

# Sexual Risk Behaviors and Condom Use Barriers in Iranian Men with Substance Use Disorders

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## Original Article

### Abstract

**Background:** We aimed to investigate risky sexual behaviors (RSBs) and condom use barriers in Iranian men with substance use disorders (SUDs).

**Methods:** Of the total 1800 outpatient drug free (ODF) and methadone maintenance treatment program (MMTP) active centers in Tehran, Iran, six were selected to participate in the current study. Data were collected (n = 300 men) using three questionnaires including a demographic questionnaire, the Risky Sexual Behavior Questionnaire (RSBQ), and the Condom Barriers Scale (CBS). The statistical software R, analysis of variance post hoc and multivariate analysis of variance (MANOVA) logistic regression tests were used in data analysis.

**Findings:** The majority, (n = 194, 64.7%) reported at least one lifetime episode of RSBs. Compared to married participants (23.1%), 88.5% of single and 87.0% of divorced men had a history of RSB. Generally, the lowest and highest subscale scores of the CBS were related to sexual experience ( $2.60 \pm 0.71$ ) and access/availability structure ( $3.77 \pm 0.54$ ), respectively. The results of MANOVA analysis showed that there was a statistically significant difference between the CSB subscales based on the participants' education and marital status ( $P < 0.001$ ). Only the partner barrier subscale had a significant negative relationship ( $P = 0.003$ ) with RSB.

**Conclusion:** Sexual dynamic of Iranian men with SUDs is different. Barriers to condom use seem to be socio-culturally determined. Culturally acceptable strategies need to be utilized in Iranian clinical settings reaching beyond simply condom accessibility for this at risk population.

**Keywords:** Sexual risk behaviors; Condoms; Substance abuse; Sexually transmitted infections; Men

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## Introduction

Risky sexual behaviors (RSBs) are highly prevalent among people with substance use disorders (SUDs).<sup>1-5</sup> Being under the influence of substance can alter judgment and inhibitory behaviors, resulting in involvement in risky and impulsive behaviors, particularly RSBs such as reduced or no condom use, increased number of sexual partners, using drugs at the time of sexual encounters, sex with high-risk sexual partners, and also exchanging sex for drugs or money.<sup>6-16</sup>

In Iran, there is an increase in new cases of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and it is expected that the number of HIV infected individuals will continue to increase in Iran;<sup>17</sup> as of September 2016, a total of 31950 people with HIV were detected. It is estimated that undiagnosed cases are 3 times more than the number of detected cases. Of all cases, approximately 66% are men.<sup>18</sup>

RSBs are considered to be one of the main routes of transmission of sexually transmitted infections (STI), especially HIV.<sup>19,20</sup> In Iran, sexual transmission of HIV remained low (5%-6%) up until 2006 when rates began escalating and in 2010, the rate was 20.7%,<sup>2</sup> and 37.9% in 2014.<sup>21</sup> Men represent one of the highest risk groups leading this serious epidemic in Iran.<sup>7</sup>

Using condoms is known as the most accessible and cost-effective way to reduce the risk of STI, particularly transmission of HIV.<sup>22</sup> However, studies have shown that a large percentage of people, especially those with SUDs, do not use condoms, and do not perceive unprotected sexual encounters as risky. Studies have shown that only 15.1% of men (240 out of 1595 past month injection substance users) had used condoms during the last sexual contact with their wives. The percent of men using condoms with non-paid sexual partners was 16.2% (258 out of 1595) and 15.3% with paid sexual partners.<sup>23</sup> Despite the extensive studies exploring sexual risk behaviors among individuals with SUDs, there is limited information about the reasons and barriers that interfere with safe sexual practices. It seems that barriers to condom use are a priority to be investigated in studies concerning the prevention of STI/HIV, particularly in individuals with SUDs. In this paper, we report

condom use barriers leading to RSBs among Iranian men with SUDs.

