STI in one study (Boyer, 2006). This is of concern, as untreated STIs can have long-term consequences for women, such as pelvic inflammatory disease (PID) with possible subsequent infertility and chronic pain (Smeltzer, Bare, Hinkle, & Cheever, 2008; CDC, 2007b). A study by Simms et al. (2006) found correlations between risky sexual behaviors and a clinical presentation of PID.

Many factors and theories associated with risky sexual activity have been analyzed and researched. Earlier initiation of sexual activity has been found to correlate with increased risky sexual behaviors and negative consequences (Pedlow & Carey, 2004). Staras, Cook, & Clark (2009) summarize the partner characteristics determined to be important risk factors for STI acquisition. These partner characteristics are: current STI diagnosis, age discordance, current multiple partners, partner intoxicated during sex, or partner previously in jail.

Alcohol use is another factor that has been associated with risky sexual behavior (Cooper, 2002). In Goldstein, Barnett, Pedlow, & Murphy's (2007) study of college students, alcohol use

was found to be associated with: increased sexual activity with new partners, sexual activity within less committed relationships, decreased contraceptive use, and fewer discussions of safer sex practices.

Situational factors are also involved in risky sexual behaviors. In a study with 84 college women, an analysis was performed as to the relationship between the person, partner, place, and other factors in safe or risky sexual encounters. It was found that individuals in the risky group (did not use a condom in anal, oral, or vaginal sex) described an atmosphere that was more cozy (von Sadvoszky et al., 2003). Unsafe sexual encounters after partying, dancing, or celebrating were reported more frequently from the risky group. Riskier sexual encounters were also more frequently to have occurred within a boyfriend/girlfriend relationship, and safer sexual encounters more frequently with an acquaintance or one-time partner (von Sadvoszky).

Patel et al. (2007) analyzed young adult college students' perceptions of a sexual situation through a hypothetical scenario. The participant's real-life sexual behavior was related to his or her decision-making process in the hypothetical situation. They found that individuals, who were at low, personal sexual risk, based their hypothetical sexual behaviors on an understanding of sexual risk and the potential negative consequences. On the other hand, high-risk individuals based their hypothetical behavior on emotional variables. Their priority was the "heat of the moment" and satisfaction (Patel et al.).

Many interventions have been developed and tested to reduce HIV/STI risk. Information-based interventions, behavioral interventions, and a combination of these two models have been designed and tested. It is important for interventions to tailor to the needs, experiences, and cultural implications of a particular population. The literature has explored intervention types and their efficacy among population cohorts based on age, gender, race, sexual orientation, and

risk factors. Interventions chosen for implementation clinically and in the community should be selected from those found to have a positive effect on reducing risky sexual behaviors or negative outcomes (Lyles et al., 2007). In choosing and implementing sexual health interventions, evidence-based interventions that are tailored to the targeted population are desired (Lyles et al.).

Based on incidences of STIs, other negative outcomes, and prevalence of risky sexual behaviors, suggestions have been made in the literature regarding populations and sexual behaviors to address in the future. It has been recommended that interventions be developed to protect women under 25 years of age (Peipert et al., 2007), especially women not actively seeking reproductive health care (Boyer et al., 2006). Addressing sexual practices other than vaginal intercourse should also be included in future interventions (Brewster & Tillman, 2008).

Some partner characteristics have shown to be predictive of STI risk (Staras, Cook, & Clark, 2009). These researchers suggest that clinical assessments of adolescents include an assessment of their partner(s)' characteristics.

Current interventions assessed in the literature have shown some efficacy in reducing risky sexual encounters and/or negative outcomes. A randomized study with 564 African American females assessed 2 information-based interventions (group vs. one-on-one) and 2 skills-building interventions (group vs. one-on-one) against a control group. The interventions ranged in time commitment between 20 minutes for a tailored one-on-one encounter with a health care professional to 200 minutes for group interventions consisting of 3-5 participants. Skills-building interventions were found to correlate with increased overall condom use, increased condom use at last sexual encounter, decreased unprotected sex, and decreased testing positive for an STI (Jemmott et al., 2007). The positive and superior effect of the skill-building

interventions showed significance at 12 months. The authors concluded that efficacious interventions, even those with an individual visit with a health care provider, can be conducted in a reasonable amount of time and have long-lasting effects (Jemmott et al.).

