Knowledge of Undergraduate Medical and Non-Medical Students about HIV/AIDS Risk Factors and Modes of Transmission

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Abstract

Background:

Aim of the study: To assess the knowledge of undergraduate medical and non-medical students about the risk factors and modes of HIV transmission and to determine the effect of the curriculum applied in the colleges of medicine regarding HIV/AIDS on the level of knowledge of medical students compared with that of non-medical.

Methods: Questionnaire survey using structured, self-administered questionnaire consisted of 38 closed-ended questions, concerning the knowledge of risk factors and modes of HIV transmission was distributed to 400 undergraduate students from Colleges of Medicine, Science and Arts in Al-Mustansirya University during the period from the 1st of October 2004 through May 2005.

Results: The study showed that 73.5% of medical and 59.5% of non- medical students had good and 21.5% of medical and 27% of non-medical students had fair knowledge scores regarding modes of HIV transmission .While 96% of medical and 83.5% of non- medical students had good and 2.5% of medical and 15.5% of non-medical students had fair knowledge scores regarding risk factors for HIV infection.

Conclusion: Generally, students showed good knowledge about risk factors and modes of HIV transmission, and the level of medical students' knowledge was significantly higher than that of non-medical, however some gaps in their knowledge still exist and ignorance of some basic facts on HIV transmission was observed.

Keywords: Knowledge, students, HIV/AIDS risk and modes of transmission.

Introduction:

The Acquired Immune Deficiency Syndrome (AIDS) is the expression of a spectrum of disorders caused by cellular and humeral immune dysfunction resulting from infection by Human Immunodeficiency Virus (HIV).Since AIDS was recognized as distinct new disease entity in 1981, over 50 million individuals worldwide have been infected by HIV, of those more than 90% in developing world [1].

Today some 37.8 million people are living with HIV which killed 2.9 million in 2003 and over 20 million since the first cases of AIDS were identified in 1981[2]. The prevalence of HIV infection in Iraq is low and the cumulative number of reported cases since the first cases of the infection were recognized in the country in 1986 to the year 2005 is only 260 cases, this was mainly due to the prevailing religious, social, and cultural values in addition to the applied strategies for prevention and control [3] Because of the serious impact of HIV/AIDS upon people and societies, all effective means should be used to combat it and limit its spread, but in absence of a protective vaccine and curative treatment till now , public health education is still the best mean of combating the disease and the level of knowledge on HIV/AIDS is important in eradicating the disease.

College students represent dynamic and highly educated group in the society, and they are expected to play a crucial role in limiting the spread of HIV/AIDS and promoting the health education about HIV/ AIDS in the country, so the present study sought to assess their knowledge about risk factors and modes of HIV transmission.

Subjects & Methods:

A structured, self-administered questionnaire consisted of 38 closed-ended questions, concerning the knowledge of risk factors and modes of HIV transmission was distributed to 400 undergraduate students from Colleges of Medicine, Science and Arts in Al-Mustansirya University. The students recruited were 200 medical students and 200 non-medical students. The questionnaire was adapted according to the WHO Research Package: Knowledge, Attitudes, Beliefs and Practices on AIDS, 1990 [4], and the United Nations Children's Fund (UNICEF) 1999**:** KABP Survey for adult men and women target groups [5] and other survey questionnaires used in the similar studies. It has been modified to suite the Iraqi culture and norms, reviewed and evaluated by expert's specialists from the Ministries of Health and Higher Education and Scientific Research. All the statements in the questionnaire were translated into Arabic and the clarity and time needed to complete it were assured by a pilot study comprising of 20 students from College of Arts. So as a result the average time needed to complete the questionnaire was estimated to be approximately 20 minutes. Some modifications then made on the questionnaire and final version of it had been distributed to study groups. The

students required to respond with (Yes) and (No). Scores were assigned for each response and a total score of (38) was adopted. The scores of each student were calculated on the basis of a score (1) for the correct responses and (0) for the incorrect responses. Knowledge scores are then categorized according to above and below the median of the total scores in to Poor (<19), Fair (19-29) and Good (30 or more) scores. The collected data was analyzed statistically with Statistical Package for Social Sciences (SPSS) version (11.5) programme. ***P-value*** equal to or less than 0.05 was considered significant.

