

# Predictors of Condom Use among a Sample of Male Inmates: A Social Cognitive Perspective

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The primary purpose of this study was to determine factors that predict condom self-efficacy among a sample of soon-to-be-released adult male inmates with respect to self-reported HIV/AIDS risk behaviors. Approximately 230 inmates had agreed to enroll in the study. This analysis is based on completed baseline surveys from 187 inmates. Data were collected at baseline (prior to implementing the intervention) on self-reported condom self-efficacy HIV/AIDS risk behaviors. Findings support that, requesting that your partner uses condoms every time they had sex was the strongest indicator of self-reported condom self-efficacy by inmates in the sample ( $p < 0.01$ ). Findings also suggest that engaging in sexual activity after smoking marijuana, limiting the number of sex partners and asking partners' HIV status were significant predictors for the dependent variable of condom self-efficacy ( $p < 0.05$ ); engaging in sexual activity after drinking was not ( $p < 0.11$ ). Findings suggest that it may be wise to take a best-practice approach using former inmates as peer educators if health-based interventions are to be delivered to soon-to-be-released adult male inmates.

**Key words:** inmates ■ condoms ■ HIV/AIDS

## INTRODUCTION

The relationship between sexually transmitted diseases (STDs) and lack of condom use has been presented consistently in the literature. However, few of these studies deal with incarcerated populations with respect to condom use and self-efficacy. The studies that do examine inmate populations and the aforementioned construct are either conducted outside of the United States, target jails versus prisons, involve juvenile populations or do not focus specifically on soon-to-be-released inmate populations.<sup>1-8</sup>

Prisoners are at high risk for infection with HIV due to the relationship between the practice of problem behaviors and incarceration.<sup>9-14</sup> Therefore, there is a need for collaboration between state health departments and correctional systems to better understand factors that contribute to reducing inmates risk to infectious disease, such as AIDS. In this manner, programs may be developed to target HIV prevention, education and treatment—both in prison and upon release into the community.

Adequate understanding of condom use behavior requires researchers to examine factors that may increase risk among inmate populations—as this may eventually place others at risk when they return to communities. This is essential given that risk factors for HIV can include substance use behavior, having unprotected sex and having sex with multiple partners.<sup>15-16</sup>

At the individual level, consistent and regular condom use,<sup>17-19</sup> personal self-efficacy, perceived vulnerability to HIV/AIDS,<sup>20-22</sup> substance use reduction,<sup>21,22</sup> and peer and family support<sup>23</sup> are just a few. Consistent and regular condom use reduces the likelihood of contracting HIV<sup>24</sup> and generates more personal and positive attitudes towards condoms with respect to preventing the transmission of sexually transmitted diseases. On a similar line of thought, personal self-efficacy regarding protective behaviors, such as condom use, have been demonstrated to be associated with more consistent condom use among men. Another point of contention regards issues that may impact the occurrence of future

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problems. One such factor is substance use. Research indicates that the use of alcohol and other illegal substances complicate and operate in concert with other psychosocial issues. These factors may be related to individuals, the environment and interpersonal factors.<sup>25</sup> The inclusion of these factors in implementing effective support systems for released inmates assumes that external antecedents of behavior may be considered as reinforcing the expectancies that substance use may generate. For example, at the level of the family and peer group relations, alcohol consumption may be a part of celebrations that serve to stimulate community-based activities.

The use of behavioral theory in understanding high-risk behaviors among inmates can have a strong impact on how interventions are developed to reduce HIV/AIDS risk. Social cognitive theory<sup>25,26</sup> emphasizes the significance of self-regulation and social skills in the process of behavior change. Social cognitive theory posits that self-efficacy, the belief that one can effectively execute a behavior required to produce a desired outcome and that one has the skills necessary to do so, is an important determinant of health behavior change.

