



Sexual and reproductive health needs of HIV-positive people in Tehran, Iran: a mixed-method descriptive study

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Abstract

Background: People Living with HIV (PLHIV) are highly stigmatized and consequently hard-to-access by researchers and importantly, public health outreach in Iran, possibly due to the existing socio-cultural situation in this country. The present study aimed to evaluate the sexual and reproductive health needs of PLHIV in Tehran, the capital of Iran.

Methods: As a mixed-method descriptive study, this project was conducted in 2012 in Tehran, Iran. In this study, we evaluated and discussed socio-demographic characteristics, family and social support, sexual behaviors, fertility desires and needs, PMTCT services, contraceptive methods, unintended pregnancy and safe abortion, and Pap smear tests among 400 participants referring to the behavioral disorders consulting centers.

Results: Of the sample 240 (60%) were male and 160 (40%) were female. About 50% of women and 40% of men were 25-34 years old. More than 60% of men and 96% of women were married, while more than 50% of the participants had HIV-positive spouses at the time of study. According to the results, fertility desire was observed among more than 30% of female and 40% of male participants. Results of the in-depth interviews indicate that the participants are not satisfied with most of the existing services offered to address their sexual and reproductive health needs.

Conclusion: Despite the availability of services, most of sexual and reproductive health needs of the PLHIV are overlooked by the health system in Iran. Paying attention to sexual and reproductive health needs of PLHIV in Iran not only protects their right to live long and healthy lives, but also may prevent the transmission of HIV from the patients to others within the community.

Keywords: Sexual Behavior, Reproductive Health, HIV, Multimethodology, Iran

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Key Messages

Implications for policy makers

- Attention to the associated parameters of high-risk sexual behaviors such as mental health, relationship status, and drug and alcohol use should be considered by the policy-makers to better control HIV transmission from the positive people to the non-infected community.
- Developing relevant interventions to change the attitudes of the physicians towards HIV/AIDS is necessary to address the issue.
- Existence of specific guidelines to support the sexual and reproductive health needs of People Living with HIV (PLHIV) would help the policy-makers to make proper relevant decisions for this vulnerable group.

Implications for public

The existing stigma towards HIV/AIDS has made positive individuals extremely hard-to-access by the healthcare providers in Iran. It should be considered that addressing the sexual and reproductive health needs of Iranian HIV-positive people would prevent the transmission from patients to the non-infected community.

Background

Although three decades have passed since the first pandemic of HIV/AIDS, it is still known as one of the most important infectious diseases in today's world (1). The significance of disease can be depicted by 35.3 million People Living with HIV (PLHIV) globally, 2.3 million new HIV-positive cases, and 1.6 million AIDS-related deaths in 2012 (2,3). Despite the considerable prevalence, incidence and mortality rate of HIV worldwide, it should be considered that recent curative methods such as combination Antiretroviral Therapies (ARTs) have changed HIV/AIDS to a manageable chronic

disease and significantly increased the life expectancy among HIV-positive individuals under treatment (1,4).

Evidence leaves no doubt that therapeutic interventions such as ARTs might influence the sexual activities of PLHIV. In this regard a study conducted among Mozambican HIV-positive people demonstrates a significant increase in sexual activities, 12 months after initiating the treatment (5). In another study with a qualitative setting conducted in Ethiopia, half of the PLHIV under ART reported an increase in their perceived sexual desire (6). Change in sexual function of PLHIV due to receiving therapeutic interventions suggest that their sexual

and reproductive health needs would be changed as well. Drawing on the treatment protocol of Iranian Ministry of Health (MoH) on HIV/AIDS, there is a priority for treatment of PLHIV in the clinical stage of 3 or 4, those with a CD4 count less than 350, those living with hepatitis B or active Tuberculosis (TB) co-infections, serodiscordant couples, HIV-positive individuals older than 50 years, those with a viral load more than 100,000, and pregnant women (7). However, to the best of our knowledge no study has been conducted to evaluate the association between initiating ARTs and different aspects of sexual life among Iranian PLHIV.

Drawing on the last report from the Joint United Nations Program on HIV/AIDS (UNAIDS), it was estimated that 71,000 HIV-positive individuals, 70,000 adults aged 15 and higher, and 19,000 women aged 15 and higher were living with HIV in Iran towards the end of 2012, while 4,600 deaths due to AIDS were recorded in this year (8). With a prevalence of 15.07%, injecting drug use is the main route of HIV transmission in Iran (9). Although the UNAIDS results demonstrate a very slight decrease in HIV incidence to less than 8,000 new cases from 2005 to 2013 (10), the above-mentioned statistics shed light on the value of paying attention to HIV/AIDS as one of the most important health crisis in Iran.

A large body of research has been conducted to assess the risk of HIV among Iranian high-risk populations (11–14). Few studies have also been carried out to evaluate the different dimensions of mental and physical health status among Iranian PLHIV. Some of these studies are devoted to the evaluation of life expectancy (15), dental caries prevalence (16), retinitis due to opportunistic infections (17), and toxoplasma serology (18) among HIV-positive patients in Iran. However, evaluating the sexual health aspects among Iranian PLHIV is a less researched area.