Results:

Among the 400 students recruited in the study, 218 (54.5 %) were females and 182 (45.5%) were males. The mean age of the whole cohort was 22.5±0.91 years (range 20-25 years).Regarding the transmissibility of HIV by body fluids, all medical (100%) and 93.5% of non medical students knew that HIV could be transmitted by blood, and 98% of medical and 98.5% of non medical stated that HIV could be transmitted by semen and majority of students in both groups were aware about the non-transmissibility of HIV by sweat(89% of medical,85.5% of non medical) and tears (81% of medical, 8^.5% of non medical). (Table 1).

Maternal – Fetal HIV transmission was also recognized by the majority of students (89% of medical, 84.5% of non medical), while HIV transmission during delivery was appreciated by medical more than non medical students (91% vs. 53%), and 63.5% of medical and 60% of non medical students were aware about HIV transmission during breast feeding (Table 2).

Table 1: Distribution of students according to their knowledge about the Transmissibility of HIV by body fluids

Fluid type	Correct Response			
	Medical		Non - Medical	
	No.	%	No.	%
Blood	200	100	187	93.5
Sweat	178	89	171	85.5
Tears	162	81	177	88.5
Semen	196	98	197	98.5
Saliva	149	74.5	114	57
Urine	145	72.5	116	58

Table 2: Distribution of students according to their knowledge about Maternal – Fetal / Infant HIV transmission:

Statements	Correct Response			
	Medical		Non - Medical	
	No.	%	No.	%
During pregnancy	178	89	169	84.5
During delivery	182	91	106	53
During breast feeding	127	63.5	121	60

Regarding modes of HIV transmission , in general the majority of students were clear that media such as insect bite, shaking hands, eating food prepared by an HIV positive person did not constitute modes of transmission, while drinking from the same glass, being coughed / sneezed upon reported to be safe by medical more than non medical students (69.5% vs. 45.5%). There was a strong agreement among medical students (97%) and non medical (93.5%) that sharing injecting needles constitute mode of transmission for HIV, while recognition of sharing razors and tooth brushers as modes of transmission for HIV was more by medical than non medical students (90.5% vs. 65% and 82% vs.71% respectively). A noteworthy finding was that only 9% of medical and 27.5% of non medical students consider blood donation safe regarding HIV transmission (Table 3).

Table 3: Distribution of Students according to their knowledge about modes of HIV transmission

Mode of Transmission	Correct Response			
	Medical		Non - Medical	
	No.	%	No.	%
Inset bite	142	71	138	69
Blood donation	18	9	55	27.5
Shacking hands with HIV positive person	180	90	161	80.5
Drinking from the same glass as HIV positive person	117	58.5	98	49
Eating food /drink prepared by HIV positive person	139	69.5	134	67
Sharing swimming pools with HIV positive person	110	55	85	42.5
Sharing smoke with HIV positive person	108	54	98	49
Sharing injecting needles with HIV positive person	194	97	187	93.5
Sharing clothes with HIV positive person	138	69	126	63
Sharing razors with HIV positive person	181	90.5	130	65
Sharing tooth brushes with HIV positive person	164	82	142	71

Regarding the type of people most at risk of contracting and transmitting HIV. The majority of students of both group correctly specified group of people as those engaged in extramarital sexual

Relations, Injectable drugs abusers, male homosexuals, and those who need frequent blood transfusions to be at a high risk of contracting HIV. Health care workers as Dentists, Surgeons, Nurses and Laboratory workers were identified as a risk group for HIV transmission by medical more than non medical students (92.5% vs. 54.5%) (Table 4).

According to knowledge scores, there was significant association between knowledge scores and the category of students regarding modes of HIV transmission (X^2=12.006; p=0.002**)** and risk factors **(**X^2=20.719; p=0.0001) (Table 5).

