

Assessment Knowledge, Attitude, and Willingness to Care for Patients with HIV/AIDS among Midwifery Students of Selected Universities in Iran in 2020

Abstract

Background: Stigmatization and discrimination by health workers, particularly midwives are obstacles to the achievement of universal access to Human Immunodeficiency Virus (HIV) prevention, treatment, and care programs. Therefore, it is necessary to evaluate midwifery students' knowledge and attitude regarding Acquired Immune Deficiency Syndrome (AIDS) and HIV, and their willingness to care for patients with AIDS and HIV before they enter the field of health and medical activities. Thus, the aim of this study was to investigate the level of knowledge and attitude in this regard, and willingness to care for patients with AIDS and HIV among midwifery students of selected universities in Iran in 2020. **Materials and Methods:** A descriptive-analytical, cross-sectional study was performed on 618 midwifery students in Iran in 2019–2020. Data were collected using a five-part questionnaire: a demographic characteristics form, an academic profile form, the HIV Knowledge Questionnaire (HIV-KQ), the AIDS Attitude Scale (AAS), and the Jordan Standard Questionnaire. Data analysis was performed through descriptive and inferential statistical methods. *p* value of ≤ 0.05 was considered significant. **Results:** The mean (SD) age of the subjects was 23.10 (5.63) years. The mean (SD) of knowledge, attitude, and willingness scores were 26.93 (6.64), 80.45 (9.27), and 29.55 (9.10), respectively. Single individuals had higher attitude scores. **Conclusions:** Iranian midwifery students had the desired level of knowledge, although the mean score was not much higher than the threshold. The level of the midwifery students' attitude was appropriate and more than that, but none of them had a 100% positive attitude. They had a moderate or neutral willingness to provide services to and care for patients with AIDS.

Keywords: Acquired immunodeficiency syndrome, attitude, human immunodeficiency viruses, knowledge, midwifery

Introduction

Acquired Immune Deficiency Syndrome (AIDS) is the deadliest infectious disease and the fourth leading cause of death in the world.^[1] Global surveys in 2016 showed 1.8 million new cases of Human Immunodeficiency Virus (HIV), 36.7 million cases of HIV infection, and 1 million deaths due to HIV/AIDS.^[2] The World Health Organization (WHO) estimates that 95% of HIV-positive and AIDS cases occur in developing countries.^[1] Iran is one of the countries in the Middle East facing the AIDS crisis.^[2] Epidemiological models show that there are about 80,000 HIV-positive subjects in Iran.^[3] In general, this disease affects the productive and active population of any society, that is, youth and

adolescents. Statistics show that 50% of people with AIDS are 21–35 years of age.^[4] Despite many efforts and good progress in controlling AIDS around the world, AIDS is still one of the most important diseases that threaten the lives of many people. Therefore, prevention is the only way to deal with this disease.^[5] One of the most effective steps for prevention is training. However, the results show an insufficient level of knowledge about AIDS in the society. The level of knowledge and attitude is influenced by factors such as the quality of training and the provision of services by the health team.^[6]

The health team needs an appropriate and up-to-date level of knowledge about AIDS,

Fatemeh Mokhtari¹, Bahareh Kamranpour², Maryam Shakiba³, Marjan Akhavanamjadi⁴, Marjan Goli⁵, Masoumeh Pourmohsen⁶

¹Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, ²Ph.D. Reproductive Health, Scientific Member of Midwifery, Department of Midwifery, College of Nursing and Midwifery, Rasht Branch, Islamic Azad University, Guilan, Rasht, ³PhD in Epidemiology, Department of Biostatistics and Epidemiology, School of Health, Guilan University of Medical Sciences, Rasht, ⁴Assistant Professor, Department of Midwifery, Faculty of Nursing and Midwifery, Tehran Medical Sciences, Islamic Azad University, Tehran, ⁵Assistant Professor, Department of Midwifery, Nursing and Midwifery Sciences Development Research Center, Najafabad Branch, Islamic Azad University, Najafabad, ⁶Ph.D. Reproductive Health, Scientific Member of Midwifery, Department of Midwifery, College of Nursing and Midwifery, Rasht Branch, Islamic Azad University, Guilan, Rasht, Iran

