



(RESEARCH ARTICLE)



Knowledge and awareness of HIV/AIDS among male prisoners in Kuwait

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International Journal of Science and Research Archive, 2023, 08(02), 244–251

Publication history: Received on 13 February 2023; revised on 22 March 2023; accepted on 24 March 2023

Article DOI: <https://doi.org/10.30574/ijrsra.2023.8.2.0247>

Abstract

Background: Prisoners are considered as one of the high-risk populations for the transmission of human immunodeficiency virus (HIV) infection. Targeting this group is one of the strategies to reduce the incidence of acquired immune deficiency syndrome (AIDS) in the community.

Subjects and Methods: A cross-sectional study was conducted among male inmates in Kuwait's prison by administering three sets of questionnaires to assess the level of their knowledge and awareness about the mode of transmission of HIV/AIDS, their risky personal behavior that may lead to HIV infection, and the presence of any negative attitudes and stigmatization towards HIV infected individuals.

Results: The study included 123 male inmates, with a mean \pm SD age of 30.9 ± 8.4 years. Most participants had a good general knowledge about the mode of transmission of HIV/AIDS including sharing contaminated syringes, but with misconception regarding handshaking and kissing. On the other hand, risky personal behaviors such as having unprotected sex and increased number of extramarital relationships (66%), and the avoidance of the regular use of condoms (75%) was high. The younger age group (< 35 years) had more extramarital relationships than those > 35 years (71.4% Vs. 46.4%; $p=0.016$). There was a perceived attitude of stigmatization among inmates towards people living with HIV.

Conclusions: This vulnerable group of prisoners, especially young adults need educational programs to improve knowledge about transmission of HIV, and to correct and change their risky personal behaviors to protect them and the community against HIV transmission

Keywords: HIV/AIDS; Kuwait; Prisoners; Knowledge; Awareness; Personal behavior; Extramarital relationships; Safe sex; Discrimination; Stigmatization

1. Introduction

The estimated worldwide prevalence of human immunodeficiency virus (HIV) infection and/or acquired immune deficiency syndrome (AIDS) in prisons is 3% [1]. The reported rates of HIV infection among *prisoners* in many countries are significantly *higher than* those in the general *population* [2]. Prisoners and the prison community cannot be viewed in isolation from the general population as far as healthcare provisions are concerned, as most prisoners do leave prisons and return to the society at some point of time. In addition, many additional persons including the staff, healthcare workers, volunteers and visitors to the prisons live and work amongst prisoners, or visit the prisons on a regular basis [3]. Lack of knowledge and awareness among prisoners about the risk of contracting and transmitting HIV

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coupled with the absence of protective measures and non-seeking of proper medical care increase their risk for HIV infection [3].

Though Kuwait has a low reported prevalence of HIV/AIDS cases, all inmates are screened for HIV infection. To the best of our knowledge, no published studies have been conducted among prisoners in Kuwait focusing on their knowledge and awareness of HIV/AIDS, sexual practices, use of condoms, pattern of seeking treatment and the misuse of drugs. In many conservative communities, people do not reveal the truth about their risky behaviors such as extramarital relationships and/or substance abuse because of the fear of stigmatization. This results in the creation of a barrier towards HIV testing and taking early appropriate treatment, leading to further spread of HIV infection in the community. Prison inmates have therefore, been identified as a key population in the worldwide strategy to control the spread of HIV/AIDS [4].

Aim of the study

This study aimed to assess the level of knowledge and awareness relating to HIV/AIDS among prisoners in order to understand their personal behavior including extramarital relationships, use of condoms, and drug misuse leading to HIV transmission. The study also aimed at identifying the presence of discrimination and stigmatization towards HIV infected people.