Table 4: Distribution of students according to their knowledge about HIV / AIDS risk factors:

Group	**Correct Response**			
	Medical		**Non - Medical**	
	No.	**%**	**No.**	**%**
Those engaged in extramarital sexual relations	195	97.5	199	99.5
Inject able drug abusers	197	98.5	167	83.5
Food - Service workers	149	74.5	165	82.5
Male homosexuals	191	95.5	180	90
Those need frequent blood transfusions	195	97.5	168	84
Hair dressers and barbers	38	19	130	65
Dentists ,Surgeon , Nurse ,and lab - workers	185	92.5	109	54.5

Table 5: Distribution of students according to their knowledge Scores:

Knowledge Scores		**Category of Students**				**X^2; P**
		Medical		**Non-Medical**		
		NO	**%**	**NO**	**%**	
Modes of Transmission	**GOOD**	147	73.5	119	59.5	12.006; 0.002*
	FAIR	43	21.5	54	27	
	POOR	10	5	27	13.5	
Risk factors	**GOOD**	192	96	167	83.5	20.719; 0.0001*
	FAIR	5	2.5	31	15.5	
	POOR	3	1.5	2	1	

Significant p≤0.05*

Discussion:

Transmissibility of HIV by Body Fluids:

The study sought to address student's awareness of HIV transmission through body fluids. There was a strong agreement among medical and non medical students that blood and semen constitute modes of HIV transmission, however still there were about 20-40% of students in both groups who believe that sweat, tears, saliva, and urine constitute modes for HIV transmission which indicate a knowledge gaps regarding this aspect of HIV transmission. Similar study in Iraq ,found that 34.2% of dental students consider saliva a mode of HIV transmission [6],and in Sultanate of Oman, the medical and non medical students strongly agreed that blood (99%) and semen (97%) are modes of HIV transmission [7] and in Syria , where most of dental students agreed that blood (96.7%) and semen (95%) are modes for HIV transmission and 13.14% of them consider saliva a mode of HIV transmission [8].

Maternal-Fatal/Infant HIV transmission:

Although the majority of students were aware about HIV transmission during pregnancy, still about 10-15% of them were unaware about this mode of transmission and a similar percentage of medical and 47% of non medical were unaware about HIV transmission during delivery and about 40% of students in both groups did not appreciate the risk of HIV transmission during breast feeding. The similar study among fifth year dental students in Iraq found that 70.7% of dental students were aware that HIV can be transmitted from infected mother to her fetus [6], and in Sultanate of Oman, 97.5% of medical and non medical students were aware that vertical transmission is a mode of HIV transmission [7].The results of this study regarding HIV transmission during pregnancy were consistent with that of a similar study in Saudi Arabia among paramedical students where 88.9% of males and 75.9% of female knew that HIV can be transmitted during pregnancy [9].

Perception of modes of HIV transmission:

The effective formulation of educational programme and the dissemination of information require that knowledge gaps concerning the transmission of HIV be identified and addressed [10]. In this study the students were asked about arrange of media as a modes of HIV transmission, although the majority of them correctly identified media as sharing injecting needles, sharing razors, and sharing tooth brushers constitute modes for HIV transmission, and media as shaking hands did not constitute modes of transmission, more than 30% of students thought that HIV can be transmitted by insect bite and more than 50% of them thought that HIV can be transmitted by sharing swimming pools and sharing smoke. Other noteworthy findings that 91% of medical and 72.5% of non medical students considered blood donation a mode for HIV transmission and this reflect a false perception of modes of HIV transmission among those educated study groups. The study carried out among fifth year dental students revealed that students consider sharing needles (68.9%), sharing swimming pools (5.2%), and insect bite (3.4%) a modes for HIV transmission [6]. In Sultanate of Oman 11.2% of medical and non medical students thought that sharing swimming pools could transmit HIV infection, while most of students considered sharing clothes (82.7%) a safe practice and there was confusion on the safety for donating blood with 45.9% of students believing they could get infection if they donated blood [7].

HIV/AIDS risk factors:

The study also sought to determine how the students gauged the extent to which other people in the community and themselves at risk of contracting HIV, they were asked to specify the group/type of people most at risk of contracting and transmitting HIV. Although the majority of them correctly specified such risk groups, still there 25.5% of medical and 17.5% of non medical students consider food- service workers a risk group for HIV infection, and high percent of students specified personal-service workers as Hair Dressers ,Barbers as a risk groups for HIV infection.

Conclusion:

Generally, the students showed good knowledge about the risk factors and modes of HIV transmission, and the level of knowledge of medical students was significantly higher than non-medical, which reflect the effect of the curriculum applied in colleges of medicine regarding HIV/AIDS, however some gaps in their knowledge still exist and ignorance of some basic facts on HIV transmission was observed.

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