

# Knowledge and Attitude of Physicians towards Human Immunodeficiency Virus Infection in a Tertiary Care Center

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## Abstract

**Introduction:** Human immunodeficiency virus infection is a serious health issue. In 2014, around 36.9 million people were living with the human immunodeficiency virus worldwide. Saudis perceive AIDS as a moral disease. The gap between the proper attitude and knowledge of physicians and dentists about AIDS has adversely influenced the quality of HIV-related health care. Our target for this study is to evaluate the knowledge and attitude of physicians and dentists toward the human immunodeficiency virus infection in our society.

**Method:** A cross-sectional study was designed to collect data using a self-administered, structured questionnaire from physicians and dentists. It was distributed among them on specific days and times in a tertiary care center located in Riyadh, Saudi Arabia.

**Results:** The study included a total number of 201 physicians and dentists, of which 189 were physicians and 19 were dentists. Most of them (69%) are Saudis. Around 99% of the participants know that AIDS is viral in etiology. Around 127 (63%) of them know the estimated chance of transmitting HIV from a needle stick injury correctly. Also, all physicians and dentists believe that confidentiality is important for patients with AIDS. Approximately 36 (18%) think that AIDS is a curable disease.

**Conclusion:** There is an acceptable level of information and knowledge about HIV infection among our physicians and dentists. However, regular educational assistance by specialists would be beneficial to improve the current perception. This result can give us some knowledge for further studies in order to advance HIV-related awareness among healthcare workers and the community.

**Keywords:** Human immunodeficiency virus; Physicians attitude; Saudi Arabia

## Introduction

Human immunodeficiency virus (HIV) infection is a serious health issue. Worldwide, there were about 2.1 million new cases of HIV infection in 2015. About 36.7 million people are living with HIV around the world and as of June 2016, 17 million people living with HIV were receiving medicines to treat the infection [1]. The HIV cases that were reported to the Ministry of Health in Saudi Arabia were 10,217 from 2000 to 2009. The average annual incidence was fewer than 4 cases per 100,000, of which 1.5 cases per 100,000 involved Saudis and 13.2 per 100,000 involved non-Saudis [2]. The most common mode of infection in Saudi Arabia was heterosexual sex [3]. Saudi Arabia is considered to be a very conservative country whose values and beliefs are strictly based on Islamic tradition. Saudi Arabian society perceives the Acquired Immune Deficiency Syndrome (AIDS) as a moral disease and people with HIV as deviants who deserve the disease because they violated social and religious rules [4]. Healthcare providers' stigmatization of and discrimination against people with HIV have an adverse impact on the HIV epidemic as these attitudes discourage people from seeking care or getting tested for HIV and reduce access to HIV prevention [5]. Physician education about HIV/AIDS is essential to ensure that physicians have the appropriate attitude and knowledge to understand the risk factors, the mechanisms of transmission, the complications linked to HIV/AIDS and antiretroviral therapy. The gap in proper perspectives of physicians and dentists on HIV/AIDS has adversely influence the quality of HIV-related health care.

The target of this study is to evaluate the knowledge and attitudes of physicians and dentists toward human immunodeficiency virus infection in King Abdulaziz Medical City in Riyadh when they

encounter HIV patients. By exploring, comparing and analyzing our health care providers' awareness of this medical problem, we can probably implant strategies in the future that significantly influence the quality of HIV-related health care in the country.

## Method

A cross-sectional study was designed to collect data from physicians and dentists using a self-administered structured questionnaire. It was distributed among them on a specific day and at a specific time in King Abdulaziz Medical City in Riyadh, which is a tertiary care center located in Riyadh, Saudi Arabia. The study was approved by the King Abdullah International Medical Research Center. The questionnaire, which contains different levels of information about HIV, underwent a pilot study to assess the clarity and receive feedback. No personally identifying information was required and strict confidentiality was maintained. Demographic data including age, gender, specialty and professional status (intern, resident, consultant) and were all collated. Participants were asked to choose one of the 2-3 choice questions in

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different aspects of this disease. Around 16 questions were targeting to assess the physicians and dentists knowledge of HIV/AIDS.

The questionnaire was distributed among different divisions in different days, time and numbers of study subjects chosen by the principal investigator in a period of 10 weeks by convenience sampling. The sample size was 201 physicians in King Abdulaziz Medical City in Riyadh. Using Microsoft Excel 2011, data was collected and analyzed; all data was done using the Statistical Product and Service Solutions software, versions 8 and 9 (SPSS Inc., Chicago).

