

## The Impact of an Educational Program on Knowledge and Attitude of Female Sex Workers in Preventing High Risk Sexual Behaviours

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### ABSTRACT

**Background & aim:** The most important risk factor for one's sexual health is high-risk sexual behavior. Implementation of educational programs has been considered as one of the most crucial interventions in the prevention and treatment of these behaviors. Therefore, this study aimed to determine the effect of an educational program on the knowledge and attitude of female sex workers toward preventing high-risk sexual behaviors.

**Methods:** This pretest-posttest, one-group study was conducted on 40 female sex workers, imprisoned in Mashhad Vakil Abad prison in 2013. Data were collected using a questionnaire including demographic characteristics, as well as knowledge- and attitude-related data. An educational program was designed after the pretest and conducted in four 70-minute sessions. Immediately and four weeks after the educational program, post-test was performed. Data were analyzed by Friedman and Wilcoxon tests, using SPSS version 16.

**Results:** A positive significant increase was found in the mean scores of knowledge and attitude of female sex workers immediately and four weeks after the program ( $P < 0.001$ ).

**Conclusion:** Considering the increased knowledge and improved attitude of female sex workers in this study, it is necessary to design and implement educational programs in prisons.

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## Introduction

High-risk sexual behavior, defined as having multiple sexual partners and unprotected sex (1), is the most important risk factor for sexual and reproductive health. In fact, globally about 2.9 million deaths (5.2%) and 91.9 million lost disability-adjusted life years (DALYs) are attributable to unsafe sex (2).

Some risk factors such as addiction, smoking, and alcoholism could predict high-risk sexual behaviors (3). In the U.S.A., AIDS and venereal diseases, as the main general health indices, are interlocked with high-risk sexual behaviors (4). Considering the rapid spread of HIV in different populations such as female sex workers and

their clients (based on HIV epidemic model in Asia), prevention of AIDS and venereal diseases is of great significance (5, 6).

According to the results of bio-behavioral monitoring in female sex workers in 2012, the average national incidence of HIV in female sex workers was approximately 4.5% (CI 95%= 2.4-8.3). Also, HIV was reported in 13% of addicted people, receiving drugs by injection. Moreover, around 30% of female sex workers used condoms in their sexual relations, while 30% had unprotected sex (7).

Reported statistics indicated poor health behaviors in female health workers. Therefore,

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in order to control HIV epidemics, it is important to develop interventions for reducing high-risk sexual relations and encouraging the use of condoms. In order to prevent high-risk behaviors, it is necessary to increase individuals' knowledge level, strengthen their beliefs, and improve their attitudes.

Knowledge is the most important factor for decreasing the prevalence of high-risk sexual behaviors (8). In fact, the more people are familiar with negative environmental stimulations, the more they try to avoid them (9). In fact, nowadays, education is considered as one of the basic human needs and a necessary means for acquiring knowledge; it is even known as one of the fundamental elements of human rights (10).

Health education is the basis and axis of every health-related activity; it is also one of the principles of health promotion (11). This type of education enables individuals to have more control over their diseases and factors influencing their health. Health education is not only a process of acquiring knowledge, but also a way to discover common values and attitudes (12).

According to World Health Organization, education is considered as one of the most fundamental interventions for the treatment of individuals, suffering from socially caused injuries. It could be also applied as a means to change people's attitudes, performance, and eventually their lifestyle (13).

As Mironski indicated (2013), insufficient knowledge acts as a barrier to using health care services and having safe sexual relations in female sex workers (14). As Kolahi (2011) showed, female sex workers have limited knowledge about the disadvantages of high-risk sexual behaviors, especially anal sex (15). Moreover, Veladez (2013) in Libya and Ramezani Tehrani (2008) have confirmed female sex workers' lack of knowledge about HIV, as well as their need for education in order to prevent high-risk sexual behaviors (16, 17).

Considering the knowledge deficit about high-risk sexual behaviors, the high rate of complications associated with such behaviors, and the necessity of education for female sex workers (due to the secrecy of their activities and lack of official health care supervision), we aimed to determine the effect of implementing

an educational program about the prevention of high-risk sexual behaviors on the knowledge and attitude of female sex workers.

## Materials and Methods

This pretest-posttest, one-group study was conducted on imprisoned women, who met the inclusion criteria. The subjects were selected via census sampling. The inclusion criteria were as follows: 1) fluency in Farsi; 2) informed consent; and 3) two months of imprisonment (at least). The exclusion criteria were as follows: 1) psychiatric disorders including depression, bipolar disorder, and attention disorder; and 2) losing more than one session of the educational program.

The sample size was calculated as 40 subjects. Data were collected using a researcher-made questionnaire including three sections: demographic data (10 questions), knowledge-related data [22 questions, graded as true (score 1), false (score 0), and don't know (score 0), with the scores ranging between 0 and 22], and attitude-related data [5 questions, scored by bipolar 7-point likert scale, ranging from useful (1) to harmful (7), pleasant (1) to unpleasant (7), and wisely (1) to unwisely (7)]. The minimum score of this section was 15 and the maximum score was 105.

