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Personal and Social Predictors about Safe Sexual Behavior in Patients with Immune Deficiency Virus in Ahwaz, Iran

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Study Area: Ahwaz, Iran

Coordinate: 31°19'13"N; 48°40'09"E

Key words: HIV patients, Acquired immune deficiency syndrome, Social awareness, Safe sex

Abstract

Socio-demographic predictors about safe sex behaviours in individual suffering from immune deficiency virus (HIV) had been tried to understand in this cross-sectional study. It was conducted on 120 individuals having immune deficiency virus (HIV). Collection of the data were based on socio-demographic and a safe sex behaviour questionnaire. To determine the socio-demographic the general linear model was used. Result revealed mean (SD) of the total score of safe sexual behaviour among men and women was 66.5 (13.1), 62.2 (13.0) respectively and (Score limit: 0-100). Status of sexual partners, unprotected vaginal sex, drugs and alcohols, as well as employment status, were considered as predictors of safe sex behaviours. About 50 percent of the participants pose unsafe sexual practices, thus, it is advisable that the health promotion programs and HIV prevention should implement in various groups of the society.

Introduction:

As per a statistics released in the year 2014, about 36.9 million HIV/AIDS positive people were living in the world; among which about 74000 people were from Iran. Also, almost two million new cases of HIV positive are reporting annually and approximately 2.1 million people dying due to AIDS annually (UNAIDS, 2015). Iran is also similar to many other eastern Mediterranean countries which are facing a concentrated epidemic level. Based on reports of UNAIDS (The joint United Nations Programme on HIV/AIDS, 2014) around 24000 HIV-positive people were living in Eastern Mediterranean and in a time interval between 2000 to 2014, the number of deaths infected by AIDS tripled (UNAIDS, 2016). Risky and unsafe sexual behaviours such as unprotected sexual relation and injecting drugs without proper protection are the main reasons of HIV/AIDS transmission. One-third of HIV/AIDS positive population of the society are continuing their risky practices related to HIV transmission (Kalichman *et al.*, 2001). Most of the HIV positive youths continued their unsafe and unprotected sexual behaviours despite knowing the future consequences (Stein *et al.*, 2005; Bajunirwe *et al.*, 2013). On the other hand, Most HIV-positive patients are not aware of their condition but, if they consider safe sexual practices after conducting test and being aware of their

condition, they can play an important role in HIV prevention (Allen *et al.*, 2011). Although, unsafe sexual practices are done with people who are most likely HIV positive themselves, but an alarming rate of these practices are done with HIV-negative people or people who have an Unknown status of HIV / AIDS (Kalichman *et al.*, 2006).

Success in AIDS treatment by antiretroviral drugs (HAART) increased the span and life quality of HIV-positive patients, however, the increment of their life span let to continuing their sexual relations due to which the chances of unsafe sexual practices also increase among HIV-positive people. Thus, the number of registered cases related to sexual transmission of HIV are continuously increasing (Yaya *et al.*, 2014). Nevertheless, the drug injection consumers are also sexually active and their sexual practices are also unprotected (Wood *et al.*, 2013). High-risk sexual practices are not rare among youths and use of Amphetamine stimulants is increasing and their effects on risky sexual practices are also alarming (Kogan *et al.*, 2010). Registered cases of HIV positive in Iran between the year 1986 to 2012 show that out of all transmission of HIV through sexual practices and injection of drugs, 13.9% percent of total transmission were through risky sexual practices, and 67.2% percent were transmitted through drug injections which when