When applied to health promotion, social cognitive theory mostly emphasizes factors, in addition to information, that affect whether an individual uses health protective practices. Social cognitive theory and its principles for behavioral change are especially germane for encouraging specific behaviors related to health improvement and the reduction of problem behaviors. The primary purpose of this study was to determine factors that predict condom use self-efficacy among a sample of soon-to-be-released adult male inmates with respect to self-reported HIV/AIDS risk behaviors. Accordingly, condom self-efficacy is operationalized via self-report measures covering the confidence one has in being able to correctly use a condom and the confidence one has in being able to use a condom consistently with a sexual partner(s) with or without being under the influences of drugs and alcohol.

## Study Site and Sample

The current study delivered a health education intervention to soon-to-be-released adult male inmates. This study focused on collecting data from adult male inmates during the period from 2000–2003. Approval was received from the Emory University and Georgia Department of Corrections institutional review boards. Baseline level data were collected by project staff (peer educators via self-report interviews) after a pool of eligible participants was selected by Department of Corrections personnel. To be eligible for inclusion, inmates had to be between 60–90 days prior to release from the facility

and returning to the metropolitan Atlanta area (this criterion would make follow-up more feasible). There is no known universe of this sample given that release was contingent on: 1) having a home to return to, 2) not having any infraction delay release date, 3) decision of parole and pardon board, and 4) not being relocated to another correctional facility. In these selected prisons, inmates meeting the inclusion criteria range from 20–400 individuals annually. To be included in the study, inmates had to be  $\geq 18$  years of age or older, male and sexually active. The participants were recruited from a population housed at three medium-security correctional institutions for men located in middle Georgia and a transitional center located in a major southeastern city. Pilot testing of interview materials was conducted in a fourth medium-security facility not included in the baseline.

## Data Collection

Data were collected at baseline (prior to implementing the intervention); at release; and at three-, six- and nine months postrelease. These data were collected from August 2000 to December 2003. Trained interviewers and peer educators collected data inside the correctional facility. After explaining the purpose of the study and obtaining written informed consent, the interviewer reviewed the data collection instrument with each participant. The instrument was written on a fourth-grade reading level and pretested prior to administration. Inmates received monetary incentives and personal kits (including materials related to the intervention) for participation in follow-up interviews.

Approximately 230 inmates agreed to enroll in the study. However, this analysis is based on completed baseline surveys from 187 inmates. The reason for the inconsistency was due to the unreliable nature of participant release. There is no certainty that inmates who were scheduled for release would be released by the pardons and parole board or would not be delayed for problem behaviors prior to release even after participation in the intervention. Most of the sample was African-American ( $n=126$ , 67.4%), with approximately 26% ( $n=51$ ) and <5% ( $n=9$ ), reporting their ethnicity as white and Hispanic, respectively.

## MEASURES

Using response formats, inmates were asked to provide descriptive and scale information on several variables. Sociodemographic variables on the data collection instrument included: ethnicity, marital status, educational level, income prior to incarceration and incarceration history. The main psychosocial constructs for this study employed were condom use self-efficacy and eight HIV/AIDS risk behaviors.

### Condom Self-Efficacy

This measure assessed behavior associated with condom self-efficacy (e.g., “I can always put a condom on (myself/partner) so that it will not slip or break”). Degree of confidence was assessed using a number from 0–10 (“not at all sure I can” to “completely sure I can’t”). Summary scores were computed since participant scores were normally distributed. The mean scale score was 83.84 (sd=9.4) and a range of 28–120. The scale was comprised of 12 items and maintained a computed Cronbach alpha=0.90.

### HIV Risk Practices

Eight items were defined to represent unique HIV/AIDS risk behaviors. All items were scaled from 0–100 as to approximate the percentage of the time inmates reported they performed the said behavior. The response categories for this question ranged from: “100 %=all of the time” to “0%=“never/none of the time.” Example items for these items included “talking to your partner about safer sex behavior,” engaging in sexual activity after drinking” and “limiting the number of sex partners you have.”

### Sociodemographic and Background Variables

The measures used in this study and their psychometric properties are detailed in Table 1. The survey instrument contained items assessing sociodemographic and other background characteristics of participants. These variables included ethnicity, marital status, education, income prior to incarceration and incarceration history.

