Evaluating the knowledge and attitude of medical students toward HIV/AIDS

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Abstract: *Misinterpretations and misunderstandings about HIV/AIDS among students about some aspects of this disease and educational and health programs should be scheduled to inform students about the disease and the possible methods of prevention. This is a descriptive study the sample was drawn via simple random sampling method. The anonymous self-administered questionnaire was distributed among the students. The attitude was evaluated via 5 scale Likert questionnaires.*

Introduction

Human Immunodeficiency Virus

Infection/Acquired Immunodeficiency Syndrome (HIV/AIDS) is a contagious disease which is mainly transmitted through heterosexual contact especially in developing countries. Moreover, the number of new cases infected by heterosexual contact is increasing in United States and among minorities (especially among women) (1).

Another mode of transmission is blood and blood products especially by unsafe injection (shared needle and syringe) and in those who transfuse blood or blood products (1).

It is estimated that the risk of HIV transmission through tested blood products in United States is one per 725000 to one per 835000 blood donation. About 5470 patients with hemophilia were infected with HIV by receiving contaminated blood or blood products (1).

AIDS is known as a horrifying disease among people; In addition to fear of death; the person is abandoned by the family and society. If the patients are to confronting with their disease, it is essential that the doctors talk to their patients honestly and accurately about their disease. The most important problem the HIV patients face is lack of sufficient knowledge about their disease (2-3).

Peyvandi et al in a study on non-medical students about infectious diseases such as AIDS and Hepatitis demonstrated that the students mainly obtained information about HIV/AIDS through newspapers, publications and posters (58.3%) media (56.2%) family and textbooks (15.5%) and most of the students were aware of the pathogen of the disease (75%)(2).

Shoaei et al studied the knowledge and attitude of specialists and residents of different specialties toward HIV. They revealed that the knowledge of these groups about HIV/AIDS was poor and that educating and informing the physicians about diagnosing and preventing this disease is a great necessity(4).

Another study showed that among the students studying medical sciences, the medical students had the most knowledge toward AIDS and the laboratory sciences were at the bottom of the list **(5).**Another survey on students' knowledge about transmission and prevention of HIV/AIDS demonstrated that over 70% of the students had excellent and good knowledge, 15 to 20% had moderate and 10 to 50% had low information about HIV/AIDS. It can be implied that despite the HIV epidemics throughout the whole world and of course in Iran, many of our students, as the educated group of the society, are not aware of this disease. Consequently, informing the students in high school and universities or even individuals in a faster and better way is crucial (6).

In 1989, the knowledge of 581 nurses about the aspects of HIV/AIDS was evaluated in New York. Results revealed that 70% of nurses were aware of the mentioned aspects. They had the most knowledge about the means of disease transmission and the least about the treatment (7).

A study in United States also showed that in general, there are misinterpretations and misunderstandings about HIV/AIDS among students about some aspects of this disease and educational and health programs should be scheduled to inform students about the disease and the possible methods of prevention (8).

Another study held in Australia on 486 physicians demonstrated that 22% of them had visited one or more HIV patients during the past month and 80% were questioned about the disease by patients. The majority of the physicians agreed that finding HIV patients and educating them is their duty, hence 24% were not interested in providing long term health services for these patients and 16% declared that it is better to refuse treating HIV positive patients. Sixty percent had not enough knowledge regarding prevention of HIV/AIDS and most of them believed that lack of time is the most important factor in inappropriate work up in routine evaluation of the patients and not providing them enough information about risk of the transmission of the disease. They believed that having more information about disease manifestations, diagnosis and risk of sexual and non-sexual transmission of the disease is crucial for them. Most of the physicians were interested to have an active role in diagnosis, treatment and prevention of the disease and that they needed to gain more accurate knowledge in this regard .

In 1996, Stiernbary et al showed that didactic teaching and experimental learning had a positive effect on knowledge of nursing students, though there was no significant change in their attitude toward HIV/AIDS (9).

Method

This is a descriptive study on 282 students of Rafsanjan medical university. The students were stratified according to their field of study and in each stratum; the sample was drawn via simple random sampling method according to proportion of students studying in each field. All the students were orally informed about the study and participated by their own will. The anonymous self-administered questionnaire was distributed among

the students. The knowledge was evaluated by questions giving the options of "Agree", "disagree" and "I don`t know". Two points were assigned for each correct answer, 1 point for "I don`t know" and none for wrong answer. The total score of knowledge ranged between 0 to 110 points. A score from 0 to 54 was regarded as low, from 55 to 77 was regarded as moderate and from 78 to 110 demonstrated a high level of knowledge toward HIV/AIDS.

