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Assessment of HIV/AIDS information among preclinical and clinical medical students

Background: This study investigated the basic and transmitted information of medical students towards HIV/AIDS in clinical and preclinical courses, as well as the sources they usually use to get information.

Methods: This descriptive analytical study was carried out on 220 medical students in preclinical and clinical course, using a stratified random sampling method in 2015-2016. The study instrument was extracted from a WHO questionnaire.

Results: The mean age of the present participants was 22.31 ± 2.97 years. Most of them were female 130 (65.7%) and 154 (77.4%) were single. There is no statistically significant difference in basic and transmitted information among preclinical and clinical students (22.11 ± 1.66 vs 22.08 ± 1.70 , p value = 0.91). The most of the students reported that books (85.85%) were their main source of getting information about HIV/AIDS, followed by friendship organizations (32.82%) and television (29.29%). Most students reported they need more treatment information (59.59%), as well as information on prevention (42.42%) and modes of transmission (39.89%).

Conclusion: The present study showed that medical students have some knowledge about HIV/AIDS, but there are some considerable misconceptions in their basic and transmitted knowledge that require more attention to revise the HIV educational curricula.

Keywords: Knowledge, medical student, AIDS

تقييم معلومات فيروس نقص المناعة البشرية / الإيدز بين طلاب الطب قبل السريرية و السريرية

الخلفية و الهدف: كان الهدف من هذه الدراسة هو تقييم و مقارنة معرفة و معلومات طلاب الطب في المراحل السريرية و ما قبل السريرية حول طرق مختلفة لانتقال الإيدز، نقاط مهمة لهذا المرض حظيت باهتمام أقل و مصادر المعلومات التي تستخدم عادة للحصول على معلومات حوله.

المنهجية: أجريت هذه الدراسة التحليلية الوصفية على ٢٢٠ طالب طب في مقرر ما قبل السريري و السريري، باستخدام طريقة أخذ العينات العنقودية العشوائية في ٢٠١٥-٢٠١٦. تم استخراج أداة الدراسة من استبيان منظمة الصحة العالمية. **النتائج:** كان متوسط عمر المشاركين 22.31 ± 2.97 سنة. كانت غالبية المشاركين ١٣٠ (٦٥,٧%) امرأة و ١٥٤ (٧٧,٤%) عازبين. لم يكن هناك فروق ذات دلالة إحصائية في المعلومات العامة حول المرض و المعرفة بأنواع مختلفة من طرق انتقال الإيدز بين طلاب السريرية (١,٦٦ ± ٢٢,١١) و طلاب ما قبل السريرية (١,٧٠ ± ٢٢,٠٨). ذكر معظم الطلاب أن مصدر معلوماتهم الرئيسي حول الإيدز هو الكتب (٨٢,٨٢%)، ثم مجموعات الأصدقاء (٨٢,٨٢%) و أخيراً التلفزيون (٢٩,٢٩%). أفاد معظم الطلاب أنهم بحاجة إلى مزيد من المعلومات العلاجية (٥٩,٥٩%) و كذلك معلومات عن الوقاية (٤٢,٤٢%) و طرق الانتقال (٣٩,٨٩%). **الخلاصة:** أظهرت الدراسة الحالية أن طلاب الطب على دراية بفيروس نقص المناعة البشرية / الإيدز و لكن هناك بعض المفاهيم الخاطئة الكبيرة في معارفهم الأساسية و معرفتهم حول الانتقال التي تتطلب المزيد من الاهتمام و التعديل في المناهج التعليمية الخاصة حول المرض.

الكلمات المفتاحية: المعرفة، طالب الطب، الإيدز

ارزیابی اطلاعات دانشجویان پزشکی مرحله پیش بالینی و بالینی در خصوص بیماری ایدز

زمینه و هدف: این مطالعه با هدف بررسی و مقایسه آگاهی و اطلاعات دانشجویان پزشکی مرحله بالینی و پیش بالینی در خصوص انواع روشهای انتقال بیماری ایدز، نکات کمتر توجه شده ی این بیماری و منابع اطلاعاتی که معمولاً جهت کسب اطلاعات در مورد این بیماری، از آن استفاده می کنند انجام گردید.