The questionnaire was validated, using content validity index (CVI) and content validity reliability (CVR). This scale was read by 15 faculty members of Tehran University of Medical Sciences and Mashhad University of Medical Sciences (MUMS). Regarding the number of panel members (15 members) and considering Lawshe's criteria  $<0.49$ , CVI and CVR were calculated as 0.81 and 0.69, respectively.

Afterwards, 5 participants completed the questionnaire in order to quantitatively confirm its face validity and calculate its impact score. All the items had an impact score of  $>1.5$ , which indicated the importance of items in the questionnaire, based on participants' viewpoints. In order to qualitatively confirm the face validity of the questionnaire, 5 participants with different educational levels were interviewed to find words and phrases which were hard to grasp; the given comments were considered, as well.

The reliability of knowledge section was confirmed by test-retest. The subjects completed the questionnaire within a 10-day interval and  $r=0.84$  was calculated for the knowledge section. Reliability of attitude section was confirmed using Cronbach's alpha; twenty participants completed the questionnaire and  $\alpha$  was calculated as 0.72. In addition, for a better analysis, the participants were divided into three groups. In the attitude section, they were classified as having undesirable (15-45), relatively desirably (46-75), and desirable (76-105) attitudes.

In order to collect the data, the Ethics Committee of MUMS approved the study. After following ethical considerations, the researcher visited Vakil Abad Prison of Mashhad during official visiting hours and selected the participants, based on the inclusion and exclusion criteria. The researcher explained the aims and objectives of the study and informed consents were obtained.

The questionnaires were distributed among the subjects and were anonymously completed. The participants were assured about the confidentiality of the data. Moreover, 15-20 minute face-to-face interviews were conducted in the library. It should be noted that all the data were kept confidential and the participants could withdraw from the study at any point.

After the pre-test and analysis, an educational intervention was implemented for two groups of 20 participants. Four 70-minute sessions were held, with a 5-day interval. The educational content was as follows:

1) First session: description of the reproductive system, using lectures as well as questions and answers;

2) Second session: an introduction to different types of venereal diseases and the associated physical, emotional, social, and economical consequences, using group discussion, brain storming, lectures, scenarios, and poster presentation;

3) Third session: description of different types of high-risk sexual behaviors (e.g., extramarital sexual relations, having different sexual partners, and oral/anal sex without using condoms), using lectures, group discussion, educational movies, poster presentation, and pamphlets; and

4) Fourth session: advantages of using condoms and overcoming resistance to using condoms during sex via lecture and group discussion.

Immediately and after four sessions of the educational program, the participants completed the questionnaire related to knowledge and attitude. For data analysis, mean and standard deviation were calculated and Friedman and Wilcoxon tests were performed, using SPSS version 16.

## Results

According to the findings, the participants were  $28.75 \pm 6.0$  years old, and the majority of them (45%) had low income. As it was revealed, fathers and mothers of 50% of the subjects were workers and housewives, respectively. Overall, 16 participants (77.5%) were divorced and 16 participants (40%) used contraceptive methods. Also, 19 participants (47.5%) obtained their sexual information from their friends (Table 1).

**Table 1.** Descriptive statistics of participants

Factor	Number	Percentile
Age (years)		
20-25	14	35
26-31	14	35
32-37	7	17.5
38-44	5	12.5
Education (years)		
Primary	9	22.5
Junior high	15	27.5
High school and higher	16	40
Marital status		
Married	8	20
Divorced	31	77.5
Single	1	2.5
Income level		
Low	24	45
Sufficient	14	42.5
More than sufficient	2	12.5
Contraception Method		
Withdrawal	16	40
Condom	12	30
IUD	6	15
Oral contraceptive	4	10
Injections	2	5
Sexual information sources		
Friends	19	47.5
Satellite	11	27.5
Books	5	12.5
Health personnel	5	12.5

**Table 2.** The mean scores of knowledge and attitude before, immediately after, and four weeks after the intervention

Factor	Mean±Std. Before the intervention	Mean±Std. immediately after the intervention	Mean±Std. Four weeks after the intervention	Friedman Test	Size effect Four weeks after the intervention
knowledge	12.8±5.0	19.5±2.5	19.6±2.5	P<0.001	53%
Attitude	82.6±5.0	95.9±11.9	98.9±9.7	P<0.001	19%

**Table 3.** The mean scores of knowledge and attitude before, immediately after, and four weeks after the intervention

Factor		Before the intervention (X1)		immediately after the intervention (X2)		Four weeks after the intervention (X3)		Wilcoxon signed-rank test
		Number	Percentile	Number	Percentile	Number	Percentile	
Knowledge	Undesirable (0-7)	6	15	-	-	-	-	P X1,X2=0.001
	Relatively desirable (8-15)	15	37.5	1	2.5	-	-	P X2,X3=0.86
	Desirable (16-22)	19	47.5	39	97.5	40	100.0	P X1,X3=0.001
Attitude	Undesirable (15-45)	-	-	-	-	-	-	P X1,X2=0.001
	Relatively desirable (45-75)	1	2.5	-	-	-	-	P X2,X3=0.2
	Desirable (76-105)	39	97.5	40	100.0	40	100.0	P X1,X3=0.001

In total, 29 participants (72.5%) had a prior history of addiction, and 18 women (45%) had attempted to escape from the prison. There was a significant difference in the mean and standard deviation of knowledge and attitude scores before, immediately after, and four weeks after the educational program, based on Friedman test ( $P<0.001$ ). The effect size was 53% for knowledge and 19% for attitude four weeks after the intervention, which were considered moderate and weak, respectively, based on Cohen's criteria (1988) (18) (Table 2).

