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A survey of awareness and attitude among Kurdistan's students towards AIDS in the year 2020

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Abstract

Introduction: Prevention of acquired immune deficiency syndrome (AIDS) requires proper awareness and attitude towards the disease, and ways of transmission and prevention. This study aimed to investigate the awareness and attitude of students at Kurdistan University of Medical Sciences and University of Kurdistan towards AIDS in 2020.

Material and methods: This was cross-sectional, descriptive-analytical study. The study population was students at Kurdistan University of Medical Sciences (MUK) and University of Kurdistan (UOK) in 2020. 369 students were selected based on relative sampling. Data collection tool was international AIDS questionnaire (IAQ). Independent *t*-test and analysis of variance were applied for analysis.

Results: The total IAQ score among students of MUK (75.38 ± 7.66) was higher than that of UOK students (71.17 ± 8.52) ($p = 0.023$). Although the total score in men (74.04 ± 8.14) was slightly higher than women (72.71 ± 8.50), there was no significant difference ($p = 0.13$). The difference in the scores of students living in single house with students living with their parents ($p = 0.002$) and students living in dormitories ($p = 0.006$) was statistically significant. The average score of undergraduates was the lowest, and doctorates the highest ($p = 0.035$).

Conclusions: In light of the need to increase the awareness of ways of AIDS transmission, and appropriate attitudes towards people living with HIV/AIDS, with a focus on non-medical students, schemes should be designed and implemented to raise awareness and attitudes among people.

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Key words: awareness, attitude, AIDS, students, Kurdistan.

Introduction

Acquired immune deficiency syndrome (AIDS) is an emerging viral disease that has been recorded as one of the most common chronic viral infections worldwide [1]. AIDS, firstly reported in 1981, is unique in human history for its' rapid spread, span, and severity [2]. It is also one of the most critical public health issues globally, especially in low-income and middle-income countries [3]. According to the World Health Organization (WHO), in 2017, 940 thousand people worldwide died of AIDS-related causes. Africa

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region, with 25.7 million people, has the highest number of cases. Years of life lost due to this disease, and years of life with disability have increased from 15.3 and 1.3 per 100,000 people in 1990 to 81.9 and 4.4 in 2015, respectively [4]. In total, more than 35 million people worldwide live with HIV/AIDS. The WHO considers Iran to have a low prevalence (0.1-0.5) [5]. According to the latest statistics obtained in the country, injecting drug use and high-risk sex were the most common causes of AIDS, respectively. Meanwhile, Iranian youth are at serious risk due to unregulated sexual relations in terms of health, high prevalence of addiction, lack of sex education, increasing age of marriage, increase in overseas travel, and proximity to countries considered high-risk areas. Also, a rapid increase in high-risk behaviors and lack of sex education towards HIV/AIDS in Iranian schools and universities can lead to AIDS [6]. Due to lack of effective vaccines, AIDS principles of prevention methods include education, counseling, and behavior change [7]. Results of Sanei Moghaddam *et al*.'s study in 2011 showed that the level of awareness among students was good (50.2%), moderate (44%), and poor (5.8%). In another study conducted by Ravandi *et al*. (2016), there was no significant gender difference in the students' awareness and attitude [7-9]. According to studies, the most fundamental way to deal with AIDS is to raise public awareness about the nature of the disease, and ways of transmission and prevention. Prevalence of physical disorders, including sexually transmitted diseases and mental illnesses, such as depression among students, predisposes them to high-risk behaviors, e.g., addiction and unconventional relationships, followed by AIDS [10]; therefore, regular education and monitoring of awareness and attitudes of different population groups, especially students, in relation to AIDS seems necessary. Hence, we conducted a study to examine the awareness and attitudes of students at Kurdistan University of Medical Sciences and University of Kurdistan regarding AIDS.