## Results

The study included a total number of 201 physicians and dentists, of which 189 were physicians and 19 were dentists. Most of them, 139 (69%), are Saudis. Two-thirds of the participants were less than 35 years old and there were 92 (46%) residents (Table 1).

Around 199 of all physicians and dentists know that AIDS is viral in etiology and only two think it is a bacterial infection. Out of 201 subjects, 159 (79%) know that the total number globally of AIDS patients is increasing. Around (67%) of the physicians know the actual chance of transmitting HIV from needle stick injury, while only five dentists (26%) know that. Most physicians and 129 (64%) dentists know that the sexual route is the commonest mode of transmission.

| Demographic Characteristic | Number (%)  |
|----------------------------|-------------|
| Male                       | (154) 76.6% |
| Female                     | (47) 23.4%  |
| Age (years):               |             |
| 25-35                      | (136) 67.7% |
| 36-45                      | (44) 21.9%  |
| 46-55                      | (16) 8%     |
| more than 55               | (5) 2.5%    |
| Professional status:       |             |
| Consultant                 | (70) 34.8%  |
| resident                   | (92) 45.8%  |
| Intern                     | (39) 19.4%  |
| Saudi                      | (139) 69.2% |
| Non-Saudi                  | (62) 30.8%  |
| Dentist                    | (19) 9.5%   |
| Physician                  | (182) 90.5% |

Table 1: Demographic characteristics.

A total of 170 physicians (93%) and 16 (84%) dentists were able to answer that antiretroviral therapy can control the HIV infection. Also, all participants believe that confidentiality is important for patients with AIDS. Approximately 18% of the participants think that HIV/AIDS is a curable disease.

Regarding HIV post-exposure prophylaxis therapy, 150 (75%) is aware of its need and importance. There was very a minimal number of participants who thought that HIV can be transmitted by shaking hands or through the air, 0 (0%) and 3 (1%), respectively. Only 41 (20%) admitted to not feeling comfortable dealing with HIV patients. Interestingly, 179 (89%) feel sympathy for HIV patients. Most of the participants (84%) will do the general physical exam for HIV patients as part of the clinical assessment. There was no significant difference in participants' answers based on their professional level (Table 2).

## Discussion

It was apparent from our study that there is an acceptable level of knowledge among physicians and dentists on the human immunodeficiency virus infection in King Abdulaziz Medical City and they have a positive attitude to HIV patients. This result might not be the same if the study was done 15 years ago. We think that the attitude and perception of physicians are affected positively over the years and according to the educational level.

On reviewing the literature, we see a couple of studies addressing the issue of knowledge and attitudes of physicians to HIV/AIDS. In 2011, a survey was conducted in Korea among 475 dentists. The results of a cross-sectional study show that although the dentists' level of knowledge was high enough about HIV/AIDS, the respondents answered that they avoid active treatment or seek referrals as much as they treat those patients like healthy people [6]. In Pakistan, a cross-sectional survey was conducted in 2011 by interviewing 103 general practitioners from different towns of Karachi to assess the knowledge, attitudes and practices of general practitioners regarding sexually transmitted diseases and HIV/AIDS. Regarding treatment of an HIV-positive patient, 40.8% said that they referred those patients to an AIDS control program. About 94% knew the value of sexual history [7]. Moreover, results from a survey conducted in Kenya suggest that there is a need for continuing education courses to enable dentists to take