### Data and Statistical Analysis

Trained interviewers collected data from study participants after explaining the purpose of the study and obtaining written informed consent. The interviewer provided an overview of the major areas of the data collection instrument with each participant to make certain that the participant understood the response format. The instrument was written on a fourth-grade reading level.

Linear regression analysis was employed to examine the effects of the HIV/AIDS risk problem behaviors on the study outcome variable of condom self-efficacy. Beta coefficients and corresponding values of significance (p) in concert with R-square and standard error of beta estimates were obtained to estimate

**Table 1. Demographic profile of sample prior to incarceration—missing not included (n=187)**

<b>Variable</b>	<b>n</b>	<b>%</b>
<i>Ethnicity/Race</i>		
African-American/black	126	67.5
Hispanic	9	4.8
White	51	27.4
Other	1	0.3
<i>What Is the Highest Grade or Year of School You Have Finished?</i>		
8th grade or less	10	5.4
Some high school, didn't finish	64	34.4
Graduated high school or GED	66	35.5
Vocational, trade or technical school	7	3.8
Started college, didn't finish	31	16.7
Graduated college	6	3.2
Started postgraduate work	1	0.5
Finished postgraduate/professional degree	1	0.5
<i>What Was Your Household Income Prior to your Arrest?</i>		
<\$10,000	28	15.0
\$10,000–\$19,999	35	18.7
\$20,000–\$29,999	46	24.6
\$30,000–\$39,999	28	15.0
\$40,000–\$49,999	13	7.0
\$50,000–\$59,999	9	4.8
\$60,000–\$69,999	10	5.3
≥\$70,000	18	9.6
<i>Was This Your First Time Being Incarcerated?</i>		
Yes	75	40.3
No	111	59.7

the strength of the association between HIV/AIDS risk behavior variables and the dependent variable of condom self-efficacy and how much confidence we can have in the estimates accordingly.

It is important to indicate that condom self-efficacy was a summary score based on the aggregated scale score for the construct. Selected independent variables were computed categorically. The model reported herein shows only unadjusted results. All equations entered each independent variable such to gauge the impact of each variable on predicting inmates self-reported condom self-efficacy.

**RESULTS**

**Sociodemographic Profile**

The self-reported mean age for participants was 35.3 years (sd=8.9). On average, participants indicated they had been incarcerated in the Georgia state correctional system for 4.29 years (sd=5.5). Over their lifetime, inmates indicated they had been incarcerated >9 years (sd=15.4). Nearly similar proportions of the sample of inmates indicated that they had attended high school but did not finish (34.4%, n=64) or had graduated from high school and received a GED (35.5%, n=66). More than 80% of participants noted their income prior to incarceration ≤\$39,999 annually prior to incarceration.

Results for predicting condom use self-efficacy are presented in Table 2. In addition, item means and standard deviations are also presented in Table 2. A

condom self-efficacy score was created by combining the 12 items in the scale. A linear regression analysis was employed to predict the impact of the selected HIV risk problem behaviors on condom self-efficacy.

Requesting that a partner use condoms every time they had sex was the strongest indicator of self-reported condom self-efficacy by inmates in the sample (P<0.01). When condom self-efficacy and self-reported talking to one's partner about safer sexual practices were evaluated, it was observed that nearly 14% of the variation of condom-use self-efficacy could be explained by discussion with a sexual partner.

Although our findings suggest that engaging in sexual activity after smoking marijuana, limiting the number of sex partners and asking one's partner's HIV status were significant predictors for the dependent variable of condom self-efficacy (p<0.05), engaging in sexual activity after drinking was not (p<0.11).