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compared to collected data during the period of March 20th, 2012 to March 20th, 2013, transmission of HIV through sexual practices increased to 36.8% percent and through drug injection in the same period of time were 45.5% percent (UNAIDS, 2016). The spread of HIV through sexual practices is 34% percent among people had sex with opposite sex and 10% percent among people who had sexual practices with same sex while transmission through drug injection was reported 56% percent (Nasirian *et al.*, 2012). Estimating the increasing rate of risky sexual practices in Iran specially among injecting and non-injecting drug users, prevention of risky sexual practices and increasing safe sexual practices in people affected by HIV/AIDS became one of the fundamental priorities in prevention and decreasing rate of HIV transmission in Iran (UNAIDS, 2015; Sajadi *et al.*, 2013; Haghdoost *et al.*, 2012). Some studies were conducted in high-risk and at-risk of HIV/AIDS groups which show the existence of a noticeable rate of unsafe sexual practices and drug injection among younger generations. (Khajehkazemi *et al.*, 2013; Nasirian *et al.*, 2012). Also conducted some study on obstacles of using HIV/AIDS prevention tools through sexual practices such as condom (Langeroudi *et al.*, 2014; Fallahi *et al.*, 2012; Lotfi *et al.*, 2012). Although prevention plans and statistical data with the aim of recognising HIV negative people has almost been done but there were lesser studies on recognising primary sources of HIV transmission which are in fact HIV/AIDS infected people (Kalichman *et al.*, 2001). Also, HIV prevention activities and basic studies of HIV are some of the fundamental priorities of research in this field in Iran (Haghdoost *et al.*, 2012). In fact, few studies have been conducted in this subject area so far particularly on knowledge of safe sex behaviour among HIV-positive people who are the primary source of infection and provide assistance in designing interventions intend to promote sexual health in this group. The present study aimed to determine the predictors of safe sexual practices in HIV-positive people and status of sexual behaviours in HIV-positive male and female.

Methodology:

Subject selection: total 120 people; 89 male and 31 female who are HIV positive in the time period of October of 2013 to March of 2014 were selected as a subject. Patients were registered in two behavioural disorders consultation centres of west and east of Ahvaz city.

Sampling method in this study was the purposive type. To accomplish this task, information about this study, its goals, and method of implementing this research was provided to all the patients who had an active medical record in the respective consultation centres where their HIV serological tests were reported as positive and they visit those centres on regular basis. Further, participants were evaluated on the basis of their basic demographic

data and enter-exit factors. Properly written consent from the patients about participating in the research was collected from them.

Inclusion criteria: HIV-positive male and female (based on the medical records in two behavioral disorders consultation centers), having at least 18 years old, being sexually active based on the declarations of patients (sexual activity means having vaginal, rectal or oral sexual practices at least once during the last six months), being literate, and having desire to participate in the study.

Data Collection: data collection tools included the socio-demographic questionnaire, and Safe Sexual Behavior Questionnaire (SSBQ). Socio-demographic questionnaire was based on the age, sex, income, education, race, marital status and the job profile which were filled up by the patients. Moreover with demographic factors some related factors regarding disorder (disorder stage, the number of years while diagnosed) and background of high-risk sexual behaviour which included the number of sexual partners, unprotected rectal, vaginal, and oral sexual practices were also mentioned in the same questionnaire. Participant were also asked to answer whether they had any other transmitted sexual infections rather than HIV or not. Whether they had received money for sexual practices or not. Whether they were having any history of drug injection, any drug, alcohol, methamphetamine and cocaine usage or not. And in case of the male, whether do they had sexual practice with male or not. Participants have also reported the number of their sexual partners, HIV status of their partner (includes HIV positive, HIV Negative, unknown status of HIV, or any other state).

Survey Instrument: SSBQ is a 24-question instrument that is designed by Dilario (1992) for measuring methods of reducing exposure and transmission of HIV. This questionnaire includes 25 questions that measure 5 following factors: 1- condom use 2- avoiding body fluids 3- avoiding high-risk sexual practices 4- avoiding sexual intercourse with same sex or rectal practices, and 5- Assertiveness skills (self-efficacy). The scale of this questionnaire is based on four-item Likert scale includes never, sometimes, often and always which evaluated with numbers 1 to 4 respectively.

To determine the scientific validity of this instrument, first validity of translation assessed with the forward and backwards translation method, then its contents have been investigated and evaluated by a group of 10 professors of faculties of Nursing and Midwifery University of Tabriz and after collecting regarded comments, suggested changes are done. Population sample was all the people having the clinical file in west and east centres of behavioural disorder consultation.

