Epidemiologic characteristics of HIV-positive patients referring to behavioral diseases consultation center in Shiraz, Iran

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Abstract
Background: Acquired immune deficiency syndrome (AIDS) was firstly reported from California and soon became a pandemic in the world. This disease poses serious threats to humans' health. In this study, we intended to examine the characteristics of HIV-positive patients who referred to the Behavioral Diseases Consultation Center (BDCC) in Shiraz, Iran.

Methods: This was a cross-sectional descriptive study. HIV-positive patients, referring to BDCC of Shiraz University of Medical Sciences were the population under the study. The data, collected through a checklist, were encoded and entered in to the SPSS 19. Then descriptive statistics such as mean, median, standard deviation and range were used to describe the variables. Also, the relationships between the variables were tested using X² test.

Results: The mean and median age of the HIV-positive patients were 39±8.7 and 38 years, respectively. Nearly 327 (65.4%) of the studied population were male and 173 (34.6%) were female. With respect to marital status, 225 (45%) participants were married, 133 (27%) were single, 91 (18.2%) were divorced and 49 (9.8%) were widowed. Also, 265 (53%) of the participants were infected through injection drug use, 198 (39.6%) through sexual route, 7 (1.4%) through blood and blood products, 6 (1.2%) through tattoos and 21 (4.2%) by other routes. Most of the participants had a HIV-positive history in their family, and 145 (29%) mentioned that their wives were HIV-positive. Moreover, 320 (62.7%) of the participants had a positive history of drug use, 176 (35.2%) did not have a history of drug abuse, and the status of 10 (2%) participants was not recognized.

Conclusion: Although the results of this study highlighted that injection addiction remains the major transmission route in Iran, the role of sexual transmission should be acknowledged in the future.

Keywords: HIV, AIDS, Descriptive study, Epidemiologic Characteristics, Shiraz, Iran.


Introduction
AIDS was firstly reported from California and soon became a pandemic in the world. (1). Undoubtedly, AIDS has been the greatest scourge of human society since World War II (2). AIDS, which is one of the dangerous communicable diseases caused by Human Immunodeficiency Virus (HIV), can severely endanger the protective powers of the body against infections and rare cancers(3, 4). The spectrum of this disease consist of light viremia to severe immun-
deficiency diseases and life-threatening infections(5, 6). Center for Disease Control and Prevention in the United States defined AIDS as a deep disorder in the immune system, as the result of depletion in helper T cells, in which the host is prone to affliction with severe opportunistic infections or malignant disease(7).

Because the initial incidence of the disease took place among homosexuals and intravenous drug abusers in the United States, it was expected that AIDS be limited to a particular social group, or a particular geographic region of the world. Nonetheless, as to a new occurrence of this infection in Africa via heterosexual diseases, AIDS has been recognized as a global problem and no race, nation, gender or age is safe from the infection (8, 9).

In Iran, like other Asian countries, the number of people living with HIV and being diagnosed with AIDS has been increased(10). The prevalence of AIDS in Iran consists of three waves. In the first wave in 1987, AIDS emerged through infected blood products. The second wave of this disease occurred by shared needles among drug users in 1996-1997. Currently, in the third wave of AIDS, sexual promiscuity and lack of commitment to ethical behaviors may seriously threaten the community’s health or safety(11).

Among the total registered AIDS patients since 1986 in Iran, the followings have been accounted for transmission of HIV, respectively: injection through shared tools in drug abusers (69.7%), sexual relationships (8.4%), receiving blood and blood products (1.2%) and mother to child transmission (.6%). Also, 20.1% of these cases are ranked as unrecognized transmission modes. In 2008, it was reported that injection drug addiction (76.8%), sexual relationships (13.6%) and mother to child transmission (8%) accounted for transmission routes of AIDS in Iran with the exception of 8.8% of the diagnosed patients who showed unrecognized transmission route; in addition, no transmission was reported from blood product (12). Statistics for these transmission routes in 2010 have changed to the followings: injection drug addiction (66.1%), sexual relationships (20.8%), mother to child transmission (2.5%), unrecognized (10.6%), with no new cases of blood product transfusion. According to the latest reports, the total number of HIV patients who were detected in Iran until the end of December 2011 was equal to 23,497; of whom, 91.3% were male and 8.7% were female. In addition, 3168 patients entered the AIDS stage and 4419 died. Nearly 46% of the HIV-positive patients were in 25-34 age groups. However, based on estimations in 2003, there were 30000-40000 HIV-positive patients in Iran; this number reached 80000 in 2007 and will continue to exceed 126000 in 2015 (13). There are no vaccines or medicines for the absolute treatment of AIDS. This disease has evolved rapidly in recent years and the number of patients has dramatically increased due to lack of awareness, lack of proper care, and lack of centralized services (14).