Different aspects of sexual health among Iranian women have also frequently been discussed in the literature (19–21). However, very few studies have been advanced to address the issue among high-risk women in Iran. For instance, in a cross-sectional study conducted among Iranian women with drug dependent husbands some parameters such as perceived lack of security, history of physical abuse by husband, and marital length were significantly associated with sexual satisfaction among the samples (22). As mentioned earlier, evaluating the sexual life and needs of PLHIV needs further researches.

HIV/AIDS is a big taboo in Iran, possibly due to existing socio-cultural situation in this country. The severe stigma among Iranian HIV-positive people justifies the difficulties to access this hidden population and consequently can explain the lack of studies evaluating their health needs. The present study is aimed to evaluate the sexual, contraceptive and reproductive health needs of HIV-positive people as one of the most important core groups in Iran.

Methods

Design, setting, and sampling

The present mixed-method study was designed and conducted in 2011–2 in Iran. In the qualitative part of the study, in a period of three months, 20 men aged 15 years old and higher, and 25 women in reproductive age (between 15 and 49 years old) were referred to five behavioral disorders

counseling centers in Tehran province; three centers were located in Varamin, Shahryar, and Robat Karim districts, and two centers in Tehran including Imam Khomeini hospital, and West Healthcare Center. The behavioral disorders consulting centers are the governmental centers offering free consultation, condom, testing, ART, and the other services to HIV-positive individuals, and the high-risk groups in Iran. These centers offer group training courses to teach preventive activities, separately for men and women. Harm reduction in the community is the main purpose of these centers. Participants were selected through a Purposive Sampling Method (PSM). Those who were diagnosed as HIV-positive less than 6 months ago, individuals with severe physical disabilities, people out of the reproductive age period, and those who did not consent to participate were excluded from the study. In in-depth interviews, participants were asked about the desire to have children, using safer reproductive methods, HIV risk behaviors, and their history of having had Sexually Transmitted Infections (STIs). The results of the qualitative study were used to prepare the research instruments for the quantitative component of the project.

Sample size estimation

Since there was no previous data about sexual and reproductive health needs of PLHIV in Iran, in order to obtain the maximum sample for this research, the sample size was determined by the assumption that 50% of HIV-positive individuals may desire to have children with 5% marginal error, a 95% Confidence Interval (CI), and a non-response rate of 20%. Based on this assumption, the actual sample size for the study was determined using the single proportion formula. Drawing on the formula, the sample size was estimated to be 384, which increased to 400 to enhance the confidence of the study. All individuals were sampled from the five above-mentioned centers in Tehran province.

Research instrument and measures

An interviewer-administered questionnaire was used to collect data in this study. The questionnaires assessed the socio-demographic characteristics, history of drug use and using rehabilitation services, sexual and reproductive behaviors, high-risk behaviors and history of STI, having a desire for marriage and pregnancy, and HIV knowledge. There were also two other parts which were specifically designed for women and asked about their behavior during pregnancy and childbirth, and Pap smear data.

Validity and reliability assessment of the questionnaire

During the in-depth interviews the participants were asked to discuss the above-mentioned topics. Their opinions were recorded and analyzed to design the questionnaire for the quantitative part of the study. After that, seven experts including medical doctors, behavior consultants, and HIV/AIDS specialists were invited to read and offer their comment on the questionnaire; then the questionnaire was modified based on the experts' comments.

Test-Retest and inter-observer reliability methods were used to determine the reliability of the questionnaire. During the Test-Retest procedure, the questionnaires were filled by 20 participants (including 10 men and 10 women). After

a week, the same 20 participants were asked to refill the questionnaires. Pearson coefficient was more than 0.8 for the all the quantitative variables, while KAPPA coefficient was more than 0.8 for the qualitative, and mean KAPPA was 0.8 for the quantitative variables. Using inter-observer reliability method, KAPPA coefficient was found to be more than 0.8 for the all qualitative variables, while mean KAPPA for qualitative variables was 0.9.

Interview procedure

The process of data collection for the quantitative part of the study lasted from December 2011 to March 2012. Interviews were conducted by the university-trained research assistants. Before conducting the interviews, the interviewers attended a course, to be briefed about the purpose of the project, confidentiality of the obtained data, and how to fill the questionnaires. Each in-depth interview lasted between 45 and 60 minutes.

Qualitative and quantitative data process

In the qualitative part of the study the entire statements were written word-by-word using the recorder' audio, and the main themes were extracted from the transcribed materials.

Quantitative data were processed by SPSS version 15 (SPSS Inc., IL, USA) for Windows.

Results

Socio-demographic characteristics

Among the 400 participants, 240 (60%) were male and 160 (40%) were female. More than 40% of men and more than half of women were 25–34 years old. More than 60% (162) of men and 96% (154) of women were married. More than half of the respondents who were married at the time of study had HIV-positive spouses. Less than half of the respondents (46.3%) were living in Tehran, while 175 (43.8%) were residents of Tehran province's districts, and the rest (40%) were living in the other parts of Iran. In this study, more than 70% (170) of men, and 7.5% (12) of women were injecting drug users (Table 1).