Analysis Procedure: analysis of data was done with SPSS

statistical software. To describe demographic data, health, sexual behaviours, drug use, and total scale of high-risk sexual behaviours and safe intercourse descriptive statistical method including frequency, percentage, mean, and the standard deviation was used. To determine the relationship between demographic characteristics and the total score of the first safe sexual behaviour bivariate tests including t-test, and ANOVA were used. Then to control the confounding factors, all variables which had $p < 0.05$ were entered into the general linear model.

Results and Discussions:

In this study, among 120 participants 74% percent of the participants were male and 25.5 percent were female. About half of the participants (50.8%) were in the age group of 26 to 35 years old. The level of education of more than one-third of the participants (35.8%) was primary school, 56 people (46.7%) were married. About half of the patients (45.8%) were Arabians and the remaining were Persians. In this study, out of 89 male participated, nearly half (47.1%) were unemployed and out of 31 female participating in the study, more than three-quarters (77.4%) were housewives (Table-1).

About half of the participants (51.7%) stated that they have no income. About 12.5% of the participants had approximately one year past their diagnosis, and about half of them passed two to five years of diagnosis their illness. In relation to health and disease status, about half of the population did not require medical treatment and were not in the active phase of the illness. About one-third 35 percent are receiving antiretroviral drugs (ARVs), and 11.7 percent of the population despite having AIDS and the need to take ARVs did not take their medications (Table-1). In conjunction with the risk factors for HIV, less than half of the participants; 45% were injecting drug users in the past. About 3.3% of the participant transmitted infection from sex, sex for money and had male-male relationships. About a quarter 26.7% were women who were HIV infected by their husbands and had none of the risks of HIV. Further, about one-fifth; 19.4% of patients had more than one of the risk factors of HIV (Table-1). About half of the participants, 49.1% had two or more sexual partners, 46.7% of participants had sexual partners with unknown HIV status. Unprotected vaginal (about 87.5%), rectal 43.3% and oral 58.3% sexual practices were reported in population. History of drug use 71.7% and currently using drugs is 43.3% of the whole population. More than half 58.3% also had a prison record (Table 1).

The mean (SD) of safe sexual behaviour in men was 66.5 (13.1) in an attainable score of 0 to 100. The average score of sexual behaviour in women was 62.2 (13) in an attainable score of 0 to 100.

Based on the general linear model, there is a significant relationship between total score of safe sexual behaviour with unprotected vaginal sex, currently using

drugs, the HIV status of sexual partners (with unknown status and negative) as well as participant's job ($p < 0.05$) (Table-2).

Based on bivariate tests, there is a significant relationship between an overall score of safe sexual behaviour with the job, history of high-risk behaviours, sexual HIV status of partners, the number of sexual partners, unprotected vaginal intercourse, unprotected rectal practices, unprotected oral practices, disease status and currently using drugs.

Safe sexual behaviour score in the study was moderate to high. A significant positive correlation between safe sexual behaviours and other variables such as job, sexual partners, unprotected sexual practice (vaginal), and currently being a drug user has been revealed.

The average score of safe sexual behaviour was moderate to high. In a study in Uganda on HIV-positive people, the overall spread of safe sexual behaviours was 54.1%, and there wasn't a significant difference between female (56.3%) and male (51.3%) ($p < 0.131$) (Bajunirwe *et al.*, 2013). In a study, 60% of HIV positive that take ARTs revealed safe sexual behaviours and 34% had high-risk sexual behaviours (Yaya *et al.*, 2014). Stein *et al.* (2010) showed that a very few number of male participants had safe sex behaviours. According to Hajizadeh *et al.* (2012) that conducted on high-risk behaviours of HIV-positive people in Iran showed that 49.6% of males and 15.6% of females have had high-risk sexual behaviours.