Address for correspondence:

Dr. Bahareh Kamranpour, Scientific Member of Midwifery, Department of Midwifery, College of Nursing and Midwifery, Rasht Branch, Islamic Azad University, Rasht, Iran.
E-mail: kamranpour801@yahoo.com

Access this article online

Website: <https://journals.lww.com/jnmr>

DOI: 10.4103/jnmr.IJNMR_446_20

Quick Response Code:



How to cite this article: Mokhtari F, Kamranpour B, Shakiba M, Akhavanamjadi M, Goli M, Pourmohsen M. Assessment knowledge, attitude, and willingness to care for patients with HIV/AIDS among midwifery students of selected universities in Iran in 2020. Iran J Nurs Midwifery Res 2023;28:326-31.

Submitted: 04-Jan-2021. **Revised:** 26-Mar-2021.

Accepted: 13-Oct-2022. **Published:** 21-Jun-2023.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

primarily to take preventive measures against it, and second, to provide the community with correct information and education. The results of a previous study showed that nurses had moderate knowledge and appropriate attitude toward patients with AIDS, but lacked appropriate consideration in dealing with and caring for them.^[7] Another study found that 48% of students had low levels of knowledge about HIV and there were still misconceptions among students, such as the transmission of AIDS through the use of public toilets or insect bites.^[8] Researchers believe that the effective use of medical and support services depends on and requires the care provider's appropriate level of knowledge, good attitude toward care, and tendency toward caring for each HIV-infected patient,^[9] because improper tendency to care these patients, especially in the treatment and care services of them, will have an adverse effect on the quality of care. Poor care services can cause patients to conceal their illness and refuse to participate in programs for the prevention of transmission of AIDS from mother to child or to others, counseling, testing, follow-up, treatment, and care.^[10]

Various studies have identified lack of willingness to care for patients with HIV/AIDS among midwives and nurses.^[6,9] Midwives constitute one of the largest groups of health care providers in the health sector and have a significant role to play in the prevention, care, support, and reduction of stigmatization and discrimination of patients with HIV/AIDS especially for women and their families. However, a study in Iran showed that 87% of midwives working in teaching hospitals needed education on AIDS and did not have the appropriate level of knowledge in this regard and the correct attitude toward this issue. Therefore, in order to solve the problem, it is necessary to accurately identify the existing gaps, including educational needs.^[11] Given that all midwives are university graduates, one of the steps that must be taken to assess their knowledge, attitude, and willingness regarding the care of AIDS patients is the evaluation of the quality of university education related to this disease in the pre-graduation stage. Therefore, due to insufficient study of the knowledge, attitude, and willingness regarding care of HIV patients among midwifery students in the final year, it is necessary to first assess the status of midwifery students in the internship stage, after they have completed their theoretical courses and before they enter the clinic. As the results of a study by Khorvash *et al.* showed, it is necessary to frequently evaluate the knowledge of health care providers and students of these fields regarding AIDS, its transmission routes, and prevention and raise their awareness about the associated risks.^[12] Therefore, improving knowledge about preventive behaviors is helpful in eliminating occupational exposure to HIV, and changing common behaviors and course of action.^[13] It is, therefore, of great importance to assess the gaps in midwifery students' knowledge and attitude regarding the care of patients with HIV/AIDS, and willingness to care for these

patients in order to reduce HIV/AIDS-related stigma and discrimination, and improve their midwifery training, since they will have an important role to play in ending the AIDS epidemic in the coming years.

