

The Relationship between Knowledge, Attitude and Tendency to Care of HIV/AIDS Patients among Nurses and Midwives, Working in General Hospitals and Health Care Centers of Isfahan University of Medical Sciences, 2013

Farzin Khorvash (MD)^{1,2}, Soheila Mohamadirizi (MSc)³, Behrouz Ataiee (MD)^{4,2}, Nafiseh Khayamim (MSc)³, Zahra Boroumandfar (MSc)^{5*}

¹ Assistant Professor, Nosocomial Infection Research Center, Isfahan University of Medical Science, Isfahan, Iran

² Department of Infectious Disease, Medical School, Isfahan University of Medical Science, Isfahan, Iran

³ MSc in Midwifery, Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

⁴ Assistant Professor, Infectious Diseases and Tropical Medicine Research Center, Isfahan University of Medical Science, Isfahan, Iran

⁵ PhD Student, Nosocomial Infectious Diseases Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

ARTICLE INFO	ABSTRACT
<i>Article type:</i> Original article	Background & aim: Knowledge and attitude of the nurses and midwives towards HIV/AIDS patients could affect the quality of care provision. Thus, this study aimed to determine the relationship between knowledge, attitude, and tendency of nurses and midwives towards caring for HIV/AIDS patients.
<i>Article History:</i> Received: 24-May-2014 Accepted: 08-Sep-2014	Methods: This cross-sectional study was conducted on 303 nurses and midwives at healthcare centers, affiliated to Isfahan University of Medical Sciences, using stratified sampling in 2013. All participants completed a four-section questionnaire including demographic data, knowledge about HIV/AIDS, attitude towards HIV/AIDS, and tendency to care for HIV/AIDS patients. For data analysis, Pearson's correlation coefficient, t-test, and one-way ANOVA were performed, using SPSS version 16.
<i>Key words:</i> Attitude Knowledge Midwife Nurse Tendency to Care	Results: As to the findings, 57% of the participants had insufficient knowledge, 98% had negative attitudes, and 86% had a moderate tendency to care for HIV/AIDS patients. A negative correlation was seen between HIV knowledge and attitude towards HIV patients ($P=0.042$, $r=-0.58$). Also a significant relationship was observed between attitudes towards HIV/AIDS and tendency to provide care for these patients ($P=0.011$, $r=0.78$). Conclusion: As the knowledge, attitude, and tendency to care for HIV/AIDS patients were not desirable among nurses and midwives, it is recommended that comprehensive courses be organized in order to change caregivers' knowledge, attitudes, and tendencies towards care provision for HIV/AIDS patients.

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Introduction

Acquired Immune Deficiency Syndrome (AIDS), as a new emerging infectious disease, remains one of the most challenging health problems of the late 20th century. More than 70 million people have been diagnosed with AIDS within the last 20 years, while no such cases had been found until the last three decades (1).

This disease is one of the most important problems of healthcare systems due to its prevalence among different age groups, high mortality rate, and high expenses for healthcare

systems. Therefore, prevention, management, and care for HIV/AIDS patients are among the major responsibilities of healthcare systems (2).

Iran, as a Middle Eastern country, faces AIDS crisis (3). As World Health Organization (WHO) has predicted, the rate of Human Immunodeficiency Virus (HIV) infection will increase to 10% by 2020 in Iran. Therefore, Iran is regarded as one of the high-risk countries in the world (3).

The main routes of transmission include injection with common devices, blood transfusion, sexual intercourse, and mother-to-

* Corresponding author: Zahra Boroumandfar, PhD Student, Nosocomial Infectious Diseases Research Center, Isfahan University of Medical Sciences, Isfahan, Iran. Email: boroumandfar@nm.mui.ac.ir

fetus transmission. Healthcare providers might be exposed to HIV through direct contact with contaminated blood or skin (4). It is estimated that 1000 healthcare providers will be diagnosed with HIV due to their constant contact with HIV patients and skin injuries. Furthermore, around 600,000 healthcare providers in the U.S. are in contact with patients' blood (5-7).

Compared to other healthcare providers, nurses and midwives are more in contact with patients' blood due to performing vein puncture and injections (8). As Mohammad Nejad (2010) reported, occupational exposure to HIV via sharp devices was approximately 47.5% among nurses; he also stated that 65.6% of nurses experienced needlestick injuries (9).