2. Subjects and Methods

The study was conducted among inmates from Kuwait's prison on November 2017 and 123 male inmates participated. The study protocol was approved by the institutional ethics committee. The study looked at male prisoners only because the approval of research involving prisoners from Prison Security Administration was for male prisoners only. The survey included three sets of different questionnaires prepared by the National AIDS Control Committee (NACC) in Kuwait, in order to address the issues related to a strategic plan to control HIV/AIDS in Kuwait. The questionnaires were not pretested by the research group on prisoners but NACC had done pretesting in other study groups earlier. The questionnaires were conducted by a group of healthcare workers, including doctors, nurses, and social workers. A verbal consent was obtained from all participants, and printed questionnaire was administered to the study subjects. The questionnaire was anonymous and confidentiality of the information provided was maintained for all responses. The first questionnaire consisted of six questions about HIV awareness; the second questionnaire had five questions related to their personal behavior as regards to HIV infection; and the third questionnaire was related to their attitudes towards HIV infected persons so as to detect the presence of discrimination and stigmatization towards them.

2.1. Statistical Analysis

The data management, analysis and graphical presentation were carried out using the computer software 'Statistical Package for Social Sciences, SPSS version 25.0' (IBM Corp, Armonk, NY, USA). The quantitative variable age was first ascertained for normal distribution assumption, applying the Kolmogorov-Smirnov test, and has been presented as mean \pm standard deviation (SD) and range. Chi-square or Fisher's exact test was applied to find any association or significant differences between categorical variables, and Z-test to compare two proportions. The two-tailed probability value ' p ' $<$ 0.05 was considered statistically significant.

3. Results

A total of 123 male respondents participated in the survey. The mean age was 30.9 ± 8.4 years ranging between 19–60 years, and maximum (30.4%) being in the age group 35–44 years (Table 1). Almost 60% were Kuwaitis. Around 71.4% had not studied beyond secondary school whereas 16.5% had university level education. As regard to marital status, 45.2% were unmarried followed by married (33.9%) and divorced or widowers (20.9%).

Table 1 Demographic characteristics of Respondents (N=123)

Characteristic		
Age (years)	No.	%
< 25	26	23.2
25–34	29	25.9
35–44	34	30.4
≥45	23	20.5
Mean ± SD (Range)	30.9 ± 8.4	(19–60)
Nationality		
Kuwaiti	73	59.8
Non-Kuwaiti	49	40.2
Education		
School (< Secondary)	53	44.5
School (≥ Secondary)	32	26.9
Diploma	18	15.1
University Degree	16	13.5
Marital Status		
Married	39	33.9
Bachelor	52	45.2
Divorced/Widower	24	20.9

3.1. Knowledge and awareness

As regard to awareness on mode of HIV transmission, 94.3% stated sharing syringes by drug users as a possible mode of transmission, and 92.7% reported sexual activity without protection (Table 2). There were some misconceptions among inmates, Shaking hands with affected individuals was stated by 91%, whereas only 34.4% attributed kissing as a mode of HIV transmission. About 85.4% of respondents believed that an infected person could live with HIV symptoms undetected for many years. Nearly 87.6% knew about at least two out of three methods of protection from HIV/AIDS— not sharing needles, avoiding extramarital relations, or use of condoms. Almost all prisoners aged 35 years and above believed that “HIV is transmitted by handshakes” and their number was significantly higher than those below 35 years, (100% Vs. 87%; $p=0.043$). Awareness about whether “HIV is transmitted by kissing” was significantly low in both age groups even though the older groups were more aware of this mode of transmission of the disease (50% Vs. 30%, $p=0.05$).

Table 2 Knowledge and awareness of respondents about HIV/AIDS

HIV Awareness	Yes N (%)	No N (%)
Transmitted by handshakes	111 (91.0)	11 (9.0)
Transmitted from normal kissing	42 (34.4)	80 (65.6)
Transmitted from sharing needles by drug users	115 (94.3)	7 (5.7)
Transmitted through sexual relationships without protection	114 (92.7)	9 (7.3)
Infected person can live with HIV symptoms for many years	105 (85.4)	18 (14.6)
Knew two ways of protection from HIV	99 (87.6)	14 (12.4)