Family and social supports

More than 11% of the participants mentioned that none of their family members were aware of their HIV status. A 33-year-old, married man, living with his pregnant HIV negative wife explained:

“My wife is not infected, and is in her fifth month of

Table 1. Socio-demographic characteristics of Iranian HIV-positive people

Variables	Categories	Men (n= 240)	Women (n= 160)	Total (N= 400)
Age	18-24	7 (2.9%)	22 (13.8%)	29 (7.3%)
	25-34	106 (44.2%)	82 (51.3%)	188 (47.0%)
	35-44	91 (37.9%)	97 (29.4%)	138 (43.5%)
	>45	36 (15.0%)	9 (5.6%)	45 (11.3%)
	Mean	36.2	32.4	34.7
	Median	35.0	31.5	34.0
Education	Uneducated	7 (2.9%)	7 (4.4%)	14 (3.5%)
	Primary school	62 (25.8%)	36 (22.5%)	98 (24.5%)
	Secondary school	121 (50.4%)	61 (38.1%)	182 (45.5%)
	High school diploma and pre-university	44 (18.3%)	41 (25.6%)	85 (21.3%)
	Higher	6 (2.5%)	15 (9.4%)	21 (5.3%)
Marriage history	Yes	162 (67.5%)	154 (96.3%)	316 (79.2%)
	No	78 (32.5%)	6 (3.8%)	84 (21.0%)
Marital status	Alive spouse	130 (80.2%)	105 (68.2%)	235 (74.4%)
	Dead spouse	2 (1.2%)	21 (13.6%)	23 (7.3%)
	Divorced	24 (14.8%)	19 (12.3%)	43 (13.6%)
	Separated	6 (3.7%)	9 (5.6%)	15 (4.7%)
	No answer	10 (6.2%)	10 (6.5%)	20 (6.3%)
Number of family members	1-2	101 (42.1%)	63 (39.4%)	164 (41.0%)
	3-4	99 (41.3%)	72 (45.0%)	171 (42.8%)
	5-7	40 (16.7%)	25 (15.6%)	65 (16.3%)
	Median	3.0	3.0	3.0
Employment status during the past 7 days	Employed	151 (62.9%)	36 (22.6%)	187 (46.9%)
	Unemployed	89 (37.1%)	123 (77.4%)	212 (53.1%)
Working status	Worker	49 (32.5%)	15 (41.7%)	64 (34.2%)
	Self employed	89 (58.9%)	11 (30.6%)	100 (53.5%)
	Clerk	13 (8.6%)	10 (27.8%)	23 (12.3%)
Residence place	Tehran (City)	97 (40.4%)	88 (55.0%)	185 (46.3%)
	Other cities of Tehran province	123 (51.3%)	52 (35.5%)	175 (43.8%)
	Other provinces	20 (8.3%)	20 (12.5%)	40 (10.0%)
Residence period	<5 years	44 (18.3%)	31 (19.4%)	75 (18.8%)
	5-10 years	41 (17.1%)	35 (21.9%)	76 (19.0%)
	>5 years	155 (64.6%)	94 (58.8%)	249 (62.3%)
	Mean	21.0	19.7	20.5
	Median	20.0	20.0	20.0

pregnancy. I have not told her about my HIV status. The health workers told me that it is too late to do abortion, and you must lead her here, since it is likely your child is infected. I'm worried. I wish I married somebody like myself, so that I did not feel so guilty. Since my family was not informed about my disease they forced me to marry a healthy person. Now I understand what a big mistake I made. Our life will be ruined, if she understands that I'm infected and she is infected too".

Of all participants, 33 (11.1%) were supported by welfare organization, 20 (6.7%) by Relief Committee, 225 (75.8%) by family and friends, 79 (26.6%) were supported by the Non-Governmental Organizations (NGOs), and 252 (63%) were under coverage of the governmental insurance facilities. Only about 19.5% of HIV-positive individuals had participated in group training courses. From those who had not attended 42.5% said they did not have enough time, 26.1% did not like to visit HIV-positive people, and 24.5% were unaware of the existence of such courses.

In this regard a 22-year-old married woman, living with her HIV-positive husband and a one-year-old child said:

"I do not attend classes because I do not like interacting with HIV infected drug users, they do not like me because I am not addicted too; I'm a victim".

Sexual satisfaction and sexual behaviors of People Living with HIV (PLHIV)

According to the results, 74.8% of the patients who were taking antiretroviral drugs reported that their sexual desire had not changed since the initiation of treatment, 18.2% said it had worsened, while 7% said it had improved. The results of this study showed that HIV-positive individuals did not have any problem in terms of sexuality and sexual desires. According to the results, 83.8% of HIV-positive people had sexual relations during the past year, 71.1% had sexual relations with a permanent partner such as spouse, 16.1% had sex with a unique partner other than their spouses, and 21.2% had sex with a casual partner. According to the results, 66.9% of women with HIV infection had sexual contact with an HIV-positive spouse or partner prior to being infected. Moreover, 23.9% of HIV-positive people practiced intrauterine ejaculation-prevention method to prevent the transmission of HIV infection to their sexual partners and 2.2% used vaginal washing method after each sexual contact. A 40-year-old separated man, living with his child, having multiple sexual partners noted his misunderstanding of HIV transmission as:

"I did not use condoms even after diagnosis of HIV and I used withdrawal method in order to prevent transmitting the disease to my ex-wife, because I have heard that if I use interruption method the infection won't be transmitted, and it worked".

