



Original Article

Knowledge, Attitudes, and Practices toward HIV/AIDS among Senior Midwifery Students in Iran, in 2020



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ABSTRACT

Background: Prevention of acquired immunodeficiency syndrome (AIDS) depends on the level of knowledge, attitude, and practice of health care providers. This study was aimed to investigate the relationship between knowledge, attitudes, and practices regarding HIV/AIDS among senior midwifery students in 2020.

Methods: A descriptive-analytic cross-sectional study was performed on 618 midwifery students in selected universities of Medical Sciences and Department of Midwifery of Islamic Azad Universities in Iran in 2019-2020. Students were selected through multi-stage cluster random sampling. Data were collected using self-report questionnaire after confirmation of validity and reliability. The questionnaire consisted of demographic and educational characteristics and knowledge, attitude, and performance toward AIDS. Data were described using frequency and percent or mean and standard deviation. Pearson correlation coefficient and linear regression model was used to explore the association between variables.

Results: In this study, the mean age of study population was 23.1 years old (SD = 5.63) and the majority were single. The mean and standard deviation of midwifery students' knowledge, attitude, and practice was 26.93 (SD = 6.64), 80.45 (SD = 9.27) and 29.55 (SD = 9.10), respectively. There was a positive and weak correlation between knowledge and attitude ($r = 0.22$, $P\text{-value} = 0.001$), positive and weak correlation between knowledge and practice ($r = 0.089$, $P\text{-value} = 0.02$) and positive and moderate correlation between students' attitude and practice of the senior midwifery students toward AIDS ($r = 0.35$, $P\text{-value} = 0.001$).

Conclusion: The results of this study showed moderate level of knowledge, attitude, and practice among midwifery students and the level of both attitude and practice was higher in advancing level of knowledge.

Keywords: Knowledge, Attitude, Practice, Midwifery, AIDS

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Introduction

Acquired immunodeficiency syndrome (AIDS) is one of the most important infectious disease that threatens the lives of many people. According to the World Health Organization

(WHO) in 2020, there were an estimated 38 million people living with HIV. According to WHO statistics, the estimated number of people living with HIV, especially in recent years in countries such as Iran, is increasing despite all

interventions and facilitating access to services (1). Today, sexual health issues such as unintended pregnancies and infections with Acquired Immune Deficiency Syndrome (AIDS) and hepatitis are among the leading causes of death among adolescents worldwide. However, many of these deaths can be prevented by taking appropriate and timely measures (2). At present, the most important and only way to deal with this disease is prevention (3).

The WHO report found that the prevalence of HIV in 15 countries with a high incidence of the disease has decreased in young people aged 15-24 years globally by more than 25%, which is largely due to the effective delivery of comprehensive HIV prevention programs (4). Education is one of the most effective steps to prevent the disease. However, the results reveal an insufficient level of knowledge about this disease in society. Therefore, at present, the society needs HIV prevention education among high-risk and healthy groups (5).

Health care providers are reported to be among the groups with the high risk of being affected with the disease. The WHO estimates that out of 35 million service providers, about 1,000 are becoming infected with HIV each year (6). Moreover, WHO reports indicate that in Asia, the annual needle stick injuries among health care providers are an average of 4 times per health care provider (3). There is a high risk of being infected with various diseases transmitted by blood and body fluids due to frequent exposure patient's body fluids and this issue may affect the quality of their care (7). However, the results indicate an insufficient level of knowledge regarding AIDS in society. The results of a study showed that nurses had moderate level of HIV knowledge and appropriate attitude towards AIDS patients but lacked proper performance in dealing with them (8). Another study found that 48% of students were considered to have a low level of knowledge about HIV, and that there were still misconceptions among students about getting HIV from public toilets, mosquito bites. Therefore, researchers have emphasized the urge to develop purposeful educational protocols to correct misconceptions and promote the level of knowledge (9).