Knowledge about AIDS and its transmission routes, as well as the attitude of healthcare providers towards AIDS, could influence the level and quality of care for HIV/AIDS patients (10). A study conducted on general population (aged 16-65 years) in Tehran (2004) showed misconceptions about AIDS, despite people's sufficient knowledge; however, positive attitudes towards AIDS were also reported (11). In another study, 20% of Spanish nurses had a negative attitude towards AIDS (12).

As the experts have indicated, knowledge deficit related to AIDS and fear of infection are important contributing factors for differentiating care. In fact, they are the largest barriers to HIV prevention and support for HIV patients and their families (13). A study by Zeyghemi Mohammadi (2012) in Tehran showed that 36.4% of nurses had a moderate tendency to care for AIDS patients (10). According to a study by Oyeyemi (2006) in Sub-Saharan Africa, 21% of nurses were willing to care for HIV/AIDS patients, while American midwives showed low levels of comfort to care for these patients (14).

Unwillingness to care for HIV/AIDS patients is one of the most challenging issues in professional ethics (15); it leads to patients' lack of self-esteem, psychosocial problems, and decreased quality of care. This reluctance acts as a barrier to patients' participation in HIV prevention programs (about transmission from mother to fetus or from one person to another), consultation sessions, laboratory tests, follow-ups, and treatment or care programs (16-21).

It is necessary to frequently evaluate the

knowledge of healthcare providers regarding AIDS, its transmission routes, and prevention and raise their awareness about the associated risks. Therefore, improving knowledge about preventive behaviors is helpful in eliminating occupational exposure to HIV and changing common behaviors and course of action (22-25).

Considering the above-mentioned points and the influence of healthcare providers' knowledge and attitudes on care methods for HIV/AIDS patients, we performed the present study to determine the level of knowledge, attitude, and tendency of healthcare providers to care for HIV/AIDS patients. We also assessed the relationships between these variables at Isfahan hospitals and healthcare centers in 2013.

It is hoped that this study highlights the importance of treatment and medical education and encourages health planners to design proper policies and strategies for raising knowledge and improving attitudes toward care for HIV/AIDS patients.

Materials and Methods

This one-group, correlational study aimed to determine the relationship between knowledge, attitude, and tendency to care for HIV/AIDS patients among employed nurses and midwives at Isfahan government hospitals and healthcare centers in 2013.

Overall, 303 nurses and midwives, who met the inclusion criteria and were working at Isfahan government hospitals (and affiliated healthcare centers) were included in the study. In order to have access to employed midwives with different professional backgrounds, government hospitals and healthcare centers were selected as the setting for sampling. Multistage sampling was applied and 8 hospitals and 3 provincial healthcare facilities were randomly clustered. Then, 32 participants in each cluster were selected via accessible sampling.

Sample size was calculated using the correlation coefficient formula ($n=26$, $r=0.28$) for 10 nurses and midwives. Considering a 20% dropout during the study, 306 subjects were included in order to be assured about the adequacy of sample size [CI=95%; degree of confidence $(1-\alpha)=0.05$; test power $(1-\beta)=80\%$]. Response rate was estimated at 99%; thus, the data related to 303 participants were analyzed.

The inclusion criteria were as follows: 1) written informed consent for participation in the study; 2) Iranian nationality; 3) residing in Isfahan; 4) minimum academic degree in midwifery or associate's degree in nursing or B.Sc. in nursing; and 5) three years of work experience (at least).

If the participant or one of the family members had AIDS, he/she was excluded from the study. Ethical considerations were observed throughout the study and the ethics committee of the university approved the research. Permission letters were sent from Isfahan University of Medical Sciences to the selected hospitals and healthcare centers; certain times were arranged for distributing the questionnaires.

The subjects were enrolled in the study if they met the inclusion criteria. Aims and objectives of the study were explained to the candidates and written informed consents were obtained.

At first, the participants were asked to complete a four-section questionnaire including demographic/professional data (7 questions), HIV knowledge (45 questions), AIDS attitude scale (21 questions), and caring services (14 questions). The subjects were asked to hand in their questionnaires at the end of their work shifts. The participants were assured about the confidentiality of the data and all questionnaires were kept anonymous.