Another 40-year-old separated man with multiple sexual partners explained his differentiation method in condom use based on perceived risks as:

"I treat people differently. I do not use condoms for those who I think might be positive, yet I use condom to have sex with other people".

67.2% of the participants reported using condom during the last year. Among those who used condoms in the last

year, 24.9% reported that they always, 32% almost always and 43.1% sometimes used condoms. The decision to use a condom was a mutual decision by both sexual partners in 46.1% of cases. The most commonly cited reason for not using a condom in this study was lack of consent by the sexual partner (39.2%).

In the present study, 22% of HIV-positive individuals reported that they did not use condoms consistently as a contraceptive method because they wanted to have a child.

A 30-year-old married man, living with a non-infected wife and having no child explained his fertility desire as:

"I have been living with HIV for eight years. I got married eight years ago. My wife is not infected and the only thing which we extremely need is to have a child to be more comfortable. We do not have any financial problem. We were referred to a fertility and reproductive assistant service center; they told us they cannot help us since we may infect their equipment. I am in a dilemma. My wife has the right to experience motherhood. Sometimes I feel that it is better to get separated and let her follow her dreams and not to deprive her from her right to be a mother".

Having no access to assisted reproductive techniques was the main concern for couples who were both HIV-positive, or where one of them was HIV-positive. Another reason for the lack of consistent use of condoms among 8.4% of people was that they were not sure about the HIV status of their sexual partner or spouse.

Another 38-year-old single man with multiple sexual partners noted his divergence of condom use across type of relationships:

"Now I have still some sexual relationships, but I just use condom for some of them and do not use condoms for others. When I see my partner has a relationship with some others without condoms, I do not use as well. I guess that they are infected like me. However, there are some who I know them well, and I know they might be healthy; I use condoms unwillingly. I think that they are miserable and they should not get infected like me. Some people say they do not use condoms, they ask me why I want to use condoms, am I sick? I usually reply them that I'm not, otherwise they assume that I'm sick".

It seems that Iranian HIV-positive people highly need to be provided with more adequate and frequent information about regular and correct condom use during their sexual intercourse.

Fertility desires and needs of People Living with HIV (PLHIV)

In our study, 34% of HIV-positive women and 44.2% of HIV-positive men reported their intention to have children. Moreover, 20.4% of women and 23% of men who did not use condoms were inclined to have children and they did not use condoms as contraceptives because they wanted to become pregnant. Of people who were keen to have children 31.2% did not consult physicians and experts in behavioral disorders counseling centers, and 35.4% of these people said they did not consult because they were afraid of negative reactions of the staff working in behavioral disorders counseling centers and also because staff had recommended HIV-positives not to have children. In addition, 48.7% of HIV-positive people were willing to have a child in the future because they did not

have any children, while 58.5% of participants said they were not inclined to have a child of which 63.3% said because they were afraid to have an HIV-positive child.

Results showed that there were more HIV-positive women (64.6%) than men (54%) who did not have plans for having children in the future.

In this regard a 34-year-old woman with an infected husband and no child noted her concern of infecting her child with HIV:

"I like to have children, but here they emphasized that I must not try to have children. So I decided not to become pregnant since we are afraid of having infected kids".

Another 24-year-old woman living with an infected husband and no child also noted:

"A physician said we could try to have a child. One month later, another physician said you must not become pregnant. But we have made our decision and we want children, so we do not use contraceptive methods".

A 30-year-old man living with a HIV-positive wife and no child explained his concerns of reproduction as:

"All physicians here said we must not have children. These people do not understand us; we are not satisfied with our life and we need a child. Once we went to a nursery (orphanage) to adopt a child but they made lots of problems for us. We realized that it is not important even if we have a positive child because we want kids".

Knowledge about the means of Preventing Mother-to-Child Transmission (PMTCT)

Among all participants, 50.3% of HIV-positive people had information about prevention of mother to child transmission; nevertheless only 31.5% had accurate information about transmission time (pregnancy, childbirth and breastfeeding). Only 26% of HIV-positives had complete information about the ways of Preventing Mother-to-Child Transmission (PMTCT) during pregnancy, childbirth, and breastfeeding. Of all the respondents who knew about at least one of the high-risk times for mother to child HIV transmission, or one of the ways to prevent mother to child transmission, 53.7% said they got this information from behavioral disorders counseling centers, 51.1% from their fellow friends and peer groups, and 12.8% from the training classes.

Preventing Mother-to-Child Transmission (PMTCT) services and prenatal care

In this study, 38 HIV-positive women who became pregnant or practiced breast feeding after the diagnosis of HIV infection were investigated to collect information about their pregnancy, childbirth, and post-delivery. Of all 38 cases, 55.3% were diagnosed during pregnancy, 84.6% received drugs to prevent transmission of HIV from mother to child during pregnancy. Due to diagnosis at late stages, 22.7% received drugs (antiretroviral) from the trimester III and the neonates of 19 cases who had delivery (79.2%) received prophylaxis after birth. In this regard, 25 persons (65.8%) reported the history of receiving prenatal care.

