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RESEARCH ARTICLE

Knowledge, Attitude and Practice of Nursing and Medical Students about HIV/AIDS and Hepatitis

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Abstract:

Background:

Control and prevention of AIDS and hepatitis are one of the priorities of health care systems. The aim of this study was to determine the knowledge, attitude, and practice of nursing and medical students of Shahroud University of Medical Sciences about AIDS and hepatitis.

Methods:

In this cross-sectional study, 203 medical and nursing students were selected through random sampling in 2018. The data were analyzed using chi-square, one-way ANOVA and Pearson correlation coefficient. The significance level in all tests was 0.05.

Results:

The mean score of students' knowledge was 11.19 ± 3.39 , of attitude was 74.38 ± 7.09 and of practice was 19.81 ± 3.42 . Only 12.3% of the participating students had good knowledge and 34% had good and proper practice in controlling and preventing AIDS and hepatitis. There was a significant relationship between knowledge with the field of study, age and educational level ($P \leq 0.05$). However, no significant relationship was observed between practice and attitude with the field of study, age, and level of education ($P \geq 0.05$).

Conclusion:

Based on the average awareness and performance of students in the field of AIDS and hepatitis and the role of these factors in disease prevention and care improvement, more attention of faculties and educational hospitals of Shahroud University of Medical Sciences students' internship and internship is diverted to this issue and performing necessary educational interventions, such as holding workshops and educational conferences on these diseases before students start clinical work and repeat it in time of their presence in hospital settings, seems essential.

Keywords: Knowledge, Attitude, Practice, AIDS, Hepatitis, Medical students.

Article History

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1. INTRODUCTION

Students of medical sciences can be exposed to pathogenic microorganisms such as HIV, hepatitis B and C caused by direct contact with blood and saliva of patients [1]. In general, the risk of contagion among staff and students associated with health care is 2 to 10 times higher than that of the general population [2, 3]. Hepatitis B has affected 2 billion people

worldwide. Right now, about 350 million people in the world are chronic carriers of this disease. Between 25% and 30% of these people die due to early liver problems [4]. Iran is considered to be among the endemic countries as the prevalence of hepatitis B has been estimated to be 2.2% [5]. HIV/AIDS is also an emerging infectious disease which is the fourth leading cause of death worldwide and is known as the most fatal disease of the century [6, 7]. About 36.7 million people worldwide were infected with HIV in 2016 and 1.8 million were newly infected with HIV [8]. According to official statistics of the Ministry of Health of Iran, up to 2017,

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about 37650 HIV-infected people were registered in the country, of whom 61.7% were infected by injection and 20.3% by sexual contact. Among these, 83% were males and 17% were females [9, 10]. Sexually transmitted diseases, accidental contact with infected syringes among medical staff, hemodialysis, common syringes used by injecting drug users, dental supplies, blood and blood products, tattoos, acupuncture, cupping, ear piercing, biting as well as transmission from the mother to the fetus are the possible ways for transmission of this disease [11 - 13]. Due to a lack of knowledge and not taking comprehensive precautions into account in disease control and prevention, students of medical sciences, especially nursing and medical students, can be infected with these serious diseases while caring for patients [1]. The results of a study among dental students in the USA showed that lack of information may lead to a negative attitude toward the treatment of people with AIDS [14]. Many studies have been conducted on the knowledge of staff and students of medical sciences about the prevention and control of blood-borne infections such as AIDS and hepatitis, and the results indicate low awareness of these diseases [4, 8, 9, 15 - 18]. The results of studies in other Iranian cities such as Zahedan and Rafsanjan showed that students had moderate knowledge and misconceptions about HIV/AIDS [15, 19]. The results of studies in Tehran, Mazandaran, Ahvaz, and Qom showed that although students had adequate knowledge about HIV/AIDS, they wanted to know more [8, 11, 20, 21].

