

# Knowledge and attitudes of undergraduate medical and non-medical students in Sultan Qaboos University toward Acquired Immune Deficiency Syndrome

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## ABSTRACT

**Objectives:** To investigate the knowledge, attitudes and beliefs of Omani medical and non-medical students in Sultan Qaboos University (SQU), toward acquired immune deficiency syndrome (AIDS).

**Methods:** A structured questionnaire of 40 different statements concerning basic knowledge of the human immunodeficiency virus (HIV), its modes of transmission, diagnosis, risk behaviors, prevention, treatment, beliefs as well as attitudes towards AIDS patients were distributed to 200 students (109 females and 91 males). One hundred and sixteen were pre-clinical students and 84 were non-medical students. This study was carried out during the period October 2001 through to June 2002.

**Results:** Most of the students (94%) were aware that HIV is a life-long infection and 93% think that it is preventable. No

available vaccine is appreciated by medical more than the non-medical students. However, 46% of students believed that donating blood could lead to transmission of HIV. Students or colleagues with the HIV infection attending the same classroom and working place were accepted by 55% of medical and 53% of non-medical students. However, most students (65.4%) did hesitate to take care of an AIDS patient.

**Conclusion:** Although most students showed reasonable knowledge regarding transmission, risk behaviors and prevention, misconceptions regarding the attitudes reflects a false perception of the disease among those students. This calls for well-structured health education programs stressing on such misconceptions.

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Human immunodeficiency virus (HIV) the causative agent of acquired immune deficiency syndrome (AIDS), has no cure at present and treating patients with AIDS would require big financial resources. Medical education is still the best tool to prevent infection. The level of knowledge on HIV/AIDS and the attitudes of people toward patients are important in eradicating the disease.<sup>1</sup> Denial of the existence of AIDS and the

tendency to regard it as a problem of others need to be changed.<sup>2</sup> Human immunodeficiency virus was discovered in the early 1980's<sup>3-5</sup> and since that time, the spread of HIV is continuously alarming. Nowadays, it is almost impossible to find a country that has not reported HIV or AIDS cases to the World Health Organization (WHO). According to WHO, by the year 2002 there would be over 40 million HIV infected

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individuals and more than 90% of these being in the developing countries.<sup>6</sup> The HIV epidemic continues to spread at a rate of 6000 new infections per day making it the most serious health problem particularly in Africa and Asia.<sup>7</sup> The prevalence of HIV/AIDS in Oman is low, and this is probably due to religious and cultural factors. Proper education for people will be another effective factor in further reducing the spread of HIV within this and other neighboring countries. An important starting point for designing proper prevention tools is to know how much people know of HIV/AIDS, especially among the educated persons and those who may be in contact with infected individuals and patients with AIDS. Thereafter, the knowledge and attitudes toward HIV/AIDS can be established within the community as a whole. Public health education is the best means of combating this disease. The Ministry of Health (MOH) in Oman is doing an excellent job in terms of prevention through different channels including awareness of public through the mass media. However, as far as we know, there was no study to assess the knowledge level and the attitudes of Omani people toward HIV/AIDS. Various AIDS related knowledge, attitudes, beliefs, and practice studies<sup>8-18</sup> was carried out in different parts of the world. These studies revealed the presence of apparent unease or prejudice among those lacking proper knowledge on various aspects of HIV/AIDS. The present study is one part of a large study on infectious diseases in general, and the first to evaluate the SQU-students-knowledge of HIV/AIDS and the attitudes towards HIV infected patients. The aim of this study is to discover the deficits in the Health Education Programs and to relate the knowledge to the improvement of the prevention programs against HIV/AIDS.

**Methods. Subjects.** A total of 200 undergraduate students from the Colleges of Medicine, Science, Arts and Social Studies, SQU participated in this survey, from October 2001 through to June 2002. The students included 116 pre-clinical medical students and 84 non-medical students. The questionnaire consisted of 40 different statements concerning basic knowledge of HIV, its modes of transmission, diagnosis, risk behaviors, prevention, treatment, beliefs as well as attitudes toward AIDS patients. The questionnaire was modified to suit the Omani culture, by referring to Research Package: Knowledge, attitudes, beliefs and practices (KABP) on AIDS, Phase 1,<sup>19</sup> as well as other survey questionnaires used in previous research.<sup>20-25</sup> All the statements in the questionnaire were translated into Arabic. The first 3 statements were on the etiology of HIV, the infection through a seronegative patient and if there is any mean to prevent infection. The next 14 statements were on the knowledge of the different modes of HIV transmission. Some statements addressed the role of public facilities such as toilets and swimming pools in the transmission process. Additionally, the students were asked about

contracting HIV through, sex, injections, semen, mother to baby, kissing, hugging, spitting or drinking from the same glass used by an AIDS patient, blood donation, mosquitoes bite, clothing and the use of condoms. Students were also asked whether they were aware that HIV infection is life long and the difference between HIV positive individual and an AIDS patient. Statements regarding testing for HIV using methods like, enzyme linked immunosorbent assays (ELISA), opportunistic diseases and the availability of a vaccine against AIDS were all included. Finally, questions regarding personal attitudes toward HIV-positive individuals were asked. Examples, include being with an HIV-positive individual in the same working place, having lunch together, isolating the patient and his family socially, accepting them in group-sports activity and as waitresses in restaurants and keeping them in hospitals for the rest of their lives. Moreover, students were also asked whether they think that HIV patients deserve what they have and if they are willing to take care of an AIDS patient.