Only 13.6% patients, who had referred to public health centers while they had become bedridden, were satisfied with the behavior of physicians, midwives, nurses and believed

there had been appropriate confidentiality and respect during delivery.

Considering the PMTCT, a 40-year-old married woman with an infected husband and a healthy child noted that:

"The doctor said she won't accept to perform cesarean for me and endanger the life of herself, her child, and her husband. I became extremely angry; I told we bought the gloves! In the hospital also the nurses asked me why I became pregnant. They said I must not become pregnant. They blamed me".

Another 27-year-old married woman living with a non-infected husband and a child explained her cesarean procedure as:

"Their behavior was so bad and I cried too much. Then they came and said we should wear boots to go to the room, Operating Room. Whenever I quitted my room nurses told me to go back to my room since I'm sick and may endanger the other patients. When cesarean was finished they told my mother why are you happy? You just added a sick child to the society. I heard all these words and I became nervous so that whenever I remember those days I do not want to repeat it once again".

Another participant 36-year-old married woman with a non-infected husband and a child noted the invasion of her status confidentiality during the delivery by the staff as:

"I went to hospital for delivery. They treated me badly. They had isolated me and put a board on the room so that anyone can easily recognize that I'm HIV-positive".

More than 70% obtained the infant formula for their children from pharmacies through spending personal budgets. If having recommendation letter from healthcare centers, HIV-positive people are able to get free infant formula for their children. However, in in-depth interviews with a group of HIV-positives, a 27-year-old married man with a child explained that:

"No one told me that I can receive a recommendation letter to go to a health center and take infant formula there. We were striving economically to be able to buy powdered milk".

Bottle feeding was also explained as a concern of a 22-year-old married woman with a positive husband and a one-year-old child as:

"They told me we will give you a recommendation letter to take it to a health center and to receive infant formula there, but I did not like to let them know I'm positive because it has not yet been common for people to deal with our disease. Every month I pay lots of money to buy powdered milk".

The use of contraceptive methods among HIV-positive people

From all HIV-positive individuals, 31.3% used condoms, 25.7% used natural methods, and 23% used hormonal and permanent methods for family planning; 19.7% did not use any contraceptive method. Moreover, 47.1% of subjects used mutual protection methods (dual protection) of which 31.3% used condoms alone and 15.8% used condoms along with other contraceptive methods.

In this study, 42% of the participants who did not use permanent and hormonal contraceptive methods said they were not willing to use pills, injections, IUD, Tubal ligation, and vasectomy because healthcare providers recommended the use of condoms as the main method of contraception. Our research findings are also supported by qualitative

findings, for example in the in-depth interviews with a group of HIV-positives, a 40-year-old woman in second marriage with a non-infected husband, having two healthy children noted that:

"I wanted to use IUD, but doctors here said I must not use IUD since it increases the risk of infections and is dangerous".

In this regard another 27-year-old married woman living with a HIV negative husband and having a child noted that:

"Now we use condoms because we are afraid of pregnancy. I do not like to make him infected but I am also afraid of pregnancy. Once I tempted him to do tubal ligation but the physicians stopped him, a doctor said we may find a way to have children. Therefore he did not do tubal ligation since he loves kids. There should be a way to do tubal ligation for people like us. I think the doctor did not do that for us because he was afraid. I wanted to do tubectomy but nowhere accepted me. We were using condoms, but I became pregnant. I am afraid of intercourse and I must find a secure contraceptive method".

86.5% of HIV-positive people had not ever heard about methods of emergency contraception, and were not familiar with those methods.

Unintended pregnancy and safe abortion services

As the results showed, 12% of HIV-positive people got pregnant unintentionally after diagnosis of HIV; 68.3% of these cases happened while they were reportedly using condoms. From those who had unintended pregnancy, 16% referred to private sector and 16% to behavioral disorders counseling centers to have an abortion. Thirty-nine percent said in case of unintended pregnancy they would refer to private centers and 37.1% said they would refer to behavioral disorders counseling centers for termination of pregnancy. In terms of unintended pregnancy a 33-year-old married woman living with an infected husband and one healthy child said:

"If I have unwanted pregnancy, I will refer to a gynecologist's office for abortion, because I do not think this service is provided in consultation centers".

In this regard a 32-year-old married man explained:

"Now I am using condoms to prevent pregnancy. If there would be rupture in condoms I will take my partner for abortion; we have not experienced it so far, but it happened to my friends, they had done abortion".

The status of married women with HIV infection regarding the Pap smear test

In this study, 46.1% of HIV-positive married women had not done a Pap smear test yet and 31.3% of HIV-positive married women had not done a Pap smear test since the time of their diagnosis of HIV. About 80% of the samples said they did not do the test during the 12 past months since they had no health problems, and 50.5% said the health workers did not recommend the test.

Discussion

The results of our study about the perceived sexual satisfaction and sexual behaviors, fertility desire and needs, knowledge of transmission, PMTCT services and prenatal care, unintended pregnancy and safe abortion services,

and Pap smear test, as the main components of sexual and reproductive health, suggest that existing services are unsatisfactory for PLHIV in Iran.