Prevention is the only safeguard against HIV/AIDS and hepatitis. Knowing facts and having proper attitudes and behaviors are critical for prevention. To make it more effective, we need to assess gaps in health education for students. Owing to the importance of controlling these fatal and contagious diseases and since knowing the status quo and if necessary increasing the level of knowledge and attitude of high-risk groups in society, especially occupational groups such as physicians, nurses and students of medical sciences can play a key role in better prevention of these diseases, the aim of this study was to determine the knowledge, attitude and practice of nursing and medical students of Shahroud University of Medical Sciences about HIV/AIDS and Hepatitis.

2. METHODS

In this cross-sectional study which was conducted in 2018, all nursing sophomores and all medical students who had successfully passed basic science exams and were in clinical training and internship stages were studied.

The data were collected through a 71-item questionnaire which was already examined for reliability and validity in various studies [22 - 24]. The questionnaire included 15 items that sought demographic information of the participants including age, gender, marital status, educational level, the field of study, sources used to acquire information about the disease, *etc.*, and 56 specific items (20 knowledge items, 22 attitude items, and 14 practice items). Knowledge items were designed as closed items with answers of yes, no and I don't know. Correct answers were scored 1, and wrong answers and I don't know were scored zero. Knowledge scores could range between 0 to 20 and were classified into three categories of

poor (0-10), moderate (10-15), and good (15-20). Attitude items were designed on a five-point Likert scale ranging from strongly agree scored as 5 to strongly disagree scored as 1. The scale of attitude is an inventory consists of 22 items. The overall attitude score of an individual could range from 22 to 110 and the scores were classified into two categories of negative (lower than 60) and positive (higher than 60). Practice items were designed on a scale of always, sometimes and not at all, with scores ranging from 0 to 2. Practice items can range between (0-28) and are classified into three categories of poor (0-14), moderate (14-21), and good (21-28). Validity and reliability (alpha Cronbach's coefficient= 0.739) of the Persian version of the questionnaire were previously confirmed [22 - 24]. The questionnaires were self-administered to the participants. Participation in the study was voluntary. This study was approved by the Ethics Committee of Shahroud University of Medical Sciences with the code of IR.SHMU.REC.1396.153.

The collected data were entered into SPSS-16 and analyzed using ANOVA and Chi-square tests to investigate the relationship between different dimensions of the test with demographic variables at the significant level of 0.05.

3. RESULTS

The mean age of the participants was 23.14 ± 2.18 years. Among the participants 9.9% of students were married; 76.4% were studying medicine; 88.7% were third year and higher-level students. Courses, books, and conferences accounted for 38.5% of the sources students used to acquire information about the diseases. Lack of time (50.2%), fatigue (38.4%) and lack of access to resources (7.4%) were the most important barriers to obtaining new information on HIV/AIDS and hepatitis. Moreover, 7.4% of the participants had a history of the accidental piercing of the needle-stick. Of the participants, 7.4% (N=15) had an experience of nursing HIV positive patients; 18.7% (N=38) had an experience of nursing hepatitis B positive patients; 12.8% (N=26) had taken the HIV test; 42.4% (N=86) had taken hepatitis B antigens test and 91.6% (N=186) had completed hepatitis B vaccination.

The mean score of students' knowledge was 11.19 ± 3.39 , of attitude was 74.38 ± 7.09 and of practice was 19.81 ± 3.42 . Students' knowledge and practice were moderate and their attitudes toward HIV / AIDS control and prevention were positive. 74.5% of the students had low knowledge and 97% had a positive attitude about controlling and preventing AIDS and hepatitis. Only 12.3% of students had good knowledge and 34% of them had good and proper practice in controlling and preventing AIDS and hepatitis.

One-way ANOVA showed a significant relationship between the mean age of the participants and their knowledge ($P = 0.001$). Moderate and good knowledge was higher among those with a higher mean age.

