Knowledge of dental students toward HIV/AIDS and its transmission

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Abstract: Although worldwide prevention and community information about AIDS has been developed in recent decades, it is still considered as a problem for public health. Dental students are at increased risk for HIV infection because of overutilization and unsafe injections during surgery or other procedures. Knowledge of dental students about HIV infection and its transmission ways is an important subject in health care system. The purpose of current study was to evaluate knowledge of dental students of Hormozgan University of Medical Sciences. This was a cross sectional study carried out among all of the dental students of Hormozgan University of Medical Sciences (HUMS) in 2012-2013. A questionnaire containing demographic question (age, gender) and 20 questions (7 general questions and 13 specialized questions) about knowledge toward HIV/AIDS was distributed among the participants. Data was analyzed by frequency, one way t-test, chi-square and spearman correlation test using the SPSS (V.19). The significant level was set as < 0.05. Totally 78 student participated in this study. The mean age of participants was 21.44 ± 2.54. Forty five (57.7%) were preclinical students. The mean score of questionnaires was 52.38 ± 4. This score among preclinical students was 52.28 ± 4.2 and in clinical students was 52.92 ± 3.4.There was no significant difference between total scores of respondents among clinical and preclinical students (P > 0.05). Only two students (2.5%) got below 41 points (poor knowledge). Fifteen students had achieved between 41 to 50 points (moderate knowledge) and the remains (N = 61, p = 78.2%) achieved higher than 51 points (good knowledge). Although, the knowledge of dental students was high, they didn't have enough knowledge about post exposure prophylaxis which is an important subject and any oral health worker may experience it in their professional life. Educating health care workers especially dental students regarding the prophylaxis strategies in preclinical course is recommended.

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1. Introduction

The Acquired Immune Deficiency Syndrome (AIDS) is a viral infection leading to human immune system weakness and suppression (1). Although worldwide prevention and community information about AIDS has been developed in recent decades, it is considered as a problem for public health (2).

Up to now, about 30 million deaths have been reported due to AIDS and it is estimated that almost 90 million patients suffer from Human Immune Virus (HIV) in all over the world (3). In European countries the most common cause of HIV infection transmission is sexual contact, while in developing countries, it is transmitted through contaminated needles usually among intravenous drug abusers (4).

HIV can afflict all of the individuals in all age groups, however, this disease in young individuals is more prevalent than other groups and approximately 85% of young afflicted persons are living in developed countries (5). On the other hand, about 50% of new infected patients present in 10-24 years individuals (6). One of the highly at risk groups for HIV infection are healthcare workers, such as dentists and dentistry students, physicians and medical students, nurses and nursery students. These groups could be infected due to needle stick injury and closed contamination with the body fluids of patients such as blood (7). Dental students are at increased risk for HIV infection because of overutilization and unsafe injections during surgery or other procedures (8). Evidence shows that overusing and frequent

injections lead to 8000 to 16000 cases of HIV patients (9). Untreated HIV infection can be concealed within the 10 first years after contamination and suppress the immune system of patients (10). As the number of concealed infected patients rises, the probability of HIV transmission increases. Also, this virus can lead to death within 2 years after clinical presentation in cases who don't receive any treatment. Some factors can be related to the prevalence of HIV/AIDS including, citizenship, migration, overloaded prisons, poor health system and lack of knowledge (11, 12). healthcare workers, especially dental students, are occasionally trained by their educational system to have better knowledge and performance (12).

Because of the increasing prevalence and incidence of HIV/AIDS patients, knowledge of dental students about HIV infection and its transmission are an important subject in health care system (13). The purpose of the current study was to evaluate knowledge of dental students of Hormozgan University of Medical Sciences.

