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Demographics and Risky Lifestyle Behaviors Associated With Willingness To Risk Sexually Transmitted Infection in Air Force Recruits

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Abstract

Purpose. To investigate sexually transmitted infection (STI) risk-taking behaviors relative to other lifestyle and risk-taking behaviors.

Design. The study design is cross sectional.

Setting. Lackland Air Force Base in San Antonio, Texas.

Subjects. Participants (N = 32,144) were 100% of Air Force recruits beginning basic military training from August 1995 to August 1996.

Measures. Recruits completed a questionnaire that included rating the statement "Sex without condoms is sometimes worth the risk of possibly getting AIDS or sexually transmitted diseases." Risky behaviors, such as risk taking, rebelliousness, seat belt use, smoking, alcohol use and binge drinking, opinions of illicit drug use, and lifestyle behaviors, such as dietary intake and physical activity, were also assessed.

Analysis. Univariate and multivariate logistic regression analyses examined the relationships between participant characteristics and willingness to risk STI.

Results. Sixteen percent stated willingness to risk STI to have sex without a condom. Women and white/non-Hispanic participants were less likely to agree with the statement than men and minority participants. Those who reported willingness toward risky sexual behaviors were less likely to use seat belts, were more likely to binge drink, had more positive views of illicit drugs, and reported eating fewer fruits and vegetables.

Conclusion. Results of this study suggest the importance of continued education on condom use and the possibility that multiple risk behavior interventions include sexual risk components. (*Am J Health Promot* 2008;22[3]:164–167.)

Key Words: Condoms, Risk Taking, Sexually Transmitted Diseases, Military Personnel, Prevention Research. Format: research; Research purpose: descriptive; Study design: nonexperimental; Outcome measure: cognitive; Setting: workplace; Health focus: medical self-care; Strategy: education; Target population age: adults; Target population circumstances: education/income level, race/ethnicity

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PURPOSE

Young adults make up half of new cases of sexually transmitted infections (STI),¹ and the infection rate for this group is increasing.² Given no cure for human immunodeficiency virus (HIV) and the rise of drug-resistant forms of STI,¹ consistent condom use is important in reducing rates of infection. Although studies have demonstrated a link between sexual risk and alcohol and illicit drug use,³ few studies have assessed sexual risk in relationship to other lifestyle behaviors. However, given the promise of multiple risk behavior interventions,⁴ which often simultaneously reduce risky behaviors and promote healthy ones, assessment of these behaviors in relationship to sexual risk, which is often ignored in such assessment and intervention studies, in larger samples is warranted.

Based on these clusters of behaviors, as well as the Health Belief Model,⁵ this study assessed in a population of military recruits the acceptability of sex without a condom and explored the relationship between sexual risk and gender, ethnicity, risky behaviors, and lifestyle behaviors. It is hypothesized that recruits who accept sexual risk may believe they are at reduced susceptibility for disease and will also engage in other unhealthy and risky behaviors; thus, acceptance of sexual risk will coincide with greater risk and unhealthy lifestyle behaviors.

METHODS

Design

This study is cross sectional and assessed via a 53-item behavioral health risk questionnaire the entire population of basic military training (BMT) recruits who entered training at Lackland Air Force Base from August 1995 to August 1996.

Sample

Participants were 32,144 BMT recruits. Their mean age was 19.8 years. Women represented 25.6% of recruits. A large proportion (30.2%) was of an ethnic minority group: 52% were African American, 23% were Hispanic American, 11% were Asian American/Pacific Islander, and 3% were Native American. Most participants were from low- and middle-income backgrounds (74%), obtained a high school diploma or general educational development equivalent (61.6%), and were single (82.8%). The population target was 100% of accessions during the study, and all recruits who remained in BMT completed the survey. Due to quality control checks, adherence was extremely high.

Measure

The questionnaire was geared toward a sixth-grade reading level. The median test/retest Pearson correlation for the questionnaire was .73; information on psychometric testing for this questionnaire has been presented previously.⁶ Opinions regarding illicit drug use and sexual practices rather than actual behavior were queried to avoid endangering participants' careers, as admission of any illicit drug use (past or current) is grounds for dismissal.

Sexual risk willingness was based on participants' responses on a five-point agreement scale (i.e., "Strongly agree," "Agree," "Neutral," "Disagree," or "Strongly disagree") to the following statement: "Sex without condoms is sometimes worth the risk of possibly getting AIDS or sexually transmitted diseases." For analytic purposes, those who chose "Neutral," "Disagree," or "Strongly disagree" were termed "Unwilling to Take STI Risks" while others were labeled "Willing to Take STI Risks."