Of all participants, 16% reported having sex with a partner other than their spouses, 21% had sex with a casual partner; this demonstrates that high-risk sexual behavior is prevalent among Iranian HIV-positive people. Numerous studies have been conducted to evaluate high-risk sexual behaviors among HIV-positive individuals. Results of the anecdotal studies have introduced some parameters such as alcohol use (23), mental disorders (24), status of sexual relationship partner (25), and discrimination-related trauma (26) as the parameters associated with engaging in high-risk sexual behaviors among HIV-positive individuals. Although evaluating the associated parameters of high-risk sex was not in the scope of the present study, it would be helpful for health policy-makers to pay more attention to the suggested parameters and to take proper and evidence-based decisions for the control of HIV transmission to support a healthy community. To address the issue it should be noted that associated parameters of high-risk sexual behavior might be different for men and women. Results of the present study demonstrate that in some cases, physicians reject conducting a cesarean delivery method for the HIV-positive pregnant mothers, which may perhaps be due to negative attitude towards HIV, or fear of being infected. Findings from a systematic review conducted by Read and Newell (27) suggest that Elective Cesarean Section (ECS) is an efficacious method in terms of PMTCT of HIV (27). Considering the above-mentioned systematic review, proper interventions are warranted to address stigmatizing and discriminatory attitude of Iranian physicians, and consequently to prevent MTCT of HIV through safe cesarean. It should be noted that Iranian guideline has pointed to the decreasing possibility of transmission through cesarean, and emphasizes that mothers' decision about cesarean should be respected.

Based on the Office of the High Commissioner for Human Rights (OHCHR) of the United Nations Human Rights, the association between human rights and HIV/AIDS is categorized in three categories including: increased vulnerability, discrimination and stigma, and impedes an effective response (28). On one hand, the above-mentioned organization clearly defines "the right to marry and found a family" as one of the human rights of PLHIV. On the other hand, the National Composite Policy Index (NCPI) report of Iran claims that the existing policies in terms of human rights covers PLHIV (29). However, no defined guideline has been developed to recognize the sexual and reproductive health needs of PLHIV as a part of their rights in Iran.

As one of the reproductive rights of HIV-positive individuals, they should know about available contraceptive methods and how to use them and to choose the number of children they wish to have. In this regard, it should be noted that the available sexual and reproductive health guidelines do not provide enough support for HIV-positive people (30). It should be noted that forced abortion and sterilization are among the forms of institutional violence against women (10). Couples who are living with HIV and do not desire to get pregnant and want to use a permanent method of family planning must be able to easily access tubal ligation

and vasectomy methods; they should be trained and advised about using these methods but they must not be forced to use one of these methods. Healthcare providers' training, as well as systematizing the assessment of reproduction intention of PLHIV seem necessary to meet the sexual and reproductive health needs of this sub population in the communities (31). They also should consider that the contraceptive methods should be acceptable by PLHIV.

Behavioral disorders consulting centers offers PMTCT services to the pregnant mothers. These services include consultation about alternative feeding means for the newborns, consultation about health of the mothers during pregnancy and their nutrition, detection and treatments of the STIs and the other infections, to detect and address the preventable premature births, short-time ART, caesarian (if necessary), refer to the supportive groups, care and follow up, as well as consultation about contraceptive methods after childbirth. In these centers, most of the services such as ART are free (9), however, the quality of the offered services in the centers should be evaluated in a regular basis.

The present study had some limitations; first it should be mentioned that this was a mixed method descriptive study and consequently due to the nature of the study it was not possible to find causal relations or associated parameters. Second, this study was conducted in Tehran, and therefore the results are not generalizable to the entire population of Iranian HIV-positive individuals. Third, data for the study was gathered through self-reports, and consequently over-report or under-report might have happened, especially considering the highly stigmatized topic of the study which is "HIV". Despite the mentioned limitations, it is worth mentioning this is the first study evaluating the status of sexual and reproductive health needs of Iranian PLHIV. It should be noted that in this project the researchers have tried to mitigate the possible biases using an appropriate methodology, and making a friendly atmosphere for the respondents, to avoid over- and under-reporting.

Conclusion

Results of the present study showed that although the behavioral disorders counseling centers in Iran have been able to fulfill the sexual and reproductive health needs of HIV-positive people and have provided condoms, many reproductive health needs of these groups are still overlooked including: the emergency contraception services, legal abortion, safe sex, STIs diagnosis and treatment services, cervical cancer screening, the use of assisted reproductive techniques to reduce the risk of infection, counseling before pregnancy, as well as prenatal care and family planning services. It is worth mentioning that some of these services such as Pap smear test have clearly been recommended for HIV-positive women in national guidelines.

The study findings also demonstrated that Iranian PLHIV face many obstacles to achieve reproductive health rights. Poor-quality counseling, lack of links between sexual and reproductive health centers and counseling centers, negative attitudes of staff towards HIV, stigma and discrimination, and inadequate support from family and community were among these obstacles. These problems might lead to vertical transmission of HIV infection from mother to child,

transmission of HIV infection to sexual partners, increase risk of recurrence of HIV infection and other infections in HIV-positive individuals, STIs, abortion, unwanted pregnancy, and mental and psychological complications. The results emphasize the need for and the importance of training for HIV-positive individuals, and more importantly education of the healthcare providers, as well as the importance of addressing stigma in the community. There should be more focus on health issues and risk of transmission of HIV infection to another person and risks of unsafe sex.