## Methods

The study, conducted in 2016-2017, received ethics approval from both the State Welfare Organization and Tehran University of Medical Sciences, Iran. Study sites were public health centers and non-governmental organizations (NGO) in the province of Tehran. The research sites, outpatient drug free (ODF) and methadone maintenance treatment program (MMTP) centers were selected from 1800 active addiction treatment centers. Criteria for the selection of centers included: a. having registered clients with maximum diversity in terms of social, economic and geographical conditions, b. having at least 500 active cases, and adequate staff consisting of medical physicians, psychologists, nurses and social workers. Six centers from the north, south, west and east of Tehran were selected and presented for study participation to the Research Committee of Welfare Organization. Optimum sample size was determined 300 based on power calculations. Inclusion criteria for the participants were as follows: a. men over 15 years of age, b. sexually active (oral, anal or vaginal) with any sexual partner (man/woman) in the last six months, c. a history of SUDs, and currently under treatment (with or without pharmacotherapy), and d. able to complete the consent form and questionnaires. Interested participants who signed an informed consent were placed on a waiting list for screening. The screening was performed daily by a nurse or a psychologist at the center.

Three questionnaires were used to collect data: 1. a demographic questionnaire including age, marital status, and education, 2. the Risky Sexual Behavior Questionnaire (RSBQ) derived from Family Health International Questionnaire and based on United Nations Programme on HIV/AIDS (UNAIDS) indices. This questionnaire assesses the frequency of unprotected sexual activity in the last 6 months, and consists of 6 parts: group sex activities, relationship with sex worker (woman or man), sex with money exchange, casual sex, oral sex and anal sex with men (this questionnaire has been validated for the Iranian population with risky behaviors by Moayed-Nia et al.<sup>24</sup>), 3. the Condom Barriers

Scale (CBS) used by Calsyn et al.<sup>25</sup> This questionnaire has subscales including partner-related barriers (8 items), sexual experience barriers (7 items), access/availability barriers (8 items), and motivational barriers (6 items), with all responses rated on a 5-point Likert scale from strongly agree to strongly disagree. Lower scores indicate more frequent endorsement of barriers to using condoms. English version of the questionnaire was prepared using the Lawshe and translation-back-translation methods for reliability and validity. To ensure the validity and reliability, the questionnaire was given to 10 experts, and based on their views, content validity index (CVI) and content validity ratio (CVR) indices were 0.89 and 0.94, respectively.

In addition, to assess the internal consistency of the subscales, Cronbach's alpha coefficient was 0.87. Multivariate analysis of variance (MANOVA) test was used to analyze the data regarding the association between response variables. Furthermore, ANOVA post hoc and logistic regression tests were used to assess the achieved significant relationship in MANOVA test. All analyses were performed using the statistical software R, and the level of significance was set at 0.05. Also, wherever necessary, mean  $\pm$  standard deviation (SD) was used to summarize the information.

## Results

The mean  $\pm$  SD age of the participants was  $33.86 \pm 7.75$ , 55% ( $n = 165$ ) were single and 36% ( $n = 108$ ) were married. Most (44%) had a primary and high school degree (Table 1). More than half, (64.7%,  $n = 194$ ) had a history of at least one episode of risky sexual behavior in their lifetime; with 88.5% being single, 23.1% married, and 87.0% divorced. Generally, the lowest and highest

CBS subscale scores were the sexual experience ( $2.60 \pm 0.71$ ) and access/availability subscales, respectively. Specifically, for single men who accounted for the highest percentage of risky sexual behavior, the sexual experience and access/availability ( $3.77 \pm 0.54$ ) subscales had the lowest and highest scores, respectively, compared to the other CBS subscales.

MANOVA test was used to examine differences in mean score for each of the CBS subscales related to the level of education, marital status, and age. In this analysis, the four CBS subscales were considered as dependent variables, and variables of education, marital status, and age were entered as independent variables to test for significant relationships. Significant results were obtained based on the type II sum of squares.

The results of MANOVA analysis show that there was a statistically significant difference between the condom use barriers based on education ( $P < 0.001$ ) and marital status ( $P < 0.001$ ). Further analysis was conducted using ANOVA post hoc test to determine the effect of participant level of education, marital status and age separately for each of the evaluated CBS subscales (Table 2).

We found a statistically significant difference between the mean scores of access/availability ( $P < 0.001$ ), motivational barriers ( $P = 0.001$ ) and partner barriers ( $P = 0.050$ ) at different levels of education, such that the subscales scores were generally higher in people with higher education. In addition, at the levels of marital status, there was a statistically significant difference between the mean scores on the sexual experience ( $P = 0.010$ ) and motivational barriers subscales ( $P = 0.002$ ) (Table 2).