The attitude was evaluated via 5 scale Likert questionnaires with "Totally disagree", "Disagree", "I don't have any idea", "Agree" and "Totally agree" which were scored from 0 to 4 respectively in questions evaluating positive attitude, and from 4 to 0 respectively in questions evaluating negative attitude toward HIV/AIDS (39).

The total attitude was considered negative if the score was ranged from 0 to 53 and was considered positive if the score was ranged from 54 to 106 using this formula:

$$X_{(n)} = (5k+1k) / 2 = (5 \times 16) + 16 / 2 = 53$$

Results: A total number of 282 students were enrolled in this study. The demographic data of the students is demonstrated in table 1.

Table 1 – Demographic data of studied population.

Characteristic	Number	%
Gender		
Female	191	67.7
Male	91	32.3
Marital status		
Single	249	88.3
Married	33	11.7
Field of study		
Medicine	79	28
Dentistry	48	17
Para-medicine:	155	55
Anesthesiology	28	9.9
Radiology	21	7.4
Laboratory sciences	28	9.9
Midwifery	27	9.6
Nursing	51	18.1
Education level		
Master of science and above	127	127
Bachelor of science	51	18.1
Diploma	104	36.9

Forty four students had exposure to HIV positive patients (15.6%) and 183 had no exposure to HIV positive patients (66%). The mean knowledge score of students about HIV/AIDS was 86.8±9.45 ranging from 102 to 40. The mean attitude score of students toward HIV/AIDS was 51.2±8.09 ranging from 84 to 20.

The association between knowledge and attitude score and gender, marital status and level of study is demonstrated in table 2.

Table 2 – Knowledge and attitude in different genders, different marital status and level of study

Knowledge	Gender		Marital status		**Level of study**		
	Male	**Female**	**Married**	**Single**	**MS* & above**	**BS****	**Diploma**
Good	78 (85.7%)	175 (91.6%)	30 (90.9%)	223 (89.6%)	111 (87.4%)	47 (92.2%)	95 (91.3%)
Moderate	9 (9.9%)	13 (6.8%)	2 (6%)	20 (8%)	9 (7.1%)	4 (7.8%)	9 (8.7%)
Poor	4 (4.4%)	3 (1.6%)	1 (3.1%)	6 (2.4%)	7 (5.5%)	0	0
Total	91 (100%)	191 (100%)	33 (100%)	249 (100%)	127 (100%)	51 (100%)	104 (100%)
Attitude							
Positive	37 (40.7%)	86 (45%)	20 (60.6%)	103 (41.4%)	50 (39.4%)	31 (60.8%)	42 (42.4%)
Negative	54 (59.3%)	105 (55%)	13 (39.4%)	146 (58.6%)	77 (60.6%)	20 (39.2%)	62 (59.6%)
Total	91 (100%)	191 (100%)	33 (100%)	249 (100%)	127 (100%)	51 (100%)	104 (100%)

*** Master of Science**

**** Bachelor of Science.**

Results revealed that 178 students (63.1%) used textbooks as their source of information acquisition (63.1%), 33 (11.7%) used magazines and posters, 26 (9.2%) used mass media, 24(8.5%) students used internet, 5 (1.8%) used newspaper, 5 (1.8%) used none of the above. Eleven students (3.9%) used other sources.

The knowledge and attitude in different fields is also demonstrated in table 3 and table 4.

Table3 – score of knowledge in different fields of study

	Medicine		**Dentistry**		**Anesthesiology**		**Radiology**		**Laboratory sciences**		**Midwifery**		**Nursing**		**Total**	
Knowledge	**(n)**	**%**	**(n)**	**%**	**(n)**	**%**	**(n)**	**%**	**(n)**	**%**	**(n)**	**%**	**(n)**	**%**	**(n)**	**%**
Good	76	96.2	35	72.9	23	82.1	18	86.7	28	100	26	96.3	47	92.2	253	89.7
Moderate	2	2.5	7	14.6	5	17.9	3	14.3	0	0	1	3.7	4	7.8	22	7.8
Poor	1	1.3	6	12.5	0	0	0	0	0	0	0	0	0	0	7	2.5
Total	79	100	48	100	28	100	21	100	28	100	27	100	51	100	281	100

Discussion

This study was designed to evaluate the knowledge and attitude of a group of students studying in medical fields toward HIV/AIDS. Our results revealed that 89.7% of students (253 students) had a good knowledge about HIV/AIDS but this does not verify that this knowledge is enough since the more ones knowledge is, the more appropriate that person behaves toward a better health. Kelly et al and Manning showed that knowledge, attitude, personal characteristics and believes can have a great impact on one`s behavior(8, 10) .Our results are in agree with previous studies who evaluated the knowledge of students about HIV/AIDS in Iran(2, 4, 6).