In the current study, out of all participants who had unprotected vaginal sexual practices, the score of safe sexual behaviour was also lesser. There is a significant relationship between unprotected vaginal intercourse and high sexual activeness (Crosby *et al.*, 2014). Two different studies conducted in 2003 and 2014 that almost 20% of participants have had unprotected vaginal intercourse and this has a significant relation with youth, income, sexual practices with non-spouse partners and lack of using other prevention tools (Grulich *et al.*, 2003; de Visser *et al.*, 2014).

In the current study, HIV status of the sexual partner is one of the other predictor factors of safe sexual behaviour. In such that HIV/AIDS positive individuals that having HIV-negative sexual partners had higher safe sexual behaviours compared to an HIV positive individual who had sexual partners with positive HIV/AIDS, unknown HIV/AIDS status, or any other status of HIV. One study in Uganda suggested that negativity of HIV/AIDS status of the sexual partner of the HIV-positive individual is one of the predictors of safe sexual behaviour (Musinguzi *et al.*, 2014). In another study in Uganda stated that HIV status of sexual partner had a significant relationship with high-risk behaviour; i.e. HIV-positive individual who was having a known HIV status partner (negative or positive) compared to people who had the

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Table 1. Demographic, health, sexual behavior and drug use in the past 6 months in women and men, HIV / AIDS

Variable	Number	Percentage
Age		
<25	10	8.3
26-35	61	50.8
>36	49	
40.8		
Sex		
Male	89	74.2
Female	31	25.8
Race		
Arab	55	45.8
Persian	54	45
Other	11	9.2
Marital Status		
Single	54	45
Married	56	46.7
Unmarried	10	8.3
Job		
Unemployed	42	35
Employee	13	10.8
Other jobs	34	28.3
House keeper	24	20
Prostitute	7	5.8
Income		
Income equal to expenditure	19	15.8
Income less than expenditure	5	4.2
Income more than expenditure	34	28.3
No income	62	51.7
Number of children		
0	18	27.3
1	22	33.3
2 or more	26	39.4
Education		
Primary School	43	35.8
Guidance School	37	30.8
High School/Diploma	30	25
Graduate	10	8.3
Diagnosis Years		
1 year	15	35.8
2-5 years	66	30.8
5-10 years	35	25
more than 10	4	8.3
History of high-risk HIV		
Disease transmitted from other sex	4	3.3
Sex for money	4	3.3
Male-male sex	4	3.3
Drug injection users	54	45
None	32	26.7
More than of the risks	22	19.4
HIV status of sexual Partner:		
HIV positive sexual Partner	32	26.7
HIV negative sexual Partner	25	20.8
Sexual partner with Unknown HIV status	56	46.7
Sexual partner with any status of HIV	7	5.8
Number of sexual Partners		
1	61	50.8
2	4	3.3
3 or more	55	45.8

Unprotected Vaginal intercourse:

YES 105 87.5

Rectal unprotected sexual practice:

YES 52 43.3

Oral unprotected sexual practice:

YES 70 58.3

Disease Status:

HIV positive 64 53.3

AIDS 14 11.7

Retroviral drugs intake 42 35

History of drug use in the past:

YES 86 71.7

Current drug use:

YES 28 43.3

Prison Record:

YES 70 58.3

Table-2: Relationship of demographic, health, sexual behavior, drug-use and overall score of high-risk sexual behaviour with safe sex in the past 6 months in men and women infected by HIV/AIDS based on the general linear model

