Kuwait University
Health sciences center
Faculty of Dentistry
Elective Project Study Course No. 703

Knowledge, Attitude, and Practice of HBV vaccination among dentists in primary health care, dental centers and Kuwait university dental clinics (KUDCs)

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ABSTRACT

Objectives: To evaluate the level of knowledge, attitude and practice of hepatitis B vaccination among dentists in primary health care, dental centers and KUDCs in Kuwait and identify factors associated with the vaccination status.

Methods: This cross-sectional sample survey was conducted on 184 dentists working in primary health care, dental centers and KUDCs from all governorates of Kuwait. Data were collected through a self-administered pretested questionnaire containing 22 questions, obtained from validated questionnaires. The questionnaire consisted of 4 sections: socio-demographic and work-related characteristics, knowledge assessment, attitude assessment and practice evaluation. A knowledge score about hepatitis B, vaccine, risk groups and potential routes of virus transmission was based on 20 items.

Results: Knowledge about hepatitis B virus, vaccine and routes of transmission of HBV was relatively high. Within 184 participants, all were aware that hepatitis B virus can be acquired from patient to dentists, 86.9% knew that HBV can be transmitted from dentists to patients. 88.8% have the knowledge of potential transmission of the virus through needle stick injury. Most of the respondents have positive attitude toward HBV vaccination. Furthermore, 96.6% were vaccinated against hepatitis B and almost all participants apply preventive measures at work.

Conclusions: A relatively high vaccination rate was found among dentists in primary health care, dental centers and KUDCs in Kuwait. Knowledge about nature of the virus, routes of transmission and vaccination was satisfactory. Continuous training about HBV transmission routes, protection, as well as hepatitis B vaccination and checking the anti-HBs level, is a matter of necessity.
INTRODUCTION

Hepatitis-B is an acute systemic infection with major pathology in the liver caused by (HBV) hepatitis-B virus. The life time risk of complications such as chronic hepatitis, cirrhosis and hepatocellular carcinoma in subjects with chronic HBV infection is a major concern for health care personnel (Barker et al. 1970, Ozaras, 2009). However, the outcome of HBV infection depends on the result of dynamic interaction between the virus, hepatocytes and host response. The virus is present in high concentration in blood, serum, serous exudates, saliva, semen, vaginal fluid and most body fluids. However, perinatal transmission is believed to be the most important mode in regions with intermediate and high HBV prevalence rates; in contrast sexual transmission is the predominant route among adolescents in low prevalence and developed countries. Moreover, most of babies born to mothers who are carriers of HBV also become carriers. According to a WHO estimate, two billions people in the world have serological evidence of prior HBV infection. (WHO, 2000) Of the world’s carriers of HBV, 75% are from Asia (Ameen et al. 2005). Globally, it is estimated that approximately 400 million individuals are chronic carriers of HBV and more than a million people die annually from its related causes (Chang, 2009, WHO, 1977). This high prevalence rate with its sequels makes HBV infection a disease of major public health importance worldwide. (Amazigo et al.1990). (Alavian, 2007) Symptoms in HBV infection appear only in 35% of those infected. In Kuwait, a high prevalence of HBV was found among non-Kuwaiti Arab population. (Ameen et al. 2005) and can lead to much morbidity and mortality.

As dental profession involves the use of small, sharp instruments contaminated with blood or other fluids, there is ample opportunity for inadvertent skin wounds to the operator and staff. Such accidents include the possibility of transmission of hepatitis B. (Moghimi et al, 2009) needle stick injuries are hazard to HCWs and their patients. (Charles et al. 2003) Health care-associated infections (HAIs) are a serious problem in the healthcare services as they are common causes of illness and mortality among patients. To decrease the risk of HBV infection, it is recommended that
dental personnel receive immunization against HBV and use individual protective equipment, such as gloves, to prevent blood-borne infection during dental procedures.

Hepatitis B vaccine has been available since 1982 and, since 1990, has been recommended for healthcare workers whose activities frequently expose them to blood. However, few of normal subjects do not produce the anti-hepatitis B surface antibody (anti-HBs) after receiving a standard course of HBV vaccine (Van Damme P, Van Herck K, 2007)(Abe M, et.al, 2006)(Wang C, et.al, 2004). Thus, post-vaccination testing one to three months following the third dose of vaccine is recommended for healthcare workers who have contact with blood. Previous studies carried out in other countries have revealed different proportions of self-reported vaccination, ranging from 40.3% to 97.0% (Sofola OO, et.al, 2008) (Suckling RM, et.al, 2006). The proportion of dentists who have had their antibody titer evaluated ranges from 36.5% to 47.9% (Alavian SM, et.al, 2005, 2008).