Due to the high frequency of people in active sexual and reproductive ages living with HIV/AIDS and the increasing spread of AIDS transmission from mother to fetus and through sexual contact in our country, monitoring the knowledge and attitude regarding this disease and the willingness to care for these patients among midwives, who are exposed to the target group at different stages of reproductive age, especially women at risk of HIV/AIDS, is of great importance. Therefore, before the graduates enter the field of health and medical activities, it is necessary to evaluate their knowledge and attitude regarding AIDS and HIV, and willingness to care for HIV/AIDS patients. Therefore, the aim of this study was the assessment of the level of knowledge and attitude regarding HIV/AIDS and willingness to care for patients with AIDS and HIV among midwifery students of selected universities in Iran in 2020.

Materials and Methods

The present study was a descriptive-analytical, cross-sectional study conducted on 618 midwifery students of selected Universities of Medical Sciences and Islamic Azad Universities of Iran in 2019–2020. The inclusion criteria of the research included Iranian-born, Muslim, a seventh semester student, and majored in midwifery and entering the field. Lack of willingness to participate in the study was considered as the exclusion criterion of the study. According to the statistics of the Assessment Organization, the number of midwifery students in the 2015–2016 academic year was 2,250. The average knowledge, attitude, and willingness score was estimated considering 95% confidence interval, standard deviation was estimated to be equal to 3.07 based on a previous study,^[14] and error level was equal to 0.25; thus, the sample size was calculated to be 562 students. Considering a 10% sample loss, 618 students were included in the study.

The total sample size was divided between three academic levels (based on ranking of Iranian Ministry of Health), so 85 students were selected from each of the first, second, and third level universities of medical sciences. Similarly, Islamic Azad Universities of the selected provinces were divided into three levels (based on ranking of Iranian Ministry of Health) and 121 students were selected from each class. First, a list of midwifery training universities in Iran was prepared. Based on the three university types, they were classified into three clusters. From each cluster, several universities were randomly selected. The multi-stage cluster sampling method was used in the present study. Considering the different number of students admitted to each university, a different number of universities were selected from each cluster to equalize the sample size in the three clusters. The faculties of midwifery of 11 universities

of medical sciences (Shahid Beheshti, Tehran, Tabriz, Shiraz, and Isfahan as Type I universities, Zahedan, Gilan, and Sari universities as Type II universities, and universities of Kurdistan, Shahrekord, and Dezful as Type III universities) and 11 Islamic Azad Universities (Tehran, Tabriz, Kazerun, Najafabad, Khorasgan, Zahedan, Rasht, Tonekabon, Shahrekord, Sanandaj, and Dezful) were selected. In order to control the confounding variables and better compare the data in the final stage, one of the Islamic Azad Universities were selected from all the mentioned provinces. After obtaining informed consent, the researcher provided the questionnaire to all seventh semester midwifery students who met the study inclusion criteria. The data were collected in self-reported mode using a five-part questionnaire including an individual and demographic characteristics form (age, level of education of parents, place of residence, status of residence, age of parents, employment status of parents, marital status, and income level) (14 questions), an academic profile form (type of university, grade point average, and source of information about HIV/AIDS) (nine questions), the HIV Knowledge Questionnaire (HIV-KQ; 45 questions), the AIDS Attitude Scale (AAS) (AAS; 21 questions), and the tendency to care of patients with AIDS (14 questions).

The third part of the questionnaire was taken from the standard HIV Knowledge Questionnaire designed by Carey *et al.*^[15] The questionnaire includes multiple choice questions with the three options of false (score = 0), true (score = 1), and I do not know (score = 0). The total score of this questionnaire ranges between 0 and 45; scores below 22, 22–35, and 36–45 indicate low knowledge, moderate knowledge, and good knowledge, respectively.

The fourth part of the questionnaire was taken from the standard AAS designed by Froman.^[16] The AAS consists of the two subscales of avoidance and empathy for patients with HIV/AIDS, which is scored on a 6-point Likert scale ranging from disagree greatly (1) to agree greatly (6). Higher scores indicate a more positive attitude and a supportive attitude, and lower scores represent a non-therapeutic and non-supportive attitude toward these patients.