For HIV/AIDS knowledge score, standard HIV-knowledge questionnaire (including 45 questions), developed by Carey, Morrison-Beedy and Johnson (1997), was applied. This questionnaire included HIV/AIDS transmission routes, prevention and treatment methods. Each question had three options: true (score 1), false (score 0), and don't know (score 0). The scores ranged from 0 to 45 and those who obtained scores lower than 22 were considered to have insufficient knowledge; those with scores higher than 22 were considered to have moderate or high levels of knowledge.

The next study tool was AIDS attitude scale, which was first developed by Framan in 1992 and included 21 questions (30). It consisted of 2 subscales of positive and negative attitudes towards HIV/AIDS patients. The negative subscale comprised of 14 questions and the positive subscale included 7 questions. The answers were scored based on a 6-point Likert

scale, ranging from strongly disagree (1) to strongly agree (6).

The negative subscale included questions number 1, 5, 8, 11, 14, 15, 19, and 21; higher scores indicated more negative attitudes. The rest of the questions were associated with the positive subscale; higher scores presented more positive attitudes.

Finally, the caring survey included 14 statements with 10 negative and 4 positive feelings. Each statement was scored, using a 5-point Likert scale, ranging from strongly disagree (0) to strongly agree (4). The total score ranged from 0 to 56 and higher scores indicated lower tendency to care for patients. In this survey, scores less than 18 indicated the subject's tendency to care for patients. Scores 19-37 and 38-56 referred to neutral attitude and unwillingness, respectively.

Validity of the Farsi version of this questionnaire was confirmed by content validity. This instrument was developed based on recently published books and papers and was presented to experts for scientific comments. Reliability of the questionnaire was confirmed by test-retest. The questionnaire was completed twice by 10 nurses and midwives within a 10-day interval; the reliability was calculated as $r=0.95$, $P=0.011$ and $r=0.91$, $P=0.017$, respectively.

For data analysis, Pearson's correlation coefficient, t-test, and one-way ANOVA were performed, using SPSS version 16. Confidence interval was considered at 95% and 0.05 was regarded as the significance level.

Results

According to the findings, 90.7% ($n=284$) of the participants were female and 70.9% ($n=222$) were single. Overall, 28.3% ($n=276$) of the subjects had a B.Sc. degree, 67.7% (212) were nurses, and 32.3% (101) were midwives; also, 76.8% (234) of the subjects had sufficient income.

The mean age of nurses was 23.05 ± 4.4 years (age range: 19-44 years) and the mean age of midwives was 24.06 ± 1.4 years (range: 19-44 years). In addition, the subjects had mostly acquired their knowledge through books (Figure 1). As to the findings, the mean scores of nurses'

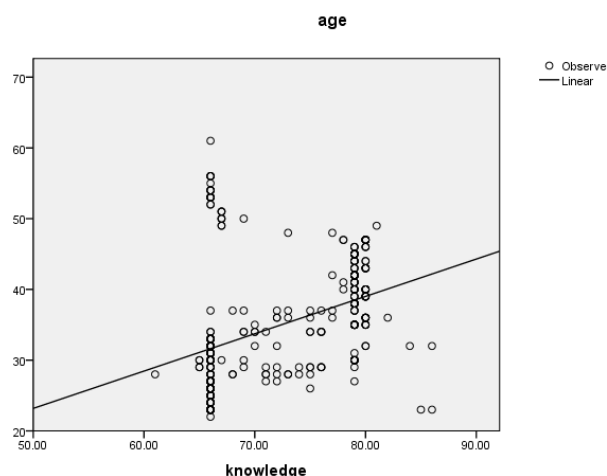


Figure 1. Scatter diagram of knowledge and age

and midwives' knowledge were 73.32 ± 6.5 (range: 59-97) and 73.04 ± 6.1 (range: 62-90), respectively.

As to the results, 180 participants (57.5%) had a moderate level of knowledge related to AIDS. The mean score of attitude towards AIDS was -22.95 ± 7.5 (ranging from -51 to 0) among nurses and -21.16 ± 11 (range: -52-17) among midwives. Also, 308 participants (98.4%) showed a negative attitude towards AIDS. On the other hand, the mean score of tendency to care was 29.26 ± 35 (range: 3-47) among nurses and 29.29 ± 21 (range: 4-6) among midwives; in addition, 272 participants (86.9%) showed a moderate tendency to care for AIDS patients (Table 1).

