Original Article

AIDS and hepatitis B and C high risk behaviors among 15 to 45 years old individuals in Bandar Abbas (Iran) in 2012

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Abstract
Background: AIDS and hepatitis are two of the most important health issues in the world. Adolescents and individuals in their reproductive years are important population for interventions in order to reduce high risk behaviors for transmission of sexually transmitted disease. However the prevalence of AIDS and hepatitis B and C is high in Bandar Abbas, no study is available about high risk behaviors related to these diseases in Bandar Abbas. The aim of the current study was to investigate high risk behaviors related to AIDS and hepatitis B and C among 15- to 45 year old individuals in Bandar Abbas, Southern Iran.
Method: In this analytical study, 1938 participants between 15- and 45 years of age in Bandar Abbas in 2012 were selected to participate in this study. For each individual, the following information was sought: shared syringes, phlebotomy, tattoos, prisoning, drug abuse, amphetamine, alcohol, smoking, unsafe sexual contacts, as well as demographic information including age, sex, marital status, and education level. Data were analysed using SPSS version 16 (SPSS Inc. Chicago, Illinois, United States) using descriptive statistics and chi-square tests.
Results: A total of 8.4% reported having had tattoos; 10.3% reported previous phlebotomy. Individuals with prison history included 7.3% of our study population and their mean age was 31.4 years. Unsafe sexual contact was reported in 10.7% of the study sample. High risk behaviors were more common among individuals with a low educational level, and in alcohol users and amphetamine users ($P<0.05$).
Conclusion: High risk behaviors are more common among individuals in their reproductive years. Increasing educational level and knowledge translation are effective in preventing AIDS and hepatitis high risk behaviors.

Keywords: AIDS, hepatitis, amphetamine

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1. Introduction

1.1. Background

AIDS and hepatitis are two of the most important health issues in the world (1, 2). About 1.7% of people in Iran are infected with chronic hepatitis B (3). Also four people out of each 100,000 people are infected with Human Immunodeficiency Virus (HIV) among blood donors in Iran (4). Because of the high rate of mortality and potential for complications, prevention is the best way to reduce the burden of these diseases. Adolescents and individuals in their reproductive years are important populations for intervention in order to reduce the transmission of sexually transmitted disease (5). Currently, the best way to prevent development is reducing high risk behaviors and increasing knowledge about these behaviors. It is well documented that high risk behaviors are associated with HCV seroprevalence (6). It has been shown that more injecting drug users (IDUs) have anti-HCV than HIV (7). IDUs are prominent HIV infected groups in Asian countries (1).

1.2. Statement of Problem

In south Florida, among 1130 students, 14 percent reported risky sexual behavior (8). Alcohol use had the strongest association with risky sexual behaviors and it has been suggested that addressing alcohol and other drug use may promote safe sexual behavior. Also, alcohol users had more high risk behaviors than non-drinkers (8, 9). Some studies have reported a low percentage of condom use among their samples (10). Education is needed to reduce high risk behaviors among injection drug users, but it is unhelpful alone and some forms of high risk behavior need peer-directed interventions (11, 12). Peers and professionals are important resources for high risk sexual behaviors. For the prevention of these diseases such as AIDS and hepatitis, it is important to modify high risk behaviors in the community. Knowledge about the prevalence of high risk behaviors and the differences of its prevalence according to sex, age group and other demographic factors can help health systems to plan for prevention of high risk behaviors.

1.3. Objectives

The general objective of this study was to determine AIDS and hepatitis B and C high risk behaviors in Bandar Abbas. The followings were set as the specific objectives of the study:

- To determine the prevalence of common blade usage, tattoos, and phlebotomy in Bandar Abbas
- To determine the prevalence of prison history in Bandar Abbas
- To determine the prevalence of drug abuse and alcohol consumption in Bandar Abbas
- To determine the prevalence of high risk sexual contact in Bandar Abbas
- To determine the difference between the proportions of high risk behaviors in Bandar Abbas by educational level
- To determine the difference between the proportions of high risk behaviors in Bandar Abbas by alcohol consumption
- To determine the difference between the proportions of high risk behaviors in Bandar Abbas by drug abuse

2. Materials and Methods

2.1. Research design and setting

This cross-sectional study was done in Bandar Abbas that is located in Hormozgan province, southern Iran.

