Knowledge and attitude of health care workers in Baquba Teaching Hospital toward HIV/AIDS infection

SR Al-Salihy, OM Enad

Abstract

Objectives: To evaluate the awareness and attitude of healthcare workers (HCWs) in Baquba Teaching Hospital towards HIV/AIDS patients.

Methods: A cross-sectional survey was conducted in Baquba Teaching Hospital during the period from 1 January to 1 March 2016. The study included 200 individuals of randomly selected HCWs working in Baquba Teaching Hospital to assess their awareness and attitude towards HIV/AIDS by using a multiple-choice questionnaire. The questions were modified according to Iraqi cultures and social traditions.

Results: Generally, the results revealed that according to Modified Bloom's Cut Off Point, the participant HCWs have good levels of awareness about etiology, vertical transmission and curability of the disease. By contrast, in some aspects like risk of HIV needle stick injury, action of antiretroviral drugs and the commonest method of HIV transmission in Iraq, the answers showed lack in awareness. Furthermore, the specialist physicians had significantly higher level of awareness than other professions (P < 0.05).

Conclusion: The awareness of HCWs was high, however, it is incomplete due to some misconception. Education campaigns, posters, workshops will strengthen the knowledge of HCWs and attempt to clarify any misconception or perverting theories about HIV-infection.

Keywords: HIV, health knowledge, attitudes, practice, healthcare worker, health personnel

Introduction

The human immunodeficiency virus (HIV) is a member of retrovirus subgroup, that causes HIV infection and by the time develops acquired immunodeficiency syndrome (AIDS), which represent the final stage manifestation of infection. AIDS is a situation in humans in which progressive malfunction of the immune system offers the opportunity to life-threatening opportunistic infections and cancers to thrive. Without treatment, the estimated average of survival time after infection with HIV is 9 to 11 years, depending on the HIV subtype.

Since the first identification in the US during 1981, HIV represents a serious health issue for parts of the world. Worldwide, people living with HIV are about 35 million, and in 2013, around 12.9 million people living with HIV were receiving ART (antiretroviral therapy). Iraq can be categorized as a low-prevalence HIV epidemic, with a low number of officially reported cases (0.1% of the total population). The first case was reported in 1986 among hemophilic patients who had received contaminated blood products. Furthermore, the cumulative number of HIV/AIDS registered cases from 1986 up to 2011 was 306. Among the registered cases, 85% were male and the most common mode of transmission (66%) was via imported blood products, (17%) by heterosexual route and (5%) by vertical transmission from infected mother. No cases of transmission due to homosexual or drug addicts were reported. Since 2003, the transmission mode shifted towards the heterosexual route, as the government adopted strict measures to ensure blood safety.

Stigma and discrimination for people who are living with HIV obstructed efforts to identify cases. It discourages people from request care or being tested for HIV and as a result prevention of HIV/AIDS, control and treatment will continue to remain a big challenge unless testing and counseling services are scaled up. Thus, understanding the
role of social and cultural variables affecting HIV transmission in Muslim countries is critical for the development and implementation of successful HIV prevention programs.

The study aims to assess the awareness and attitude of the health care workers (HCWs) in Baquba Teaching Hospital, Diyala province toward HIV/AIDS patients.

**Methods and Materials**

A cross-sectional survey was conducted in Baquba Teaching Hospital during the period from 1 January to 1 March 2016.

The study included 200 individuals of randomly selected HCWs working in Baquba Teaching Hospital to assess their awareness and attitude towards HIV/AIDS by using a multiple-choice questionnaire, which was especially constructed to meet this purpose based on previous studies.10–12 The questions were modified according to Iraqi cultures and social traditions.

The questionnaire composed of three demographic questions and 12 questions to assess awareness and attitude about HIV/AIDS. The questions were focused on the cause of AIDS, mode of transmission, risk of acquiring infection by needle stick injury, controlling and managing AIDS patient.

Statistical analysis was performed using SPSS version 9. Chi-square test was used to compare between different variables according to the correct answer of the question only (Table 3). P-value of <0.05 was considered significant.

**Results**

A total of 200 respondents were included in this study. Out of them 133 (66.5%) were males and 67 (33.5%) were females. The majority of respondent 118 (59%) were between the ages of 25 and 35 years old. Most of the respondents were physician in different professional stages (resident, permanent, and specialist) with percentages of 25.5, 11 and 22%, respectively. The percentage of the remainder professions were 10.5% nurses, 16% lab technicians, 10.5% medical assistants and 4% workers. The quantitative baseline data are shown in Table 1.