**DISCUSSION**

This study investigated the influence of HIV problem behaviors on condom self-efficacy among a sample of U.S. inmates. The results highlighted the significance of being able to communicate with one's partner openly about sexual risk behaviors and marijuana use on the dependent variable of condom self-efficacy. Specifically, the impact of communicating or being able to communicate with one's partner's issues related to one's HIV status, safer sexual practices and other information regarding their sexu-

**Table 2. Individual variables for regression results predicting condom self-efficacy**

Variable (Mean/sd)	B	SEB	P	R <sup>2</sup>
Using a condom or request that your partner use them every time you have sex (73.4/35.9)	0.454	0.05	0.01	0.207
Limiting the number of sex partners you have (81.5/30.3)	0.284	0.07	0.01	0.081
Asking your partner what their HIV status is (91.9/19.2)	0.428	0.11	0.01	0.080
Talking to your partner about safer sexual behavior (85.7/26.3)	0.419	0.08	0.01	0.147
Engaging in sexual activity after drinking (43.7/41.6)	0.107	0.05	0.15	0.011
Engaging in sexual activity after using marijuana (39.4/42.6)	0.170	0.05	0.02	0.029
Asking your partners whether they have a STD (i.e., herpes, syphilis) (88.5/24.3)	0.239	0.08	0.01	0.041
Asking someone about their sexual history before having sex with him/her (i.e., how many different partners) (75.9/34.1)	0.212	0.06	0.01	0.060

al history. We also found that differences were noted with respect to substance consumption—particularly, engaging in sexual activity after drinking in comparison to engaging in sexual activity after the consumption of marijuana.

Our findings support that consistent and regular condom use reduces the likelihood of contracting HIV<sup>27-28</sup> and generates more personal and positive attitudes towards condoms with respect to preventing the transmission of sexually transmitted diseases.<sup>6,7,19</sup> Similarly, personal self-efficacy regarding protective behaviors such as condom use have been demonstrated to be associated with more consistent condom use among men.

Research suggests that self-efficacy to communicate with peers is associated with more positive attitudes towards condoms and greater condom commitment and use.<sup>4</sup> In addition, condom self-efficacy has been demonstrated to influence condom use in the last sexual encounter among U.S.- and foreign-born Latinos in Texas<sup>5</sup> as well as general intention to use condoms among other populations<sup>6,7</sup>, inclusive of injecting drug users.<sup>29</sup>

This study supports the assertion that the use of interventions with inmate populations must reflect both ethnicity and sensitivity to prison culture so that inmates are equipped to communicate their concerns regarding sexual risk practices to their partners. This is based on the assertion that prison culture is distinct from other underserved communities.<sup>29,30</sup> From this perspective, a best-practice approach is ideal, and former inmates should be used as peer educators if health-based interventions are to be delivered to soon-to-be-released adult male inmates. Based on the epidemic models of HIV infection and the prevalence of other problem behaviors among incarcerated populations, such interventions would be beneficial to inmate populations. This is especially true since it is unlikely that the provision of condoms in correctional settings will be implemented consistently across U.S. correctional facilities.<sup>31</sup> Thus, prevention efforts designed to reduce risk of HIV/AIDS, such as enhanced personal communication skills, should be promoted.

It is also important to attempt to understand what basic implications this study may have for health promotion interventions designed especially for inmate populations. Since most participants reported some history of substance use in their past, it may be wise to evaluate such behaviors in terms of such history serving as a mediator to efficacious response to HIV risk reduction. Doing such may provide additional insight to our findings—in particular, as it relates to how different behaviors vary by substance used. For example, it may explain why condom self-efficacy is higher with respect to marijuana use,

while this is not the case for alcohol use. This finding was not anticipated.

## Limitations of the Study

In spite of this study's strengths, one must consider that inmates may be stating or reporting behaviors that may serve their best interests. In addition, we note that our findings may not be generalized to other inmate populations outside of the United States, or perhaps even the southeastern portion of the United States. Although the condom self-efficacy scale produced an acceptable alpha, it is possible that there may be more reliable ways to capture such data from inmate populations. Future efforts should attempt to measure differences in internal consistency with respect to survey and interview formats of such items, as well as use covariates of frequency of condom use to match such self-reported data. This has major importance to the communities to which inmate populations will return upon release from prison.

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