2.2. Sample size and sampling method

This study was done on 2000 participants between 15 to 45 years (study power of 80% and α=0.05 level of significance). Cluster sampling was used for the selection of study participants. A total of 100 clusters (60 clusters in central areas and 40 clusters in marginal areas) were selected based on the population of the central and marginal areas. Each cluster included 20 participants.

2.3. Measurement tool

For each individual, shared syringes, private barberry instruments, phlebotomy, tattoos, prisoning, drug abuse, amphetamine (Ecstasy), alcohol, smoking, and unsafe sexual contacts were queried. In this study divided the town areas to high risk and low risk according to the prevalence of hepatitis and AIDS. Demographic information sought included age, sex, marital status, and education level. The validity of the questionnaire used was confirmed by several specialists in behavioral sciences and infectious disease. The reliability of the questionnaire was confirmed using test re-test in a pilot study on 200 participants (r=0.83). Also, we requested that the participants select the questions that were unclear. Questions selected by more than 10 percent of the participants were excluded

or changed. The duration between two tests was two weeks. A total of 186 (98%) of the participants in first test participated in re-test. Participants in pilot study were excluded from the final study.

2.4. Data collection

In each cluster, the first house (which was chosen randomly) and the next 20 houses members who matched age criteria were asked to participate in the study. The interviewers selected eligible participants from each house until the expected 20 participants for the cluster had been met.

2.5. Ethical consideration

This study was approved by the research committee of the Infectious and Tropical Disease Research Centre of Hormozgan University of Medical Sciences. A written informed consent was obtained from all the individuals. Data collection was done using codes for each individual and the checklists were unnamed.

2.6. Statistical analyses

Data was analysed using SPSS 16.0 for windows and descriptive statistics and chi-Square (Goodness-of-fit) tests.

3. Results

3.1. Socio-demographic characteristics

We studied 1938 participants between 15- to 45 years of age. The mean age of these individuals was 27.26 years of age (SD=7.1 years), 981 (50.6%) were female and 957 (49.4%) were male. Among the participants, 1163 (60%) were married, 719 (37.1%) were single, and 56 (2.9%) were divorced. Table 1 shows the demographic characteristics of the study sample.

Table 1. Demographic characteristics of the study sample.

		n	%
Sex	Male	947	49.4%
	Female	971	50.6%
Area	High risk	807	41.7%
	Low risk	1129	58.3%
Marital status	Married	1150	60%
	Single	712	37.1%
	Divorced	56	2.9%
Education	No education	46	2.4%
	Primary	183	9.5%
	Guidance school	372	19.4%
	High school	362	18.8%
	Diploma	657	34.2%
	Higher	301	15.7%

3.2 Common blade, tattoos, and phlebotomy

Our results showed that only 547 (28.2%) used personal instruments for barberry use; 192 (9.9%) had used a common blade and this rate was higher in men and those with a low educational level (P<0.001). A total of 163 (8.4%) reported they had tattoos. As well, 200 (10.3%) reported previous phlebotomy and in 68 participants (3.5%), it was done by an individual who wasn't a physician.

3.3 Prison history

Individuals with prison history included 141 (7.3%) of our study sample and their mean age was 31.4 years (SD=6.2 years). Prison history was higher in individuals with a low educational level, men, and divorced individuals (P<0.001).

3.4 Drug abuse and alcohol consumption

Only 95 (4.9%) reported drug use as *often* and 967 (49.9%) reported drug use as *sometimes*. Amphetamine use was reported in 60 (3.1%) of the patients and their mean age was 27.5 years (SD=6.9 years). Age, sex, educational level, marital status, and living in high risk areas was unrelated to the amphetamine use (P>0.05). 233

(12%) reported narcotic use. Opium (54.9%) was the most prevalent drug used followed by marijuana and cannabis (29.7%). Opium was the most prevalent drug used among both men and women. 147 (7.6%) of the study sample used injection for drug use. 133 (68.8%) of the individuals used common syringes for injection. Alcohol use was reported in 376 (19.4%) of the study sample. Among them, 130 (6.7%) used alcohol *often* and 246 (12.7%) used it *sometimes*.