In 1991, CDC published recommendations to prevent transmission of blood borne viruses from infected health-care providers to patients while conducting exposure-prone invasive procedures (CDC, 1991). These recommendations did not prohibit the continued practice of invasive surgical techniques by HBV-infected surgeons, dentists, and others, provided that the nature of their illnesses and their practices are reviewed and overseen by expert review panels. Essential elements of the 1991 CDC recommendations relevant to HBV included that 1) there be no restriction of activities for any health-care provider who does not perform invasive (exposure-prone) procedures; 2) exposure-prone procedures should be defined by the medical/surgical/dental organizations and institutions at which the procedures are performed; 3) providers who perform exposure-prone procedures and who do not have serologic evidence of immunity to HBV from vaccination should know their HBsAg status and, if that is positive, also should know their hepatitis B e-antigen (HBeAg) status; and 4) providers who are infected with HBV (and are HBeAg-positive) should seek counsel from and perform procedures under the guidance of an expert review panel (CDC, 1991).
In previous study that was done in Kuwait by Soad A. Habiba. et.al, 2012, they found that Knowledge, attitudes and practices about hepatitis B among Health Care Workers (HCWs) was high to partial, with important gaps which need to be strengthened especially among non-vaccinated group; in which dentists had the highest percentage of knowledge. In light of this data, our main focus was dentists, so we conducted a survey to collect information about dentists' knowledge, practice and attitude regarding HBV vaccination.

As hepatitis B can lead to much morbidity and mortality, and dentists are a high-risk group for acquiring HBV infection and for transmission to their patients and close contacts, it makes sense to evaluate dentists’ knowledge, attitudes and practice towards HBV and the vaccination against it.

METHODS

STUDY DESIGN AND PARTICIPANTS

This cross-sectional study assessed the level of knowledge, attitude and practice regarding HBV vaccination among dentists in primary health care, dental centers and Kuwait university dental clinics in Kuwait. This study was conducted from April 2012.

The target population was dentists in the 5 dental centers and primary health care uniformly distributed all over the 6 governorates in Kuwait, as well as, dentists in Kuwait university clinics. A representative sample of 12 primary health care centers was randomly selected from the sampling frame obtained from the primary health care department, Ministry of Health (Primary health care annual report, 2010). Two primary health centers was selected randomly from each governorate. Most selected center was visited more than once in order to cover all working hours (day and afternoon shifts). On centers and Kuwait university clinics, all available physicians were approached to participate in the study. All selected centers granted us permission to conduct our study.
Permission was also granted from Kuwait university clinics. Overall, the total number of participants was 200, of whom 184 responded, at a response rate of 92%.

<table>
<thead>
<tr>
<th>Governorate</th>
<th>Target number</th>
<th>Number approached</th>
<th>Response rate (%)</th>
<th>Refusal rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
<td>70</td>
<td>71</td>
<td>101.4</td>
<td>_</td>
</tr>
<tr>
<td>Hawalli</td>
<td>30</td>
<td>19</td>
<td>63.3</td>
<td>36.7</td>
</tr>
<tr>
<td>Farwaniya</td>
<td>30</td>
<td>21</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>Al-Ahmadi</td>
<td>35</td>
<td>28</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Al-Jahra</td>
<td>35</td>
<td>39</td>
<td>111.4</td>
<td>_</td>
</tr>
</tbody>
</table>

**ETHICAL CONSIDERATION**

Informed consent was obtained from each participant prior to enrollment, after reading the informed consent sheet in English and receiving answers to any enquiries or questions, the participants checked a box indicating willingness to participate in the study. Anonymity was insured since none of the participants' names were recorded. It was clearly stated in a written form that participation is not obligatory and that there is no harm in participating or refusing to participate. A human subject’s form was completed and the research was approved by the Departmental Ethics Review Board, and the Joint Research Ethics Committee of Health Science Center and Ministry of health "Asst. undersecretary for planning and quality". Permission was also obtained from the administrative authorities at each included primary health care center, dental centers and Kuwait University.