Overall, Iranian health policy-makers must recognize that paying attention to the sexual and reproductive health needs of PLHIV in Iran not only helps to protect their rights to live healthy lives, but also may prevent HIV transmission from this core group to those in the community who are uninfected.

Ethical Issues

Written informed consent was obtained from all participants prior to each interview. Before starting the interviews, participants were informed about recording their voices, and also were assured about the confidentiality of their personal information. The records were deleted after transcription. The questionnaires were anonymous, and the present study was approved by the ethical committee of Tehran University of Medical Sciences (TUMS), Tehran, Iran.

Competing interests

Authors declare that they have no competing interests.

Authors' contributions

Initiating the idea: SH, SN, HRS and RM; study design: SN, SH, HRS, and MMG; collecting the data: SH, MMG, and MM; analyzing the data: SH, BM, FR and SN; interpretation of the results: SH, HRS, BM and SN; drafting the manuscript: BM, SH, and FR. All authors have read and approved the content of the manuscript.

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References

1. Baryamutum R, Baingana F. Sexual, reproductive health needs and rights of young people with perinatally Acquired HIV in Uganda. *African Health Sciences* 2011; 11: 211-8.
2. United Nations Program on HIV/AIDS (UNAIDS). AIDS by the number [internet]. [cited 2014]. Available from: http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2013/JC2571_AIDS_by_the_numbers_en.pdf
3. United Nations Program on HIV/AIDS (UNAIDS). UNAIDS report on the global AIDS epidemic 2013. [cited 2014]. Available from: <http://www.unaids.org/en/media/unaids/contentassets/>