Table 1. Distribution of subjects based on the personnel's HIV/AIDS knowledge, attitude, and tendency to take care for HIV/AIDS patients

Variables	N (%)
Attitude	
Positive	5 (1.6)
Negative	308 (98.4)
Tendency to care	
No tendency	17 (5.4)
Neutral tendency	272 (86.9)
High tendency	24 (7.7)
Knowledge	
Poor	180 (57.5)
Good and moderate	133 (42.5)

Based on Pearson's correlation test, a significant inverse correlation was found between attitude towards HIV/AIDS patients and tendency to care; i.e., high scores of tendency to care for patients were associated with negative attitudes towards these patients (Table 2). No significant relationship was found between knowledge and tendency to care for patients ($P=0.552, r=0.023$).

There was a negative correlation between HIV knowledge and attitude toward HIV patients, i.e., high knowledge scores were associated with decreased attitude scores (Table 3). In terms of demographic data, HIV/AIDS knowledge was significantly correlated with age and work experience; i.e., advancing age and work experience were associated with higher knowledge scores (Table 4, Figures 1 and 2).

Table 2. Distribution of subjects' attitude, based on their tendency to take care for HIV/AIDS patients

Tendency to care	High tendency	Neutral tendency	No tendency	Total	Pearson's test
Attitude	N (%)	N (%)	N (%)	N (%)	
Negative	15(8.6%)	54 (30.9%)	92(52.6%)	161(92%)	P= 0.032, r= -.41
Positive	1(0.6%)	3(1.7%)	10(5.7%)	14(8%)	
Total	16(1.9%)	57(32.6%)	1.2(58.3%)	175(100%)	

Table 3. Distribution of knowledge, based on subjects' attitude towards HIV/AIDS patients

Knowledge	Less than the mean	More than the mean	Pearson's test
Attitude	N (%)	N (%)	
Negative	3(1.7%)	2(1.5%)	P=0.042, r= -0.58
Positive	177(98%)	131(98.5%)	
Total	180(100%)	133(32.6%)	

T-test showed no significant difference between knowledge and marital status ($P=0.53$), gender ($P=0.42$), or academic education ($P=0.32$). Similarly, no significant difference was

found between tendency to care for HIV/AIDS patients and marital status ($P=0.13$), gender ($P=0.72$), or academic education ($P=0.44$).

There was no significant difference between

attitude and marital status ($P=0.51$), gender ($P=0.09$), or academic education ($P=0.08$). Also, ANOVA test showed no significant difference between income level and knowledge ($P=0.62$), tendency to care for HIV patients ($P=0.31$), or

attitude towards HIV/AIDS ($P=0.17$). Moreover, no significant relationship was found between weekly working hours and knowledge ($P=0.36$), tendency to care for HIV patients ($P=0.630$), or attitude towards HIV/AIDS ($P=0.31$).

Table 4. Distribution of knowledge, based on work experience

Work experience	Less than 5 years	5-10 years	More than 10 years	Pearson's test
Knowledge	N (%)	N (%)	N (%)	
Less than the mean	59(19.0%)	42(13.8%)	77(25.2%)	P= 0.011, r=-0.78
More than the mean	53(17.4%)	39(12.8%)	35(11.5%)	
Total	112(36.7%)	81(26.6%)	112(26.6%)	