**DATA COLLECTION INSTRUMENT AND PROCEDURES**

The participants completed a self-administered, structured questionnaire comprising of 22 questions. It consisted of use of the liker scale; yes/no/not sure and a few open-ended questions. The items in the questionnaire were obtained from numbers of validated questionnaires, and were pre-tested on 10 dentists in Kuwait university clinics. This pilot study was formulated to test the clarity,
applicability of the study tools, identify the difficulties that may be faced during the application. Also, the time needed for filling the questionnaire by the staff was estimated during this pilot study. The necessary modifications according to the results obtained were done.

The questionnaire was divided into 4 sections: Section 1: socio-demographic characteristics (question 1 to 11) including age, gender, nationality, marital status, number of children, educational status, current working status, country from which highest degree obtained, place of work, number of years since graduation and duration of practice.

Section 2- Knowledge about HBV and the vaccination (questions 12) including (20 items), Section 3- Attitude towards HBV vaccination (questions 13 and 14) including reasons which make dentists have positive attitude towards up taking HBV vaccination (9 items), and reasons for declining vaccination (7 items). Section 4- Practice of HBV vaccination (questions 15 to 22) including questions about infection with HBV and vaccination, recommendation of vaccination to patients or family members, referral of patients for vaccination, wearing preventive measures at work, awareness of new guidelines regarding HBV vaccination, and whether dentists provide information to patients about HBV vaccination. Correct answers to each item were based on a review of the available literature as well as policies and guidelines. (Ali Kabir et al. 2010, Soad A. Habiba. 2012). A positive answer was assigned one point, whereas a negative answer was given zero. Participants were divided according to their answers into two groups. The first groups contained those with low knowledge level (<50% knowledge score) and the second one includes participants with satisfactory level (≥ 50% knowledge score).
STATISTICAL ANALYSIS

The statistical Package for Social Science (SPSS Inc., Chicago, IL, USA, 2008) version 19 was used for data entry and analysis. Simple descriptive statistics were used (mean ± standard deviation for quantitative variables and frequency with percentage distribution for categorized variables). The P-value ≤ 0.05 was used as the cut-off level for statistical significance. The response rates differed by item; hence the frequency distributions was calculated using the denominator for the individual item.

RESULTS

In the present cross-sectional survey, 200 dentists from primary health care, dental centers and KUDCs were approached. Out of these, 184 responded and returned a completed self-administered questionnaire (response rate = 92%). This sample represents around 16% of all dentists working at primary health care, dental centers and KUDCs in Kuwait (MOH, 2010). The reason for non-response was mainly lack of time because of the busy schedules of dentists. Analysis was done on the 184 cases, with 119 (66.1%) male and 65 (33.9%) female. Majority of the participants were ≥40 yrs old (mean ± std. deviation equal to 2.64 ± 1.212). Kuwaitis and non-Kuwaitis were more or less similarly presented, accounting for 50.8% and 49.2% respectively. Majority of them (55.1%) had master degree. More than three-quarters of the respondents 76.1% were married. Additionally, More than 50% of dentists in our sample got their highest degree from USA and India and around 40% of participants work in the capital. Furthermore, More than three-quarters had practiced dentistry for four years and more and around 90% were aware that viral hepatitis B can be transmitted from patients to dentists and vice versa.
Knowledge

Tables (2) and (3) represent the results of the knowledge section of the questionnaire. The questions were in a “true, false and not sure” format. The median knowledge score was 14 out of 18 with mean ± std. equal to 13.6 ± 3.4. Thirty-one and half of the respondents answered less than 14 out of 18 questions, which means that more than two-third of the participants have high knowledge about hepatitis B virus, vaccine and routes of transmission of the virus. Most of the participants answered 16 out of 18 questions correctly. All of the respondents were aware that HBV can be acquired from patient to dentists and 86.9% knew that the virus can be transmitted from dentists to patients. Moreover, 92.9% of the respondents considered it as serious disease. The majority of the respondents were aware of HBV vaccine, 85% were aware about the number of doses of vaccination required for complete protection. In addition, more than 55% of dentists have the knowledge about the potential routes of HBV transmission; broken skin in contact with saliva contaminated with blood of HBV positive patient, broken skin in contact with blood of HBV positive patient and needle stick injury had the highest percentage of knowledge. Lastly, eighty-five percent knew that antibodies for HBV need to be checked after receiving three titers and around 26.5% of respondents knew that the HBV vaccine is not for all people; this is true because there is contraindication for the vaccine, such as severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component (CDC, 2013). No significant association between knowledge score about HBV vaccination and socio-demographic characteristics and work-related variables of respondents except with nationality, which shows that Kuwaitis have higher knowledge score than non-Kuwaitis (p-value 0.049) and with years of practice (p-value 0.001) in which those who have been practicing dentistry for 3 years and more have higher knowledge score.
Attitudes

Tables 4 and 5 demonstrate that most of the respondents have positive attitude toward HBV vaccination mostly because they believe that their jobs puts them at risk of contracting HBV infection and because it is serious disease. Around 14% had a negative attitude toward HBV vaccination because they are worried of its adverse effects.

