

## Attitudes and Practice of Health Care Workers about Human Immunodeficiency Virus in Isfahan, Iran

### Abstract

**Background:** Health Care Workers (HCWs) play a key role in the Human Immunodeficiency Virus (HIV) prevention program, care and treat People Living with HIV (PLHIV). The evaluation of the attitude and performance among HCWs is regarded as one effective method for preventing the (HIV) spreading. This study was aimed to assess the attitude and practice of HCWs about HIV in Isfahan. **Materials and Methods:** In a cross-sectional study, we recruited 350 eligible participants from five academic hospitals, three academics dental clinics and six health centers by the convenience multistage sampling. A standard questionnaire was used to evaluate HIV attitudes among the HCWs in Isfahan. The variables were compared between males and females by Chi-square and *t*-test. In addition, linear and logistic regression was utilized to investigate the factors affecting attitude. **Results:** Respondents had a moderate level of attitude toward PLHIV. About 2.00% of the respondents had a good attitude. Marital status ( $\beta=-11.79$ ,  $p = 0.048$ ) was associated with attitude. Among women, wearing gloves was associated with attitude ( $\beta=5.96$ ,  $p = 0.041$ ). **Conclusions:** HIV attitude was not satisfactory among the HCWs in Isfahan. Therefore, the necessary measures and training are needed to improve the attitudes of health personnel and reduce stigma and discrimination toward PLHIV in health systems. Also, it is recommended to strongly monitor HIV infection control guidelines and instruction.

**Keywords:** Attitudes, health personnel, human immunodeficiency virus, nursing, performances

### Introduction

Regarding Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) surveillance's report in Iran, the number of registered People Living with HIV (PLHIV) was about 38,480 up to September 2017, of which, 13,600 deaths were recorded.<sup>[1]</sup> However, increasing HIV incidence and prevalence has made Health Care Workers (HCWs) worried.<sup>[2]</sup> Nurses and midwives are one of the key personnel in dealing with PLHIV. Although their sufficient knowledge, unstigmatized attitude and proper performance among them play an important role in reducing HIV transmission,<sup>[3]</sup> a study in Bangladesh indicated that nurses have the highest stigmatized attitude toward PLHIV.<sup>[4]</sup>

Lack of sufficient knowledge about HIV transmission routes is one of the main causes of concern on how to communicate with, care and treat PLHIV. As an Iranian study showed that the indecent routes of

HIV transmission such as homosexuality and extramarital sex, as one behavior contrary to Islam religion, have caused the health workers to have an inappropriate attitude towards PLHIV; reluctant providing services to or have stigmatized and discriminatory behavior with them.<sup>[5-7]</sup>

These conditions reduce the quality of services while HCWs play a key role in HIV prevention programs.<sup>[5,7]</sup> This circumstance leads to discouraging PLHIV for seeking care<sup>[8,9]</sup> or not to disclose their disease regarding receiving proper services similar to ordinary people.<sup>[10]</sup> Subsequently, the health workers do not aware of HIV infection and meet HIV standardized precautions that contribute to the spread of HIV.<sup>[11]</sup> Therefore, one of the key factors in HIV prevention is to improve the attitude and then promote the performance of health workers, particularly the midwives and nurses as the most relevant group, towards HIV.<sup>[7]</sup> Before planning appropriate programs for training the health workers,

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assessing the attitude and performance of this key group is necessary. A study in Shiraz (2015) revealed that all HCWs had a degree of stigmatized attitude toward PLHIV whilst grade of the stigmatized attitude of the HCWs was associated with a level of unwillingness to provide services to PLHIV.<sup>[7]</sup> The present study was aimed to assess the attitude and performance of HIV among the HCWs in Isfahan. The results of this study can aid proper planning for improving HIV attitude and performance among the health care workers.