Public fear of HIV disease has affected many aspects of social life of these patients because 88% of the patients are aged 20 to 49, and the detection of HIV can cause family breakdown, decline in economic activities and may also lead to family poverty (15, 16). While AIDS remains a major health problem, it has become a complex social and economic emergency case to be attended. Because AIDS often afflicts seniors as the active group of the community and create obstacles for the private sector development and the public, it can impede a nation’s development and thus push the developing countries into deterioration(17). Due to the potential risks of HIV infection for human communities, fighting against this disease was reflected in the millennium development program (18). Therefore, in this study, we aimed to epidemiologically depict the characteristics of HIV-positive patients who referred to BDCC of Shiraz University of Medical Sciences. Surely, highlighting the image of AIDS’s features in the society can be of great help in mak-
ing policies against this dread fulepidemic.

Methods
This was a cross-sectional descriptive study. HIV-positive patients who referred to BDCC of Shiraz University of Medical Sciences were the population of this study. To collect data, a checklist specifically designed for this purpose, was used. This checklist consisted of two sections: the first section included demographic variables; and the second part was based on specialized variables such as history of addiction and drug abuse, history of HIV in the family, disease transmission, ART therapy states, stage of the disease, CD4 counting, duration of drug consumption and drug addiction.

Due to the confidentiality of the patients’ information and difficulty accessing this information, nearly 500 patients were included in the study. The required data were obtained from the patients’ medical folders. Also, we interviewed HIV-positive patients if their folders were incomplete.

The collected data for this research were encoded and entered into the SPSS 19 using descriptive statistics such as mean, median, standard deviation and range. Moreover, the relationship between the qualitative variables was found using $X^2$ test.

Results
The mean age of the studied patients was $39\pm8.7$, ranging from 8 to 70 years. As demonstrated by Graph 1, 1,327 (65.4%) participants were male and 173 (34.6%) were female. As presented in Graph 2, 2,225 (45%) of the participants were married, 133 (27%) were single, 91 (18.2%) were divorced and 49 (9.8%) were widowed. Most of the HIV-positive patients were in the 26-45 age range.

With respect to clinical aspects, 272 pa-
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Table 1. Transmission Mode

<table>
<thead>
<tr>
<th>Transmission mode</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection</td>
<td>265</td>
<td>53.3</td>
</tr>
<tr>
<td>Sexual</td>
<td>198</td>
<td>39.6</td>
</tr>
<tr>
<td>Blood</td>
<td>7</td>
<td>1.4</td>
</tr>
<tr>
<td>Tattoo</td>
<td>6</td>
<td>1.2</td>
</tr>
<tr>
<td>Other Routes</td>
<td>21</td>
<td>4.2</td>
</tr>
<tr>
<td>Unrecognized Subjects</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>Total Subjects</td>
<td>500</td>
<td>100</td>
</tr>
</tbody>
</table>

Patients (54.4%) had been under ART treatment and 228 (45.6%) had not. Also, 385 patients (77%) were in the nonclinical phase and 115 (23%) experienced the clinical phase. With regards to CD4 counting, 194 patients (38.8%) had CD4 < 200, 175 (35%) had CD4 between 200 to 350, 57 patients (11.4%) had CD4 between 350 to 500 and 74 of them (14.8%) had more than 500 CD4.

Considering the transmission mode, 265 patients (53%) were afflicted with HIV through injection drug addiction, 198 (39.6%) and 7 patients (1.4%) through blood and blood products respectively, 6 patients (1.2%) through tattoo, and 21 (4.2%) through other modes; the frequencies are demonstrated in Table 1. Also, 145 (29%) participants had HIV-positive cases in their family; and the majority of them declared that their wives were HIV-positive.