Analysis of data recorded in Table 2 revealed that there was a significant difference among study groups in their answer when they were asked about the cause of AIDS (Q1). 100% of each of permanents, specialists, lab technicians, medical assistants, workers were aware of the correct answer, which is virus, whereas, 50 (98%) of residents and 21 (95.4%) of nurses answered correctly. While in accordance to the risk of needle stick injury (Q2), only 32% of all study groups realized the correct answer, which is 0.3%13; the specialists scored the highest correct answer rate (61.4%) with a significantly difference in comparison to other professions.

Likewise, there is a significant difference among professions about (Q3) as only 40.1% knew that the prevalent method of transmission of AIDS in Iraq is blood transfusion. Again the specialist gave more correct answer with percentage of 59.1%, followed by permanent (50%) and medical assistants (42.9%), meanwhile, lab technician and workers gave 28.1% and 12.5% respectively.

There is no significant difference among study groups in accordance with answer of (Q4). The percentages of the correct answers were 79% among which residents 80.4%, permanents 77.3%, specialists 97.7%, nurse 63.6%, lab technicians 62.5%, medical assistant 85.7% and the workers 62.5%.

In accordance with Q5 and Q6, 82.5% and 67%, respectively, reported the possibility of vertical transmission of the virus from the infected mother to her child either during birth or via breastfeeding, while the rest denied this possibility with significant differences among study groups.

Meanwhile, lab technicians gave more correct answers with the percentage of 90.6% than others, followed by the specialists (88.6%), medical assistants (85.7%), residents (82.4%), nurses (81.8%), permanents (72.7%) and workers (75%), when they were asked about the total number of AIDS patients globally according to UNAIDS global report on 2012 (Q7)14, however, the difference is not significant.

On the other hand, the rate of respondents believed incorrectly that AIDs can be transmitted by shaking hands or through the air were (11%) and (4.5%), (Q8 and Q9), respectively. The results showed significant difference.

In accordance with (Q10), 22% of respondents had incorrectly supposed air-borne isolation of AIDS patients with significant difference among professions.

Just over half of respondents (52%) have the information about controlling AIDS by antiretroviral drugs (Q11), while most of respondents (82.5%) knew that AIDS is not curable disease (Q12), with significant differences among study groups in both questions.

<table>
<thead>
<tr>
<th>Table 1 Demographic distribution of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td><strong>Profession</strong></td>
</tr>
<tr>
<td>Resident</td>
</tr>
<tr>
<td>Permanent</td>
</tr>
<tr>
<td>Specialist</td>
</tr>
<tr>
<td>Nurse</td>
</tr>
<tr>
<td>Lab. technician</td>
</tr>
<tr>
<td>Medical assistant</td>
</tr>
<tr>
<td>Worker</td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>25–35</td>
</tr>
<tr>
<td>36–45</td>
</tr>
<tr>
<td>46–55</td>
</tr>
<tr>
<td>&gt;55</td>
</tr>
</tbody>
</table>
Table 2 Rates of correct answers about HIV/AIDS in accordance with profession of participants