3.2. Personal behavior and sexual practices

During the survey on the personal behavior and sexual practices that might lead to HIV/AIDS, 78 (66.1%) participants gave a history of extramarital relationships. Of these 42 (67.5%) were heterosexual, 10 (13%) homosexual, and 15 (19.5%) bisexual. Relatively a large number of prisoners (50, 69.4%) gave a history of using condoms during extramarital relationship (Table 3). As regard to number of sexual partners in the past 12 months, 78 (66.1%) stated that they had more than one relationship—27 (43.6%) with 1–2 partners, 12 (19.4%) with 3–5 partners and 23 (37.1%) with 6 or more. Also, the younger age group, < 35 years had more extramarital relationships than those above 35 years (71.4% Vs. 46.4%; $p=0.016$). Those with university education engaged in significantly less extramarital relationships compared to those without university education (43.8% Vs. 69.4%; $p=0.045$). Majority (82, 69.5%) did not use euphoric or intravenous (IV) drugs and the use of such agents was found to be significantly higher among those without university level education compared to university educated (33.3 Vs 6.7%; $p=0.035$).

Table 3 Personal behavior and sex practices of respondents

Behaviour and practices	Yes	No
	N (%)	N (%)
Have extramarital relations	78 (66.1)	40 (33.9)
If yes, the type of extramarital relations		--
Heterosexual	42 (67.5)**	
MSM	10 (13.0)	
Bisexual	15 (19.5)	
Number of sexual partners in last 12 months		--
1–2	27 (43.6)	
3–5	12 (19.4)	
> 6	23 (37.1)	
Using euphoric or IV drugs	36 (30.5)	82 (69.5)
Use condom during extramarital relations	50 (69.4)*	22 (30.6)

*including sometimes; **percent from those having extramarital relations (n=77)

3.3. Discrimination and stigmatization

More than 60% of the participants would not buy vegetables from a seller with HIV or avoid travelling with individual with HIV, while equal (50%) number of the participants agreed and disagreed on the question of “Do infected person need be isolated?” (Table 4).

Table 4 Respondent’s attitude towards discrimination and stigmatization of HIV infected persons

Attitude	Yes	No
	No (%)	N (%)
Buys vegetables from a HIV infected seller	43 (36.1)	76 (63.9)
Travels together with a HIV infected person	45(37.8)	74 (62.2)
Does infected person need to be isolated?	59 (50.0)	59 (50.0)

4. Discussion

Prisons concentrate great numbers of people living with HIV and at-risk populations, while prisoners comprise one of the least represented populations in national HIV prevention strategies worldwide [3]. Evidence from global studies indicates that most prisoners are eventually released into the general population and return to their communities [3]. Testing prisoners for HIV status, educating detainees including sexual offenders routinely about the adverse effects of

their promiscuity and unprotected sex on people in their community and imparting knowledge about transmission of and protection from HIV/AIDS are not universal practices. Consequently prison inmates are a potential link for transmission of HIV to the general population irrespective of whether they contract infection with HIV outside or inside the prison [5].

There are some previous studies that measured knowledge and awareness about HIV/AIDS among prisoners. O'Mahony and Barry assessed HIV-positive Irish prisoners about their psychological attitudes, knowledge of risk behavior and actual past risk behavior [6]. A major observation was that 65% of the prisoners admitted that they had put others at risk of HIV. This study concluded that even with a high level of knowledge about the basic facts about AIDS, there were a significant number of misapprehensions to questions concerning disease transmission for example, by touch and the preventive effectiveness of avoiding drug misuse. The result of another study done in Durban (South Africa) by Shanta Singh to assess the awareness of HIV/AIDS among prison inmates indicated that the internees had only a superficial understanding of HIV/AIDS; the prevalence of HIV/AIDS was high and the conditions of the prison were conducive to propagation of the virus [7]. Thus the general awareness about HIV/AIDS and its mode of transmission vary among nations.

Testing prison inmates for HIV is a regular practice in Kuwait unlike most other countries. In 2016, the prevalence of HIV infection in Kuwait's prison was as low as 0.3% as documented by the screening HIV tests [8]. To the best of our knowledge, this is the first study in Kuwait that surveyed the pattern of sexual behavior and level of knowledge about HIV/AIDS among male prisoners. A significant majority (90.6%) of participants were young adults between 19–45 years, considered as the vulnerable age group. The educational status of the study population was modest as a large number of participants did not finish high school education (44.5%) and only a few had secondary school (26.9%) or a higher level of education (28.6%). Targeting the educationally underachievers is thus a priority in the preventive policies for HIV in the local community.

