

Prisoners' knowledge of HIV/AIDS and its prevention in Kerman, Islamic Republic of Iran

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معارف السجناء حول الإيدز والعدوى بفيروسه والوقاية منه في كرمان بجمهورية إيران الإسلامية
فاطمة نخاعي

الخلاصة: أجريت هذه الدراسة لتقييم معارف السجناء حول الإيدز والعدوى بفيروسه في كرمان. أشار التحليل إلى أن عينة السجناء (وعددهم 350 سجيناً) لديها معارف جيدة نسبياً حول الإيدز والعدوى بفيروسه وبطرق انتقاله. ومع هذا، كانت معرفتهم بالوقاية من الإيدز والعدوى بفيروسه محدودة. وقد كانت المعارف العامة للرجال بالإيدز أدنى بشكل ملموس من معرفة النساء به. وكان الأقل معرفة بطرق انتقال العدوى هم السجناء الأميون والأشخاص في عمر 46 سنة أو أكبر. وعلاوة على ذلك، كانت معرفة السجناء الأميين حول الوقاية من الإيدز والعدوى بفيروسه أقل من غيرهم بكثير. لذلك ينبغي تقييم مواقف وممارسات السجناء وتطبيق برامج تعليمية لتغيير السلوك العالي الخطار فيما يتعلق بالإيدز والعدوى بفيروسه.

ABSTRACT Knowledge of prisoners regarding HIV/AIDS in Kerman was evaluated. Analysis indicated that the sample ($n=350$) of prisoners had relatively high knowledge about HIV/AIDS and its modes of transmission. However, they had a lower level of knowledge about HIV/AIDS prevention. The overall knowledge of men about AIDS was significantly lower than women. Persons aged 46 years and older and illiterate inmates had the least knowledge about modes of transmission. In addition, the knowledge of illiterate prisoners about HIV/AIDS prevention was significantly lower than others. Evaluation of attitudes and practices of prisoners and implementation of educational programmes regarding HIV/AIDS are suggested.

Connaissances des prisonniers en ce qui concerne le VIH/SIDA et sa prévention à Kerman (République Islamique d'Iran)

RESUME Cette étude a été réalisée pour évaluer les connaissances des prisonniers en ce qui concerne le VIH/SIDA à Kerman. L'analyse a indiqué que les prisonniers constituant l'échantillon ($n=350$) connaissaient relativement bien le VIH/SIDA et ses modes de transmission. Toutefois, leurs connaissances concernant la prévention du VIH/SIDA étaient plus faibles. Les connaissances globales des hommes sur le SIDA étaient significativement moindres que celles des femmes. Les prisonniers âgés de 46 ans et plus et les prisonniers analphabètes étaient ceux qui avaient le moins de connaissances au sujet des modes de transmission. De plus, les connaissances des prisonniers analphabètes en ce qui concerne la prévention du VIH/SIDA étaient considérablement moindres que celles des autres prisonniers. L'évaluation des attitudes et pratiques des prisonniers et la mise en place de programmes éducatifs pour modifier les comportements à haut risque en ce qui concerne le VIH/SIDA sont proposées.

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Introduction

It has been estimated that 42 million people were living with HIV at the end of the year 2002, with young people being the group most affected and women being the more vulnerable [1,2]. Many infected people do not know that they are carriers and millions of people have low knowledge of HIV/AIDS or do not know how to protect themselves against infection [1,2]. There were 7.2 million people living with HIV in South-East Asia in 2002, and the first mode of transmission was through sexual contact and the second through intravenous (IV) drug abuse [3]. In the Islamic Republic of Iran, it has been estimated that about 35 000 people are living with HIV [4]. Only 4424 cases are recognized, of whom 95.6% are men and 4.4% are women, and 66% are IV drug addicts. Thus the commonest mode of transmission is IV drug abuse [4].

Some studies have indicated that high risk behaviours are common among prison inmates [5–9]. One study at a prison revealed that many inmates knew the modes of AIDS transmission, but 85% of them were IV drug users and 43% of addicts were using shared syringes [10]. In another prison, there were high rates of history of drug and alcohol use among prisoners [11]. Education on HIV/AIDS and its means of prevention is thus essential among such groups in order to control the disease.

Since prisoners are a high risk population, many studies have assessed their knowledge level. It has been reported that the average knowledge scores about HIV-infected people were lower among prison inmates than in the general population [12]. In one prison, the highest knowledge scores were found for those aged 15–16 years, and women had a higher mean

knowledge score than men [13]. Inmates usually are poorly educated, and one study showed a high school sample to be more knowledgeable than incarcerated youths [14].