## Materials and Methods

This cross-sectional study was approved by the research review board of Isfahan University of Medical Sciences. It was conducted to assess the level of HIV attitude and performance among health workers in Isfahan from December 2017 to April 2018. The 35% prevalence of stigmatized attitude among HCWs in Iran,<sup>[7]</sup> the confidence level of 95% and an error level of 5%, we recruited 350 eligible participants using multistage sampling. Inclusion criteria were HCWs who maybe had the communication with PLHIV including physicians, midwives, dentists, surgeries, laboratory technicians, nurses, paramedical staff and servants. Exclusion criteria were the unwillingness to participate in study or absence in the workplace. Firstly, we selected five academic hospitals, three academic dental clinics, and six health centers by convenience sampling. Then, 300 HCWs in hospital wards with a high probability of referring PLHIV were selected. In addition, 10 dentists in academic dental clinics and 40 health workers in health centers were non-randomly selected. In hospitals, we selected samples from three shifts (morning, evening and night) for controlling the effect of shift work. The data were collected by two trained interviewers who were from Isfahan and informed on HIV/AIDS.

The survey instrument was a standard self-administrated questionnaire, including some information on the demographic characteristics (5 items), attitude (16 items), concern (8 items), performance (12 items), and work situation (2 items). The face validity and content validity of the questionnaire were qualitatively confirmed. For reliability, Cronbach's alpha was 0.75; the Internal Correlation Coefficient (ICC) was 0.71.<sup>[12,13]</sup> The attitude items were scored by the Likert scale with five options (strongly disagree, disagree, no idea, agree, and strongly agree). The total score of attitude was determined by collecting the scores of attitude questions (16–80). Using statistical quartiles,<sup>[14]</sup> the attitude was then classified as poor ( $\leq 48$ ), moderate (49–64), and good (65–80).

We used Stata software (version 14) to analysis the data. Descriptive statistics including mean, standard deviation, frequency, and percentage were used to describe the results. The variables were compared between groups by Chi-square and *t*-test. Linear and logistic regression

were conducted to assess the factors affecting attitude and performance. A significant level of  $<5\%$  was applied.

## Ethical considerations

The code of ethics for this study was IR.MUI.REC 1369.1.015. Given the sensitivity of the subject, getting written consent was not possible. Therefore, the verbal informed consent was received from all participants after explaining the purpose of the study and data confidentiality.

## Results

### Demographic information

A total of 350 (72.99% women) health workers took part in this study of which 50.00% were nurses as the most important person associated with PLHIV. The mean (SD) age of respondents was 33.60 (8.77) years. The mean (SD) work experience of participants was 10.11 (8.07) years. Moreover, about 62% had work experience with PLHIV. More than half of participates (52.75%) reported that they had a history of care and treatment for PLHIV in the past year. Finally, 59.16% had a history of passing a course on HIV and blood-borne diseases in their workplace [Table 1].

### Attitude and concern toward PLHIV

Regarding the results, the mean (SD) score of attitude toward PLHIV was 50.29 (7.09), indicating a moderate level of attitude in all respondents. A total of 44.86%, 53.14%, and 2.00% of participants had poor ( $<48$ ), moderate (49–64), and good (65–80) levels of HIV attitude, respectively. The mean score of attitude among female and male were 50.39 (95% CI: 49.50–51.20) and 50.06 (95% CI: 48.40–51.60), correspondingly. This difference was not significant ( $p = 0.699$ ). The mean score of attitude among nurses and midwives was 49.93 (95% CI: 48.97–50.89) which did not differ significantly with other occupations ( $p = 0.262$ ). Approximately, 28.06% of participants agreed that PLHIV does not pay much attention to preventing HIV transmission to others. Nearly, 30.33% of respondents mentioned that they were very worried about getting HIV during drawing the blood of PLHIV. In addition, 23.15% were worried that catch HIV in health care settings such as teeth filling, surgical procedures from PLHIV. Also, 36.70% of participates declared that it is acceptable to do HIV testing for a patient without informing them. About 20.60% of respondents were agreed that they prefer not to services to Men who have Sex with Men (MSM) [Tables 2 and 3].