Practice

There was no significant association between knowledge score and practice and the only exception was that those respondents (62%) who reported to be up-to-date with the new guidelines regarding HBV vaccination had significantly higher median knowledge score (Mann-Whitney U test, p<0.021). As shown in table 6, about three quarters of the respondents (96.9%) have actually ever received Hepatitis B vaccine. 97.2% apply preventive measures at work (e.g. wearing mask, glasses, gloves, etc.).

<p>| Table(1): Socio-demographic characteristics of the respondents and association with knowledge score |
|---------------------------------------------------------------|---------|--------|
| freq.                        | %      | With knowledge score (p-value) |
| Gender:                     |        |                                  |
| Male                         | 119    | 66.1                             | 0.77     |
| Female                       | 61     | 33.9                             |          |
| Age:                         |        |                                  |
| 25-35                        | 47     | 26.3                             |          |
| 31-35                        | 34     | 19                               |          |
| 36-40                        | 35     | 19.6                             |          |
| ≥ 40                         | 63     | 35.2                             |          |
| Nationality:                 |        |                                  |
| Kuwaiti                      | 91     | 50.8                             | 0.049    |
| Non-Kuwaiti                  | 88     | 49.2                             |          |
| Marital status:              |        |                                  |
| Single                       | 39     | 21.7                             |          |
| Married                      | 137    | 76.1                             | 0.37     |
| Divorced                     | 4      | 2.2                              |          |
| Widowed                      | 0      |                                  |          |</p>
<table>
<thead>
<tr>
<th>Do you have children?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor degree in dentistry</td>
</tr>
<tr>
<td>Masters degree</td>
</tr>
<tr>
<td>PhD degree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current working status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
</tr>
<tr>
<td>Assistant registrar</td>
</tr>
<tr>
<td>Registrar</td>
</tr>
<tr>
<td>General practitioner</td>
</tr>
<tr>
<td>Specialist</td>
</tr>
<tr>
<td>Consultant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country from which highest degree obtained:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuwait</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>India</td>
</tr>
<tr>
<td>Arab Countries</td>
</tr>
<tr>
<td>European Countries</td>
</tr>
<tr>
<td>Others</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Government of work:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
</tr>
<tr>
<td>Hawalli</td>
</tr>
<tr>
<td>Farwania</td>
</tr>
<tr>
<td>Al-Ahmadi</td>
</tr>
<tr>
<td>Al-Jahra</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of years since graduation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>≥4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of years in practice:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>≥4</td>
</tr>
</tbody>
</table>
Table (2) showing correct answers regarding knowledge about Hepatitis B and the vaccination:

<table>
<thead>
<tr>
<th>Statement</th>
<th>freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B is contagious</td>
<td>157</td>
<td>95.7</td>
</tr>
<tr>
<td>HBV carrier may look healthy without showing any symptoms of the disease</td>
<td>160</td>
<td>93.6</td>
</tr>
<tr>
<td>Hepatitis B can be lethal</td>
<td>157</td>
<td>92.9</td>
</tr>
<tr>
<td>Patient can spread hepatitis to dentists</td>
<td>184</td>
<td>100</td>
</tr>
<tr>
<td>Dentists can spread the virus to their patients</td>
<td>155</td>
<td>89.6</td>
</tr>
<tr>
<td>HBV vaccination does not cause hepatitis</td>
<td>100</td>
<td>58.8</td>
</tr>
<tr>
<td>HBV vaccine is not for all people</td>
<td>111</td>
<td>64.9</td>
</tr>
<tr>
<td>HBV vaccination can prevent hepatitis</td>
<td>135</td>
<td>77.6</td>
</tr>
<tr>
<td>HBV vaccination does not increase risks of complications</td>
<td>120</td>
<td>71</td>
</tr>
<tr>
<td>HBV vaccine contraindicated in pregnancy</td>
<td>37</td>
<td>22</td>
</tr>
<tr>
<td>The antibodies for HBV need to be checked after three titers</td>
<td>149</td>
<td>85.1</td>
</tr>
</tbody>
</table>