3.5 Unsafe sexual contact

Unsafe sexual contact was reported in 207 (10.7%) of the study sample and 68 (3.5%) reported it *often* and 139 (7.2%) reported it as *sometimes*. The mean age of these individuals was 27.9 years (SD=6.2 years). Unsafe sexual contact was reported in 40 (4.1%) of women and 164 (17.3%) of men and this was statistically significant (P<0.001). Among the individuals with unsafe sexual contact 60 (29.3%) did not use condoms for their sexual contact. Unsafe sexual contact was higher among individuals who used alcohol and amphetamines (P<0.001).

4. Discussion

The 15- to 45 year old samples were an active and young group of society and were in their reproductive ages. Assessment of high risk behavior for AIDS and hepatitis is important in this population. In this study we assessed 1983 individuals with mean age of 27.26 years (SD=7.1 years).

4.1 Common high risk behaviors

In this study, tattoos and phlebotomy were higher in men and in individuals with a low educational level. This behavior is a high-risk behavior for AIDS and hepatitis. Previous studies in Iran have shown that phlebotomy, tattooing, and intravenous drug use were major risk factors of hepatitis B and its transmission (13). Also age, sex, history of imprisonment, and thalassemia are other important risk factors in Iran (14, 15).

Smoking is not high risk behavior for AIDS and hepatitis but it is shown that is more prevalent among low educational level individuals and men which had higher prevalence of high risk behaviors. Despite this, some studies show that knowledge about the transmission route does not prevent high risk behaviors (16). Prison may be due to some high risk behaviors but being a prisoner exposes the individuals to a number of high risk behaviors. Prison history was higher among men, low educational levels, and divorced participants. Also smoking, phlebotomy, tattoos, and common barberry instrument use was higher among men and low educational level individuals. It has been shown that smoking and drinking are associated with higher rates of high risk sexual behaviors (17).

4.2 Drug abuse and alcohol consumption

Drug abuse and amphetamine use is among the high risk behaviors that might lead to other high risk behaviors for AIDS and hepatitis. Our study showed that using these drugs is higher among men, low educational level individuals, and divorced individuals. Despite the development of new narcotic drugs, the consumption of older drugs remains higher and the most common drugs used were opium, cannabis, and marijuana. These drugs are mostly used with non-injection methods but 7.6 percent reported using these drugs with injecting methods. It has been shown that using substances is related to high risk behaviors (5).

4.3 Unsafe sexual contact

Unsafe sexual contact is one important method for AIDS and hepatitis transmission and was reported in 10.7 percent of the individuals 15 to 45 years of age and was higher in men. Some studies have reported higher rates of high risk sexual behavior among the study population related to sex frequency, the age for first sexual activity, and alcohol use (9). Also it is well documented that men who had sex with men had higher rates of high risk behaviors related to AIDS and hepatitis (18, 19).

4.4 Recommendations

Increasing educational level and the knowledge are effective in preventing AIDS and hepatitis high risk behaviors. Trying to increase the knowledge and change attitudes about AIDS and hepatitis high risk behaviors can be helpful. Hepatitis B vaccination would be helpful in high risk populations. It has been shown that the knowledge about HIV/AIDS is low among high risk populations and interventions are needed to increase their knowledge in order to prevent disease transmission (17, 20-22). Focus group discussions are also useful in adolescents with high risk behaviors. Several studies showed that education alone may not be useful in reducing high risk behaviors and other combined strategies are needed to acquire better results (11). Some studies in Iran suggested that efforts to increase vaccination of adults who are at increased risk of AIDS and hepatitis infection can be helpful (23). Education and vaccination in prison may be one possible way to decrease the transmission rate of AIDS and

hepatitis (24). Prevalence of high risk behaviors should be decreased among peoples in Bandar abbbas. It seems that increasing the knowledge and changing the attitudes toward AIDS and hepatitis is helpful to reach these aims (12, 22).

5. Conclusion

The results of this study showed high risk behaviors are more common among individuals with a low educational level, and in alcohol users and amphetamine users. It is important to know individuals who are more susceptible to high risk behaviors. Increasing educational level and transmitting knowledge may be effective in preventing AIDS and hepatitis high risk behaviors. It is recommended to increase knowledge and change attitudes about AIDS and hepatitis high risk behaviors especially in high risk population. Future researches can be focused on strategies to decrease high risk behaviors among individuals who are susceptible for it.

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Conflict of Interest:
There is no conflict of interest to be declared.

Authors' contributions:
All of authors contributed to this project and article equally. All authors read and approved the final manuscript.

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