روش: این مطالعه به روش توصیفی تحلیلی روی ٢٢٠ دانشجوی پزشکی در مرحله بالینی و پیش بالینی با روش نمونه گیری تصادفی خوشه بندی شده در سال ٩٥-١٣٩٤ و در دانشگاه علوم پزشکی مشهد انجام شد. ابزار مورد استفاده در این مطالعه، از پرسشنامه سازمان جهانی بهداشت که جهت ارزیابی دانش، آگاهی و عملکرد ایدز ایجاد شده است، استخراج گردید.

یافته ها: میانگین سنی شرکت کنندگان 22.31 ± 2.97 سال بود. اکثریت شرکت کنندگان، ١٣٠ (٦٥,٧%) خانم و ١٥٤ (٧٧,٤%) درصد مجرد بودند. تفاوت آماری معناداری در اطلاعات کلی در مورد بیماری و آگاهی در مورد انواع روش های انتقال ایدز، بین دانشجویان بالینی (١١/٦٦ ± ٢٢/٠٨) و پیش بالینی (١٠/٨٢ ± ١٧/٠) وجود نداشت. بیشتر دانشجویان بیان کردند که اصلی ترین منبع اطلاعاتی آنها در مورد بیماری ایدز در درجه اول کتابها (٨٢/٣٢ درصد)، سپس گروههای دوستان (٨٢/٣٢ درصد) و در نهایت تلویزیون (٢٩/٢٩ درصد) می باشد. در مورد اطلاعات مورد نیاز، دانشجویان در درجه اول نیاز به اطلاعات درمانی ٥٩/٨٩ درصد را ذکر کرده بودند سپس اطلاعاتی در خصوص پیشگیری از بیماری (٤٢/٤٢ درصد) و در نهایت اطلاعاتی در رابطه با انواع روش های انتقال بیماری (٣٩/٨٩ درصد) نیاز داشتند.

نتیجه گیری: نتایج مطالعه حاضر نشان داد که دانشجویان پزشکی اطلاعات کلی نسبتاً خوبی در مورد بیماری ایدز دارند ولی در مورد روش های انتقال بیماری به میزان قابل توجهی دچار تصور و درک غلط هستند. این مسأله با توجه به جایگاه دانشجویان پزشکی نیاز به توجه بیشتر و اصلاح کوریکولوم آموزشی آنها در مورد بیماری دارد.

واژه های کلیدی: دانش، ایدز، دانشجوی پزشکی

کلینیکل تعلیم حاصل کرنے والے اور کلینیکل تعلیم کے مرحلے سے پہلے کے میڈیکل طلبا میں ایدز کے تعلق سے معلومات کا موازنہ

بیک گراؤنڈ: اس تحقیق کا مقصد کلینیکل تعلیم حاصل کرنے والے اور کلینیکل تعلیم کے مرحلے سے پہلے کے میڈیکل طلبا میں ایدز کے تعلق سے یہ جاننے کی کوشش کی گئی کہ کیا انہیں اس بیماری کے پھیلنے کے طریقوں، ایدز کے بارے میں جن نکات کو نظر انداز کیا جاتا ہے اور ایدز کے بارے میں جن منابع سے معلومات حاصل کی جاسکتی ہیں ان کے بارے میں کتنا علم ہے۔

روش: اس تحقیق میں دو سو بیس طلباء کو شامل کیا گیا۔ ان طلبا میں بعض کا تعلق کلینیکل تعلیم کے مرحلے اور بعض کا تعلق کلینیکل تعلیم سے پہلے کے مرحلے سے تھا یہ تحقیق دوہزار پندرہ اور سولہ میں مشهد یونیورسٹی آف میڈیکل سائنس میں انجام دی گئی۔ طلبا سے معلومات حاصل کرنے کے لئے انہیں ایدز کے بارے میں عالمی ادارہ صحت کا بنایا ہوا سوالنامہ دیا گیا۔

نتیجے: تحقیق میں شرکت کرنے والے طلبا کی اوسط عمر بائیس سال تھی۔ اس میں طالبات نے زیادہ تعداد یعنی ایک سو تیس کی تعداد میں شرکت کی تھی۔