The results of a study investigated the level of knowledge among most nursing and midwifery students in Isfahan and concluded that students had moderate knowledge about HIV/AIDS (10). While a study in Nigeria showed that most students had inadequate knowledge on HIV/AIDS and were not willing to care for AIDS patients. According to experts in the field of infectious diseases, lack of information about AIDS and as a result, the fear of becoming infected with the AIDS virus, are the causes of discrimination. This is the biggest obstacle to preventing HIV transmission and providing care and support to infected people and their families. The study demonstrated that nurses who felt fear of the risk of contracting AIDS due to occupational exposure were less likely to care for AIDS patients (7). The results of a study in Africa also showed that people with AIDS received poor services in a place with good facilities due to the poor performance of service providers. Therefore, the effective use of medical services and support depends on the desired level of knowledge, attitude, and practice of the care providers (11).

Midwives play a pivotal role in the prevention and treatment of AIDS since they have close and continuous communication with mothers. The Millennium Development Goals (MDGs), particularly, its second goal, emphasize global reproductive health for women (12). In the field of AIDS, inappropriate KAP will definitely cause irreversible damage to the individual, family and society, and its measurement in midwives is essential for educational planning (13). Thus, it is essential to obtain information about the knowledge, attitude, and practice of midwifery students because they are at risk as service providers; moreover, their role is important since they provide services to vulnerable groups to prevent and control the spread of the virus (14). Therefore, this study was aimed to investigate the relationship between knowledge, attitude, and practice of senior midwifery students in relation to AIDS in 2020.

Methods

Study type and study population:

A descriptive-analytic cross-sectional study was performed on senior midwifery students in selected universities of Medical Sciences and Department of Midwifery in Iran in 2019-2020. Inclusion criteria included being Iranian, Muslim, midwifery students in the 7th semesters and entry into the practice field of midwifery course. Lack of willingness to participate in the study was considered a criterion for non-acceptance in the study. The total number of midwifery students in the 7th semesters in Iran was estimated to be 2250 individuals. According to previous estimate of standard deviation for knowledge score equal to 3.07 (15), considering precision to be 0.25, attrition rate of 20%, and type I error probability of 0.05, a total of 700 subjects was calculated for sample size.

The required sample was selected using multistage cluster random sampling method. First, the list of universities in Iran which had a department of midwifery was prepared and classified into three clusters based on the types of universities. Then in each cluster, some universities were randomly selected proportional to the cluster size. Sample individuals were selected from the 7th semester of midwifery course using simple random sampling method on the list of eligible students as sampling frame. After obtaining informed consent from students, the data were collected using a self-report, 5-part questionnaire including demographic and educational characteristics, and knowledge, attitude and practice scale.

Study Questioners

To assess students' knowledge on AIDS, the HIV Knowledge Questionnaire (HIV-KQ) developed by Carey, Morrison-Beedy, & Johnson was used (16). Three-choice questions (true, false, I do not know) were designed. The score for a "false" answer and "I do not know" was zero, and the score for a "correct" answer was one. Total score ranges between 0 to 45 and then classified as low knowledge (scores less than 22), moderate knowledge (scores between 22 to 35) and high knowledge (scores between 35 to 45).

The AIDS Attitude Scale was derived from the standard AIDS Attitude Scale of Froman (17). Scores were rated on a 6-point Likert type scale from strongly disagree (1) to strongly agree (6). A higher score indicates a more positive and

supportive attitude, and a lower score indicates a non-therapeutic and non-supportive attitude towards these patients.

Jordan standard questionnaire was used to assess performance. The scale consisted of 14 items including 10 negative and 4 positive items. Scoring was rated on a 5-point Likert scale, from strongly disagree (0) to strongly agree (4). The total score was between 0 and 56. A higher score indicates proper performance of caring for AIDS patients. In this questionnaire, the score less than 19 indicated improper performance, 19-38 indicated neutral performance and the score 38-56 indicated optimal performance.

The reliability of AIDS knowledge, attitude, and practice questionnaires have been assessed in previous studies by Benjakulw, Carey and Zeighami studies and have been confirmed by Cronbach's alpha of 85%, 92% and 91%, respectively (16, 18, 19). The content validity of the questionnaire was determined by evaluating the item scores given to the 10 faculty members of the Department of Nursing and Midwifery. Content validity index was higher than 0.79 indicating the suitable content validity.