The fifth part of the questionnaire was used to evaluate the tendency to care of patients with AIDS and was taken from the Jordan Standard Questionnaire. This tool contains 14 items (10 negative phrases and 4 positive phrases) which are scored on a 5-point Likert scale ranging from highly disagree (score of 0) to highly agree (score of 4). The overall score of this tool ranges between 0 and 56, and higher scores indicate the provision of suitable care services to patients with AIDS. In this questionnaire, scores of less than 18, 19–37, and 38–56 indicate inappropriate care, neutral care, and optimal care, respectively.

The content validity of the questionnaire was determined by evaluating 10 faculty members of the Department of Nursing and Midwifery. Its content validity index was

higher than 0.79 and its CVR was 0.84 (expansion of CVR was: 0.60-1), indicating a suitable content validity. The reliability of the questionnaire was confirmed through test-retest. The questionnaire was completed twice by 20 midwifery students within a two-week interval and its reliability was calculated as $r = 0.95$ ($p = 0.011$).

To analyze the data, descriptive statistical methods (mean, standard deviation, frequency, and percentage) and inferential statistics (Pearson correlation coefficient and linear regression model, t-test, one-way analysis of variance, and Kruskal–Wallis test) were used. Data analysis was performed using SPSS software (SPSS Inc., Chicago, IL, USA, version 18). The significance level was considered to be $p < 0.05$.

Ethical considerations

This study was approved by the Ethics Committee of Islamic Azad University, Rasht Branch (Ethics Code: IR.IAU.RASHT.REC.1397.063) in 2019. Written informed consent was obtained from all the students before enrollment.

Results

The mean (SD) age of the subjects (618 midwifery students) in this study was 23.10 (5.63) years. The demographic characteristics of the participants are presented in Table 1. Among midwifery students, the mean (SD) of the knowledge, attitude, and willingness to care scores were 26.93 (6.64), 80.45 (9.27), and 29.55 (9.10), respectively [Table 2].

The level of desired knowledge in the subjects without children (80%) was significantly higher than in people with children (63%) ($p = 0.042$). The desired level of knowledge was significantly higher in the subjects under the age of 30 years (93%) than in those with older spouses (7%) ($p < 0.001$).

The status of lack of willingness to care was significantly lower in married people (10.17%) than in unmarried people (19.27%) ($p = 0.002$). Moreover, among married people, the rate of high willingness to care in the subjects with children (27.08%) was significantly higher than in people without children (10.00%) ($p = 0.041$). Students who had experience in the field of health had a moderate level of willingness to care compared to all students. The average score of lack of willingness to care in students with a history of employment in the field of health (6.15%) was significantly lower than the subjects with no experience in the field of health (19.17%) ($p = 0.041$) [Table 3].

Discussion

The best way to prevent AIDS and control its spread is to provide education, especially to health care providers. The results of the present study indicated a moderate level of knowledge among the participants, although the mean score was not much higher than the threshold. By

Table 1: Demographic characteristics of the studied units

Variable	Frequency (%)
Age group (year)	
18-20	187 (30.20)
20-22	247 (40.00)
22 and above	184 (29.80)
Marital status	
Married	118 (19.10)
No spouse (single, widowed, and divorced)	493 (79.80)
No response	7 (1.10)
The age of the spouse (year)	
<30	58 (49.15)
30-50	52 (44.07)
>50	4 (3.39)
No response	4 (3.39)
Mother's age (year)	
30-50	486 (78.60)
>50	132 (21.40)
Father's age (year)	
30-50	315 (50.90)
>50	303 (49.10)
Mother's education	
Elementary	89 (14.40)
High school	112 (18.10)
Diploma	253 (41.00)
University	164 (26.50)
Father's education	
Elementary	71 (11.50)
High school	86 (13.80)
Diploma	231 (37.50)
University	230 (37.20)
Family income	
Good	170 (27.50)
Moderate	425 (68.70)
Low	23 (3.80)
Residential status	
Residential house	285 (46.00)
Dorm	247 (40.00)
Student house	58 (9.40)
Relatives' house	28 (4.60)
Number of children	
Without children	70 (59.32)
1	27 (22.89)
2	14 (11.86)
3 and more	7 (5.93)