The highest level of knowledge was among BS students with 92.2% which was consistent with the results of Habibzadeh et al(11). Moreover, female demonstrated a higher level of knowledge compared

to male students (91.6% and 85.7% respectively). The highest level of knowledge was among students of medical school (92.6%) with faculty of nursing, midwifery and dentistry coming afterwards.

Anderson in a study on HIV positive patients revealed that men are more aware of means of the disease prevention rather than female, and that resulted in enough knowledge about protection and safety during sexual contacts. Also younger women with lower socioeconomic state had lower knowledge in this regard (12).

The married students showed a slightly higher knowledge (90.9%) compared to single students (89.6%). This result was similar to that of Esmaeili et al conducted in Isfahan central prison(13). However, some other studies did not show a significant relation between marital status and knowledge toward HIV and means of transmission (14-15).

The results revealed that the main sources of information gathering about HIV/AIDS patient was textbooks (63.1%) where as magazines, newspapers and posters (11.7%) and television and radio (9.2%) were in the 2nd and 3rd place respectively. This was different from the study conducted by Peyvandi et al with magazine, newspapers and posters standing above all (58.3%), and media (56.2%), family and textbooks (15.5%) coming afterwards(2). Obtaining information from media was lower than other means, suggesting the fact that educated people are eager to search other routs rather than gaining the information through media. Media demonstrated a lower percent compared to other routs of obtaining information which might be due to less attention to educating programs broadcasted through it. Television as a mass media is one of the most useful and applicable tools for public education, is very effective in educating people and transferring information. The more comprehensive and interesting the data transferred, the better the results would be (16).

The majority of the studied population had negative attitude toward HIV/AIDS (56.4%). Students of nursery had more positive attitude toward HIV/AIDS (60.8%). The attitude of students towards HIV/AIDS according to their field of study was as follows: students of midwifery (51.9%), students of medicine (49.4%), laboratory sciences (46.4%), radiology (42.9%), dentistry (22.9%), and anesthesiology (21.4%). There was a significant difference between field of study and attitude toward HIV/AIDS ($p<0.05$).

Married students (60.6%) had more positive attitude toward HIV and AIDS compared to single students (41.4%) which statistically was significant. ($P<.05$)

Female students (45%) had more positive attitude toward HIV and AIDS compared to male students (40.7%) which statistically was not significant. ($P>.05$)

Degree students (60.8%) had more positive attitude toward HIV and AIDS compared to diploma (40.4%) and professional doctorate (39.4%) level students which statistically was significant. ($P<.05$)

Ratio of positive vision in participating students in research study based on source of info about HIV and AIDS was as follows:

Others (54.5%), Media (50%), Textbooks (46.1%), Internet (41.7%), Magazines and posters (30.3%), news papers (20%), none (20%)

Individuals who have not encountered people diagnosed with HIV (43.3%) had more positive attitude compared to the ones who have encountered (40.9%) toward HIV and AIDS, while

this difference statistically was not significant. (P>.05)

Individuals who had an addict in family members (46.2%) had more positive attitude toward HIV/AIDS compared to individuals who had not any, while this difference statistically is not significant. (P>.05)

Also in a study Pelter carried out in South Africa on AIDS amongst teachers, he observed a direct and significant relation between more knowledge and better attitude(1).

Conclusions:

Increasing knowledge of individuals can be effective in prevention and cognition of transmission ways of the disease. In addition to this world health organization believes, more literacy level, mutual trust in family and religious and cultural commitments are amongst preventers of undesired behavior and it is informative.

Therefore everyone is to be alert and open-eyed and take warnings of Iran AIDS Center seriously, that believes people should know ways of transmission and prevention, avoid promiscuity, injecting drugs, encountering objects with sharp and unhygienic edges.

Since presently there is no vaccine and effective cure for this fatal disease and infection with AIDS virus will end up with the AIDS disease which is fatal, therefore education is really crucial.

Suggestions:

Considering the position of medical students and the roll they can play out in increasing general knowledge of HIV/AIDS disease and considering acquired level of information and attitude in medical students in this research, it is recommended to have educational sessions about HIV/AIDS disease, to increase knowledge level and attitude of students and also to make use of educational videos and teaching aids.

Considering related field of study in addition to general education, specific education should be offered based on demands of related field.

Once in every few month all students must be updated with the new info acquired on HIV/AIDS so it can be transferred to the public.

It is also recommended to conduct a study on HIV/AIDS knowledge level and attitude with other groups and students to help better and more effective planning and decision making later on.

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