Another study of 682 African American and Latina females aged 12-19 years compared an information-based intervention to a skills-building intervention and control. It was found that the skills-building had a significant effect on decreasing risky sexual behavior at 3, 6, and 12 months (Jemmott et al., 2005). The authors concluded that interventions should include developing skills such as proper condom use and application (Jemmott et al.).

Lyles et al. (2007) completed a systematic review of HIV behavioral interventions targeting both men and women. This study searched the literature to find evidence-based behavioral interventions that showed a positive and significant reduction in risky sexual behavior or biophysical markers. They found 18 interventions to be best-evidence in quality of research design and process. Research gaps identified through this review were: not all at risk populations were represented, low generalizability, and lack of homogeneity between a rigorous research environment and the real world (Lyles et al., 2007).

Most of the interventions in the review required more than one session and significant facilitator hours. Sixteen of the eighteen studies had greater than or equal to 4 sessions, and most were between 9-18 hours total. A few facilitators were peer educators, but most were trained mental or biological health care providers. The gaps evident in the literature made known through this review were a lack of self-administered interventions providing ongoing reference. Interventions with a lower time and monetary burden are also rare. It is also important to reach individuals not actively seeking care, and an intervention that assists women in assessing her personal sexual risk is desirable.



This research study aims to assess the Sexual Awareness Kit (SAK). It is a self-administered, information-based tool that assists men and women in assessing his or her sexual risk in a particular situation and provides the knowledge and tools to be safe in that situation. The tool provides skills-direction on communication and psychomotor skills associated with safe sexual encounters. This tool can be used on an ongoing basis, providing booster information sessions as needed or desired. This intervention addresses many of the gaps in sexual health interventions identified by the literature; yet, prior to implanting the intervention in clinical trials some important questions need to be answered:

Research Questions:

1. What were their perceptions regarding ease of use?
2. Would they personally use the SAK?
3. What are their primary information concerns?
4. Are there differences by gender in information concerns?

### **Methods**

This is an exploratory, descriptive study which aimed to evaluate an intervention, the Sexual Awareness Kit, by gathering young adult's opinions about the feasibility of the tool. The SAK is a self-administered, portable tool designed to promote awareness of risky sexual encounters and provide the tools to have safe sexual encounters. There are two components to the SAK-the risk calculator and the booklet. The risk calculator's algorithm will provide a degree of risk for an unsafe sexual encounter (green, yellow, or red per military terminology of risk.) Each category of risk corresponds to a section in the booklet providing education and coaching on how to either refuse sex or have the safest sexual encounter possible. The SAK booklet provides educative information on: reproductive anatomy, STIs, birth control, behavioral skills,

and communication skills. It is designed to educate and enable men and women with the resources to have the safest sexual encounters. The intervention also provides barriers such as condoms (von Sadowszky et al., 2008).

The sample in this study included young adult men and women recruited from a Midwestern university campus via: ads in the campus newspaper and flyers posted in dormitories. Inclusion criteria for this study were as follows: heterosexual, 18—35 years old, and the ability to read and write English. Men and women self selected into the study by contacting the primary investigator. The primary investigator contacted prospective participants via e-mail, where an explanation of the study and the participant's involvement was provided. The prospective participant had the opportunity to sign up for one of the group meeting times. An incentive of a ten dollar gift card was provided at the time of data collection to compensate for the participants' time.

The instruments being utilized for data collection included two questionnaires developed by the primary investigator. The first collected demographic data on the participants; the second consisted of both closed and open-ended questions to collect the participants' opinions of the SAK. These questions address the: feasibility, advantages/disadvantages, attractiveness/unattractiveness, suggested changes to be made, desires for additional information, and lastly, anticipated support or use of the SAK.