**Table 1.** Distribution of sexual risk behavior and the subjects' demographic characteristics ( $n = 300$ )

Variable		n (%)	Risky behavior
Marital Status	Single (never married)	165 (55.0)	146 (88.5)
	Married (permanent marriage)	108 (36.0)	25 (23.1)
	Married (temporary marriage*)	4 (1.3)	3 (75.0)
	Divorced	23 (7.7)	20 (87.0)
Education status	Illiterate (no education)	9 (3.0)	5 (55.6)
	Primary	12 (4.0)	9 (75.0)
	Secondary school	134 (44.7)	86 (64.2)
	Diploma	103 (34.3)	67 (65.0)
	Associate degree and bachelor degree	42 (14.0)	27 (64.3)

\*Temporary marriage or so called 'marriage of mut'a' is a marriage which the contract stipulates it will last for a fixed period of time

**Table 2.** The post hoc test (univariate ANOVA) to investigate which construct(s) are influenced by the education and marital status

Variable	Motivational barriers	Access/availability	Sexual experience	Partner barriers
Education (mean $\pm$ SD)				
Illiterate	2.85 $\pm$ 0.80	4.10 $\pm$ 0.74	2.90 $\pm$ 0.93	3.41 $\pm$ 0.93
Primary	3.20 $\pm$ 0.73	3.40 $\pm$ 0.48	2.57 $\pm$ 0.73	3.59 $\pm$ 0.66
Secondary school	3.34 $\pm$ 0.66	3.65 $\pm$ 0.54	2.55 $\pm$ 0.69	3.54 $\pm$ 0.78
Diploma	3.48 $\pm$ 0.67	3.89 $\pm$ 0.49	2.61 $\pm$ 0.73	3.79 $\pm$ 0.70
Associate degree and bachelor degree	3.67 $\pm$ 0.53	3.93 $\pm$ 0.49	2.71 $\pm$ 0.63	3.72 $\pm$ 0.68
F-value (P)	7.78 (0.001)	6.29 (< 0.001)	0.59 (0.660)	2.39 (0.050)
Marital status (mean $\pm$ SD)				
Single	3.45 $\pm$ 0.64	3.82 $\pm$ 0.51	2.69 $\pm$ 0.69	3.58 $\pm$ 0.72
Married (permanent)	3.28 $\pm$ 0.69	3.70 $\pm$ 0.57	2.46 $\pm$ 0.69	3.70 $\pm$ 0.79
Married (temporary)	3.95 $\pm$ 1.18	3.71 $\pm$ 0.95	3.03 $\pm$ 0.67	4.15 $\pm$ 1.03
Divorced	3.77 $\pm$ 0.47	3.77 $\pm$ 0.53	2.59 $\pm$ 0.77	3.85 $\pm$ 0.59
F-value (P)	5.46 (0.002)	1.47 (0.230)	4.51 (0.010)	1.85 (0.150)

SD: Standard deviation

We also examined the relationship between the CBS subscales and RSBs. For this purpose, a significant test was conducted at the macro level using MANOVA (Table 3). Then, appropriate post hoc test was used for significant cases (Table 4).

**Table 3.** Odds ratios (OR) for sexual risk behavior with barriers to condom use subscales as predictors

Condom barrier subscales	OR	95% CI	P
Partner barriers	0.38	0.22-0.64	0.003
Effect on sexual experience	1.12	0.74-1.70	0.590
Access/availability	1.31	0.75-2.60	0.300
Motivational barriers	1.54	0.90-2.68	0.110

OR: Odds ratio; CI: Confidence interval

Logistic regression analysis was used due to two-state risky sexual behavior components. The results of the test for RSBs in general and CBS subscales are given in table 3. Only partner barrier subscale scores had a significant negative relationship ( $P = 0.003$ ) with risky sexual behavior such that 1 point increase in condom use reduced the chance for risky sexual behavior by 62 percent. There were no other statistically significant relationships between risky sexual behavior and other CBS subscales.

Logistic regression post hoc analysis for

relationships between partner barrier subscale and types of sexual risk behaviors was performed, the results of which are provided in table 4.

There was a significant negative relationship ( $P = 0.002$ ) with risky sexual behavior and the partner barriers subscale in men who had casual sex, such that with a 1 point (1 unit) increase in the partner barriers subscale, the probability of risky sexual behavior was reduced by 61%.

In men who had group sex, the partner barriers subscale had a significant negative relationship ( $P < 0.001$ ) with risky sexual behavior such that with a 1 point (1 unit) increase in the subscale score, the probability of risky sexual behavior was reduced by 69%.