### Performance assessment

Nearly, 29.55% of participants avoid a physical encounter with PLHIV. Also, 66.57% and 81.23% wear two and one gloves when they are servicing to PLHIV, respectively. About 73.35% of participants considered the standard precautions for PLHIV. Also, according to participants' reports about the occurrence of some behaviors in

**Table 1: Demographic Characteristics of participants**

Characteristics	Men (n=94)	Women (n=254)	Value of Test	df	p
Age [Year] Mean (SD)	36.10 (9.98)	32.71 (8.13)	$t = -3.06$	313	0.002
Marital Status (%)					
Single	21 (23.08)	63 (25.20)	Chi2=0.24	2	0.883
Married	66 (72.53)	178 (71.20)			
Divorced	4 (4.40)	9 (3.60)			
Educational level (%)					
Diploma	42 (45.65)	27 (10.80)	Chi2=61.93	4	<0.001
Associated/Bachelor	36 (39.13)	192 (76.80)			
Master of Science	3 (3.26)	19 (7.60)			
Doctor of medicine	6 (6.52)	7 (2.80)			
PhD	5 (5.43)	5 (2.00)			
Occupation (%)					
General practitioner	3 (3.19)	4 (1.59)	Chi2=83.59	8	<0.001
Specialists practitioner	2 (2.13)	3 (1.19)			
Dentist	5 (5.32)	5 (1.98)			
Nurse	24 (25.53)	150 (59.52)			
Midwife	0	22 (8.73)			
Administrative officer	1 (1.06)	13 (5.16)			
Laboratory technician	2 (2.13)	4 (1.59)			
Paramedical and servant	51 (54.26)	30 (11.90)			
Other	6 (6.38)	21 (8.33)			

**Table 2: Attitude of health workers toward people live with Human Immunodeficiency Virus (HIV)**

Statements (response for positive attitude)	N (%)				
	Strongly agree	Agree	No idea	Adverse	Strongly adverse
Facing the problem if discriminate between PLHIV* and other patients in the workplace <sup>b</sup>	74 (22.16)	118 (35.33)	75 (22.46)	47 (14.07)	20 (5.99)
Having adequate facilities at work that reduces the risk of HIV transmission <sup>b</sup>	51 (15.04)	137 (40.41)	64 (18.88)	65 (19.17)	22 (6.49)
The existence of standardized protocols or practices in the workplace that reduce the risk of developing HIV <sup>b</sup>	55 (16.42)	137 (40.90)	74 (22.09)	55 (16.42)	14 (4.18)
PLHIV does not care about others <sup>a</sup>	45 (13.43)	94 (28.06)	123 (36.72)	61 (18.21)	12 (3.58)
PLHIV should be embarrassed <sup>a</sup>	10 (2.95)	15 (4.42)	44 (12.98)	146 (43.07)	124 (36.58)
Most PLHIV have multiple sexual partners <sup>a</sup>	15 (4.48)	54 (16.12)	111 (33.13)	95 (28.36)	60 (17.91)
People get infected that have irresponsible behavior <sup>a</sup>	21 (6.21)	55 (16.27)	106 (31.36)	110 (32.54)	46 (13.61)
HIV is a punishment for bad behavior <sup>a</sup>	9 (2.66)	15 (4.44)	62 (18.34)	131 (38.76)	121 (35.80)
Allowing HIV positive women to have children <sup>b</sup>	19 (5.60)	74 (21.83)	110 (32.45)	81 (23.89)	55 (16.22)
If it is my choice, I will not provide services to PLHIV <sup>a</sup>	26 (7.67)	36 (10.62)	76 (22.42)	143 (42.18)	58 (17.11)
I prefer not to offer services to MSM <sup>a</sup>	61 (17.99)	70 (20.65)	89 (26.25)	77 (22.71)	42 (12.39)
I prefer not to provide services to men who sex workers <sup>a</sup>	57 (16.81)	71 (20.94)	87 (25.66)	81 (23.89)	43 (12.68)
I prefer not to provide services to women who sex workers <sup>a</sup>	49 (14.45)	61 (17.99)	82 (24.19)	100 (29.50)	47 (13.76)
If a pregnant woman is HIV-infected, her family has the right to know <sup>b</sup>	113 (59.79)	55 (29.10)	13 (6.88)	7 (3.70)	1 (0.53)
Women who refuse to perform an HIV test are irresponsible people <sup>b</sup>	54 (28.72)	48 (25.53)	58 (30.85)	23 (12.23)	5 (2.66)
A woman with HIV should be infertile regardless of her choice <sup>a</sup>	20 (10.70)	12 (6.42)	64 (34.22)	61 (32.62)	30 (16.04)
The score of attitude: mean (SD)	50.29 (7.09)				