Approval for this study was obtained from the institutional review board of the university on which it was conducted. At the point of data collection, participants met the researchers at an appointed location on the college campus. The participants were informed of the purpose of the study and what their involvement would entail. Informed consent was secured and a

demographic questionnaire completed. No identifying information was collected and all informed consents were kept separate from the evaluations.

A demonstration of the SAK intervention by the primary investigators or co-investigators was performed. The participants were seated throughout the room, where no one would be able to see others' responses to the questionnaires. The participants were given time to independently review and familiarize themselves with the SAK intervention and respond to the questionnaire. The completed questionnaires were collected in envelopes. At completion of the questionnaire, each participant was given their \$10 gift card and a debriefing letter.

Descriptive statistics, including mean and standard deviation, were used to describe the data. T tests were used to compare data between the males and females. The data from the men will be utilized to compare for significance with the data from the females, as well as, to create a larger perception basis for evaluating the SAK.

## **Results**

### ***Sample Characteristics***

Table 1 shows the descriptive characteristics of the sample. Eighteen young adults participated in this study. The sample's average age was 21.8 years (SD=3.6). The majority of the sample was female (83.3%) and Caucasian 77.8%. The sample size was small and largely homogenous. Seventy-eight percent of the sample report having ever had vaginal intercourse, and 61.1% report using a condom with last episode of vaginal intercourse. Sixty-one percent of the sample report having ever had oral sex, with only 5.6% having used a condom with last time. Forty-four percent report having had anal sex, with 22.2% condom use with the last time.

Table 1

Sample Characteristics, N=18

Age, <i>M (SD)</i>	21.8 (3.6)
Gender:	
Female	83.3%
Male	16.7
Ethnicity:	
Caucasian	77.8%
Asian	11.1
African American	5.6
Hispanic	5.6
Ever had:	
Vaginal sex	77.8%
Oral sex	61.1
Anal sex	44.4
Condom use with last:	
Vaginal sex	61.1%
Oral sex	5.6
Anal sex	22.2

***Ease of Use and Personal Use of the SAK***

Research questions one and two concern participants' perceptions about the ease of use of the SAK and whether they would personally use the SAK. These results are shown in Table 2.

Overall, participants found the SAK relatively easy to use. Females rated the SAK slightly easier to use than males. What was found regarding the ease of use supports the design of the SAK.

Regarding personal use of the SAK, moderate potential use was reported.

Table 2

Means and Standard Deviations of Ease of Use and Personal Use of the SAK by Gender

	Females	Males
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	<i>M (SD)</i>	<i>M (SD)</i>
Ease of working through intervention	4.4 (0.63)	3.7 (1.15)
Ease of finding prescriptions in intervention	4.9 (0.26)	4.3 (1.15)
Ease of finding the detailed information about a prescription in the book	4.7 (0.62)	3.0 (1.73)
How much one would personally use an intervention like this	3.4 (1.12)	3.0 (1.0)

Note: Scales for “ease” questions ranged from 1 (not at all easy) to 5 (very easy.) Scale for “personally use” question ranged from 1 (wouldn't use at all) to 5 (would use often).

### ***Additional Information Concerns***

Research question three concerns what types of additional sexual health information the participants would be interested in. Participants were asked to rate on a scale of 1 (no information at all) to 5 (as much as possible) how much they would like additional information on thirty-one sexual health topics. The topics included information on general sexual health, relationships, sex, and reproductive health. The top ten information concerns-identified by highest mean responses-are listed in Table 3 (Females) and Table 4 (Males). Means, standard deviation, and P-values are provided. Each table includes the interest level of both genders for comparison purposes. Six of the ten top requests were shared by men and women (contraception, abuse, common diseases, safer sex, talking sex needs, and pain during intercourse).