With respect to addiction history, it has been demonstrated that 320 participants (62.7%) had the history of narcotic use and 176 did not. Also, the background of 10 participants (2%) was unrecognized. Most addictive substances used were opium (225 patients), heroin (195 patients), and hashish and crystal were the next in order. Most addictive-history positive patients (289) mentioned that they had a history of more than 10 years of substance use. Intravenous drug addiction by 220 patients (44%) was the prevailing form of substance use in this study.

In this research, based on X² test, assignment relationship was found between gender and transmission mode (p<0.001). The major transmission mode was injection drug addiction in males and it was sexual transmission in females (Graph 3). Also a significant association was obtained between substances used, the type and transmission mode (p<0.001). Intravenous drug addiction in opium and heroin users were
31.3% and 27.9%, respectively and it was 
23.2%for other substances. Although a signif-
ificant association was observed between 
marital status and transmission mode 
(p<0.001), the main transmission in the 
married participants was sexual relations 
(20.5%) and it was injection drug addiction 
(22.1%) in the single participants.

Discussion
Concerns about AIDS have prompted 
many researchers to study this disease. The 
main propose of this study was to epidemi-
ologically demonstrate the characteristics 
of HIV-positive patients. Although most of 
the HIV-positive patients were male, which 
is in line with national and global statistics 
(19), astonishingly, the number of females 
with HIV was also high (173=34.6%). In 
this research, it was demonstrated that HIV 
has afflicted individuals in 26-45 age range. 
This finding is in line with the national and 
international average (19). The youths are 
more likely to develop risky behaviors; hence, 
preventing these behaviors may reduce the 
prevalence of AIDS remarkably in this group.

In our findings, it has been demonstrated 
that the major transmission mode of AIDS 
is in the same line with the national pat-
tern (19) and injection drug use (53% of the 
patients) was in contrast with global statistics (9). Some studies (20-28) also found that 
the mean transmission mode in Iran is in-
jection drug use. In this study, it was re-
vealed that this transmission rate was lower 
than the national average (around 66%) in 
Iran (29)). Also, single participants men-
tioned that they mostly got HIV through 
injecting drug use. Because Iran has a large 
number of injecting drug users (21), great 
consideration should be given to this 
transmission route in Iran.

Of the participants, 36.9% reported sexual 
relationships as the transmission route. Most of the infected patients through this 
route had a HIV-positive wife who had 
been afflicted with the disease through injec-
tion drug use. Some studies (20, 25, 27, 28, 30) have also indicated sexual transmis-
sion as the second dominant route of HIV 
infection. However, statistics for this route 
is higher than the national statistics (13). In 
this study, we found that injecting drug use 
was the most common transmission catego-
ry in males and sexual transmission was the 
most common in females. However, it 
should be noted that most female partic-
ipants in this study were married. This find-
ing is consistent with the national transmis-
sion pattern (19). Moreover, 1.2% of our 
participants got the disease through blood 
and blood products. Compared with the na-
tional rate, this finding is natural, but Kati-
beh and Hariat (26) found that 11.5% of 
their participants got infected through 
transfusion route.

Based on the findings of this study, it 
seems that the transmission pattern of 
HIV/AIDS is changing in Iran. Although 
previously injection addiction accounted 
for the major transmission route, currently 
sexual route has possibly been replaced by 
it. It seems that the emerging pattern of 
HIV in Iran mostly targets younger people. 
Therefore, adolescents and young adults 
should be acquainted with the related pre-
ventive measures against HIV. Although 
AIDS has no vaccine or specific treat-
ment (9), educating people particularly 
younger individuals about use of safe needle 
s for injecting drugs and changing their 
addiction habits can help reduce the preva-
ience and incidence of this disease in the 
coming years. Controlling AIDS is one of 
the main items in Millennium development 
goals; hence, by providing and promoting 
more preventive measures and educational 
programs particularly for those at-risk 
groups, we can achieve our desired goals.

Conclusion
In this study, we examined the character-
istics of HIV-positive patients who referred 
to BDCC. Although the results of this study 
highlighted that injection addiction remains 
the major transmission route in Iran, the 
role of sexual transmission should be 
acknowledged in the future. Hence, prefect 
consideration should be given to this
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changing pattern. Finally, it has been pointed that protection against HIV is a multifaceted task and all community groups should be involved in this collaborative process.

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Ethical issues

The study was approved by the Ethics Committee of the Shiraz University of Medical Sciences.

References