\*a for these questions, “strongly adverse” is the correct answer; <sup>b</sup>for these questions, “strongly agree” is the correct answer. \*PLHIV: People Living with HIV; MSM: Men who have Sex with Men

**Table 3: Concern of health workers toward HIV in workplace**

Statements (response for concerned)	N (%)			
	I do not worry	I'm a little worried	I'm worried	I'm very worried
Getting HIV in touch the clothes or the bed of PLHIV	151 (43.77)	93 (26.96)	36 (10.43)	29 (8.41)
Getting HIV during dressing a wound of PLHIV	45 (13.55)	93 (28.10)	70 (21.08)	70 (21.08)
Getting HIV in drawing the blood of PLHIV	33 (9.91)	68 (20.42)	79 (23.72)	101 (30.33)
Catching HIV during measuring body temperature of PLHIV	191 (57.01)	51 (15.22)	26 (7.76)	12 (3.58)
Getting HIV in health care services such as teeth filling, surgical procedures and . for a PLHIV.	35 (10.39)	46 (13.65)	78 (23.15)	75 (22.26)
Stay away from family and friends due to the importance to PLHIV (in the past year)	139 (40.64)	31 (9.06)	22 (6.43)	10 (2.92)
Distracting colleagues due to the importance to PLHIV (over the past year)	141 (42.47)	20 (6.02)	17 (5.12)	8 (2.41)
Contributing to deliver a mother with HIV	35 (20.23)	44 (25.43)	35 (20.23)	22 (12.72)

their colleagues in the past year, 24.71% of personnel unwillingness to provide services to PLHIV. About 37.87% mentioned that their colleagues never provide poor services to PLHIV. The midwives reported that 35.60% of their colleagues never inform others about pregnant women with HIV. Moreover, 43.08% of midwives never neglect pregnant women with HIV during childbirth. Nearly, 29.74% of midwives complied with the standard precautions for an HIV infected pregnant woman during childbirth. And about 42.90% of participants were not informed about instruction on non-discrimination care and treatment for PLHIV.

#### Factors associated with the attitude score

Except for marital status, there was no significant relationship between demographic and occupational characteristics of participants with their attitudes toward PLHIV ( $p > 0.05$ ). Married participants had fewer attitude scores in comparison with single ( $\beta = -11.79$ ,  $p = 0.048$ ). The years of employment, having a history of servicing PLHIV, and history of participating in HIV related training courses had no significant effects on attitude score ( $p > 0.05$ ). Among women, wearing gloves was associated with attitude ( $\beta = 5.96$ ,  $p = 0.041$ ).

#### Factors associated with performance

The odds of avoiding physical contact with PLHIV among men was significantly 2.55 times more than women ( $p = 0.029$ ) while the odds of wearing two gloves during servicing to PLHIV among women was significantly 69.00% more than men ( $p = 0.007$ ). The odds of wearing two gloves during servicing to PLHIV among nurses and midwives were significantly 5.81 and 14.16 times in comparison with the general practitioners ( $p = 0.011$ ). The odds of considering standard precautions among nurses was 4.87 times more than general practitioners ( $p = 0.047$ ).

The other demographic characteristics, years of employment, having a history of servicing PLHIV in the past year, and history of participating in training courses in HIV related had no significant effects on

performance ( $p > 0.05$ ). The odds of avoiding physical contact with PLHIV were significantly 8.13% decrease for one unit improving attitude scores ( $p < 0.001$ ).