Since little is known about the knowledge of prisoners regarding HIV/AIDS in the Islamic Republic of Iran, the objectives of this study were:

- To identify the knowledge level of prisoners about HIV/AIDS, its modes of transmission and prevention.
- To determine the relationship between the prisoners' knowledge level and characteristics such as age, sex, education and length of stay in prison.

Methods

The study sample consisted of 350 prisoners selected from the only prison in the city of Kerman. Since the prison is partitioned into eight sections according to the type of crime, the members of the sample were chosen by stratified sampling. Data were collected by a questionnaire that was developed from an earlier questionnaire used to evaluate the knowledge of some students and teachers at schools [15]. The questionnaire included three sections with items about overall knowledge of HIV/AIDS, its modes of transmission and prevention. Also personal characteristics, such as age, sex, education and the length of imprisonment were determined. All of the prisoners had been exposed to one of various informational sources (e.g. instructors in prison, radio, television). Illiterate prisoners answered the questions by instructing a prison warden. Knowledge was calculated by summing correct answers and dividing by the total number of questions in each section and multiplying by 100. The mean

was then calculated for all persons in the sample. Frequency of correct answers was also calculated and differences between prisoners according to personal characteristics were tested by *t*-test, analysis of variance and Kruskal–Wallis test.

Results

The total response rate was 97%. Women made up 36.2% of the sample and men 63.8%, and the mean age was 33 years. Prisoners were divided into four age groups: under 25 years old (26.3%), 25–35 years (40.3%), 36–45 years (22.1%), and 46 years and over (11.3%). Participants with an education level below high-school diploma level represented 49.8% of the sample and illiterate prisoners constituted 27.0%, while those with a high-school diploma and a graduate degree represented 18.3% and 4.8% respectively.

In answering the question “Do you know about AIDS?” many prisoners (73.4%) answered positively. Among informational sources, they had received a lot of information from instructors in prison (63.8%). Six items were used to evaluate the overall knowledge about HIV/AIDS (Table 1). Nearly all prisoners (97.7%) knew that IV drug users were at high risk, and almost half of them (44.8%) had a knowledge score of 100. The mean index was 86.7 (SD = 15). Analysis indicated a difference between the sexes. Women had a mean score of 90.4 and men had a mean score of 84.6 ($t = 3.36$, $P = 0.001$).

Table 2 shows the prisoners' knowledge about modes of transmission of HIV. The table shows the percentages of correct answers and mean scores in subgroups of prisoners. Analysis of knowledge scores indicated that 21.5% of the participants obtained a score of 100 and the mean was 84

Table 1 Frequency of correct answers and mean general knowledge scores regarding HIV/AIDS by subgroups of prisoners

Item	% of correct answers	
AIDS has a vaccine	3.5	
AIDS has treatment	5.0	
Intravenous drug users are at risk	97.7	
AIDS is limited to homosexuals	37.1	
AIDS can threaten our society too	95.6	
A person with HIV infection can be recognized by appearance	21.8	

Characteristic	Mean score	P-value
Sex		0.001*
Female	90.4	
Male	84.6	
Age (years)		0.17
≤ 25	88.4	
26–35	88.8	
36–45	84.5	
≥ 46	83.8	
Education		0.26
Illiterate	83.9	
Below high-school diploma	88.2	
High-school diploma	85.0	
Graduate degree	88.9	
Length of prison stay (months)		0.1
≤ 12	88.6	
13–24	84.8	
25–36	85.6	
37–48	86.7	
49–60	95.4	
≥ 61	81.3	

*Significant.

(SD = 14.7). There were statistically significant differences between age group and education level for knowledge scores. Prisoners aged 46 years and older had the lowest mean score of 75.6 ($F = 6.2$, $P =$

Table 2 Frequency of correct answers and mean knowledge scores for modes of HIV transmission by subgroups of prisoners

Item	% of correct answers
By blood transfusion	98.3
Intercourse with infected homosexuals	99.1
Intercourse with infected heterosexuals	84.3
Sharing syringes	95.2
Sharing plate and spoon	79.4
Sharing shaving devices	96.4
By tattooing	97.9
By contaminated dentistry tools	94.3
Maternal transmission	94.3
By breastfeeding	77.7
Mosquito bites	51.7
Touching and kissing patients	85.7
Eating contaminated foods	72.6
Breathing contaminated air	83.7
Through patient's clothes	71.6

Characteristic	Mean score	P-value
Sex		0.07
Female	86.9	
Male	83.4	
Age (years)		0.0007 ^a
≤ 25	88.6	
26-35	85.9	
36-45	82.6	
≥ 46	75.6	
Education		0.001 ^a
Illiterate	77.7	
Below high-school diploma	87.1	
High-school diploma	84.6	
Graduate degree	91.4	
Length of prison stay (months)		0.06
≤ 12	86.2	
13-24	82.0	
25-36	79.5	
37-48	88.8	
49-60	84.7	
≥ 61	77.6	

^aSignificant.