نتیجے دونوں مرحلوں کے طلبا میں ایدز کے بارے میں کلی معلومات میں کوئی خاص فرق نہیں تھا۔ ایدز کے بارے میں معلومات حاصل کرنے کا اصلی منبع نصابی کتابیں تھیں، اس کے بعد دوستوں کے گروپوں سے معلومات حاصل ہوتی تھیں اور ٹی وی بھی ایدز کی معلومات کا ایک ذریعہ تھا۔ تقریباً ساٹھ فیصد طلبا نے لکھا تھا کہ انہیں علاج کرنے کی معلومات فراہم کی جائیں، اسکے بعد بیالیس فیصد طلبا نے بیماری کی روک تھام کی روشوں سے آگاہ کئے جانے کا مطالبہ کیا تھا اور آخر میں تقریباً چالیس فیصد طلبا نے مطالبہ کیا تھا کہ انہیں ایدز کے پھیلنے کے طریقوں سے آگاہ کیا جائے۔

سفرارش: اس تحقیق سے معلوم ہوتا ہے کہ میڈیکل طلبا ایدز کے بارے میں کلی طور پر اچھی معلومات رکھتے ہیں لیکن ایدز کے پھیلنے کے طریقوں کے بارے میں غلط معلومات رکھتے ہیں۔ اس مسئلے کے پیش نظر میڈیکل نصاب کو ایڈٹ کرنا ضروری ہے۔

کلیدی الفاظ: ایدز، میڈیکل، طلبا، معلومات

INTRODUCTION

By the end of 2015, UNAIDS reported that 0.1% of general population aged 15-49 years was living with HIV/AIDS and 4000 deaths were related to this disease in Iran (1). According to World Health Organization (WHO) estimation, almost half of new HIV cases are in 15-24 age groups, so the youth are at the core of educational and preventing programs (2, 3). Due to effective antiretroviral therapy and increased number of HIV/AIDS patients, more physicians from all branches of medicine will encounter these patients. This means all physicians should have sufficient and correct information and proficiency about routes of transmission to manage the patients regardless of their fear, stigma, and misconception.

Among this medical students, because of their future role as health care practitioners and also their special age group, are in critical situation. Medical students must be aware of the different aspects of disease like proper prevention methods such as post exposure prophylaxis, hospital safety protocols, and effective counselling method for HIV/AIDS patients. They should achieve disease information from different sources and also different views (patient view, health system view, medical view and community view) to become familiar with community knowledge and belief, so that they can deal with this developing epidemic. A study conducted in Malaysia showed insufficient knowledge in 80% of medical students (4). There are few studies on this important issue in Iran, most of them were community based survey (5, 6) and some studies involve undergraduate students (7), dental students, (8) and nurses (9).

The aims of this study were to assess the medical students' information about HIV/AIDS and the essential information which they want to know about this disease, also to determine the source of information they use to acquire knowledge about AIDS. The results of the study can act as a guide for medical students' educational curriculum in order to find effective strategies for community based interventions.

METHODS

This descriptive analytical study was carried out using a stratified random sampling method on medical students studied in different course of medical education in 2015-2016.

The sample size of 220 was obtained according to the following assumption: a 5% margin of error, 95% confidence interval and an expected knowledge level of 84% according to the similar study was done on pharmacy students (10). Every student in each course (as a strata) had the same probability of being sampled:

Group (1): 100 medical students in basic science course and in physiopathology course (preclinical group)

Group (2): 100 medical students in externship and internship courses (clinical group)

All medical students who studied in Mashhad University of medical sciences and desired to fill the questionnaire enrolled the study. Exclusion criteria included unwillingness

to participate in the study and also those who filled out the questionnaire incompletely. The study instrument was extracted from a WHO questionnaire developed to assess HIV/AIDS related knowledge, attitudes, and practice. (11-13) Questions about sociodemographic characteristics included age, gender, marital status (married, single, widowed, and divorced), incomes, and lodging status (Student dormitory, living with parents). Also, the individuals' source of information on HIV/AIDS and also their informational needs about the different aspects of the disease were added to the first part of the questionnaire. The instrument was validated in previous study and the Cronbach's Alfa was 0.81 (6).

The same researcher distributed the questionnaires in two study groups. The purpose and method of the study were described to participants and all those agreeing to take part in the study were provided by a written consent. All questionnaires were anonymous and respondents were completely voluntary to take part in the study. The study was approved by the Mashhad university medical faculty ethics committee (IR.MUMS.fm.REC.1394.561).

Categorical variables were reported as number and percent among participants and the quantitative variable were the mean \pm and standard deviation (SD). In order to compare quantitative variables, STUDENT T, test or Man-Witney U test was used according to the results of normality test. Pearson's Chi-square was used to evaluate categorical variables between groups. A P-value of less than 0.05 was considered significant. Data analysis was performed using SPSS (version 11.5; SPSS, Inc., Chicago, IL, USA).