**Statistical analysis.** The responses to the questionnaire were in the form of agree, do not agree or do not know. The data collected was analyzed statistically using statistical package for social sciences program (9.0 for Windows).

**Results.** Among the 200 students, the males constituted 45.5% (91 males) and the females constituted 54.5% (109 females). Fifty-eight percent of the respondents were from the medical school, while 42% were non-medical students. The mean age of the whole cohort was 22 years (range 18-28 years). Surprisingly, 5.5% of the participants think that AIDS is not caused by HIV or they do not know and 19.8% do not know that a seronegative patient could be infected. Ninety-two point four percent think that HIV is preventable (**Table 1**). There is very strong agreement that drug needles (99%), sex (97.5%), semen of HIV infected men (97%) and vertical transmission (97.5%) are the modes of transmission. Regarding sharing of a toilet or a swimming pool with infected persons, 11.2% of the students think it could transmit the infection. Most of the students consider sharing the same glass (86.3%) or cloths (82.7%) with an infected person is a safe practice. Hugging is safe at 92.8% compared to 77.7% who rate kissing to be safe (**Table 1**). There is confusion on the safety for donating blood, with 45.9% of students believing they could get infected if they donated blood. There was no statistically significant difference in the response between the 2 groups (medical and non-medical) for the previous statements except for the role of condoms in providing 100% protection against HIV. Medical students knew that condoms do not give full protection than non-medical students ( $p < 0.05$ ). Not surprisingly 71.3% of medical group knew that ELISA is the diagnostic test for HIV compared to 71.2% of the non-medical who did not

know. Ninety-three point nine percent of the respondents were aware that HIV is a lifelong infection, 12.8% think it is curable if treated early and 74% knew that death is mainly due to opportunistic diseases. No available vaccine is a fact appreciated by medical more than the non-medical students. Having a student or colleague in the same classroom or working place was unaccepted by 45.7% of the students. Although most of the participants agreed that HIV positive patients should not be separated or prohibited from eating or playing sports with others, they think that those patients should not be allowed to handle food. Sixty-four percent do not think that HIV positive patients are getting what they deserve, but the majority seems hesitant to take care of AIDS patients. Getting checked for HIV in case of suspicion was supported by 83.1% of the participants (Table 1).

**Discussion.** Acquired immune deficiency syndrome can evoke irrational emotions and fears in health care providers, including medical students and the general public.<sup>26-27</sup> If unexamined, these fears may produce a barrier to successful educational efforts about AIDS and may result in a variety of adverse outcomes.<sup>11</sup> Generally, health care professionals and the general

public have been reported to have negative attitudes towards people with AIDS and usually nursing and first year medical students showed great fear of contagion, negative emotions and professional resistance.<sup>11,17,25,28,29</sup> There are many factors associated with negative AIDS related attitudes. These include: less liberal ideology, a low knowledge level, young age, fear, exaggerated risk assessment, not knowing someone with AIDS and lacking the experience of caring for patients with AIDS.<sup>11,26</sup> This study is the first of such type to be conducted in Oman. It is confined to students from SQU, whom expected to have adequate and appropriate knowledge on HIV/AIDS compared to the rest of the Omani community. The students represent a dynamic, highly educated and highly positioned group in the Omani society. Therefore, they are expected to play a crucial role in limiting the increasing number of HIV cases and in promoting the health education in Oman. The findings of this survey are, generally, satisfactory despite some disappointing facts on basic knowledge, for example, 5.5% of the participants either think that AIDS is not caused by HIV or they do not know. Most of the respondents show a reasonable knowledge regarding the modes of HIV transmission. For specific

**Table 1** - Percentage response to some of the statements regarding transmission of HIV and attitudes towards AIDS of the whole cohort: (n=200)