Statistical analysis

Descriptive statistics including mean, standard deviation,

frequency and percentage were used to describe data. The normality of continuous variables was assessed using Kolmogorov-Smirnov test. Inferential statistics including Pearson correlation coefficient, t-test, one-way ANOVA and Kruskal-Wallis test were used to analyze the data, as appropriate. To assess independent association of each significant variable with knowledge, attitude, and practice multivariate linear regression model using backward method was used. Data analysis was performed using SPSS18 software. The p-value less than 0.05 was considered statistically significant.

Results

Of total 700 questionnaires, 618 students completed and returned them yielding a participation rate of 88.29%. The mean age of participants was 23.1 (standard deviation (SD) = 5.63) years. Most students (79.8%) were single. Among married individuals (118 subjects), 19.1% had children. Most students' parents had a diploma or lower degree of education. The mean age of mothers and fathers of the participants was 46.76 ± 6.7 and 51.57 ± 6.94 , respectively. Demographic and educational characteristics of the study sample are shown in table 1.

Table 1. Demographic Characteristics of the Research Units

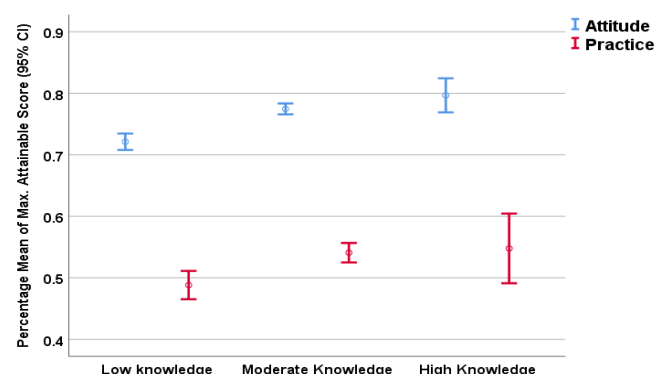
Number	Variable	Frequency	Percent
1	Age group		
	18 to 20 years	184	29.8
	20 to 22 years	244	39.5
	22 years and older	182	29.4
2	Marital status		
	Married	118	19.1
	Without spouse (single, widowed or divorced)	493	79.8
	No answer	7	1.1
4	Mother's age		
	30-50 years	261	50.9
	> 50 years	252	49.1
5	Father's age		
	30-50 years	408	78.6
	> 50 years	111	21.4
6	Mother's education		
	Elementary	88	14.5
	Junior High School	110	18.1
	Diploma	249	41.0
	University	161	26.5
7	Father's education		
	Elementary	70	11.5
	Junior High School	84	13.8
	Diploma	227	37.4
	University	226	37.2
10	Family income		
	Good	160	27.5
	Average	400	68.7
	Weak	22	3.8
9	Place of residence		
	Residential house	284	46.0
	Dormitory	247	40.0
	Student house	58	9.4
	Relatives' house	28	4.5
12	Number of children (Among married)		
	0	70	59.32
	1	27	22.89
	2	14	11.86
	3 and more	7	5.93
13	Education place		
	Hometown	183	183
	Outside of hometown	435	435
14	Type of university of study		
	Public	253	253
	Private	365	365

Table 2. Association between Demographic Variables with Knowledge, Attitude, and Practice toward HIV among Midwifery Students Using Backward Linear Regression Model

Construct	Variable	B- coefficient	t value	P-value	(95%CI)
Knowledge	Age	-0.27	-4.94	0.001	-0.38, -0.16
	Residence status (not at hometown)	-1.59	-2.23	0.012	-2.74, -0.34
	Ref: hometown				
Attitude	Marital status (Single)	-1.79	-2.44	0.021	-3.37, -0.27
	Ref: married				
	Marital status (Single)	2.537	2.87	0.011	0.58, 4.49
Practice	Ref: married				
	Age	-0.183	-3.42	0.008	-0.318, -0.049
	Type of university (private)	1.616	1.87	0.045	0.034, 3.19
	Ref: public				