Table (3) showing correct answers regarding knowledge about potential routes of HBV transmission

<table>
<thead>
<tr>
<th>Route of Transmission</th>
<th>freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broken skin in contact with saliva contaminated with blood of HBV positive patient</td>
<td>167</td>
<td>93.8</td>
</tr>
<tr>
<td>Broken skin in contact with blood of HBV positive patient</td>
<td>169</td>
<td>95.5</td>
</tr>
<tr>
<td>Broken skin in contact with saliva of HBV positive patient</td>
<td>104</td>
<td>59.4</td>
</tr>
<tr>
<td>Intact skin with HBV positive patient</td>
<td>144</td>
<td>85.2</td>
</tr>
<tr>
<td>Intact skin with intact skin of HBV positive patient</td>
<td>126</td>
<td>75.4</td>
</tr>
<tr>
<td>Needle stick injury</td>
<td>159</td>
<td>88.8</td>
</tr>
<tr>
<td>Aerosol produced by a hand piece</td>
<td>57</td>
<td>33.1</td>
</tr>
</tbody>
</table>
### Table 4: Positive attitude toward HBV vaccination

<table>
<thead>
<tr>
<th>Variable</th>
<th>Agreed</th>
<th>Agreed %</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a positive attitude towards HBV vaccine because of the following reasons:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am at risk because of the nature of my work</td>
<td>172</td>
<td>96.6</td>
</tr>
<tr>
<td>Vaccination prevents spread of infection to patients</td>
<td>156</td>
<td>88.1</td>
</tr>
<tr>
<td>Vaccination protects my family members</td>
<td>169</td>
<td>94.4</td>
</tr>
<tr>
<td>Vaccination is mandatory by higher health authorities</td>
<td>154</td>
<td>88.5</td>
</tr>
<tr>
<td>Hepatitis B is a serious disease</td>
<td>175</td>
<td>98.3</td>
</tr>
<tr>
<td>Hepatitis vaccine is effective in preventing the disease</td>
<td>171</td>
<td>96.1</td>
</tr>
<tr>
<td>The vaccine is available at my work place</td>
<td>120</td>
<td>67.5</td>
</tr>
<tr>
<td>The risk of death among vaccinated persons is reduced compared to the non-vaccinated</td>
<td>158</td>
<td>94.6</td>
</tr>
</tbody>
</table>

### Table 5: Negative attitude toward HBV vaccination

<table>
<thead>
<tr>
<th>Variable</th>
<th>Agreed</th>
<th>Agreed %</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a negative attitude towards HBV vaccine because of the following reasons:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am worried about its adverse effects</td>
<td>23</td>
<td>14.7</td>
</tr>
<tr>
<td>I am afraid of injection</td>
<td>6</td>
<td>3.9</td>
</tr>
<tr>
<td>It is not effective in disease protection</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>I am not at high risk of contracting HBV</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>The vaccine is not available</td>
<td>14</td>
<td>9.3</td>
</tr>
<tr>
<td>I have limited contact with high-risk persons</td>
<td>9</td>
<td>6.7</td>
</tr>
</tbody>
</table>
DISCUSSION

The present cross-sectional study included 184 dentists from all governorates of Kuwait. The aim of the study was to assess the level of knowledge, attitude and practice of dentists regarding HBV vaccination; and identify the factors associated with such practice. In this study, the overall prevalence of HBV vaccination among dentists was 96.6%. Although the majority of participants have high rate of knowledge the correlation between the vaccination rate and knowledge was not significant. Moreover, knowledge score about vaccination was not significantly associated with the socio-demographic variables (age and gender) and with work-related variables (academic degree, working status, country from which highest degree obtained and government). Significant
association was only found between nationality and knowledge score with p value equal to 0.045, as well as with years of practice (p<0.001). Knowledge score was significantly higher for respondents with positive attitudes towards vaccination. However, no significant association was found between knowledge score and practicing vaccination. The results of the study can be used to develop awareness programs and plan interventions to sustain the level of knowledge about HBV vaccination among dentists.

Knowledge of dentists about HBV, vaccine, conditions recommended by CDC for vaccination and routes of transmission.