Variable	B	(CI 95%)	p-value
History of high-risk HIV behavior			
YES (Ref.)	0		
NO	2.4	(-2.2 to 7)	0.305
HIV status of sexual partner:			
With any condition of HIV (Ref.)	0		
HIV positive	1.3	(-6.3 to 9)	0.726
HIV negative	11.7	(3.5 to 19.8)	0.005
HIV unknown	8.5	(1.2 to 15.8)	0.023
JOB:			
Prostitute (reference)	0		
Unemployed	6.3	(-1.6 to 14.3)	0.118
Employee	12	(2.3 to 21.6)	0.016
Other jobs	6.9	(-1.5 to 15.3)	0.107
House Keeper	4.3	(-5.3 to 14)	0.378
Type of sexual behavior:			
Homosexual & straight sexual (Ref.)	0		
non-homosexual	6.6	(-1.8 to 9.1)	0.185
Unprotected vaginal sexual practice			
NO (reference)	0		
YES	-21	(-14.6 to -3.7)	0.001
Unprotected rectal sexual practice			
NO (reference)	0		
YES	-2.6	(-6.8 to -2.5)	0.257
Unprotected oral sexual practice			
NO (reference)	0		
YES	-1.9	(-6.4 to -2.5)	0.386
Currently a drug user			
NO (Ref.)	0		
YES	11.4	(7.01 to 15.78)	<0.001
Number of sexual partners			
3 or more (Ref.)	0		
one	2.5	(-1.59 to 6.7)	0.225
Two	4.9	(-4 to 14)	0.227
Status of Disease			
Retroviral drug intake (Ref.)	0		
HIV Positive	-1.9	(-5.5 to 1.6)	0.278
AIDS	-2.1	(-7.5 to 3.3)	0.447

unknown status of the partner had higher safe sexual practices (Bajunirwe *et al.*, 2013). Findings of both the mentioned studies are confirmed in the current study.

One of the other predictors of safe sexual behaviours in the current study was alcohol and drug usage. People who were then using alcohol and drugs having lesser safe sexual behaviours compared to people who were not using any alcohol and drugs. Many studies mentioned the effect of alcohol and drug usage on safe sexual practices (Fallahi *et al.*, 2012; Hojjat *et al.*, 2012).

In a case study, it was noted that in addition to the relationship between personality structure of individual and risky sexual behaviour among HIV / AIDS positives, factors such as perceived responsibility and drug use were some other predictors of high-risk sexual behaviours (Shuper *et al.*, 2014). In a study in the Iran, it was reported that possibility of high-risk sexual behaviours is related to addiction to drugs and usage of alcohol (Hajizadeh *et al.*, 2013). Hojjat (2011) in his research reported that there is a relationship between alcohol usages in individuals under methadone medication with increasing high-risk sexual behaviours. Also, high-risk sexual behaviours had a significant relationship with drug usage. Nazarius *et al.* (2012) reported that there was a highly significant relationship between alcohol consumption, having multiple sexual partners and unprotected sexual practices.

Conclusion:

In our study, the condition of safe sexual behaviours in HIV/AIDS positive individuals was found to be on the higher side than average and factors such as HIV-positive sexual partner, unprotected vaginal intercourse, alcohol and drug usage, and also job condition were significantly related to safe sexual behaviours. We found that about half of the participants did not have safe sexual behaviours, regarding this fact that safe sexual behaviours in HIV/AIDS infected people would have a significant role in decreasing the spread of HIV among healthy individuals and also decreasing cases of transmitted infection of HIV type or different strains of HIV in infected people. These findings show the necessity of more efforts to promote HIV prevention programs in Iran. Besides the HIV prevention programs and promoting social health strategies, more stress must be given in finding HIV-infected people in the deeper insight into different groups of society; especially within them who are sexually active and also HIV-positive sexually active patients.

Limitations and Future Research Directions: this study has some limitations in itself. For example the current population sample cannot represent the whole country; because the volume of the population sample is 120 individuals and the number of female participants is far lesser than males. The second limitation is that high-

risk sexual behaviours are self-reported and there is the possibility that because of social biases some cases were not reported at all. It is better if the number of female participants increases in the future researchers.

Acknowledgements:

We should thank and appreciate the efforts of Center of Consultation of Behavioral Disorders of Ahvaz for their cooperating in sampling and issuing necessary recommendation, Dr. Sayed Mohammad Alavi, infectious disease specialist and Dr. Shokr-Allah Salmanzadeh, infectious disease specialist and director of Health center of Khuzestan province for his motivations and support in this study, Dr. Farashahi infectious disease specialist regarding providing necessary scientific resources and Dr. Azadeh Mehrpouyan for her suggestions and editing article derived from master degree thesis.

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