2. Material and Methods

This was a cross sectional study carried out among all of the dental students of Hormozgan University of Medical Sciences (HUMS) in 2012-2013. The participants were selected by using convenience sampling method. A questionnaire containing demographic question (age, gender) and 20 questions about knowledge toward HIV/AIDS (7 general questions about HIV and 13 specialized questions about HIV transmission) was distributed among the participants. Each question had 3 answers, "Yes" for correct answers, "No" for wrong answers and "I don't know" for unknown answers. Validity of questionnaire was confirmed by 2 experts and the reliability of questionnaire was confirmed (α=(0.71).

Each question was scored between 1-3, if the question was answered correctly, got 3 points. If the answer was wrong, it got 1 point and if the question's answer was no opinion it got 2 points. In consequence, we divided the participants into 3 groups according their answers. The respondents who achieved between 51 to 60, their knowledge was considered to be good, those who achieved between 41 to 50 scores, their knowledge was considered as moderate, and a score between 20 to 40, was considered as poor. Participation in the study was voluntary and the personal information of the participants was concealed. Data was analyzed by frequency, one way t-test, chi-square and spearman correlation test using the SPSS (V.19). the significant level was set as < 0.05.

3. Results

Totally 78 student participated in this study. The mean age of participants was 21.44 ± 2.54. Forty five (57.7%) were preclinical students and the rest (N=28, P= 42.3%) were clinical students. Among the participants, 27 (34.6%) were male and 50 (64.1%) were female. One participant did not complete the questionnaire and thus, was excluded from the study. . Most of the respondents (N = 61, P = 78.2%) agreed that sexual contact is the most common cause of HIV throughout the world. Table 1 demonstrates the general information regarding HIV/AIDS.

The majority of participants knew, needle stick injury could increase the risk of HIV infection. But, a large number of participants (N= 29, p= 38.2%) didn't know that there are medical strategies, especially post exposure prophylaxis, after needle stick injury. Also, 37 respondents (50%) believed that, human or animal bite may results in HIV transmission (Table 2).

The mean score of questionnaires was 52.38 ± 4. This score among preclinical students was 52.28 ± 4.2 and in clinical students was 52.92 ± 3.4.There was no significant difference between total scores of respondents among clinical and preclinical students (P > 0.05).

The mean score of questionnaires in male respondents was 53.22 ± 3.9 and in female participants was 51.94 ± 4.1. but, this difference was not statistically significant (P > 0.05).

Only two student (2.5%) got below 41 points (poor knowledge). Fifteen students had achieved between 41 to 50 points (moderate knowledge) and the remains (N = 61, p = 78.2%) had achieved higher than 51 points (good knowledge).

Discussion:

HIV transmission caused by occupational exposure is one of the most essential subjects in health system. Some countries accommodate educational program in their educational curriculum to promote the knowledge of their health care workers regarding HIV and its transmission. Many studies have been conducted to evaluate the knowledge and attitude of health care students about AIDS and its transmission. In this paper we studied the knowledge of dental students of our hospital which is belong to HUMS.

The results showed that, most of the participants had good knowledge about the most common cause of HIV transmission such as sexual intercourse with an infected person or needle stick injury which is more important particularly in hospital setting.

Table 1: general information about HIV/AIDS

Question	Preclinic			Clinic			P - Value
	Yes	No	Abstained	Yes	No	Abstained	
Sexual contact is the most common cause of HIV transmission	34 (75.6%)	6 (13.3%)	5 (11.1%)	23 (82.1%)	5 (17.9%)	0	NS
HIV could be diagnosed by physical condition of patients	6 (13.6%)	32 (72.7%)	6 (13.6%)	28 (100%)	0	0	NS
HIV removed with U.V irradiation	12 (27.3%)	10 (22.7%)	22 (50%)	9 (32.1%)	12 (42.9%)	7 (25%)	NS
HIV remain in environment	7 (15.6%)	22 (48.9%)	16 (35.6%)	3 (10.7%)	24 (85.7%)	1 (3.6%)	NS
HIV diagnosis is based on Serum antibody	28 (65.1%)	4 (9.3%)	11 (25.6%)	21 (77.8%)	3 (11.1%)	3 (11.1%)	NS
Prophylaxis after needle stick reduce the chanc of HIV infection	11 (25%)	10 (22.7%)	23 (52.3%)	14 (51.9%)	8 (29.6%)	5 (18.5%)	0.004
HIV vaccine prevent disease progression	3 (6.8%)	38 (86.4%)	3 (6.8%)	1 (3.7%)	26 (96.3%)	0	NS