Table 3

#### Means and Standard Deviations for Top 10 Information Concerns for Females

	Females <i>M (SD)</i>	Males <i>M (SD)</i>	<i>p</i> value
Contraception	4.73 (0.59)	4.33 (1.15)	.37
Abuse	4.60 (0.91)	4.33 (0.58)	.64
Common Diseases	4.53 (0.83)	1.00 (1.73)	.65
Negotiating Safer Sex	4.47 (0.83)	3.33 (1.53)	.08
Talking Sex Needs	4.33 (0.82)	4.00 (0.00)	.50
Safer Sex	4.27 (0.88)	4.00 (1.00)	.65
Pain During Intercourse	4.14 (0.77)	4.00 (1.00)	.78
STDs	4.00 (1.13)	3.33 (1.53)	.39
Sex Response	3.87 (1.06)	2.67 (1.15)	.10
Vaginal Sex	3.87 (1.25)	3.67 (1.15)	.80

Note: Scale for information questions ranged from 1 (no information at all) to 5 (as much information as possible).

Table 4

Means and Standard Deviations for Top 10 Information Concerns for Males

	Females <i>M (SD)</i>	Males <i>M (SD)</i>	<i>p</i> value
Contraception	4.73 (0.59)	4.33 (1.15)	.37
Abuse	4.60 (0.91)	4.33 (0.58)	.64
Safer Sex	4.27 (0.88)	4.00 (1.00)	.65

Talking Sex Needs	4.33 (0.82)	4.00 (0.00)	.50
Pain During Intercourse	4.14 (0.77)	4.00 (1.00)	.78
Common Diseases	4.53 (0.83)	4.00 (1.73)	.65
Anal Sex	3.33 (1.23)	4.00 (1.00)	.40
Normal Sex	3.73 (1.39)	4.00 (1.00)	.76
Masturbation	3.07 (1.10)	3.67 (0.58)	.38
Oral Sex	3.80 (1.26)	3.67 (1.15)	.87

Note: Scale for information questions ranged from 1 (no information at all) to 5 (as much information as possible).

#### ***Differences between genders for information concerns***

Research question four evaluates whether there are any differences by gender in information concerns. Two information concerns reached statistical significance. Women wanted significantly more information on sexual orientation ( $p=0.03$ ) and same sex relationships ( $P=0.04$ ) than men. Trending towards significance was the “negotiating safer sex” topic. On average, women desired more information about this than men, with a  $P=0.08$ . Table 5 contains additional information.

Table 5

#### **Means and Standard Deviations for Differences between Genders**

	Females <i>M (SD)</i>	Males <i>M (SD)</i>	<i>p</i> Value
Sexual Orientation	3.47 (1.30)	1.67 (1.15)	0.03
Same Sex Relationships	3.53 (1.25)	1.67 (1.15)	0.04
Negotiating Safer Sex	4.47 (.83)	3.33 (1.53)	0.08

## **Discussion**

What was found from this study is applicable to the field of behavioral sciences and its applied disciplines. This research revealed that young adults have a broader interest in sexual health information than just that surrounding sexual risk. Further sexual health research and intervention development may consider including general sexual health information in addition to sexual risk reduction information. An additional implication for research includes gaining an understanding of where young adults currently learn general sexual health information, what they learn, and their preferred format for learning this material.

Health care practitioners can utilize this knowledge in the care of their young adult populations. Young adults desire information about general sexual health. Practitioners can incorporate assessment for information deficits and desires and provide education or resources accordingly.

The limitations of this study include the use of a convenience sample for data collection and a small, homogenous sample size. Because of the small sample size, this study lacks the power to draw more conclusions or generalize the findings. African Americans and individuals of other ethnic backgrounds were underrepresented in this sample. The results reported here are preliminary, as data is still being collected to be included in a subsequent evaluation.

The purpose of this study was to evaluate the SAK from the perceptions of young adults on a college campus. What was found regarding the ease of use of the SAK supports the design and utilization of the SAK. However, because of the limitations of this study, further implications cannot be drawn. Adaptations to the intervention will be considered at the end of data collection.

## **Conclusion**



In conclusion, considering the prevalence of risky sexual behaviors and the consequences of these behaviors, interventions should be developed to aid in preserving health. The SAK is a unique intervention as it is self-administered and available for ongoing reference. It will continue to be developed and hopefully implemented in a clinical trial in the future.

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