Chi-square test showed that the field of study and the educational level were significantly associated with the knowledge of the participants so that medical students had better knowledge than nursing students. But there was no significant relationship with other demographic variables (Table 1).

Results of the one-way ANOVA showed no significant relationship between mean age and attitude (P = 0.176). However, the chi-square test showed that taking the HIV test

and vaccination against hepatitis B were significantly associated with attitudes of the participants, so that students who were vaccinated had a more positive attitude toward AIDS control and prevention (Table 2).

Table 1. Relationship between some variables and knowledge about AIDS and Hepatitis B.

| Variables | Knowledgelevel(%) | | | X2 | P-value |
|---|-------------------|-----------|----------|-------|---------|
| | Low | Moderate | High | | |
| Gender | | | | | |
| Male | 13(23.6) | 37(67.3) | 5(9.1) | 1.52 | 0.47 |
| Female | 42(28.4) | 86(58.1) | 20(13.5) | | |
| Marital status | | | | | |
| Single | 50(27.3) | 112(61.2) | 21(11.5) | 1.21 | 0.55 |
| Married | 5(25) | 11(55) | 4(20) | | |
| Field of study | | | | | |
| Nursing | 35(74.5) | 10(21.3) | 2(4.3) | 69.49 | 0.001 |
| Medicine | 20(12.8) | 113(72.4) | 23(14.7) | | |
| History of piercing contaminated needle in the hand | | | | | |
| yes | 1(6.7) | 11(73.3) | 3(20) | 3.7 | 0.157 |
| no | 54(28.7) | 112(59.6) | 22(11.7) | | |
| Experience of taking care of HIV positive patient | | | | | |
| yes | 2(13.3) | 12(80) | 1(6.7) | 2.55 | 0.278 |
| no | 53(28.2) | 111(59) | 24(12.8) | | |
| History of taking HIV test | | | | | |
| yes | 5(19.2) | 17(65.4) | 4(15.4) | 1.02 | 0.6 |
| no | 50(28.2) | 106(59.9) | 21(11.9) | | |
| History of vaccination against hepatitis | | | | | |
| yes | 52(28) | 112(60.2) | 22(11.8) | 1.09 | 0.58 |
| no | 3(17.6) | 11(64.7) | 3(17.6) | | |

Table2. Relationship between demographic and health variables and attitudes toward AIDS and Hepatitis.

| Variables | Attitude(%) | | χ2 | P-value |
|---|-------------|-----------|-------|---------|
| | Negative | Positive | | |
| Gender | | | | |
| Male | 1(1.8) | 54(98.2) | 0.34 | 0.56 |
| Female | 4(2.6) | 143(96.6) | | |
| Marital status | | | | |
| Single | 5(2.7) | 178(97.3) | 0.323 | 0.57 |
| Married | 1(5) | 19(95) | | |
| Field of study | | | | |
| Nursing | 2(4.3) | 45(95.7) | 0.654 | 0.548 |
| Medicine | 4(2.6) | 152(97.4) | | |
| History of piercing contaminated needle in the hand | | | | |
| yes | 0(0) | 15(100) | 0.493 | 0.482 |
| no | 6(3.2) | 182(96.8) | | |
| Experience of taking care of HIV positive patient | | | | |
| yes | 1(6.7) | 14(93.3) | 0.78 | 0.38 |
| no | 5(2.7) | 183(97.3) | | |
| History of taking HIV test | | | | |
| yes | 3(11.5) | 23(88.5) | 7.65 | 0.006 |
| no | 3(1.7) | 174(98.3) | | |
| History of vaccination against hepatitis | | | | |

(Table 4) cont....

| Variables | Attitude(%) | | χ^2 | P-value |
|-----------|-------------|-----------|----------|---------|
| | Negative | Positive | | |
| yes | 2(1.1) | 184(98.9) | 27.38 | 0.001 |
| no | 4(23.5) | 13(76.5) | | |