Material and methods

The present study was performed in a descriptive-analytical cross-sectional manner. Study population were students at Kurdistan University of Medical Sciences and University of Kurdistan in 2020. Kurdistan University (UOK) and Kurdistan University of Medical Sciences (MUK) are the two largest universities in Kurdistan Province, where students in various fields of medicine and health are studying at MUK, and students of other fields (non-medical) are studying at UOK. About 3,000 and 9,000 students are studying in both MUK and UOK universities, respectively. 369 students were included in the study using relative sampling method, and their information were collected using demographic information checklists and international AIDS questionnaires (IAQ). Demographic characteristics checklist included age, sex, type of university, type of department, field of study, degree, parents' place of residence, student's place of residence, number of semesters (year of entry), smoking, and marital status. International AIDS questionnaire consisted of 18 questions on AIDS to evaluate four different dimensions of AIDS awareness and attitudes, including myths and misconceptions about the transmission of AIDS (question, 7-1), attitudes towards people living with AIDS (question, 8-12), statements about understanding the risk of AIDS (question, 13-15), and awareness of facts related to AIDS (questions, 18-16). Answers were in the form of a 5-point Likert scale ('strongly disagree', 'disagree', 'do not know', 'agree', 'strongly agree'), with each option given a score of 1 to 5, respectively. For inverse questions 10, 16, 17, and 18, scores were calculated inversely. The score ranged from 50 (the lowest) to 90 (the highest). Validity and reliability of the questionnaire have been confirmed in previous studies, including in Maghami's survey on the reliability of the questionnaire using a pre-test/ post-test method, with a reliability of 0.86 [7]. The validity and reliability of this questionnaire has also been confirmed by Eskandari's study, in which factor analysis and construct validity were used to assess the validity of the questionnaire, and Cronbach's α coefficient was used to assess the reliability [11]. Also, Ravandi's confirmed the validity and reliability of the questionnaire [3]. SPSS software version 22 was used for analysis. Data were analyzed using descriptive statistics, independent *t*-test, and analysis of variance, and assumptions related to these tests were considered. The study obtained an approval of bioethics committee, with an approval number of IR.MUK.REC.1399.011.

Results

In this study, 369 students were included. 188 students were from MUK (50.9%), and 181 were from UOK (49.1%). 53.9% of students were females, and 50.9% and 49.1% studied at MUK and UOK, respectively. The mean age of MUK and UOK students were 22.94 ± 2.9 and 23.79 ± 4.2 years, respectively. This difference was statistically significant ($p = 0.023$). Most of the students (48.8%) studied bachelor's studies and the lowest number (1.4%) of students an associate degree. 45.3% of individuals lived with a family, 43.9% in a dormitory, and 10.8% in a single house. The residence of parents of the studied students was 92.7% in the city and 7.3% in the village. Moreover, 92.4% of the participants were single, and 7.6% were married (Table 1).

The age of students was not significantly correlated with the total IAQ score and their factors. The mean score of all factors and the total IAQ score among Kurdistan University of Medical Sciences students was higher than that of University of Kurdistan, and these differences were statistically significant based on independent *t*-tests (Table 2). The mean of total IAQ score of the perceptions and facts was higher in the group of cigarette smokers, and this difference was significant. There was no significant difference between the mean of total IAQ score and types of factors between single and married people, and based on the parents' place of residence (city and village). Tukey test analysis showed a significant difference between living with parents and in single house ($p = 0.002$) as well as dormitory living with

single house (p = 0.006). There was a significant difference between undergraduate and PhD degree (p = 0.035). Comparison of total score based on the year of university entry and comparison of total score between departments of both universities based on analysis of variance was not significant (Table 3). Based on multivariate regression results, it was found that if we entered all the variables that are likely to affect the total IAQ score simultaneously, only two variables of university and student residence had a significant relationship with the total IAQ score (Table 4).