Before the educational program, the knowledge score of 47.5% of participants and the attitude score of 97.5% of participants were at a desirable level; However, after the program, the scores of all participants were desirable. According to Wilcoxon test, there was a significant difference in knowledge and attitude scores before, immediately after, and four weeks after the program ( $P<0.001$ ) (Table 3).

## Discussion

In the present study, a significant difference was found in the knowledge score between the pre- and post-intervention periods; the pure effect of the intervention was estimated at 53%. In Peterson's study (2005), the effect of intervention on the knowledge score of female sex workers was significant after three months, and the pure effect of intervention on knowledge was 19.5%.

In the mentioned study, the knowledge-related questionnaire consisted of 5 items. Before the intervention, the participants had sufficient knowledge (level=4.1), which improved even further after the intervention (level=4.9); i.e., although the participants had sufficient knowledge, they acquired more comprehensive information after the intervention (19).

According to Sakha (2013), the pure effect of the intervention was 42% in female sex workers after two months of intervention. The obtained results showed a significant increase, compared to the pre-intervention period (20). Based on the above-mentioned results, education is effective for high-risk groups. Also, more attention should be paid to providing valuable information for these groups, since the prerequisite for correcting common misbeliefs and negative attitudes is knowledge acquisition (21).

According to the present study, a significant difference was found in the attitude score between the pre- and post-intervention periods. In Larsen's study (2004), women, who participated in the educational sessions, had a more desirable attitude, compared to the control group after six months; the effect of intervention was estimated at 31% in the follow-up period (22). Moreover, in Karimi's study (2012), education led to a significant change in the attitudes of addicted men toward AIDS and HIV prevention; the pure effect of intervention on attitude was 67% after two months.

In studies by Larsen and Karimi, the pure effect of intervention was more than that reported in the present study, since the attitude score in 98.5% of participants was desirable before the program; therefore, the effect of intervention was less significant and somehow poor, based on Cohen's criteria in the current study. However, attitude improvement could be justified given the direct association between attitude and knowledge; therefore, increased knowledge was followed by attitude improvement (23).

As all of the above-mentioned studies indicated, increased knowledge score was accompanied by increased attitude score. It should be mentioned that all these studies applied similar methods such as group discussion for attitude improvement. However, Martiniuk's study (2003) showed that sex education had no effect on adolescents' attitudes toward sexually transmitted diseases (24).

This discrepancy in the results could be related to variations in sample selection and differences between adolescents and adults. In fact, adolescents pay less attention to their health as they think they are not vulnerable to diseases; as a result, they avoid healthy behaviors. Therefore, this feeling of invulnerability, known as optimistic bias, should be considered when adolescents are being studied (25).

The discrepancies between the results of different studies could be also related to differences in teaching methods, use of non-interactive, non-participatory methods, and implementing repetitive educational programs, regardless of individuals' educational needs. All these factors could lead to insignificant differences in the attitude scores of test and control groups. Therefore, if teaching methods and media are compatible with the objectives and characteristics of the study, more useful results can be obtained.

In the present study, almost half of the participants obtained desirable knowledge scores before the intervention, and after the program, all the participants could get desirable scores. Hajabdolbaghi (2007), by evaluating the sexual behaviors of female sex workers, showed that they are well-informed about AIDS, which is in agreement with the results of the present study (26).

However, Vian (2014) showed that female sex workers were less informed about the prevention and transmission of venereal diseases, compared to others, although the difference was insignificant (27). This difference could be related to cultural differences, as well as differences in educational level. In Vian's study, 41.2% of the participants had continued their education till sixth or ninth grade. However, in the present study, 40% of women had high school diploma (or more), which could justify the difference in the knowledge scores of these two groups.

In the present study, although almost all participants (98.5%) had positive attitudes before the intervention, they all obtained desirable attitude scores after the intervention. In Karimi's study (2012), conducted on addicted men in Zarandieh city, 58.3% of participants had an undesirable attitude toward AIDS preventive methods; after two months, this rate reached to 45.48%, which is different from the results of the present study.

The observed difference in the obtained results could be related to the implementation of the educational program (5 sessions a week in Karimi's study). On the other hand, 73.3% of participants were junior high students or first graders of high school (23), while in the present study, 40% had high school diploma (or more). Also, in the present study, the educational sessions were held with a 5-day interval, since intensive courses result in less efficient learning, compared to sessions with proper intervals (28).

## Conclusion

Since the implemented educational program could improve the knowledge and attitude of female sex workers in the current study, it is necessary to design and implement educational programs in prisons and rehabilitation centers.

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