CI, Confidence Interval

The mean and standard deviation of midwifery students' knowledge, attitude, and practice was 26.93 (SD = 6.64), 80.45 (SD = 9.27) and 29.55 (SD = 9.10), respectively. The percentage of maximum attainable score for knowledge, attitude and practice were 66%, 76%, and 53%, respectively. The frequency distribution of each category showed that 25.7% had low, 68.3% had moderate, and 6% had good knowledge. Regarding to the practice categories, 11.7% had improper, 73.3% had neutral, and 15% had optimal practice. Figure 1 illustrates the maximum attainable score of attitude and practice by categories of knowledge. The mean score of both attitude and practice was higher in higher categories of knowledge. As shown, the percentage mean of maximum score for attitude was higher than practice.

**Figure 1.** Percentage of Maximum Attainable Score of Attitude and Practice by Knowledge Group

According to the results of Spearman correlation coefficient, there was a positive and weak correlation between knowledge and attitude ($r = 0.22$, $P\text{-value} = 0.001$), a positive and weak correlation between knowledge and practice ($r = 0.089$, $P\text{-value} = 0.02$) and positive and moderate correlation between attitude and practice ($r = 0.35$, $P\text{-value} = 0.001$).

Table 2 shows the result of backward multivariate linear regression model for the association of study variables on knowledge, attitude, and practice. The model showed independent association between age, resident status and marital status of the participants with knowledge. The knowledge score of single individuals was significantly lower than married ones ($B = -1.79$, $P\text{-value} = 0.021$), significantly lower with every one-year increase in age (-0.27 , $P\text{-value} = 0.001$). The knowledge score of students studying outside their hometown was significantly lower than students studying in their hometown ($B = -1.59$,

$P\text{-value} = 0.02$). The model accounted for 7% of variation in knowledge score.

In contrast of knowledge score, the attitude score of single individuals was significantly higher than married ones ($B = 2.54$, $P\text{-value} = 0.011$). The model showed that students studying at private university had higher performance score towards people with AIDS than students studying at public universities ($B = 1.62$, $P\text{-value} = 0.045$).

Discussion

The results of the present study showed that senior midwifery students in Iran had moderate level of knowledge, relatively good attitude, and neutral level of practice towards HIV/AIDS. The level of both attitude and practice was higher in moderate and high compared to low knowledge group. The results also showed a positive and weak correlation between knowledge with attitude and practice and a positive and moderate correlation between attitude and practice among midwifery students in Iran. Therefore, increasing the level of knowledge can lead to increasing attitudes and improving student performance in relation to AIDS. In consistent with the results of the present study, a study showed that more profound knowledge of medical and paramedical students can help encourage students to provide more support to people living with HIV/AIDS (20). However, studies in different societies show different levels of youth knowledge about HIV/AIDS, which can be due to various factors including socio-cultural, religious, political orientation and parental knowledge (21).

Having insufficient information about AIDS and the fear of becoming infected by the virus might be the main barriers caring for infected people and their families. In a previous study in Nigeria, it was shown that patients with HIV infection considered service providers to be the most important cause of stigma in the community and their improper performance has been considered as the most important obstacle in access to health services prevention and control (7). Therefore, it should be noted that the knowledge, attitude, and practice of service providers, including midwives, are important and can promote and ensure the health of the individual, family, and community.

The results of the present study showed that the mean score of attitude of midwifery students was appropriate, however, none of them had a 100% positive attitude. Moreover, the results showed that there is a positive and weak correlation between the level of knowledge and attitude of midwifery students. The results of this study is in line with another study