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1/ What’s the cause of AIDS?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct answer</td>
<td>Virus 196 (98%)</td>
<td>50 (98%)</td>
<td>22 (100%)</td>
<td>44 (100%)</td>
<td>21 (95.4%)</td>
<td>32 (100%)</td>
<td>21 (100%)</td>
<td>8 (100%)</td>
</tr>
<tr>
<td>Q2/ In case of needle stick injury with AIDS patients, the risk of acquiring AIDS is</td>
<td>0.3% (32%)</td>
<td>10 (19.6%)</td>
<td>7 (31.8%)</td>
<td>27 (61.4%)</td>
<td>6 (27.3%)</td>
<td>5 (15.6%)</td>
<td>6 (28.6%)</td>
<td>3 (37.5%)</td>
</tr>
<tr>
<td>Q3/ The commonest method of transmission of AIDS in Iraq, currently is</td>
<td>Blood transfusion (41.5%)</td>
<td>18 (35.3%)</td>
<td>11 (50%)</td>
<td>26 (59.1%)</td>
<td>9 (40.9%)</td>
<td>9 (28.1%)</td>
<td>9 (42.9%)</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Q4/ Is HIV transmitted during pregnancy from mother to fetus inside the uterus?</td>
<td>Yes (79%)</td>
<td>41 (80.4%)</td>
<td>17 (77.3%)</td>
<td>43 (97.7%)</td>
<td>14 (63.6%)</td>
<td>20 (62.5%)</td>
<td>18 (85.7%)</td>
<td>5 (62.5%)</td>
</tr>
<tr>
<td>Q5/ Is HIV transmitted to child during the birth?</td>
<td>Yes (82.5%)</td>
<td>46 (90.2%)</td>
<td>19 (86.4%)</td>
<td>41 (93.2%)</td>
<td>15 (68.2%)</td>
<td>22 (68.8%)</td>
<td>16 (76.2%)</td>
<td>6 (75%)</td>
</tr>
<tr>
<td>Q6/ Is HIV transmitted from mother to child through the breast feeding?</td>
<td>Yes (67%)</td>
<td>42 (82.4%)</td>
<td>21 (95.5%)</td>
<td>38 (86.4%)</td>
<td>8 (36.4%)</td>
<td>7 (21.9%)</td>
<td>14 (66.7%)</td>
<td>4 (50.0%)</td>
</tr>
<tr>
<td>Q7/ According to UNAIDS global report on 2012, the total number of AIDS patients globally is:</td>
<td>Increasing (84%)</td>
<td>42 (82.4%)</td>
<td>16 (72.7%)</td>
<td>39 (88.6%)</td>
<td>18 (81.8%)</td>
<td>29 (90.6%)</td>
<td>18 (85.7%)</td>
<td>6 (75%)</td>
</tr>
<tr>
<td>Q8/ Can AIDS be transmitted by shaking hands?</td>
<td>No (89%)</td>
<td>47 (92.2%)</td>
<td>21 (95.5%)</td>
<td>40 (90.9%)</td>
<td>18 (81.8%)</td>
<td>30 (93.8%)</td>
<td>18 (85.7%)</td>
<td>4 (50.0%)</td>
</tr>
<tr>
<td>Q9/ Can AIDS be transmitted through air?</td>
<td>No (95.5%)</td>
<td>49 (96.1%)</td>
<td>22 (100.0%)</td>
<td>43 (97.7%)</td>
<td>19 (86.4%)</td>
<td>32 (100.0%)</td>
<td>20 (95.2%)</td>
<td>6 (75%)</td>
</tr>
<tr>
<td>Q10/ All AIDS patients, if admitted are supposed to be in air-borne isolation?</td>
<td>No (78%)</td>
<td>44 (86.3%)</td>
<td>20 (90.9%)</td>
<td>39 (88.6%)</td>
<td>10 (45.5%)</td>
<td>27 (84.4%)</td>
<td>13 (61.9%)</td>
<td>3 (37.5%)</td>
</tr>
<tr>
<td>Q11/ Can antiretroviral therapy succeed in controlling the disease process in AIDS patients?</td>
<td>Yes (52%)</td>
<td>22 (43.1%)</td>
<td>8 (36.4%)</td>
<td>34 (77.3%)</td>
<td>8 (36.4%)</td>
<td>19 (59.4%)</td>
<td>10 (47.6%)</td>
<td>3 (37.5%)</td>
</tr>
<tr>
<td>Q12/ Is AIDS disease curable?</td>
<td>No (82.5%)</td>
<td>46 (90.2%)</td>
<td>21 (95.5%)</td>
<td>41 (93.2%)</td>
<td>14 (63.6%)</td>
<td>26 (81.3%)</td>
<td>15 (71.4%)</td>
<td>2 (25.0%)</td>
</tr>
</tbody>
</table>

Table 3 Comparison between different variables

<table>
<thead>
<tr>
<th>Chi-square tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. sig. (2-sided)</th>
<th>Exact sig. (2-sided)</th>
<th>Exact sig. (1-sided)</th>
<th>Point probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson chi-square</td>
<td>33.687a</td>
<td>6</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>28.883</td>
<td>6</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher’s exact test</td>
<td>27.924</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear-by-linear association</td>
<td>17.139b</td>
<td>1</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N of valid cases</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 4 cells (28.6%) have expected count less than 5. The minimum expected count is 1.40.
b. The standardized statistic is 4.140.
Discussion
The present study evaluates the HIV-related awareness and attitude of HCWs in Baquba Teaching Hospital as it represents an important pillar in dealing with and managing an AIDS patient.