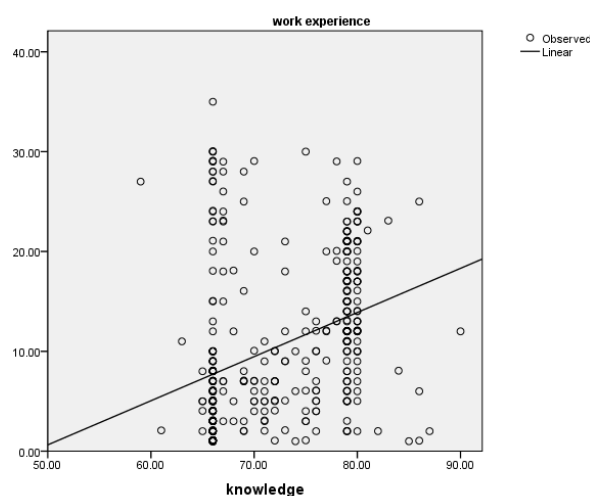


Figure 2. Scatter diagram of knowledge and work experience

Discussion

In the present study, 42% of nurses and midwives had a high level of knowledge, which is in agreement with the results of studies by ZeyghamiMohammadi (2011) and Ghorbani (2006), who reported that 41% and 46% of the subjects had high levels of knowledge about HIV and its transmission routes, respectively (10, 26); on the other hand, Jafari (2007) indicated that more than 83% of healthcare providers had sufficient knowledge in this regard (27). As these results indicated, although healthcare providers are at a higher risk of HIV or AIDS, they are more educated than other high-risk groups including the youth and adolescents.

As the results demonstrated, a limited number of participants had insufficient knowledge about HIV/AIDS. Therefore, Continuing Medical Education (CME) courses are necessary for this group, since knowledge

deficit about transmission routes negatively influences the care process.

Negative attitudes towards AIDS were highly associated with fear of morbidity due to knowledge deficit and fear of contact with patients. According to the findings, approximately 92% of nurses and midwives had negative attitudes toward these patients, which is in agreement with a Tanzanian study in which 97% of healthcare providers including physicians, nurses, and midwives showed negative attitudes; on the other hand, Ghorbani (2006) reported that only 49% of nurses had a negative attitude toward HIV/AIDS patients.

Poursheikham (2004) reported that 91% of the subjects had a positive attitude towards HIV patients in Guilan, Iran. According to another related study, there was a relationship between knowledge and attitude toward AIDS (28). However, Adebajo showed that despite the high levels of knowledge (96%), subjects had a negative attitude towards HIV and AIDS (29). Similarly, ZeyghamiMohammadi (2011) found no significant relationship between knowledge and attitude towards HIV/AIDS among nurses in Tehran (10). Discrepancy between the current findings and those of the aforementioned study might be due to the larger sample size of the present research (303 vs. 165 subjects).

Another influential factor for attitudes towards HIV is tendency to care for AIDS/HIV patients (30). In the present study, 86% of the participants had a moderate tendency to care for these patients, which is consistent with the findings of Zeyghami's study (80%). However, Kremor (2005) reported that 15% of the subjects were unwilling to care for these patients (31).

Another observation was the relationship between attitude towards AIDS and tendency to care for HIV/AIDS patients. This finding was not in congruence with those of Kremor's study in which fear of morbidity was not related to negative attitude or tendency to care for patients (31).

However, the present findings were consistent with those of Chen's research, which showed that healthcare providers have a lower tendency to care for HIV patients, given their fear of morbidity (32). Similarly, Babits (2008) found a relationship between fear of morbidity and discrimination in care provision for HIV patients. In fact, 72% of healthcare providers, who were at risk of infection, had no tendency to care for HIV patients (33).

Therefore, nurses' knowledge regarding patients' rights and professional ethics should be raised in order to encourage a positive behavioral change, improve care for HIV patients, and reduce fear of morbidity and negative attitudes toward these patients. Indeed, care is a fundamental aspect of nursing profession and all patients have an equal right. It seems that improving a positive attitude toward AIDS via knowledge development is of great importance.

Although the participants were assured about the confidentiality of the data, it is possible that some questions were not sincerely answered. In addition, due to heavy workload, researchers could not gather the questionnaires immediately after completion and the subjects were asked to hand in their own questionnaires at the end of their work shifts. It is recommended that further studies be conducted on other groups of healthcare providers with larger sample sizes.

Conclusion

Knowledge, attitude, and tendency to care for HIV/AIDS patients were not at a desirable level among nurses and midwives. Since healthcare providers including nurses and midwives are at risk of HIV disease, it is recommended that related courses be held in order to change their attitude and improve their tendency to care for these patients. In addition, caregivers should be encouraged to participate in seminars and congresses and be provided

with pamphlets and CDs to improve their knowledge, attitude, and tendency to care for HIV/AIDS patients.

Conflict of Interest

The authors declare no conflicts of interest.

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