Table 1. Frequency distribution of qualitative variables in students participating in the study

Variables	No. of students	Percentage
University		
University of Medical Sciences	188	50.9
University of Kurdistan	181	49.1
Grade		
Associate	5	1.4
Undergraduate	180	48.8
Masters	55	14.9
PhD	129	35.0
Parents' place of residence		
Village	27	7.3
City	342	92.7
Smoking per day		
0 (non-smoker)	334	90.5
1-3	13	3.5
4-10	13	3.5
< 10	9	2.5
Gender		
Female	199	53.9
Male	170	46.1
Student's accommodation		
Living with parents	167	45.3
Dormitory	162	43.9
Single house	40	10.8
Marital status		
Single	341	92.4
Married	28	7.6
Year of university entrance		
2011	4	1.1
2012	5	1.4
2013	16	4.3
2014	23	6.2
2015	27	7.3
2016	55	14.9
2017	104	28.2
2018	73	19.8
2019	62	16.8

Discussion

The study results showed that the mean score of total awareness and attitude among students at the University of Medical Sciences is 75.38 ± 7.67 and students at the University of Kurdistan is 71.17 ± 8.53, which indicates that it is higher in students at the University of Medical Sciences. In a study of Parhizkar *et al.* comparing awareness and attitude towards AIDS between pre-service students and medical students, the difference in awareness was statistically significant, and the level of awareness was higher among medical students [12]. In a study of Ghodsi *et al.*, the level of students' awareness and attitude in chemistry, midwifery, and experimental sciences field was higher than in other areas [13]. In a study conducted by Ravandi *et al.*, the results showed that the mean and standard deviation of students' awareness scores on AIDS, in general, was 54.53 ± 5.89, while in its' attitude was 20.12 ± 3.54 [14]. All items of IAQ questionnaire had a higher mean in Kurdistan University of Medical Sciences. Through the items of perception and risk estimation, the score difference between the two universities was higher. In a study conducted by Alipour *et al.*, the mean scores obtained in the field of misconceptions about transmission of AIDS were attitudes (28.4 ± 34.73) and prejudices (19.3 ± 75.72) about people infected with AIDS. Moreover, estimates of personal risk were 19.10 ± 28.3, AIDS transmission facts were 12.3 ± 00.41, and the total score was 70.8 ± 04.77 [15]. In Jahanfar's 2010 study among non-medical students, there were misconceptions about the disease despite students' good awareness of AIDS [16]. In a 2008 study on community knowledge performed by Temu *et al.* in Tanzania, there was a misconception about sexually transmitted diseases and AIDS, despite the high level of information [17]. It seems that students studying in medical universities, especially in fields, such as medicine, nursing, and midwifery, and also paramedical students, would be well aware of AIDS due to the nature of their field and courses they take from the moment they enter the university. Also, following awareness, they present a more positive attitude towards various dimensions of this disease. On the other hand, organizations, such as HIV/AIDS organizations in medical universities that strive to increase awareness and improve attitudes towards these diseases are essential because there are many negative attitudes; for example, about the separation of people with the illness. These student's organizations can improve this attitude.

Although the total score in both universities was slightly higher in men (medical sciences, 75.53; non-medical, 72.44) than women (medical sciences, 75.25; non-medical, 70.11),

Table 2. Mean and standard deviation of quantitative variables (questionnaire scores by domains and total score) by university

Variable	University (*n*)	Mean (SD)	Min-max	*p*-value*
Perceptions	University of Medical Sciences (189)	29.41 (4.38)	16-35	0.003
	University of Kurdistan (180)	27.97 (4.96)	16-35	
Attitude	University of Medical Sciences (189)	20.98 (3.17)	8-25	0.032
	University of Kurdistan (180)	20.24 (3.43)	8-25	
Risk assessment	University of Medical Sciences (189)	12.28 (1.68)	7-15	> 0.001
	University of Kurdistan (180)	10.95 (2.47)	5-15	
Facts	University of Medical Sciences (189)	12.69 (1.66)	8-15	> 0.001
	University of Kurdistan (180)	12.00 (1.98)	7-15	
IAQ	University of Medical Sciences (189)	75.38 (7.66)	50-90	> 0.001
	University of Kurdistan (180)	71.17 (8.52)	50-90	

**Based on t-test results*

Table 3. Comparison of AIDS awareness and attitude score (IAQ) in different sub-groups of students at Kurdistan University of Medical and Kurdistan University