The study showed that in accordance with Modified Bloom’s Cut Off Point15 (Appendix 2), the participant HCWs generally have good levels of knowledge about etiology, vertical transmission and curability of the disease. By contrast, in some aspects like risk of HIV needle stick injury, action of antiretroviral drugs and the commonest method of HIV transmission in Iraq. The answers showed lack in awareness. Albujeer et al. also showed the same result among Iraqi medical and dental students in four Iraqi provinces16.

The study of Al-Owais, et al.10 showed that physicians including specialists, permanents and residents demonstrate a higher level of knowledge compared to other groups followed by medical assistant, lab technician, nurses, and finally the workers. This may be due to their high education level, attending conferences or participation in workshops.

Although the overall risk of acquiring HIV infection from a needle stick injury with an HIV-contaminated needle is as little as 0.3%, more than 68% of HCWs overestimated their risks. This may be indicative of their fear of acquiring HIV infection leading to minimize their willingness of dealing with HIV-positive patients. Our results were in tune with numerous studies10,17,18.

In spite of the high level of knowledge, there is a misconception of the commonest method of HIV transmission in Iraq, which had been blood transfusion9, however, 47.2% choose sexual practice, while slightly lower rate (41.5%) chose the correct answer. This conflict of views may be due to their familiarity with the fact that after 2003, the transmission mode shifted towards the heterosexual route as more liberal social and sexual norms are available in addition to implementation of strict blood screening measures adopted by the Iraqi Ministry of Health (MOH). However, the rate of HIV-infection due to blood transfusion is still the highest9.

Surprisingly, only 52% of respondents had the cognition that antiretroviral drugs success in controlling and managing disease process in AIDS patients which was an indication of gaps in the knowledge in spite of high level of knowledge estimated.

Conclusion
It was obvious from the finding of our study that the knowledge of HCWs was high, however, it is incomplete due to some misconception. There were a significant difference among different professions of HCWs. However, the specialist demonstrated a better knowledge. Education campaigns, posters, workshops will attempt to clarify any misconception or perverting theories about HIV-infection, with our health care workers.

Conflict of Interest
None.

References
Appendix 1

Knowledge and Attitude of Health Care Workers of Baquba Teaching Hospital toward Human Immunodeficiency Virus (HIV) Infection

Part 1: socio-demographic description

1. Sex:  
   - □ Male  
   - □ Female

2. Age:  
   - □ 25–35 years  
   - □ 36–45 years  
   - □ 46–55 years  
   - □ 56 years and more

2. Profession:  
   - Physician:  
     - □ Yes  
     - □ No if yes:  
       - Intern  
       - Resident  
       - Consultant
   - Nurse:  
     - □ Yes  
     - □ No
   - Laboratory Technologist:  
     - □ Yes  
     - □ No
   - Social worker:  
     - □ Yes  
     - □ No

Part 2: question related to the attitude and knowledge

1. What is the cause of Acquired Immunodeficiency syndrome (AIDS)?  
   - □ Bacteria  
   - □ Virus  
   - □ Fungal element

2. In case of needle stick injury with an AIDS patient, the risk of acquiring AIDS is?  
   - □ 0.3%  
   - □ 3%  
   - □ 30%

3. The commonest method of transmission of AIDS in Iraq currently is: (choose 1 answer)  
   - □ IV drug use  
   - □ Blood product transfusion  
   - □ Sexual practices

4. Is HIV transmitted during pregnancy from mother to fetus inside the uterus?  
   - □ Yes  
   - □ No

5. Is HIV transmitted to child during the birth?  
   - □ Yes  
   - □ No

6. Is HIV transmitted from mother to child through the breast feeding?  
   - □ Yes  
   - □ No

7. According to UNAIDS global report on 2012 the total number globally of AIDS patient is:  
   - □ Increasing  
   - □ Decreasing

8. Can AIDS be transmitted by shaking hands?  
   - □ Yes  
   - □ No

9. AIDS can be transmitted through air?  
   - □ Yes  
   - □ No

10. All AIDS patients, if admitted are supposed to be in air-borne isolation?  
    - □ Yes  
    - □ No

11. Can Antiretroviral therapy succeed in controlling the disease process in AIDS patients?  
    - □ Yes  
    - □ No

12. Is AIDS curable?  
    - □ Yes  
    - □ No

Appendix 2

Modified Bloom's Cut Off Point

Good Knowledge (80–100%)  
Moderate Knowledge (60–79%)  
Poor Knowledge <60%