Table 3. Relationship between demographic and health variables and practice of the participants about AIDS and Hepatitis.

| Variables | Practice(%) | | | χ^2 | P-value |
|---|-------------|-----------|----------|----------|---------|
| | Poor | Moderate | Good | | |
| Gender | | | | | |
| Male | 1(1.8) | 39(70.9) | 15(27.3) | 1.77 | 0.412 |
| Female | 4(2.7) | 90(60.8) | 54(36.5) | | |
| Marital status | | | | | |
| Single | 5(2.7) | 13(61.7) | 15(27.3) | 2.76 | 0.25 |
| Married | 0(0) | 16(80) | 4(20) | | |
| Field of study | | | | | |
| Nursing | 0(0) | 25(53.2) | 22(46.8) | 5.495 | 0.064 |
| Medicine | 5(3.2) | 104(66.7) | 47(30.1) | | |
| History of piercing contaminated needle in the hand | | | | | |
| yes | 1(6.6) | 7(46.7) | 7(46.7) | 2.65 | 0.265 |
| no | 4(2.1) | 122(64.9) | 62(33) | | |
| Experience of taking care of HIV positive patient | | | | | |
| yes | 0(0) | 8(53.3) | 7(46.7) | 1.43 | 0.49 |
| no | 5(2.6) | 121(64.4) | 62(33) | | |
| History of taking HIV test | | | | | |
| yes | 0(0) | 11(42.3) | 15(57.7) | 7.78 | 0.02 |
| no | 5(2.8) | 118(66.7) | 54(30.5) | | |
| History of vaccination against hepatitis | | | | | |
| yes | 5(2.7) | 118(63.4) | 63(33.9) | 0.47 | 0.79 |
| no | 0(0) | 11(64.7) | 6(35.3) | | |

Results of the one-way analysis of variance indicated no significant relationship between mean age and practice ($P = 0.058$). However, the chi-square test showed a significant relationship between the taking HIV test and the practice of the participants, so that students who had taken HIV tests had a better practice in controlling and preventing AIDS and hepatitis. No significant difference was observed between practice and other demographic variables (Table 3).

Pearson correlation coefficient showed no significant relationship between knowledge and attitude ($r=0.101$, $p=0.153$), knowledge and practice ($r=-0.096$, $p=0.173$) and between attitude and practice ($r=-0.024$, $p=0.73$).

4. DISCUSSION

Most of the participants had learned about AIDS and hepatitis in the courses they had taken in the university. In studies by Marashi and colleagues (85.5%), Shobeiri and colleagues (20.9), and Alipour and colleagues (28.2%), radio and television were the most frequently used sources of information [20, 21, 25] and in a study by Mirnejad and colleagues, the largest source of information was mass media [21, 26], which is inconsistent with the present results.

Due to the importance of these resources in increasing students' awareness at Shahroud University of Medical

Sciences, it seems that the inclusion of comprehensive and more complete content in textbooks and classrooms in particular and information through the media, in general, can have a significant impact on students' awareness and society.

It seems that textbooks in particular and the media, in general, can have a significant impact on the knowledge of students, the young and the community by improving the quality and quantity of educational programs.

The knowledge of most of the participants was moderate, which is consistent with the results of some studies [17, 27]. In some studies, people had good knowledge [8, 25, 28] and some others reported poor knowledge for most people, which is inconsistent with the results of our study [18]. Perhaps one of the reasons is the difference in the research communities in the above studies. Adequate knowledge of AIDS and hepatitis can lead to improved care and prevention of contamination of students in internships and internships.

In this study, 97% of the participants had a positive attitude toward the prevention and control of AIDS and hepatitis and only 3% had a negative attitude. In a study by Lotfiipour and colleagues, 80.2% of participants had positive and 19.8% had a negative attitude [19]. Marashi and colleagues reported that 88.75% and Zarabadi Pour and colleagues reported that 56.7% of the participants had a positive attitude toward disease

prevention and control [18, 21]. The higher percentage of positive attitudes toward prevention and control of AIDS and Hepatitis in these studies is in line with the result of the current study. Given the field of study of medical students and their understanding of the consequences of the disease, the higher positive attitude toward disease control and prevention may not be unexpected.