Soad A. Habiba. et.al, 2012 reported in their similar study that participants’ knowledge concerning the various aspects of HBV (knowledge of HBV infection, the routes of transmission of the infection, the ways of preventing the infection and the fact that the infection can be transmitted as a nosocomial infection) was generally high and consistent with current scientific evidence, since the majority were aware about HBV transmission from patients to HCWs (76.2%) and the standard precaution via vaccination (81.5%). In contrast, 57.7% knew that Hepatitis B can be transmitted from HCWs to patients. This indicated that there are wide areas where the knowledge was lower, particularly regarding infections from health worker to a patient. Another study done among Vietnamese American college students, found that those students had limited knowledge of their increased risk of HBV, which demonstrated the need for general HBV education. In our study, majority of the respondents demonstrated a high level of knowledge of HBV infection, the routes of transmission of the infection, the ways of preventing the infection and the fact that the infection can be transmitted as a nosocomial infection with a median of knowledge score reaching 14 out of 18. Also, we found that all respondents were aware that HBV can be acquired from patient to dentist, and 86.9% knew that the virus can be transmitted from dentist to patient.
Association of knowledge about vaccination with socio-demographic and work-related variables

In this study, it was shown that the knowledge score was significantly associated with nationality with (p=0.049 and mean ± std = 0.90 ± 0.45), in which Kuwaitis have higher knowledge score, but it was not significantly associated with gender, age, marital status, academic degree, working status, country of graduation, governorate and duration of graduation. In contrast to our study, higher knowledge scores was found among women than men; however, similarly age was not significantly associated with HBV knowledge (Jessica P. Hwang et al., 2008). As age of dentists, the median knowledge score expected to significantly increase, but this was not the case in our study since the majority of the participants were 40 years old or more. However, as duration of practicing advances, the median knowledge score significantly increases (p-value 0.001) and this is estimated because as the dentist gains more experience, he will tend to be more knowledgeable and more aware of the burden of hepatitis B.

Association of knowledge with attitude towards vaccination

Results of the present study showed that the median knowledge score was significantly higher, with p value equal to 0.000, for respondents with positive attitudes toward vaccination who believed that they are at risk due to the nature of their work, those who believed that HBV vaccine is effective in preventing the disease, and those who believed that the risk of death among the vaccinated is reduced compared to the non-vaccinated. This can be understood if one takes into consideration the fact that one’s beliefs and attitudes are directly affected by one’s knowledge. In other words, a dentist who knows about hepatitis B and its vaccine would certainly believe that he is at risk for the illness and that the vaccine is effective and lowers the risk of death. On the other hand, knowledge score was lower for respondents with negative attitudes toward vaccination however, this result was not significant and the only negative attitude toward vaccination that was significantly
associated with knowledge score is the following belief that they have limited contact with high-risk patient. These attitudes reflect without a doubt the knowledge of the respondent as was explained earlier.

**Association of knowledge with practice of HBV vaccination**

Our data showed no significant association between knowledge score and practice of vaccination. However, rate of vaccination among dentists (96.6%) was significantly related to knowing that HBV carrier may look healthy without showing any symptoms of the disease and HBV can be lethal, with a (p value of 0.000 and 0.013) respectively. On the other hand, (Soad A. Habiba. et.al, 2012) found in their study that though many of the respondents had a relatively high knowledge of the HBV infection and vaccine, only 74.7% of them had ever received hepatitis B vaccine. Moreover, a significant association found between the knowledge score and being up-to-date with the new guidelines of HBV vaccination. This is logical because those who appropriately recommend vaccination must have a higher level of awareness of the importance and preventative value of the vaccine compared to those who do not, and hence must be more knowledgeable. Though majority of participants apply preventive measures at work, this was not significantly associated with their high knowledge score. A possible reason for that is these preventive measures are not used exclusively for preventing HBV infection but they are applied routinely for some other reasons.

**Attitudes towards HBV vaccination**

In this study, participants were asked to respond to 9 items regarding positive attitude and 7 items regarding negative attitudes towards HBV vaccination. The majority of participants reported that they had a positive attitude towards the vaccination because they believed that they are at risk because of the nature of their work and believed in the effectiveness of the vaccine in preventing the disease. This suggests that dentists in primary health care centers and specialized centers as well as those working in the KUDCs predominantly use vaccination to reduce absenteeism due to hepatitis
B. Furthermore, they believed that hepatitis B is a serious illness. This finding is similar to those of another study (Soad A. Habiba. et.al, 2012), which showed that factors associated with a positive attitude towards vaccination were the belief in the efficacy of the vaccine and that their job puts them at risk of HBV infection (80.5%). In their study, they indicated that 87.1% reported their need to be protected from HBV infection, and 86.3% considered it necessary to receive the vaccine. In our study, we found that positive attitude toward HBV vaccination was also because of dentists’ awareness that vaccination can reduce transmission to patients, the vaccine is mandatory by higher health authority as well as the risk of acquiring hepatitis B is reduced compared to non-vaccinated. On the contrary, 14.7% had negative attitude toward vaccination due to their beliefs that they are worried about the vaccine’s adverse effects and 9.3% because vaccine is not available.