RESULTS

A total of 198 complete questionnaires were obtained. This is very a good response rate (90%) in questionnaire based study. The mean age of the participants was 22.31 ± 2.97 years and ranged from 16 to 45 years. Most of them were female 130 (65.7%) and 154 (77.4%) were single. Most of the students were living in student dormitory 116 (58.9%). A summary of participants' characteristics is presented in Table 1.

HIV/AIDS basic and transmitted information of medical students in two study groups were presented in table 2 (The correct answers were shown as N (%)). There is no statistically significant difference in mean and SD (standard deviation) of information between preclinical and clinical students (22.11 ± 1.66 vs 22.08 ± 1.70 , p value = 0.91).

HIV/AIDS basic and transmitted information of medical students in two study groups were presented in table 2 (The correct answers were shown as N (%)). There is no statistically significant difference in mean and SD (standard deviation) of information between preclinical and clinical students (22.11 ± 1.66 vs 22.08 ± 1.70 , p value = 0.91).

Details about information needs in two groups of medical trainees were shown in table 4. Most students reported they need more information on treatment 118 (59.59%), as well as information on prevention 84 (42.42%), and modes of transmission 79 (39.89%).

Table 1. Demographic characteristics of preclinical and clinical students				
Variables		Preclinical students N (%)	Clinical students N (%)	Whole N (%)
Age mean(SD)		20.24 (1.89)	24 (1.36)	22.31 (2.97)
Gender	Male	31 (33)	36 (35.6)	68 (34.3)
	Female	63 (67)	65 (64.4)	130 (65.7)
Marital Status	Single	83 (87.4)	71 (69.6)	154 (77.4)
	Married	11 (11.6)	29 (28.4)	40 (21.1)
	Divorced/ widowed/ separated	1 (1.1)	2 (2)	3 (1.5)
Lodging status	Student dormitory	42 (44.2)	74 (73.3)	116 (58.9)
	Living with parents	46 (48.4)	16 (15.8)	63 (32)
	Others	7 (7.4)	11 (10.9)	18 (9.2)

Table 2. Participants basic and transmitted information about HIV/AIDS				
	Preclinical students N (%)	Clinical students N (%)	Total N (%)	P value
Q1: AIDS is a viral and infectious disease(n=198)	91 (95.8)	103 (100)	194 (97.97)	0.05
Q2: AIDS is curable (n=193)	65 (71.4)	75 (73.5)	140 (72.53)	0.03
Q3: AIDS is a simple disease like the common cold (n=198)	92 (96.8)	95 (92.2)	187 (94.44)	0.35
Q4: Immunity is reduced in an HIV positive Individual (198)	92 (96.8)	101 (98.1)	193 (97.47)	0.47
Q5: AIDS has a vaccine (n=197)	76 (80.9)	95 (92.2)	171 (86.8)	0.05
Q6: A person infected with HIV is usually diagnosed with symptoms of the disease (n=197)	86 (91.5)	95 (92.2)	181 (91.87)	0.86
Q7: Diagnosis is by blood exam (n=198)	88 (93.6)	93 (90.3)	181 (91.41)	0.40
Q8: AIDS can be transmitted from the pool or Toilet (n=198)	85 (89.5)	91 (88.3)	176 (88.88)	0.70
Q9: Touching an infected person, such as hugging, holding and shaking hands can transmit AIDS (n=198)	94 (98.9)	99 (96.1)	193 (97.47)	0.13
Q10: Sharing the food utensils of an infected person can transmit AIDS (n=197)	88 (93.6)	97 (94.2)	185 (93.90)	0.45
Q11: Exposure to an infected person who coughs or spits can transmit AIDS (n=198)	90 (94.7)	101 (98.1)	191 (96.46)	0.32
Q12: Sharing an injection needle or surgical instrument previously used by an infected person can transmit AIDS (n=198)	93 (97.9)	102 (99)	195 (98.48)	0.47
Q13: Donating the blood, organs, or tissue of an infected person to others can transmit AIDS (n=197)	92 (97.9)	102 (99)	194 (98.47)	0.46
Q14: HIV Positive mother can infect her child in the prenatal period (n=197)	87 (91.6)	94 (92.2)	181 (91.87)	0.47
Q15: AIDS can be transmitted through sexual intercourse (n=198)	93 (97.9)	101 (98.1)	194 (97.97)	0.65