analyzing and examining the questions in the knowledge section of the questionnaire, we found that more than half of those surveyed did not have sufficient knowledge about the facts “HIV is the cause of AIDS,” “HIV is killed by disinfectants,” “pulling out the penis before a man climaxes keeps a woman from getting HIV during sex,” “a number of drugs can treat AIDS,” “women are always tested for HIV when having a pap smear,” “women are not infected through oral sex with an HIV-infected man,” “the use of latex condoms is the best protection against HIV infection,”

“a person can get HIV by giving blood,” “natural skin condoms provide more protection than plastic,” “after a week of sexual contact with an HIV-infected person, the laboratory test shows it,” “if the AIDS test is positive, their spouses should also be advised to have an AIDS test,” and “using Vaseline with a condom reduces the chances of getting HIV.”

One of the most effective steps for prevention is training,^[6] and according to the results of our study, despite the moderate level of knowledge among the students, there is still a need for education in the basics. Therefore, it seems necessary to pay more attention to teaching theoretical and clinical courses to students. Furthermore, the results of a similar study in Malaysia showed that the knowledge of final year medical students regarding the transmission ways was good but was poor regarding the ways of treatment and post-exposure measures. Unlike the subjects studied in this study, medical students in a previous study had an undesirable level of knowledge about mother-to-child transmission.^[17] However, the results of our study indicate that it is necessary to focus more on teaching and preventing AIDS in sexual relationships.

Similarly, the results of a study on students of Iran University of Medical Sciences showed that 60% of students had a good level of knowledge about AIDS, among which medical students had a higher level of knowledge. Moreover, 55% of students believed that Vitex could disinfect the infected environment. Therefore, based on the results, the researchers have suggested courses on the subject of AIDS in the health course of all fields of medical sciences.^[18] By reviewing the results of our study and the results of the mentioned article, we realized that despite the existence of these topics in theoretical courses, medical students lack even the basic knowledge about AIDS. Furthermore, the results of another study showed that the level of knowledge of nursing and midwifery students in Isfahan in the field of AIDS and HIV was moderate, which was in line with the results of the present study. Therefore, the authors of the article suggested the establishment of counseling centers in universities to provide effective and continuous education for students who will be responsible for the care of AIDS patients in the future, so that they have sufficient knowledge.^[17] A study in Nigeria found that most students had insufficient knowledge about AIDS and were reluctant to care for AIDS patients.^[14] Therefore, the need for educational planning and focus on teaching issues in the field of AIDS prevention and diagnosis for midwifery students is felt. Due to the fact that these subjects are taught in theoretical courses, it is suggested that materials on the nature of AIDS, ways of prevention, diagnosis, and treatment be reviewed periodically in the form of workshops or webinars.

However, the results of the present study showed that the average attitude score of the midwifery students was appropriate and more than that. Therefore, most midwifery

Table 2: Level of knowledge, attitude, and willingness of the students studied

Variable	Min. score	Max. score	Mean (SD)
Knowledge	1.00	40.00	26.93 (6.64)
Attitude	5.00	104.00	80.45 (9.27)
Willingness to care	0.00	56.00	29.55 (9.10)

Table 3: Assessing the willingness to care for Acquired Immune Deficiency Syndrome (AIDS) patients among midwifery students based on demographic characteristics