Statement	Agree	Don't agree	Don't know
<b>Transmission</b>			
You may get HIV by sitting on a toilet seat used by a person with AIDS	11.2	79.7	9.1
A person can get HIV by drinking from the same glass or water fountain used by a person with AIDS	6.6	86.3	7.1
HIV can be transmitted by coughing and spitting	12.2	79.7	8.1
Men may pass HIV on to others through their semen	97	1.5	1
A person may get HIV by sharing drug needles	99	1	0
HIV can be acquired by swimming in the same water with someone with AIDS	12.6	71.7	15.7
HIV is acquired through sexual intercourse with infected women	97.5	1.5	0.5
HIV may be passed from a mother to her unborn or newborn baby	97.5	1.5	0.5
Sharing cloths with AIDS patients may spread HIV	6.1	82.7	11.2
A person may get HIV by donating blood	45.9	50.5	3.6
A person may get AIDS from a mosquito bite	18.9	70.4	10.7
There have been reported cases in which HIV was spread by kissing	14.2	77.7	8.1
Hugging or holding hands can spread HIV	2.6	92.8	4.6
Condoms offer complete protection against HIV	10.7	66.5	22.8
<b>Attitudes</b>			
I would not mind having a student or colleague with HIV in my classroom or working place	44.7	45.7	9.6
A person who is infected with HIV should be allowed to eat lunch with others	56.6	34.2	9.2
I would avoid a person whose family member has AIDS	13.3	82.7	4.1
Persons infected with HIV should be separated from others	34.2	61.2	4.6
Persons who are infected with HIV should not play sports with other healthy individuals	19.	75.4	5.6
People with AIDS should not be allowed to work in places that handle food	67.9	26.5	5.6
I would feel uncomfortable hugging a person who has AIDS	21.2	70.5	8.3
People who have AIDS are getting what they deserve	13.7	64.7	21.6
I would be comfortable caring for someone who had AIDS	34.6	29.3	36.1
I would get tested if I thought I might have HIV	83.1	6.2	10.3
Using shared instruments (for example, razors, toothbrush, and so forth) with a HIV infected individual is all right	3.6	95.4	1
People with AIDS should always stay in hospitals, not at home	22.4	66.3	11.2
HIV - human immunodeficiency virus, AIDS - acquired immune deficiency syndrome			

modes of transmission (for example spitting or coughing, kissing, swimming pools), no statistically significant difference was observed between agreement and disagreement responses. This might be due to the controversy of these issues and the lack of solid evidence. The majority of responses clearly indicate that students knew what HIV/AIDS is, and how it can be transmitted and how it can be avoided. A significant difference between medical and non-medical participants ( $P < 0.05$ ) was found regarding the efficiency of condoms usage, with non-medical students believing that condoms can give complete protection against HIV infection. Getting tested for HIV was supported by 83.1%, while 10.3% did not know whether to be tested or not. As expected, 71.3% of the medical participants knew that ELISA is the diagnostic test for HIV compared to 71.2% of the non-medicals who did not know. Nineteen point eight percent of the participants did not know that a person could carry the AIDS virus if he/she was tested negative. Ten point seven percent did not know that an HIV-positive patient could be symptom-free. This information may encourage a pre-marital check of the partner, before marriage, which is crucial for prevention.

Generally, health care personnel's and the general public have been reported to have negative attitudes toward people with AIDS.<sup>26,27</sup> Some misconceptions were observed, in the present study, regarding interaction with infected individuals especially taking care of an AIDS patients and employing them in restaurants. Although, most of the students never met a person with HIV/AIDS, there were fears expressed regarding eating, working or living with infected individuals. These misconceptions regarding the attitudes reflect a false perception of the disease among those highly educated. Knowledge alone is not sufficient to bring about behavior change.<sup>30-31</sup> Therefore, this calls for well-structured health education programs to address such misconceptions. These educational programs should be initiated at school levels and extended beyond formal education to reach parents and other adults in the community. Seminars, workshops and conferences will provide communication platforms for students at SQU and will be relevant for use at wider school and community levels.<sup>32-33</sup> Collaboration among the University, MOH, Ministry of Religious Affairs, Ministry of Information and educational specialists should be built across the nation to implement comprehensive programs of research, prevention, treatment and special education needed to fight the HIV/AIDS pandemic.

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**Search Word: acquired immune deficiency syndrome**

**Authors:** A. J. Pinching  
**Institute:** Mary's Hospital Medical School, London, United Kingdom  
**Title:** The acquired immune deficiency syndrome and related disorders  
**Source:** Saudi Med J 1985 Vol. 6 (3): 205-216

**Abstract**

The acquired immune deficiency syndrome (Aids) is the most severe clinical expression of a new infectious disease; the profound immune deficiency in Aids patients is manifested by a wide spectrum of secondary opportunist infections and tumors that have hitherto been restricted to patients with rare childhood immunodeficiencies or on therapeutic immune suppression. The causative virus htlv-111 appears to be transmissible by sexual or contact and is now spreading as an epidemic through many countries of the world; as a result many physicians need to understand the nature of this disease and to recognize its clinical spectrum, this review therefore concentrates on the clinical aspects of aids while providing an outline of its retroviral etiology and cellular immune pathogenesis. The features of other less severe manifestations of the same retrovirus infection are also described; the relationship of these lesser disorders to aids, whether as variant or prodrome, needs to be perceived aids and htlv-iii infection have provided new insights into basic immune mechanisms and have opened up a new area of human viral immunopathogenesis.