In this study, 34% of students had good practice in the prevention of AIDS and hepatitis. In the study of Lotfiipour and colleagues 52.6% had a good practice [19], which is inconsistent with the results of this study. Based on the student's profession, improving this condition can be effective in preventing students from becoming infected with these diseases. Therefore, more attention from medical, nursing and midwifery schools and educational hospitals in the field of internship and internship of students in this regard can help to improve the control programs for AIDS and hepatitis.

In the present study, there was a significant relationship between knowledge and field of study, which is consistent with some studies [4]. But there was no significant relationship between the field of study and attitude. In the study of SaneiMoghaddam and colleagues, there was no significant relationship between knowledge and field of study, and between attitude and field of study [15], which is partially consistent with the present study.

This study showed a significant relationship between knowledge and age, which is consistent with the findings of some studies [8, 18]. But there was no significant relationship between attitude and age. In the study of Marashi and colleagues, there was no significant relationship between knowledge and age, and attitude and age [21], which is consistent with some of the recent results. A higher age implies a higher level of education and receiving more information through the course.

There was no significant relationship between knowledge, gender, marital status, accidental piercing of infected needles, the experience of HIV / AIDS care, HBV and HIV testing, and vaccination against HBV. Lotfiipour and colleagues also reported no significant relationship between gender and knowledge and attitudes [19], which is consistent with the above results. In the study of Alipour and colleagues, there was no significant relationship between knowledge and attitude and marital status, but gender was significantly associated with knowledge [20], which is consistent with part of the current study. Jafari and colleagues did not report a significant relationship between knowledge and gender either [28], which is in line with the results of the present study.

In the present study, there was a significant relationship between knowledge and educational level, which is inconsistent with the results of some studies [15, 21]. But there was no significant relationship between attitude and educational level, which is consistent with the results of some studies [15, 21].

In this study, there was no association between practice and age, gender, marital status, educational level, the field of study, history of accidental needle contamination, experience of providing nursing services to HIV positive and hepatitis B

patients and taking HBV tests and vaccination. However, a significant relationship was observed between taking the HIV test and practice. Savabi and colleagues also reported no significant relationship between gender and practice [22], which is consistent with some of the results of the current study. In the study of Lotfiipour and colleagues [19], a significant relationship was found between marital status and practice, which is inconsistent with part of the present study.

In the present study, there was no significant relationship between attitude, history of accidental needle contamination, the experience of nursing for HIV positive and hepatitis B positive patients, and taking HBV test but a significant relationship was observed between attitude and taking HIV test, HBV vaccination and nursing for HBV positive patients. In some studies, no significant relationship was found between attitude and gender and marital status [4, 19, 22], which is in line with the results of the present study.

CONCLUSION

Based on the average awareness and performance of students in the field of AIDS and hepatitis and the role of these factors in disease prevention and care improvement, more attention of medical, nursing and midwifery faculties and educational hospitals of Shahroud University of Medical Sciences students' internship and internship is diverted to this issue and performing necessary educational interventions, such as holding workshops and educational conferences on these diseases before students start clinical work and repeat it in time of their presence in hospital settings, seems essential.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by the Ethics Committee of Shahroud University of Medical Sciences, Iran with the code of IR.SHMU.REC.1396.153.

HUMAN AND ANIMAL RIGHTS

Not applicable.

CONSENT FOR PUBLICATION

Written informed consent was obtained from each participant prior to the study.

AVAILABILITY OF DATA AND MATERIALS

The raw data and materials used to support the findings of this study are available from the corresponding author [M.R.] upon request.

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None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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Declared none.

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