- documents/epidemiology/2013/gr2013/UNAIDS_Global_Report_2013_en.pdf
4. Samji H, Cescon A, Hogg RS, Modur SP, Althoff KN, Buchacz K, *et al.* Closing the gap: increases in life expectancy among treated HIV-positive individuals in the United States and Canada. *PLoS One* 2013; 8: e81355. doi: [10.1371/journal.pone.0081355](https://doi.org/10.1371/journal.pone.0081355)
 5. Pearson CR, Cassels S, Kurth AE, Montoya P, Micek MA, Gloyd SS. Change in sexual activity 12 months after ART initiation among HIV-positive Mozambicans. *AIDS Behav* 2011; 15: 778-87. doi: [10.1007/s10461-010-9852-3](https://doi.org/10.1007/s10461-010-9852-3)
 6. Dessie Y, Deresa M. Sexual practices of HIV-positive individuals attending antiretroviral treatment (ART) in Addis Ababa public hospitals: findings from in-depth interview. *Pan Afr Med J* 2012; 13: 80.
 7. Iranian Ministry of Health and Medical Education (MoHME). Evaluation of the HIV positive patients and ART in young adults and adults. 2014. Available from: http://aids.behdasht.gov.ir/uploads/art_and_patient_evaluation_final_930530_196629.pdf
 8. United Nations Program on HIV/AIDS (UNAIDS). Islamic Republic of Iran. [2014]. Available from: <http://www.unaids.org/en/regionscountries/countries/islamicrepublicofiran/>
 9. UN General Assembly Special Sessions (UNGASS). Islamic Republic of Iran AIDS Progress Report. 2014. Available from: http://www.unaids.org/sites/default/files/en/dataanalysis/knownyourresponse/countryprogressreports/2014countries/IRN_narrative_report_2014_en.pdf
 10. United Nations Program on HIV/AIDS (UNAIDS). The Gap Report 2014. Available from: http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2014/UNAIDS_Gap_report_en.pdf
 11. Ahmadi K, Rezazade M, Nafarie M, Moazen B, Yarmohmmadi Vassel M, Assari S. Unprotected Sex with Injecting Drug Users among Iranian Female Sex Workers: Unhide HIV Risk Study. *AIDS Res Treat* 2012; 2012: 651070. doi: [10.1155/2012/651070](https://doi.org/10.1155/2012/651070)
 12. Mirabi P, Vassel MY, Moazen B, Sehat M, Rezazadeh M, Ahmadi K. Unprotected anal Intercourse among Iranian Intra-Venous Drug Users. *Front Public Health* 2013; 1: 34. doi: [10.3389/fpubh.2013.00034](https://doi.org/10.3389/fpubh.2013.00034)
 13. Sajadi L, Mirzazadeh A, Navadeh S, Osooli M, Khajehkazemi R, Gouya MM, *et al.* HIV prevalence and related risk behaviours among female sex workers in Iran: results of the national biobehavioural survey, 2010. *Sexually Transmitted Infections* 2013; 89: iii37-40. doi: [10.1136/sextrans-2013-051028](https://doi.org/10.1136/sextrans-2013-051028)
 14. Zadeh AO, SeyedAlinaghi S, Hassanzad FF, Hajizadeh M, Mohamadi S, Emamzadeh-Fard S, *et al.* Prevalence of HIV infection and the correlates among homeless in Tehran, Iran. *Asian Pac J Trop Biomed* 2014; 4: 65-8. doi: [10.1016/s2221-1691\(14\)60210-0](https://doi.org/10.1016/s2221-1691(14)60210-0)
 15. Mohammadi-Moein HR, Maracy MR, Tayeri K. Life expectancy after HIV diagnosis based on data from the counseling center for behavioral diseases. *J Res Med Sci* 2013; 18: 1040-5.
 16. Rezaei-Soufi L, Davoodi P, Abdolsamadi HR, Jazaeri M, Malekzadeh H. Dental caries prevalence in human immunodeficiency virus infected patients receiving highly active anti-retroviral therapy in kermanshah, iran. *Cell J* 2014; 16: 73-8.
 17. Abdollahi A, Mohraz M, Rasoulinejad M, Shariati M, Kheirandish P, Abdollahi M, *et al.* Retinitis due to opportunistic infections in Iranian HIV infected patients. *Acta Med Iran* 2013; 51: 711-4.
 18. Alavi SM, Jamshidian R, Salmanzadeh S. Comparative study on toxoplasma serology among HIV positive and HIV negative illicit drug users in Ahvaz, Iran. *Caspian J Intern Med* 2013; 4: 781-4.
 19. Arbabi M, Fakhrieh Z, Delavari M, Abdoli A. Prevalence of Trichomonas vaginalis infection in Kashan city, Iran (2012-2013). *Iran J Reprod Med* 2014; 12: 507-12.
 20. Farnam F, Janghorbani M, Raisi F, Merghati-Khoei E. Compare the effectiveness of PLISSIT and sexual health models on women's sexual problems in Tehran, Iran: a randomized controlled trial. *J Sex Med* 2014; 11: 2679-89. doi: [10.1111/jsm.12659](https://doi.org/10.1111/jsm.12659)
 21. Hajiaghbabaei M, Javidan AN, Saberi H, Khoei EM, Khalifa DA, Koenig HG, *et al.* Female sexual dysfunction in patients with spinal cord injury: a study from Iran. *Spinal Cord* 2014; 52: 646-9. doi: [10.1038/sc.2014.99](https://doi.org/10.1038/sc.2014.99)
 22. Jafari F, Noori R, Moazen B, Khoddami-Vishteh H-R, Narenjiha H, Mirabi P. Perceived sexual satisfaction among women with drug-dependent husbands in Iran. *Journal of Substance Use* 2014; 19: 416-20. doi: [10.3109/14659891.2013.840685](https://doi.org/10.3109/14659891.2013.840685)
 23. Kahler CW, Wray TB, Pantalone DW, Krus RD, Mastroleo NR, Monti PM, *et al.* Daily Associations Between Alcohol Use and Unprotected Anal Sex Among Heavy Drinking HIV-Positive Men Who Have Sex with Men. *AIDS Behav* 2014. doi: [10.1007/s10461-014-0896-7](https://doi.org/10.1007/s10461-014-0896-7)
 24. Wilson PA, Stadler G, Boone MR, Bolger N. Fluctuations in depression and well-being are associated with sexual risk episodes among HIV-positive men. *Health Psychol* 2014; 33: 681-5. doi: [10.1037/a0035405](https://doi.org/10.1037/a0035405)
 25. Blashill AJ, Wilson JM, O'Cleirigh CM, Mayer KH, Safren SA. Examining the correspondence between relationship identity and actual sexual risk behavior among HIV-positive men who have sex with men. *Arch Sex Behav* 2014; 43: 129-37. doi: [10.1007/s10508-013-0209-7](https://doi.org/10.1007/s10508-013-0209-7)
 26. Fields EL, Bogart LM, Galvan FH, Wagner GJ, Klein DJ, Schuster MA. Association of discrimination-related trauma with sexual risk among HIV-positive African American men who have sex with men. *Am J Public Health* 2013; 103: 875-80. doi: [10.2105/ajph.2012.300951](https://doi.org/10.2105/ajph.2012.300951)
 27. Read JS, Newell MK. Efficacy and safety of cesarean delivery for prevention of mother-to-child transmission of HIV-1. *Cochrane Database Syst Rev* 2005: CD005479. doi: [10.1002/14651858.cd005479](https://doi.org/10.1002/14651858.cd005479)
 28. Office of the High Commissioner for Human Rights (OHCHR). HIV/AIDS and human rights. Available from: <http://www.ohchr.org/EN/Issues/HIV/Pages/HIVIndex.aspx>
 29. United Nations Program on HIV/AIDS (UNAIDS). Islamic republic of Iran NCPI report. Available from: <http://www.unaids.org/sites/default/files/country/documents/Iran%20Islamic%20Republic%20of%20NCPI%202012.pdf>
 30. Mantell JE, Smit JA, Stein ZA. The right to choose parenthood among HIV-infected women and men. *J Public Health Policy* 2009; 30: 367-78. doi: [10.1057/jphp.2009.35](https://doi.org/10.1057/jphp.2009.35)
 31. Moodley J, Cooper D, Mantell JE, Stern E. Health care provider perspectives on pregnancy and parenting in HIV-positive individuals in South Africa. *BMC Health Serv Res* 2014; 14: 384. doi: [10.1186/1472-6963-14-384](https://doi.org/10.1186/1472-6963-14-384)