	Status of willingness to care			p
	Frequency (%)			
	Good	Moderate	Weak	
Marital status				
Married	21 (17.80)	85 (72.03)	12 (10.17)	0.002
No spouse (single, widowed, and divorced)	42 (8.52)	356 (72.21)	95 (19.27)	
Children				
Yes	13 (27.08)	30 (62.51)	5 (10.41)	0.041
No	7 (10.00)	55 (78.57)	8 (11.43)	
Experience in the field of health				
Yes	7 (10.77)	54 (83.08)	4 (6.15)	0.041
No	59 (10.67)	388 (70.16)	106 (19.17)	

students had an almost appropriate attitude toward people with HIV or AIDS, but none of them had a 100% positive attitude. Contrary to the present study, the results of a study on midwifery and nursing students showed that most of the students did not have positive attitude toward people with HIV/AIDS. The main reason for this was fear.^[19]

The results of the study represent the neutral tendency to care for patients with AIDS by midwifery students. The results of this study, similar to the results reported by Khorvash *et al.*,^[12] showed a moderate or neutral willingness to provide services to and care for patients with AIDS. The results showed that married people with children and a history of employment in the field of health performed better than people without a spouse, without children, and without a history of employment. The results of our study also showed that those who have experience in the field of health had a moderate level of willingness to care for these patients compared to all students. The results of a study showed that one of the reasons for the lack of desire and negative attitude toward providing services to people with AIDS was lack of knowledge, fear of HIV, and the connection between HIV and social evils; however, the results of their study have shown the high level of knowledge of medical students regarding AIDS.^[20]

The WHO has addressed the integration of AIDS into educating curricula of pre-entry service providers among other factors affecting disease control. Therefore, in order to improve the attitude and practice of midwives in the

face of patients with AIDS, educational planning for the presence of students in centers providing services to these patients is recommended. Therefore, it is recommended that education authorities prepare studies on the appropriate educational protocol for teaching students, especially midwifery students, regarding the treatment and care of people with AIDS, and consider them in overt or covert training of academic educational systems. Data collection from only a number of midwifery training universities in Iran was the limitation of this study. It seems that conducting this study on all universities can provide more comprehensive information.

Conclusion

Iranian midwifery students had a moderate level of knowledge, appropriate attitude and more than that, and moderate or neutral willingness to care for patients with AIDS. Due to the increasing number of women suffering from AIDS, it is suggested that training courses be conducted in the form of webinars and at the bedside of patients in order to hold retraining courses on the topic of AIDS and to improve the attitude and performance of midwifery students.

Acknowledgments

We greatly appreciate the support and cooperation of this Vice Chancellery, as well as all of officials of Iran Universities of Medical Sciences and Islamic Azad and midwifery students.

Financial support and sponsorship

Islamic Azad University of Rasht Branch

Conflicts of interest

Nothing to declare.

References

- UNAIDS: Joint United Nations Programme on HIV/AIDS. 2014. Available from: https://apps.who.int/iris/bitstream/handle/10665/111625/9789241506984_eng.pdf. [Last accessed on 2020 Apr 22].
- Organization WHO. HIV/AIDS fact sheet 2017 [updated July 2017]. Available from: <http://www.who.int/mediacentre/factsheets/fs360/en/>.
- Asl HM. HIV epidemiology. In: Center for Communicable Diseases Control MoH, editor. 2016.
- AIDS Control Office, Infectious Diseases Management Center, Ministry of Health and Medical Education, the latest statistics on HIV infection in the Islamic Republic of Iran, the first nine months of 2017, for general use in March 2017. Available from: https://www.unaids.org/sites/default/files/country/documents/IRN_2018_countryreport.pdf. [Last accessed on 2020 Apr 2].
- Saydkhani V, Albooghobeish M, Khosravi S, Haghighizadeh MH, Banisakini H, Mousahosaini N. Evaluation of AIDS disease information between anesthesia practitioners in educational hospitals of Ahvaz Jundishapur University of Medical Sciences in 2010. *Jentashapir j. health res* 2012;3:311-20.
- World Health Organization. The Global health sector strategy