There was no significant relationship between the partner barriers subscale scores and oral and anal sex. In the past year, only 9.1% had always used condom with partners when engaging in oral sex and 16.3% when engaging in anal sex.

In men who had sex for money exchanges, the partner barriers subscale had a significant negative relationship ( $P < 0.001$ ), such that with 1 point (1 unit) increase in the partner barriers subscale, the probability of risky sexual behavior was reduced by 95 percent. In the past year, 68.8% engaged in sex with money exchange had used a condom.

**Table 4.** Partner barriers subscale and sexual risk behavior based on types of sexual behaviors

Sexual risk behavior	Partner barrier					
	Relationship with sex worker (woman or man)	Sex with money exchange	Anal sex	Oral sex	Group sexual relationships	Casual sexual relationships
AOR	0.47	0.05	0.92	0.85	0.31	0.39
P	0.001	< 0.001	0.800	0.620	< 0.001	0.002

RSB: Risky sexual behavior; AOR: Adjusted odds ratio

In men who had sex with prostitutes, the partner barriers subscale had a significant ( $P = 0.001$ ) negative relationship with RSBs, so that with a 1 point (1 unit) increase in this subscale score, the probability of risky sexual behavior was reduced by 53%. In the past year, 68.9% had used a condom when engaging in sex with prostitutes.

## Discussion

This research describes condom use behaviors in men with SUDs, and the critical role that condom use barriers play in determining their RSBs. The majority of the participants (64.7%) reported at least one RSB in comparison to the earlier studies in Iran.<sup>26-29</sup> Our findings of increasing RSBs suggest the likelihood of the associated increase in the prevalence of STI, especially HIV/AIDS in the population of men with SUDs, including subsequent sexual transmission of infections to sex partners, as well as mother to child transmissions.

In this study, the majority of single (88.5%) and divorced men (87.0%) reported a history of RSBs compared with only 23.1% of married participants. Consistent with the results reported by Keshtkar et al.<sup>26</sup> we argue that married people possibly have greater commitment to their marital lives and would take less risk than single or divorced people.

Condoms have always been a common means of prevention and protection in the field of sexual health education and promotion.<sup>30</sup> Similar to other studies,<sup>31,32</sup> men had the lowest score (more negative attitude or more barriers) on the CBS sexual experience subscale. Condoms are often considered to be a barrier to sexual pleasure. Thus, men may be less likely to use condoms in their sexual encounters.<sup>30-33</sup> The highest score on the access/availability subscale suggests that our study participants had no problem in accessing condoms.

The results of this study also showed that at different levels of education, there was a statistically significant difference between the mean scores on the access/availability, motivational barriers and partner barriers, such that these subscale scores were generally higher in people with higher education. In other words, they had more positive attitude toward using condoms and perceived less condom use barriers. These results suggest that people with higher education may have better negotiating skills in

their sexual relationships and/or encounters. We did not detect significant differences between level of education and other CBS subscales. There was a statistically significant difference between the mean scores of sexual experience and motivational barriers subscales and men's marital status. Men in temporary marriage were at the greater risk than those with committed and permanent marriage. Undoubtedly, men in temporary marriage would change their partner when the marital contract was ended after a fixed period of time.

Regarding the relationship of the CBS subscales with RSB, only the partner barriers subscale had a significant negative relationship with RSB. This is consistent with the results of similar studies<sup>31,32,34,35</sup> demonstrating sexual partner barriers have been reported as an important cause of not using condoms. In our study, RSB was not significantly associated with the other CBS subscales (effect on sexual experience, access/availability, motivational barriers) consistent with the results reported by Calsyn et al.<sup>31</sup> Possible explanations for this finding may be lack of negotiation skills or the way partnership is defined in the context of drug use in the Iranian culture.<sup>36,37</sup> Men with drug using problems normally approach sex workers compared with healthy men who avoid risky partnership.<sup>38</sup> We found that there was a significant negative relationship between RSB and partner barriers subscale in those men who had casual sex, such that with 1 point (1 unit) increase in the partner barriers subscale score, the probability of RSB was reduced by 61 percent. This finding was consistent with the results pointed out by Calsyn et al.<sup>31</sup>

## Conclusion

We conclude that in this drug using population of men, there are different types of barriers to condom use related to education and marital status, specifically less educated single and divorced, that put certain men at high-risk sexual behavior.