Risk taking, rebelliousness, and attitudes toward illegal drugs were measured by agreement with the statements: "I like to take risks (e.g., drive really fast, do something dangerous)," "I would describe myself as rebellious, or sometimes doing things I know people don't want me to do," and "Taking illegal drugs (e.g., marijuana) is sometimes worth the risks," respectively. Those who agreed with the statements were considered higher on risk taking, rebelliousness, and/or attitudes toward drugs. Participants reported how often they drank alcohol and binge drank (eight or more drinks in a day) in the year prior to BMT ("0 to 1 times per year," "A few times per year," "A few times per month," "A few times per week," "Every day"). Those who exceeded one time per year were considered higher on alcohol intake and binge drinking. Seat belt use was dichotomized such that those who reported greater than frequent use were deemed high on seat belt use. Recruits rated how physically active they were during the 12 months prior to BMT compared with other individuals of their age and sex. Those who indicated more activity than others were deemed higher on this variable. Participants were asked to estimate the frequency that they consumed a serving of fruit and/or vegetables and high-fat foods. Those with daily intake were rated higher on these variables.

Analysis

Willingness to risk STI was assessed by gender, ethnicity, and age. The distribution of age was highly skewed; therefore, age was categorized into three groups of approximately equal size: 17 to 18 years, 19 to 20 years, and 21 to 35 years. Univariate logistic regression models were used to examine the relationship between participant characteristics and willingness to risk STI, with a critical α level of $p = .02$ (.05/3). Next, χ^2 analyses were used to compare participants who were willing to risk STI with those who were not (critical α level of $p = .005$ [.05/10]). Finally, those risky and lifestyle behaviors that were significantly related to risk univariately were entered into a multivariate logistic regression to determine the relative predictive ability of each variable.

RESULTS

Overall Sexual Risk Taking

As demonstrated in Table 1, a large majority of participants (i.e., 81%) reported that they would be unwilling to risk contracting STI by not wearing a condom.

Gender, Ethnic, and Age Differences

Table 1 also provides risk ratings analyzed separately by gender and ethnicity. Based on the dichotomized version of the rating scale, women were 18% less likely to agree that not wearing condoms was worth the STI risk (odds ratio [OR] = 0.815, $p < .001$). Using white/non-Hispanic participants as the referent group, a logistic model was also used to determine the impact of ethnicity on willingness to take sexual risks. All other ethnic groups were significantly more likely to agree that not using condoms was worth the STI risks compared with white/non-Hispanics. Both African Americans (OR = 1.60, $p < .001$), Hispanic Americans (OR = 1.61, $p < .001$), and those in the "Other" category (OR = 1.58, $p < .001$) were approximately 60% more likely to be willing to take STI risks than whites. However, Asian American/Pacific Islander people were more than 245% more likely to be willing to take STI risks than whites (OR = 2.45, $p < .001$). Although the oldest group was less likely to take STI risks than the youngest group, this finding did not reach significance (OR = 0.913, $p = .023$).

Differences in Lifestyle Behaviors

Table 2 presents differences in risky and lifestyle behaviors among recruits categorized by willingness to take STI risks. Interestingly, those willing to take STI risks rated themselves similar to those not willing to take STI risks on general risk taking. However, those willing to take STI risks rated themselves as significantly more rebellious. The two groups were similar on some risky and lifestyle behaviors such as alcohol use, physical activity, and intake of high-fat foods. However, those willing to take STI risks were less likely to use seat belts, were slightly more likely to smoke cigarettes, were more likely to binge drink, had more positive attitudes

Table 1
Gender and Ethnic Differences in Willingness to Risk Sexually Transmitted Infection

Participant Group	Percent Agreement With the Statement "Sex without condoms is sometimes worth the risk of possibly getting AIDS or sexually transmitted diseases."		
	Unwilling to take STI risks (n = 27,012)	Willing to take STI risks (n = 5,132)	Odds ratio (p)
All participants (n = 32,144)			
Gender			
Male (n = 23,912)	83.4	16.6	referent
Female (n = 8,232)	86.0	14.0	0.82 (<0.0001)
Ethnicity			
White/non-Hispanic (n = 22,433)	86.3	13.7	referent
African-American (n = 4,511)	79.7	20.3	1.60 (<0.0001)
Hispanic American (n = 2,227)	79.6	20.4	1.61 (<0.0001)
Asian American (n = 1,040)	71.9	28.1	2.45 (<0.0001)
Other Ethnic Groups (n = 1,933)	79.9	20.1	1.58 (<0.0001)
Age			
17-18 (n = 10,749)	84.0	16.0	referent
19-20 (n = 12,558)	83.2	16.8	1.06 (0.106)
21-35 (n = 8,837)	85.2	14.8	0.91 (0.023)

STI indicates sexually transmitted infection.
Percentages may not add to 100 due to rounding.

toward illegal drugs, and had slightly lesser intake of fruits and vegetables.