0.0007) and illiterate inmates had the lowest mean score of 77.7 ($K-W = 15.16$, $P = 0.001$).

Fourteen items (14) were used to estimate the knowledge of HIV/AIDS prevention (Table 3). Only 3.4% of prisoners got the highest score of 92.9 and the mean was 67.5 ($SD = 10$). Statistical differences were also found between educational level. Illiterate prisoners had the lowest mean score of 65.2 ($K-W = 20.2$, $P = 0.0002$).

Discussion

The most important finding in this study was a relatively high level of knowledge prisoners had about HIV/AIDS and its modes of transmission, but lower knowledge about HIV/AIDS prevention. Another positive finding was that prisoners under 26 years of age had a significantly high mean score of knowledge about modes of transmission. Despite this, the overall knowledge about HIV/AIDS and its prevention was the same among different age groups. In some studies, it has been documented that adolescent prisoners had significantly poorer knowledge about HIV/AIDS than other age groups [12,16]. In earlier studies, it has been shown that new prisoners had a low level of knowledge [17,18], but in the present study there was no significant difference between inmates according to their length of imprisonment. This might be due to a fairly high knowledge in Iranian society. Also, a significant difference was found between prisoners depending on their level of education. Prisoners with a lower level of education had low knowledge scores about HIV/AIDS transmission and prevention. It is essential therefore to prepare more educational programmes for illiterate persons and those with a low level of education.

Table 3 Frequency of correct answers and mean knowledge scores for HIV/AIDS prevention by subgroups of prisoners

Item	% of correct answers	
Isolation of infected persons from society	12.5	
Public health education	96.0	
Protection from imported contaminated blood	97.6	
Prohibition of unusual sexual behaviours	97.9	
Being loyal to spouse	91.3	
Using disposable medical devices	94.6	
Education of intravenous drug users	93.6	
Contraception for infected women	97.3	
Recognizing patients or infected persons	92.5	
Immunization by vaccine	26.9	
Control people coming from infected areas	96.7	
Protection from imported contaminated foods	15.6	
Drug treatment in infected areas	13.3	
Admitting AIDS patients to hospital	17.0	
Characteristic	Mean score	P-value
Sex		0.2
Female	66.5	
Male	68.0	
Age (years)		0.4
≤ 25	65.7	
26–35	68.5	
36–45	67.9	
≥ 46	66.7	
Education		0.0002 ^a
Illiterate	65.2	
Below high-school diploma	68.8	
High-school diploma	67.2	
Graduate degree	74.3	
Length of prison stay (months)		0.95
≤ 12	66.9	
13–24	67.5	
25–36	67.7	
37–48	67.3	
49–60	67.9	
≥ 61	65.1	

^aSignificant.

IV drug use is one of the most significant modes of HIV transmission in the Islamic Republic of Iran [4]. It is very possible that a number of our participants were IV drug abusers. However, 95.2% of the participants knew that sharing syringes is one of the modes of HIV transmission. The usage of shared syringes was reported among prisoners in Spain even though they knew that it was a significant mode of transmission [10]. It is essential to design educational programmes about the dangers of abusing drugs, especially IV drugs, to alter attitudes and practices of inmates to avoid addiction and the use of shared syringes. Sexual transmission is the other important means of transmission in the country [4]. In this study, prisoners had a high level of knowledge about transmission through intercourse with infected homosexuals and heterosexuals. They also knew that avoidance of unusual sexual behaviours and being faithful to the one's spouse could help prevent infection. Some studies have reported a high level of knowledge among prisoners about HIV transmission through sexual behaviour, but at the same time have reported a high degree of practising risk behaviours among them [10,12]. This suggests that it is vital to provide educational programmes to alter high-risk behaviour inside and outside of prisons.

There was a significant difference in overall knowledge of HIV/AIDS between men and women. Women were more knowledgeable than men and this has also been shown in another study [13]. However, knowledge of men and women about modes of transmission and prevention was identical. According to the World Campaign against AIDS in December 2000, men were targeted because they are more at risk [19]. In the Islamic Republic of Iran more cases of AIDS are found among men [4] so spe-

cial educational programmes must be designed for this group.

Information and education are vital in the fight against HIV/AIDS. Therefore, informational sources (schools, television, radio) must provide more educational programmes about this topic in order to change high-risk behaviour in prisons, schools and among the general public. This study did not investigate attitudes and practices of inmates regarding AIDS and there-

fore it is recommended that further studies be conducted to assess these aspects.

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