With sex partners, barriers to condom use seem to be highly related to socio-cultural issues. Unprotected sex can be an important indicator of trustful partnership and emotional connection between intimate partners; using condoms or negotiating safe sex may compromise this emotional connection and trust. It is not clear why

unprotected sex with sexual partner, casual in particular, occurs in this population and future studies may explore this further.

Given the STI/HIV-related implications for condom use by individuals with SUDs, preventive programs must focus on the broader aspects of their lives. Sexual life and partnerships of individuals with SUDs are frequently overlooked in STI/HIV prevention programs targeting people with SUDs. Safer sex skills education may help at risk populations to implement safe sexual practices to avoid contracting STI, including HIV.<sup>30</sup>

To explore the sexual dynamic of Iranian men with SUD, more qualitative work needs to be done not only to identify culturally acceptable strategies which reach beyond education or

condom accessibility for this at risk population, but to explore the process through which their sexually-related discourses are formulated.

### Conflict of Interests

The Authors have no conflict of interest.

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## موانع استفاده از کاندوم و رفتارهای پرخطر جنسی در مردان ایرانی با اختلالات سوء مصرف مواد

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### مقاله پژوهشی

### چکیده

**مقدمه:** هدف از انجام مطالعه حاضر، بررسی رفتارهای پرخطر جنسی و موانع استفاده از کاندوم در مردان ایرانی با اختلالات سوء مصرف مواد بود.

**روش‌ها:** از مجموع ۱۸۰۰ مرکز فعال درمان سرپایی و درمان نگهدارنده با متادون تهران، ۶ مرکز برای این پژوهش انتخاب شد. داده‌ها (۳۰۰ مرد) به وسیله پرسش‌نامه‌های اطلاعات دموگرافیک، رفتارهای پرخطر جنسی (Risky Sexual Behavior Questionnaire یا RSBQ) و موانع استفاده از کاندوم (Condom Barriers Scale یا CBS) جمع‌آوری گردید. سپس داده‌ها با استفاده از آزمون‌های تعقیبی ANOVA و MANOVA در نرم‌افزار R مورد تجزیه و تحلیل قرار گرفت.

**یافته‌ها:** بیشتر شرکت کنندگان (۱۹۴ نفر، ۶۴/۷ درصد) سابقه حداقل یک رفتار پرخطر جنسی در یک سال گذشته را گزارش کردند. در مقایسه با شرکت کنندگان متأهل (۲۳/۱ درصد)، ۸۸/۵ درصد مجردها و ۸۷/۰ درصد مردان مطلقه سابقه رفتار پرخطر جنسی داشتند. پایین‌ترین و بالاترین نمرات سازه‌های موانع استفاده از کاندوم به ترتیب مربوط به سازه تجربه جنسی ( $0.71 \pm 2/60$ ) و سازه دسترسی به کاندوم ( $3/77 \pm 0/54$ ) بود. نتایج آزمون MANOVA تفاوت آماری معنی‌داری را بین سازه‌های موانع استفاده از کاندوم و سطح تحصیلات و وضعیت تأهل شرکت کنندگان نشان داد ( $P < 0/001$ ). بین سازه موانع شریک جنسی با رفتار پرخطر جنسی ارتباط منفی و معنی‌داری مشاهده شد ( $P = 0/003$ ).

**نتیجه‌گیری:** دینامیسم جنسی در مردان ایرانی با اختلالات سوء مصرف مواد متفاوت می‌باشد؛ بدین معنی که موانع استفاده از کاندوم در بستر تعیین کننده‌های اجتماعی-فرهنگی شکل می‌گیرد. بنابراین، فراتر از در دسترس قرار دادن کاندوم، لازم است استراتژی‌های قابل قبول فرهنگی در کلینیک‌های ایرانی در درمان‌های موجود تلفیق شود.

**واژگان کلیدی:** رفتارهای پرخطر جنسی، کاندوم، سوء مصرف مواد، عفونت‌های منتقل شونده جنسی، مردان

**ارجاع:** مرقاتی خویی عفت السادات، رضایی زاهد، شجاعی زاده داود، آزادی نامعلی، ریماز شهناز، بیات علیرضا، مؤیدی نیا سعیده، امتی ساناز، سلیمی فرحناز، کورتی جفری، کیلن تریس، محرز مینو. **موانع استفاده از کاندوم و رفتارهای پرخطر جنسی در مردان ایرانی با اختلالات سوء مصرف مواد.** مجله اعتیاد و سلامت ۱۳۹۵؛ ۹(۱): ۴۷-۴۰.

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