A multivariate logistic regression model of risk willingness was also conducted with all significant univariate predictors from Table 2 ($\chi^2 = 712.2$, $p < .0001$). All univariate predictors remained statistically significant in the multivariate model with the exception of binge drinking (OR = .97, $p = .41$). A willingness to risk

taking illegal drugs emerged as the strongest independent predictor (OR = 6.9, $p < .001$) in the multivariate model, indicating that those who suggest a willingness to risk taking illegal drugs are more than 600% more likely than those who do not to endorse sexual risk willingness. Other significant predictors included rebelliousness (OR = 1.1, $p < .05$), seat belt use (OR = .82, $p < .001$), smoking status (OR =

1.1, $p < .01$), and fruit and vegetable intake (OR = .21, $p < .001$).

DISCUSSION

Summary

Results suggested that most recruits opposed engaging in sex without a condom; however, a clinically significant minority of recruits endorsed sexual risk willingness. Findings from

Table 2
Willingness to Risk Sexually Transmitted Infection and Lifestyle Behaviors

Behavior	Unwilling To Take STI Risks (n = 27,012)	Willing To Take STI Risks (n = 5,132)	χ^2	p
	Percentage	Percentage		
Greater risk taking	18.3	19.1	0.17	0.085
Greater rebelliousness	9.9	12.8	39.05	<0.0001
Illegal drugs worth the risk	1.2	8.0	891.38	<0.0001
Higher alcohol use	66.0	66.1	0.010	0.935
Higher binge drinking	32.6	34.4	6.87	0.009
Cigarette smoking (% current)	24.5	27.0	15.30	<0.0001
Infrequent seat belt use	20.2	24.7	52.086	<0.0001
Lower physical activity	51.6	51.7	0.040	0.843
Lower intake of fruits and vegetables	61.6	66.3	40.88	<0.0001
Higher intake of high-fat foods	35.7	34.9	1.29	0.259

STI indicates sexually transmitted infection.

studies of college students suggest that young adults know how to prevent STI and HIV but risk infection to engage in unprotected sex at seemingly much greater numbers than suggested by the willingness reported here.⁷ It may be that this population intends to use condoms more frequently than college students or that risky sexual behaviors have not yet emerged. Moreover, this population may be adopting views that decrease sexual risk due to military intervention strategies; for example, cognitive-behavioral interventions have been used in the Marines to successfully reduce high-risk psychosocial factors and to increase STI prevention knowledge, decision making, and communication skills.⁸ Perhaps college and military populations intend to use condoms but do not as a result of negative experiences with condoms or a lack of knowledge or negotiation skills.

This study suggests sexual risk, risky behavior, and lifestyle behaviors may be interrelated. Due to the range of behaviors observed, a multiple risk behavior intervention may increase healthy behaviors by making disease susceptibility and severity salient and highlighting the benefits of behavior change.⁵ Such an intervention may focus on decreasing smoking, binge drinking, and sexual risk while impacting views of illegal drugs and encouraging healthy eating habits; in addition, this intervention could target men and minority groups most at risk for sexual risk willingness. Studies suggest multiple risk behaviors can be successfully intervened upon simulta-

neously^{4,9}; however, none to date seem to prominently include issues of sexual risk.

Limitations

Limitations must be addressed in evaluating these findings. This study could only ask about attitudes and not behaviors. Because admission of illegal behavior would jeopardize the career of a recruit, there may be potential bias in answers provided, and behaviors may not match expressed attitudes. In addition, issues of generalizability arise as this military population is distinct from young adults in general. Moreover, only one question was used to assess sexual risk. Despite limitations, this study contained a number of strengths. Foremost, this study included a large number of participants and had virtually no missing data. Although distinct from university populations, this is a unique sample of interest which represents a large segment of young adults in the United States.

Significance

Future directions include the need for continued systematic studies of sexual risk, along with other risky and lifestyle behaviors, in varied large representative samples, as well as the inclusion of sexual risk reduction components to multiple risk interventions, especially in young adults.

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