Variables*	Kurdistan University of Medical Sciences			University of Kurdistan		
	Sub-groups (*n*)	Mean (SD)	*p*-value	Sub-groups (*n*)	Mean (SD)	*p*-value
Gender	Male (88)	75.53 (7.76)	0.799	Male (82)	72.44 (8.30)	0.068
	Female (101)	75.25 (7.63)		Female (98)	70.11 (8.62)	
Marital status	Single (180)	75.27 (7.74)	0.361	Single (161)	71.40 (8.51)	0.290
	Married (9)	77.66 (6.00)		Married (19)	69.21 (8.66)	
Degree	Associate degree (3)	79.33 (1.16)	0.420	Associate degree (2)	67.50 (12.02)	0.265
	Undergraduate (57)	76.04 (7.18)		Undergraduate (123)	70.70 (8.74)	
	Master's degree (3)	80.00 (3.60)		Master's degree (52)	71.99 (7.91)	
	PhD (126)	74.88 (7.99)		PhD (3)	79.33 (6.11)	
Student accommodation	Living with parents (70)	75.39 (8.1)	0.106	Living with parents (97)	70.62 (8.33)	0.011
	Dormitory (100)	74.73 (7.73)		Dormitory (62)	70.28 (8.33)	
	Single house (19)	78.79 (4.52)		Single house (21)	76.38 (8.62)	
Parents' place of residence	Village (7)	77.29 (4.96)	0.505	Village (20)	72.20 (8.47)	0.569
	City (182)	75.31 (7.76)		City (160)	71.05 (8.56)	
Smoking	Yes (15)	78.33 (6.73)	0.120	Yes (20)	74.55 (10.24)	0.060
	No (174)	75.13 (7.71)		No (160)	70.75 (8.23)	
Year of university entrance	≥ 2015 (49)	75.15 (7.88)	0.264	≥ 2015 (26)	69.08 (9.13)	0.175
	2016 (25)	75.48 (8.33)		2016 (30)	73.87 (8.47)	
	2017 (52)	76.64 (6.93)		2017 (52)	70.75 (8.33)	
	2018 (39)	75.80 (8.33)		2018 (34)	72.47 (7.37)	
	2019 (24)	72.38 (6.68)		2019 (38)	269.90 (9.11)	
School (department)	Health (14)	74.86 (7.36)	0.087	Literature and humanities (35)	72.20 (8.82)	0.139
	Nursing and midwifery (24)	79.05 (7.17)		Natural resources (71)	69.50 (8.33)	
	Medicine (106)	74.61 (8.06)		Basic sciences (11)	74.81 (8.20)	
	Paramedical (21)	73.90 (6.09)		Technical engineering (51)	71.28 (8.44)	
	Dentistry (24)	76.70 (6.99)		Agriculture (12)	74.33 (8.40)	

**p-value was calculated in two-state variables using the t-test, and variables with more than two states were done using ANOVA test*
#Tukey test was used as a post-hoc test that showed a significant difference in IAQ between students living in dormitories and living in single house (p = 0.012) as well as students residing in single house with students living with parents (p = 0.013)

but there was no significant difference. There was a significant difference only in two items of perceptions and facts, in both of which the average score was slightly higher in men. In a study of Maghami *et al*., male students were significantly more aware of AIDS ($p = 0.001$) [7]. Similarly, in a study of Kumar *et al*., awareness and attitudes about HIV/AIDS were significantly higher in men than their counterparts [18]. It can be assumed that since men are usually more risk-takers and the issue of polygamy and multiple relationships is more common for men, they pursue this issue. In our study, although the total score was slightly higher in men than women, there was no significant difference, and the results were in line those of Ravandi *et al*. [8]. Contrary to the results of the present study, there was a significant difference in a study of Tabari *et al*., and it was higher in men ($p < 0.001$) [19]. Perhaps the reason for this difference in the present study is the difference in the age group of the population.