Table 2: knowledge of respondents about HIV transmission

Question	Preclinic			Clinic			P - value
	YES	NO	Abstained	YES	NO	Abstained	
HIV tramsmitted by Saliva	8 (18.2%)	34 (77.3%)	2 (4.5%)	8 (28.6%)	17 (60.7%)	3 (10.7%)	NS
Urine or feces	1 (2.2%)	41 (91.1%)	3 (6.7%)	1 (3.6%)	25 (89.3%)	2 (7.1%)	NS
Blood transfusion	44 (97.8%)	0	1 (2.2%)	28 (100%)	0	0	NS
Needle stick	44 (97.8%)	1 (2.2%)		28 (100%)	0	0	NS
Blood splashing into the eye	37 (82.2%)	4 (8.9%)	4 (8.9%)	25 (89.3%)	3 (10.7%)	0	NS
Food borne	2 (4.5%)	40 (90.9%)	2 (4.5%)	1 (3.6%)	27 (96.4%)	0	NS
Sexual contact	45 (100%)	0	0	28 (100%)	0	0	NS
During pregnancy	44 (100%)	0	0	27 (96.4%)	1 (3.6%)	0	NS
Through breast feeding	40 (88.9%)	2 (4.4%)	3 (5.7%)	24 (85.7%)	3 (10.7%)	1 (3.6%)	NS
Sneezing and coughing	2 (4.4%)	39 (86.7%)	4 (8.9%)	0	28 (100%)	0	NS
Mosquitoes bites	6 (13.3%)	35 (77.8%)	4 (8.9%)	4 (14.3%)	22 (78.6%)	2 (7.1%)	NS
Organ and tissue transplantation	33 (73.3%)	4 (8.9%)	8 (17.8%)	22 (81.5%)	3 (11.1%)	2 (7.4%)	NS
Human and animal bites	17 (40.5%)	18 (42.9%)	7 (16.7%)	16 (59.3%)	9 (33.3%)	2 (7.4%)	NS

Many studies have reported that, early prophylaxis within the first hours after exposure to HIV can reduce the risk of HIV infection by reducing viremia. There are 2 main post exposure protocols including the combination of two nucleoside analogue reverse transcriptase inhibitors (NRTIs) or adding one protease inhibitor to NRTIs (14).

The most important finding in our study was the lack of knowledge about the prophylaxis after needle stick injury. Totally 11 (25%) of preclinical respondents and 14 (51.9%) of clinical students were aware of prophylaxis strategies after needle stick injury. These finding is consisted with the results of other studies (14-16). Our finding showed that, approximately 78% of respondents had good knowledge about HIV and its transmission. A finding is concordant with other studies (17, 18).

Some studies suggested that, increasing knowledge of individual is the first step toward decreasing the HIV transmission. Using gloves, mask and goggles are widely advised for oral health worker to reduce the direct contamination of their mucosal surface with patients body fluids (14).

Limitations of our study was that the participants didn't answered if they had an experience of needle stick injury or not, and they didn't state the sources of their information about HIV and its transmission. If this data were mentioned by participants, we would have interesting and applicable results.

In conclusion this study showed that, although the knowledge of dental students about HIV and its transmission was high, they hadn't have enough knowledge about post exposure prophylaxis, which is an important subject that any oral health worker may experience it in his/her professional life. Educating health care workers especially dental students regarding the prophylaxis strategies in preclinical course are recommended.

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