**Practices of dentists regarding HBV vaccination**

The present study showed no significant differences towards increase in vaccination rate among socio-demographic variables and work-related factors. This is plausible as HBV vaccine is mandatory for health care workers before starting their practice. An Italian survey (Di Giuseppe et.al, 2007) show that majority of dentists were not immunized against HBV, because 42.8% considered it useless and 33.3% unsafe. Fortunately, our study does not support this data. In another study (Alavian SM et.al, 2005) vaccination against HBV was done in 94.9% of dentists. This figure in our study has increased to 96.6%. Positive progress, although it is certainly not enough. Reports from several countries indicate that some dentists do not engage in safe practices, especially in wearing gloves, facemasks, or protective eye glasses (Alavian SM et.al, 2005). In contrast, Ali Kabir et.al, 2010, discovered that Iranian dentists are used to wearing double gloves, which is similar to our results.
Limitations

There are some potential limitations in this study that should be considered when interpreting the results. First, since the study was a descriptive cross-sectional study, therefore, no direct relationship between variables and outcomes can be proved. A second limitation is the potential reporting bias associated with the self administered questionnaire with the possibility that dentists tend to over-report compliance. Also, some participants responded next day, this may have led to increased variability in the data and potentially unknown biases.

Conclusions and recommendations

In conclusion, the vaccination rate against hepatitis B infection among dentists in primary health care, dental centers and Kuwait university dental clinics was 96.6%, which is satisfactory. Knowledge about hepatitis B virus, vaccine, and conditions recommended by CDC for vaccination were not significantly associated with socio-demographic and work-related variables except for nationality. In addition, knowledge was highly associated with positive attitudes toward vaccination. However, there was no association between knowledge and practicing vaccination. Based on the results of this study, health authorities may plan awareness programs and interventions to improve the level of knowledge in those with low level of knowledge about hepatitis B virus vaccination in order to prevent the burden of this disease among this high risk group.

Acknowledgements

We would like to express our appreciation to all participants and to our supervisor and colleagues who helped us to carry out this study.
References


12. CDC. Recommendations for preventing transmission of human immunodeficiency virus and hepatitis B virus to patients during exposure-prone invasive procedures. MMWR 1991;40(No. RR-8).


APPENDICES

1) Ethics Portfolio
2) Consent Forms and Permission Letters
3) Questionares
HSC Students’ Research Ethics Portfolio

Faculty dentistry

Project Title
knowledge, attitude and practice of HBV vaccination among dentist in Ministry of Health Dental Centers and Kuwait University Dental Center

Student Name(s)
maryam abdal\khyrat al-mousa

Tutor:
dr.Bobby Joseph

Date
27/11/2012
Human Subjects Form

Title: knowledge, attitude and practice of HBV vaccination among dentist in Ministry of Health Dental Centers, primary centers and Kuwait University Dental Center

Study Objectives:

- to assess knowledge, attitude and practice of HBV vaccination among dentist in Ministry of Health Dental Centers, primary centers and Kuwait University Dental Center

Human Subjects

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Are human subjects to be enrolled?

If yes, from which population will they be identified?

- General population, adults (specify: dentists in Ministry of Health Dental Centers, primary centers and Kuwait University Dental Center)
- General population, minors
- Patients, outpatient setting
- Patients, inpatient setting
- Other
Methods

The methods of the study include the following:

- Questionnaire

- Screening/diagnostic procedures/tests (specify: ______________________)

- Physical examination (specify: ______________________)

- Other (specify: ______________________)

Risks

Does the research pose any risk to participants in the following categories?

- Yes  No
  - Risks to social or psychological well-being? (specify: ______________________)
  - Risks to physical well-being? (specify: ______________________)
  - Conflict with local religious or cultural beliefs? (specify: ________________)
  - Risks over and above routine clinical care? (specify: ________________)
  - Risks from invasive procedures? (specify: ________________)
  - Other risks? (specify: ______________________)

Benefits

List the benefits the participant and/or medical science will receive from this study

**Improve the knowledge and awareness of HBV vaccination and help providing healthy protective dental environment by following preventive precautions**

- Yes  No
  - In your opinion, do the benefits outweigh the risk?
## Confidentiality

<table>
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Is confidentiality assured in this study?