Table 3. Participant's sources of information			
	Preclinical students N (%)	Clinical students N (%)	Overall number N (%)
Family	19 (20)	11 (10.67)	30 (15.15)
Friends	28 (29.47)	19 (18.44)	47 (23.73)
Radio	4 (4.21)	2 (1.94)	6 (3.03)
Television	31 (32.63)	27 (26.21)	58 (29.29)
Newspapers	22 (23.15)	25 (24.27)	47 (23.73)
Books	77 (81.05)	93 (90.29)	170 (85.85)
friendship organization	45 (47.36)	20 (4.96)	65 (32.82)

Table 4. Information needs in clinical and preclinical students

	Preclinical students N (%)	Clinical students N (%)	Overall number N (%)
General information	27 (28.42)	30(29.12)	57(28.78)
Prevention	43 (45.26)	41 (39.80)	84 (42.42)
Transmission	35 (36.84)	44 (42.71)	79 (39.89)
Treatment	51 (53.68)	67 (65.04)	118 (59.59)
Others	13 (13.68)	26 (25.24)	39 (19.69)

DISCUSSION

The results of the study showed that most of the students were informed about the nature of the disease and the various ways of transmission and contamination of HIV infection. Over 95% of the preclinical students and 100% of clinical students had knowledge about the pathogenicity mechanism of the disease and they knew that the immune system has been targeted by HIV virus. The results of another study carried out on final year medical students in Vietnam had demonstrated that only 41% of students knew the TCD4 lymphocytes are the main target cells in HIV infection (14). Almost all of the students except a few, knew that the virus can be transmitted through sexual contact or infected surgical and dental instruments. Although in most of the questions, the students selected the correct answers but in some aspects they had specific deficiency. Generally, knowledge regarding transmission and contamination of HIV infection was not acceptable for medical students. This finding that 12% of our sample was concerned about the contamination of public places like pools or toilets indicates that medical students do not receive sufficient education to work safely with AIDS patients. It has been shown that one of the important factors in students' negative perception about AIDS patients is the fear of contagion (15). In this study there was no statistically significant difference in basic and transmitted information among preclinical and clinical students. It might be due to the particular nature of the questions which cannot differentiate between two different courses in medical education, or it can be related to the deficits in our medical education program and HIV education and training. One can expect valid information about HIV/AIDS over the years of study in medical school to increase especially after entering the clinical courses.

As it was expected, the most common and valid means of receiving information about HIV/AIDS were books which was constant among preclinical and clinical students. On the contrary, similar studies carried out on medical students, nursing students, and other health science students in other countries indicated the students selected the popular media such as TV, radio, and newspaper as their most common choices (16-18). In a study performed among general public, TV, magazine, and newspaper were

found to be the most popular sources of information (6). One can deduced that although the popular media are the best path for population based intervention but it seems in Iran they do not have played their particular task in constructing awareness of selective health problem as HIV/AIDS for all type of general population with different knowledge level. The results of the study showed that student organization was one important source of information in overall and particularly in preclinical students.

Most of the students wanted to know more about HIV/AIDS prevention and also different modes of transmission. Presented results are in correspondence with students' basic and transmitted information which assessed in this study. These main trainings should be delivered to medical students early in their pre-clinical course and replicated later on a larger scale to strengthen their information, so that their practice in relation with patients, proper prevention method, and post exposure prophylaxis can be changed.

The first limitation of this study was the self-administrated instrument which might be disposed to bias, so the precision of the responses could not be checked. Secondly, the instrument was not designed to investigate in depth HIV training and educational program in medical university. Future study should explore this aspect in order to provide valuable evidence in relationship between undergraduate education, knowledge, and practice. Nevertheless, the study instrument was extracted from a specific standardized WHO questionnaire which developed to assess HIV/AIDS related knowledge, attitudes, and practice. Moreover the high response rate in this study showed respondent population was well excited and the survey was well-administrated.

The present study showed that although medical students have knowledge about HIV/AIDS, there are some considerable misconceptions in their basic and transmitted HIV knowledge that require more attention to revise the HIV educational curriculum of the medical schools. The students used books, student organization, and television as their dominant sources of getting HIV information. Majority of students wanted to know more about treatment and prevention of the disease. It seems that organizing different congresses and meetings related to different aspects of

HIV/AIDS, can prepare opportunity for medical students to become aware of the general precautions and different prevention methods such as post exposure prophylaxis and hospital protection protocols.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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