|   | Category         | Consultant | Intern     | Resident   | p-value |
|---|------------------|------------|------------|------------|---------|
| <b>What is the cause of (AIDS)?</b>   | Bacteria         | (0) 0%     | (1) 2.6%   | (1) 1.1%   | 0.471   |
|   | Virus            | (70) 100%  | (38) 97.4% | (91) 98.9% |         |
| <b>Can antiretroviral therapy succeed in controlling the disease process in HIV patients?</b>   | No               | (3) 4.3%   | (2) 5.1%   | (10) 10.9% | 0.294   |
|   | Yes              | (67) 95.7% | (37) 94.9% | (82) 89.1% |         |
| <b>In case of needle stick injury with an HIV/AIDS patient, the risk of acquiring HIV with?</b> | 0.3%             | (44) 62.9% | (23) 59%   | (60) 65.2% | 0.602   |
|   | 3%               | (14) 20%   | (7) 17.9%  | (21) 22.8% |         |
|   | 30%              | (12) 17.1% | (9) 23.1%  | (11) 12%   |         |
| <b>Confidentiality is important for patients with AIDS?</b>                                     | Correct          | (70) 100%  | (39) 100%  | (92) 100%  |         |
| <b>The most common method of transmission of AIDS currently is :</b>                            | Blood product    | (6) 8.6%   | (3) 7.7%   | (9) 9.8%   | 1.000   |
|   | IV drug use      | (19) 27.1% | (11) 28.2% | (24) 26.1% |         |
|   | Sexual practices | (45) 64.3% | (25) 64.1% | (59) 64.1% |         |
| <b>The total number globally of AIDS patient is:</b>  | Decreasing       | (14) 20%   | (7) 17.9%  | (21) 22.8% | 0.830   |
|   | Increasing       | (56) 80%   | (32) 82.1% | (71) 77.2% |         |
| <b>Can AIDS be transmitted by shaking hand?</b>   | No               | (70) 100%  | (39) 100%  | (92) 100%  |         |
| <b>Can AIDS be transmitted through air?</b>   | No               | (68) 97.1% | (38) 97.4% | (92) 100%  | 0.209   |
| <b>All AIDS patients admitted are supposed to be in air-borne isolation?</b>                    | No               | (68) 97.1% | (35) 89.7% | (90) 97.8% | 0.135   |
| <b>Is AIDS curable?</b>   | No               | (55) 78.6% | (39) 100%  | (71) 77.2% | <0.001* |

Table 2: Professional level.

care of HIV patients without ignorance and fear [8]. Although critical gaps in knowledge were found in all groups, results from a survey conducted several years ago at a teaching hospital in Nigeria concluded that doctors performed significantly better than non-health workers on knowledge items and more than nurses on less context [9]. To examine the attitudes and knowledge of healthcare professionals regarding human immunodeficiency virus (HIV) infection, a large multicenter study was conducted in 1992 in which 819 healthcare professionals from India, Canada, the United States and Thailand completed the questionnaire. Percentages of respondents uncomfortable performing a physical examination on a patient with HIV/AIDS were: The United States 24%, Canada 25%, India 9% and Thailand 4% [10]. A couple of studies in the Middle East countries reflect not only lack of proper knowledge about HIV, but also a harboring of negative attitudes toward AIDS patients. More interesting, some physicians sympathized less with people who were infected via extramarital sex [11,12].

On the national level, in Saudi data, a survey was carried out in 2012 by Mahfouz and his group, in Asir region, among primary health care physicians. Self-administered questionnaires were distributed to the 361 doctors in the region. The study revealed several gaps in their knowledge regarding HIV and AIDS. These results indicated an urgent need to develop an AIDS-specific continuing medical education program to deal with false ideas and convey the message accurately to the public [13]. Because the data from Asir was only on primary health care physicians, our study will be the first survey on evaluating knowledge and attitude toward human immunodeficiency virus infection upon different physicians' specialties and dentists in a tertiary health care center in Saudi Arabia. Although we have a fewer number of dentists to compare with the physicians, our data analysis shows better physician awareness (67% vs. 26%) regarding the risk of acquiring HIV needle stick injury with an AIDS patient with significant (*p*) value. A similar study, conducted by Alowais and his team among health care workers in King Abdulaziz Medical City, included nurses and physicians only. It concluded that the amount of general information and knowledge about HIV among nurses and other Healthcare workers is variable and needs further improvement [14].

Although we got a good sample size, it was a cross-sectional study and conducted in one institution, which could represent significant limitations. We failed to survey a good number of dentists to compare them with other specialties. Also, this study included only one medical center in one city in Saudi Arabia which may not reflect other regions perceptions.

In the future we need more studies over our country including all regions around the kingdom with the goal of exploring, examining and analyzing our physicians' and dentists' awareness toward this medical problem. By getting baseline epidemiologic data, we can implant strategies in the future to fill gaps in knowledge and attitudes that have a significant influence on the quality of HIV-related health care in Saudi Arabia. In the meantime, we urge continuing the awareness campaigns about HIV/AIDS in hospitals and public areas as it has its impact as noted in this study.

## Conclusion

In conclusion, there is an acceptable level of information and

knowledge about HIV infection by our physicians and dentists. However, regular educational assistance by specialists would be beneficial to improve the current level of perception. This result can give us some knowledge for further studies to advanced level of HIV-related awareness among health care workers and at the community level.

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