#### Discussion

Given the results, more than half of the participants, as representative of HCWs in Isfahan, had a moderate attitude score toward PLHIV. More than one-fourth midwives were worried about delivering HIV infected pregnant women. About one-fifth of respondents do not prefer providing services to MSM. More than one-third of them did not inform about instruction on providing non-discriminatory care and treatment services to PLHIV. Nurses and midwives, who are the main share of participants, had better performance and complied with universal precaution during servicing to PLHIV more than other HCWs.

HIV attitude score of HCWs in this study is similar to another study in Shiraz that showed a low to a moderate level for HIV attitude score among HCWs.<sup>[7]</sup> However, a study in Gilan declared a high HIV attitude score among clinical laboratory personnel; this inconsistency may be due to differences in types of HCWs communication with PLHIV that affects the staff's attitude and concern. In the current study, more than half of the participants were nurses and midwives who are directly involved with PLHIV, consequently, the participant's attitude score is lower towards lab staff, contemplatively. Therefore, appropriate personnel training based on the workplace context and interface level with PLHIV seems necessary.<sup>[15]</sup> Regarding this results as well as in other studies, the more attitude score, the better behavior of HCWs in dealing with PLHIV and more daring physical contact with them<sup>[16]</sup>; this is a solid reason for the necessity of planning to improve the HCWs attitude and reduce stigma and discrimination toward PLHIV.<sup>[17]</sup>

Approximately, a fifth of participants of the current study revealed unwillingness in health services to HIV positive MSM; this result is similar to the result of another study by

Zarei *et al.* in Iran (46%).<sup>[7]</sup> Abandonment of homosexual behavior in Islam religion and Iranian culture seems the main reason for this negative attitude among HCWs toward MSM.<sup>[18]</sup> Nonetheless, training HCWs to provide health services to PLHIV beyond their beliefs is strongly recommended.<sup>[16]</sup>

Less than two-third of health workers were informed about non-discrimination care and treatment for PLHIV as nearly one-third of staff declared that they have no such instruction in their workplace. Conversely, to our results, in a study in the United States, about 72% of health workers reported the presence of policies preventing discrimination against PLHIV in their workplace.<sup>[19]</sup> There are policies in reducing discrimination toward PLHIV in Iran, informing health workers seems not to accomplish properly. Although the nurses and midwives adhere to universal precautions during servicing to PLHIV more than others HCWs in the current study, lack of sufficient information about universal precautions may be one of the reasons for the solicitousness of midwives about the delivery of HIV infected pregnant women. Thus, along with the training of midwives in this regard, it is also recommended monitoring the implementation of the infection control measures in the maternity ward.<sup>[20]</sup> As the nurses and midwives have the most direct relationship with PLHIV in comparison to other HCWs, planning to promote the attitude and demote the stigma and discrimination in these two groups seems essential in line with United Nations Joint Program on HIV/AIDS (UNAIDS) declaration: “achieving to the goal of ending the epidemic of HIV by 2030 is depended on reducing HIV-related stigma and discrimination.”<sup>[21,22]</sup>

Overall, consideration of both individual and structural factors is recommended to reduce stigma and discrimination in the health care setting. Increasing HCWs knowledge and reducing their fear of casual transmission through skills-building can be effective at the individual level.<sup>[6]</sup> However, future studies on the most appropriate method for educating and training HCWs in Iran are suggested.<sup>[23]</sup> At a structural level, supplying protective equipment, establishing supportive and nondiscriminatory policies and regulations, and supplies used for standard precautions in the health care setting are critical factors.<sup>[21,24]</sup>

One of the limitations of this study is the impossibility of generalizability of the results to the whole country because this study was conducted only in Isfahan, however; the results of this study can provide policy-makers with planning for improving health worker's attitude and then performance. Given that the health personnel filled questionnaires at their workplace, the probability of occurring social desirability and response bias was the other limitation that we tried to reduce these biases via including non-forced-choice options, “I do not agree or disagree”, for each question.

## Conclusion

The HIV attitude among health care providers in Isfahan was not satisfactory. Planning for training the health personnel and improving their attitudes in order to reduce HIV stigma and discrimination in health systems as well as strong monitoring of related guidelines and instructions implementation is recommended.

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## Conflicts of interest

Nothing to declare.

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