- on HIV/AIDS 2011-2015. An Interim Review of Progress, 2014. Available from: https://apps.who.int/iris/bitstream/handle/10665/112790/9789241507295_eng.pdf?sequence=1.
7. Mulenga C Naidoo JR. Nurses' knowledge, attitudes and practices regarding evidence-based practice in the prevention of mother-to-child transmission of HIV programme in Malawi. *Curationis* 2017;40:1-8.
 8. Haroun D, El Saleh O, Wood L, Mechli R, Al Marzouqi N, Anouti S. Assessing knowledge of, and attitudes to, HIV/AIDS among University Students in the United Arab Emirates. *PLoS One* 2016;11:e0149920.
 9. Ndou TV, Maputle SM, Risenga PR. HIV-positive patients' perceptions of care received at a selected antiretroviral therapy clinic in Vhembe district, South Africa. *Afr J Prm Health Care Fam Med* 2016;8:a926.
 10. Spindola T, Dantas KTB, Cadavez NFV, Fonte VRFD, Oliveira DC. Maternity perception by pregnant women living with HIV. *Invest Educ Enferm* 2015;33:440-8.
 11. Bahri N, Bajdi A, Latifnejad Roodsari R, Mirzaee K, Esmaeili H, Larki M. 'Perceived and real educational needs of midwives about prevention of mother-to-child transmission of HIV, (Hospitals affiliated to Mashhad University of Medical Sciences- 2015)'. *Iran J Obstet Gynecol Infertil* 2016;19:12-21.
 12. Khorvash F, Mansorian M, Boroumandfar Z, Mohamadirizi S. An investigation on the association between students' knowledge and their tendency to take care of HIV patients among the students in nursing and midwifery school. *Iran J Nurs Midwifery Res* 2014; 19:404-8.
 13. Ataice B, Mohamadirizi S, Khayamim N, Boroumandfar Z. Relationship between Knowledge, Attitude, and Tendency to Care for HIV/AIDS Patients among Nurses and Midwives. *Journal of Midwifery and Reproductive Health*. 2014;2: 246-52.
 14. Farotimi AA, Nwozichi CU, Ojediran TD. Knowledge, attitude, and practice of HIV/AIDS-related stigma and discrimination reduction among nursing students in southwest Nigeria. *Iran J Nurs Midwifery Res* 2015; 20:705-11.
 15. Carey MP, Morrison-Beedy D, Johnson BT. the HIV-Knowledge Questionnaire: Development and evaluation of a reliable, valid, and practical self-administered questionnaire. *AIDS and Behavior* 1997; 1: 61-74.
 16. Froman RD, Owen SV. Further validation of the AIDS attitude scale. *Res Nurs Health*. 1997;20:161-7. Available form: <https://www.ajpe.org/doi/full/10.5688/ajpe80345>. [Last accessed on 2020 Jun 22].
 17. Ahmed SI, Hassali MA, Bukhari NI, Sulaiman SA: A comparison of HIV/AIDS-related knowledge, attitudes and risk perception between final year medical and pharmacy students: A cross sectional study. *HealthMED* 2011,5:326-35.
 18. Mirnejad R, Kiani J, Jeddi F, Alaedini F. Knowledge, Attitude and Practice of Iran University of Medical Sciences Students about AIDS. *Iran Journal of Nursing* 2009; 21:17-26. Available form: 10.1002/(sici)1098-240x(199704)20:2<161::aid-nur8>3.0.co;2-i. [Last accessed on 2020 Aug 22].
 19. Iwoi DMW, Nde PF, Yuh E, Kwenti ET, Tshimwanga EK, Achiri DT, *et al.* Assessment of the level of knowledge, attitude, and practice with regard to care of people living with HIV/AIDS among nursing and midwifery students in Fako, Cameroon. *World J AIDS* 2017;7:1-15.
 20. Platten M, Pham HN, Nguyen HV, Nguyen NT, Le GM. Knowledge of HIV and factors associated with attitudes towards HIV among finalyear medical students at Hanoi Medical University in Vietnam. *BMC Public Health* 2014;14:26.