which shows that high level of knowledge can reduce negative attitudes toward HIV/ AIDS (22). However, conversely, the results of Rabiee's study showed that female dentists who had a higher level of knowledge about HIV/AIDS had a negative attitude towards the patients (23). Negative attitudes can lead to social stigma, deprivation, denial, failure to provide care for people living with HIV/AIDS, discrimination, poor quality patient care, and increased treatment costs. In addition, having an inappropriate attitude is the most important obstacle to take measures to prevent the further spread of the disease and provide optimal care and support to infected people and their families. The results of another study in Iran showed that the mean score of attitude towards HIV/AIDS was the same between medical and non-medical students and there was no significant difference between the two groups. However, medical students had a good and relatively higher knowledge of HIV/AIDS (21). Other studies have shown that medical students have a better attitude towards HIV/AIDS. This difference in results may be attributed to the cultural context of the study population. It seems that the academic education of medical and paramedical students, including midwifery, may provide suitable situation for health care providers to receive adequate training. Confronting with various cases during the theoretical and clinical course, they may have an opportunity to develop a positive attitude toward patients regardless of the nature of the disease (24). The internship provides an opportunity for students to identify and correct negative attitudes that create discrimination against HIV/AIDS patients (25). It should be noted that students' higher knowledge of negative attitudes will be an effective step in controlling and eliminating this type of attitude in providing care. Colleges seem to be the first and one of the main sources of learning professional attitudes and culture (26). Students' careers and professional identities are also formed based on social interactions with faculty members as well as the values and norms learned through formal and informal curricula (27).

The results of the present study showed neutral and fair performance of senior midwifery students towards people with AIDS. The study of Khorouresh et al. also showed the moderate or fair tendency of students to care for AIDS patients (10). The results of our study revealed that people with higher levels of knowledge and attitude also performed better. Lack of appropriate knowledge and the fear of being infected with HIV seem to be among the factors preventing the provision of medical services to this group of patients (28). Similarly, the results of a study demonstrated that although staff had acceptable level of knowledge and attitude, their performance in dealing with AIDS was poor regarding implementing prevention and control measures. Therefore, having only information and a positive attitude is necessary but not sufficient to provide appropriate services (29). The results of a study also showed the need to pay attention to learning skills needed for taking care of people infected with HIV in educational curriculum for medical students (28). Therefore, the WHO has included HIV/AIDS-related topics into the existing curriculum of service providers before they enter the field of work and this is considered as an effective factor in controlling the disease. Dealing with people infected with AIDS during the training course is one of the ways to reduce

stigma (29). Senior students are more prone to blood-borne infections because they are more involved with patient care than other students (30). In this regard, the results of a study have shown that medical students have better performance towards people with HIV/AIDS than other students since in clinical settings, they are at risk for being infected with HIV and are more exposed to blood and blood products, they show better performance in dealing with HIV virus (21).

Therefore, medical students follow safety measures and prevention guidelines more compared to non-medical students (25). Contrary to the results of our study, the results of a study showed that there is no significant relationship between the level of knowledge and practice of dentists in dealing with AIDS patients. This differences in the studies can be attributed to the differences in curricula and cultures of different regions (31).

The results of the present study also demonstrated that the knowledge score of single people was significantly lower compared to married students; whereas, single and childless people had better attitude than married to provide medical services to AIDS patients. In consistent with the results of our study, a study in Vietnam showed that increasing the family dimension has negatively affected attitudes toward AIDS patients (26). The results of another study also revealed that married people take better preventive measures since they take great responsibility towards family members (31). Moreover, the results of the present study showed that the students of Azad University have shown a better performance than the students of the State university. Since they are both given the same educational curriculum, the impact of university type on performance requires investigating the effect of clinical education environments. Therefore, we should attempt to encourage students to adopt more appropriate preventive behaviors towards these patients as we modify the educational methods. Impossibility of measuring the performance of students in the hospital environment in the face of AIDS patients was limitations in this study.

Conclusion

The results of this study showed moderate level of knowledge, attitude, and practice among midwifery students and the level of both attitude and practice was higher with advancing level of knowledge. Therefore, it is suggested that educational programs be tailored to the needs of society. It is also recommended that these programs should be designed to improve the status of students in all three dimensions of knowledge, attitude and practice when dealing with AIDS. In addition, they should be presented as various educational programs, including theoretical and practical courses, group discussions, seminars and scientific conferences.

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Ethical consideration

The current study was approved by the Islamic Azad

University of Rasht Branch in 2019. (Ethics Code: IR.IAU.RASHT.REC.1397.063).

Conflicts of interests

Authors declared no conflict of interest.

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