4.1. Knowledge about mode of transmission

Despite a lower level of formal education, majority of prisoners had reasonable cognizance about HIV/AIDS in general and its mode of transmission. A substantial number of the prisoners (94.3%) believed that sharing needles is a major source of HIV infection. Eshrati et al also had noted similar observation in a study among male Iranian prisoners [9]. In a study done in 2012 on Taiwanese male inmates, there was low level of knowledge about safe sex methods and HIV transmission routes, but they had better knowledge about sharing needles as means of transmission [10]. It is heartening to note that the majority of Kuwaiti prisoners (91%) believe that HIV spreads by handshaking. This misconception was common in the studies from Iran, Nigeria and South Africa [11]-[13]. Prisoners whether infected or not had a meager knowledge that unsafe sexual practices are important modes of transmission of HIV infection. Thus they constitute a potential risk for the spread of the disease in any society. It is equally important to clear the misconceptions about the mode of transmission of HIV.

4.2. Modes of transmission

Zimmerman SE et al assessed AIDS knowledge level among 108 inmates in Pennsylvania prison in USA, and noted that they were quite knowledgeable about established routes of HIV transmission [14]. However, there was considerable confusion about unlikely routes of transmission and especially about behaviors causing casual contact. In a more detailed study, Power K et al interviewed 559 inmates from eight Scottish prisons using a 48-item knowledge questionnaire. This study concluded that Scottish inmates were highly knowledgeable and aware about basic high risk sexual and drug behavior [15]. They knew that the virus might be transmitted by sexual contact. They were also aware of most methods of reducing the risk of transmission. However, many believed it safe to share items of injecting equipment and there was uncertainty about the effectiveness of sterilizing agents (e.g., bleaching solutions) for injecting equipment. Such detailed studies need to be conducted in Kuwait prisons too.

4.3. Extramarital relationships

One of the positive observations in this study was that Kuwaiti prison inmates in general had sufficient information about the importance of extramarital relationships and unsafe sex practices in spreading HIV/AIDS. A large majority (92.7%) of the prison inmates were aware that extramarital relationships without adequate protection are a potential source of infection. However a matter of concern was that most inmates (85.4%) believed that infected persons could remain symptomless for a very long time. Despite the knowledge, two-thirds of the study population (66.1%) admitted to having extramarital relationships. These areas need emphasis in any program to improve the knowledge-attitude-behavior of high-risk populations.

4.4. Awareness about safe sex

Inculcating awareness about the simple and easy safe sex methods especially in vulnerable population is crucial in any preventive health care program. Contrary to popular belief, many of the at-risk population is not be aware of the simple practical guidelines for safe sex popularized among lay public. Our study points to these lacunae in the knowledge of prisoners in Kuwait. Many prisoners were able to describe at least two methods of protection from HIV, which included avoidance of extramarital relationships, use of condoms, and non-sharing of needles or instruments like razors. Turnbull PJ et al also noted in a study of 452 ex-prisoners in England that 93% could correctly list two methods of HIV transmission, 18% knew at least one method of transmission, and 13% could name three methods [16]. However they might not be well-versed in all aspects of sexual intimacy and HIV transmission. Unfortunately, the knowledge of our study group was poor in one aspect (65.6%) that normal kissing could be a source of infection.

4.5. Prisoner to prisoner transmission

Apart from the fact that HIV/AIDS can originate from the prison, there might be instances where prisoners bring HIV into the prison by engaging in the same risky behavior outside the prison prior to incarceration [17], [18]. Low prevalence of HIV in Kuwait has been attributed to the region's resilient religious and cultural practices, which discourage extramarital relationships. As a result of social disapproval of extramarital relationships, many people avoid such behavior but we were surprised that two-thirds of the study population (66.1%) admitted to having extramarital relationships. A recent systematic review of health service statistics and survey data related to HIV and men who have sex with men (MSM) in the Middle East and North Africa (MENA) region reveals that HIV epidemics are emerging in several countries, with a prevalence reaching up to 28% among certain MSM groups [19]. Just over two-thirds of our study population was heterosexual in sexual orientation; yet there are smaller groups who are bisexual or homosexual. These aspects need to be thoroughly studied.