There was no significant difference between the mean total score and types of items between single and married individuals. The results of a study of Tofiqi-Niaki *et al*. are in line with the present study results [20]. The mean total score and items based on parents' place of residence (city and village) did not show a significant difference. However, in a study of Mahmoudifar *et al*., the awareness in rural residents was significantly lower than in urban residents [1]. In the present study, among the different medical sciences departments, the Faculty of Nursing and Midwifery students had higher awareness and attitude, but this difference was not significant. In a Ravandi *et al*.'s study, nursing and midwifery students had higher awareness and attitude than medical and paramedical students. But this difference between students and their departments was not significant [8]. In general, in the present study, based on the analysis of variance test, there was no significant difference in comparing the mean total score of students' awareness and attitude between different departments of both universities. In this study, non-medical university students in PhD program had higher awareness and attitude than other courses, but this difference was insignificant. However, a study of Azimian *et al*. reported a significant relationship between educational level and students' level of awareness, and that people with higher education presented higher perceptions [21]. This increase in perceptions at higher educational levels may indicate that students in higher academic years are more exposed to information, or have sought information themselves, while there is not much difference in terms of awareness between different grades of the University of Medical Sciences students. When comparing the total score based on the students' residence, we found that the analysis of variance test results was significant, indicating at least one difference between one group and another. Also, this variable had a significant relationship, with the total IAQ score in multiple regression model. The awareness score of students living in a single house was higher than other students living in dormitories or with their parents, and this difference was statistically significant. In medical sciences: living with parents (75.39%), dormitory (74.73%), single house (78.79%). In non-medical sciences: living with parents (70.62%), dormitory (70.28%), and single house (78.79%). It appears that a student's independence and living in a dorm, particularly a single house, and being away from home environment, provided conditions for students to enhance their awareness and attitude during discussions with their peers and usage of cyberspace. In this study, the mean total score, item of perceptions and facts was higher in the group of smokers, and this difference was significant.

Table 4. Determination of IAQ-related factors in students of medical and non-medical universities, based on multiple linear regression with step-wise model

Variables	Standardized coefficients beta	*t*-value	*p*-value
Age	0.068	1.356	0.176
Gender			
Female	–	–	–
Male	0.038	0.750	0.454
University			
Medical	–	–	–
Non-medical	–0.257	–5.166	0.001 >
Grade			
Undergraduate and less	–	–	–
Masters	0.056	1.050	0.295
PhD	0.074 –	1.091 –	0.276
Student's accommodation			
Living with parents	–	–	–
Dormitory	0.027 –	0.511 –	0.610
Single house	0.182	3.662	0.001>
Parents' place of residence			
Village	–	–	–
City	0.050 –	0.988 –	0.324
Marital status			
Single	–	–	-–
Married	0.026–	0.521 –	0.603
Entering year			
≤ 2015	0.085 –	1.674 –	0.095
2016	0.081	1.626	0.105
2017	0.043	0.863	0.388
2018	0.041	0.820	0.413
2019	–	–	–
Smoking			
Yes	0.085	1.661	0.097
No	–	–	–

However, studies have shown that HIV-positive people constitute a more significant proportion of their average population of smokers [22]. Though, no research has been discovered to examine the association between the awareness and attitudes towards AIDS and smoking. Smokers have unique and distinct characteristics and personalities from others. As a result, they are likely to consider becoming aware of this issue due to their side characteristics. Therefore, they actively and inactively pursue more information on this issue. There was no significant relationship between students' awareness and attitude and the university entrance year in the present study. But in a study of Kumar *et al*., the awareness and attitude towards HIV/AIDS were significantly higher in 4th-year students than in younger years and newer entrants [18].

The present study's strengths are its' large sample size and using two statistical populations connected to medical issues and unrelated to medical topics. However, there are some of the study's limitations. Students are a unique demographic that cannot be generalized to the entire community. Also, a portion of the data is a self-statement with a high probability of inaccuracy. The existence of various tools in assessing the awareness and attitude of sexually transmitted diseases, particularly AIDS, is one of the obstacles in the discussion and conclusions that can be mentioned, making the process of comparison and conclusions rather complex.

Conclusions

The present study results showed that, in terms of awareness and attitude towards AIDS, students at the University of Medical Sciences are in a more favorable situation, and one of the factors affecting their awareness and attitude is their place of residence; therefore, based on these findings, groups in need of training can be identified. It is suggested that university officials should provide more educational opportunities for non-medical students, particularly those who live in dormitories or with their parents.

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Conflict of interest

The authors declare no conflict of interest.

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