4.6. Partners in sex

Another concern is the range of sexual partners in any vulnerable population. It was startling to note the multiplicity of sexual partners among male Kuwaiti prisoners. During the previous 12 months, barely one-third had revealed having extramarital relations with a sole partner, but nearly two-third had 2 to 5 or more partners. The younger the age group, the higher was the probability of having sex relationships with more than one mate. Prisoners who were < 35 years had more sex relationships than those above 35 years (71.4% vs. 46.4%, $p=0.016$). This is another area where education might help. These areas need to be strengthened in any awareness program.

4.7. Educational status

It is generally believed that HIV/AIDS is common among the educationally backward and underachievers. Educational status had a bearing on the nature and number of sex relationships, as those having education below university level had significantly higher extramarital relationships than those who were university educated (69.4%vs 43.8; $p=0.045$). These observations again points towards sex education being a major priority in holistic preventive approaches.

4.8. Safe sex and condom use

According to WHO, condoms when used correctly and consistently, are highly effective in preventing HIV and other sexually transmitted infections [20]. The prevalence of condom use during sex varies worldwide. A study from Moscow had reported that 44% of the respondents used condoms regularly [21],[22]. The participants in our study were not very conversant with condom use and protection from HIV infection. Only 25% reported using condoms constantly, and nearly 44% were using condoms infrequently or not at all. This is another area that could be taken up by policy planners.

4.9. Drug abuse and HIV transmission

A high proportion of prisoners around the world are sentenced for drug-related crimes, including drug trafficking [14]. Injecting drugs with contaminated equipment accounts for the largest number of HIV cases in prisons on a worldwide basis [18]. Reported usage of injectable drugs was relatively low in this study with 69.5% of the prisoners reporting non-usage of injectable drugs or euphoric medications while nearly 30.5% indicated that they avoided this risky behavior. This area needs further research inputs.

4.10. Stigmatization among prisoners

People living with HIV or AIDS (PLWHA) who are incarcerated may fear a double stigmatization for their HIV status as well as being a prison inmate [23]. This study also revealed similar negative attitudes, which denotes discrimination and stigmatization towards HIV infected persons. The type of stigmas in the society may vary. Significantly large number

of prisoners (63.9%) would refuse to buy vegetables from an HIV infected seller, and nearly (62%) stated that they would not travel together with an HIV infected person. Also, nearly 50% of the inmates believed that an infected person must be isolated, similar to the observations made in the study done in Ogbomoso Prison in West Nigeria, where 65% of the respondents believed that PLWHA should be avoided [12].

4.11. Limitations of the study

The observations made in this study need to be verified in a larger number of study population. The conflicting data revealed in different studies may have been due to different strategies used to measure awareness and knowledge. Further characteristics of the different inmate populations may also contribute to the variability in results especially the amount and source of inmate HIV/AIDS education.

5. Conclusion

Though the awareness and knowledge about HIV/AIDS among prisoners was high, they lack in depth knowledge about methods of transmission. The prevalence of risky personal behavior such as extramarital relationships and avoidance of safe sex methods is high. Most of the prisoners exhibited discrimination and stigmatization towards HIV infected person.

To plan the health education programs on HIV/AIDS, especially among young adults, it is important for educators and health planners to be aware of the gaps in knowledge of inmates. With such understanding, appropriate initiative behavior can be taken to target the group in a specific manner, not only to reduce HIV/AIDS transmission but progress towards reducing discriminating attitudes.

Compliance with ethical standards

Acknowledgments

We would like to offer special thanks to Dr. Mona Mohammed Abdu Elhafiz Hussein; who; although no longer with us; continues to inspire us by her example and dedication to the patients she served over the course of her career. Her memory will be eternal; may her soul rest in peace.

Institutions/institutional heads, Prisoners, Prison authorities, NACC and other AIDS-related staff, and healthcare workers etc. who helped in the study.

Disclosure of conflict of interest

The authors whose names are listed above certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations) in the subject matter or materials discussed in this manuscript.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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