If so, how?

- ☑ Anonymous data collection (name or identifying information not obtained)
- Name taken, but stored in a separate database from other study databases, which identify participants using ID numbers only.
- Study forms with identifiers are accessible to study personnel only, and are stored in locked cabinets.

Other precautions (specify: ____________________________)

## Informed Consent

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Consent form is prepared in Arabic and English.

Is it clearly stated that participation is voluntary, and that no negative consequences will result if the prospective participant does not choose to participate?

## Students’ Statement
We affirm that we will respect potential participants’ rights by obtaining consent that is both informed and not coerced. We will immediately report to the supervising tutor any problem or complication related to the conduct of our study.

maryam abdal

khayrat al-mousa

Dr. Bobby Joseph

Date: 27/11/2012
This HSC student's research project has been reviewed and approved.

Coordinator, Health Sciences Center Students’ research Committee

Date: ____________
Title of the Project:

Knowledge, attitude and practice of dentists in Ministry of Health, primary dental centers and Kuwait University Dental Centers regarding vaccination against Hepatitis B virus.

Aim of this research:

HBV is endemic in many parts of S.E. Asia. Kuwait employs many from such countries for domestic and low-skilled labor. Accordingly, the risk of exposure locally is high. Hence the aim of the study was to evaluate knowledge, attitudes and practice of the dental clinical team concerning HBV in local Dental centers and Kuwait university dental clinics.

The procedures involved in this study include:

In the study, there will be no medical or dental procedures provided to participants. Participants must only answer questions in a questionnaire. Answering (22) questions on this questionnaire, which should only take you about (5-10) minutes to be completed.

There are no risks to you if you participate in this research. Your participation will increase knowledge about this important issue. All information collected will remain confidential. Neither your name or your address will be recorded in any assessment. There is no obligation or compulsion for you to participate, and you have the freedom to agree or not agree to participate this will not have any effect on your right to receive the health care. You may quit from the research on any time.

Please indicate(✓) below if you wish to participate or decline to do so:

☐ I wish to participate

☐ I do not wish to participate

Signature of participant

Thank You for Your Cooperation...

Student name: Maryam Abdal + Khayrat Al-Mousa Faculty: dentistry
Supervised by: Dr. Bobby Joseph
جامعة الكويت
كلية طب الأسنان
قسم علم التشخيص
2013

إقرار مستنير للبالغين (كاملى الاهلية) بالموافقة

عنوان الدراسة: معرفة وموقف ومارسه أطباء الأسنان في مراكز طب الأسنان في وزارة الصحة و جامعة الكويت لطب الأسنان بشأن التطعيم ضد فيروس التهاب الكبد (ب)

الهدف من إجراء هذه الدراسة:
وباء الكبدي (ب) متوطن في أجزاء كثيرة من مناطق الشرق الأوسط بما فيها آسيا. الكويت تتوفر العديد من الأيدي العاملة المحلية الماهرة والمنخفضة من هذه البلدان. وفقاً لذلك، فإن خطر التعرض محلياً نظرية عالية. ومن هنا كان الهدف من هذه الدراسة هو تقييم معرفة وموقف ومارسه أطباء الأسنان بشأن وباء الكبدي (ب) في مراكز طب الأسنان المحلية وعيادات جامعة الكويت لطب الأسنان.

الإجراءات المتبعة في هذه الدراسة تتضمن التالي:
في هذه الدراسة، لن يكون هناك أي إجراءات طبية مقدمة للمشاركين وعلى المشاركين سؤال من (22) الإجابة على الأسئلة المطروحة في الاستبيان فقط ستكون الإجابة على خلال هذا الاستبيان المكون والذي يستغرق (5-10) دقيقة تقريبا. جميع المعلومات التي سيتم الحصول عليها من خلال هذه الدراسة سيتم التعامل معها بسرية تامة ولن يتم خلال هذه الدراسة إدراج الأسماء، ويعتبر الباحث بالموافقة على سرية المعلومات الخصوصية المشارك في هذه الدراسة اختيارية و غير ملزمة. ولكل الحريزة في الموافقة أو عدم الموافقة على المشاركة علماً بأن عدم الموافقة لن يؤثر على حقك في تلقي الرعاية الطبية المقررة لك. ولكل الحق في التحفظ على الإجابة أو الانسحاب من الدراسة في أي وقت.

الرجاء وضع علامة (✓) في المكان المناسب:
أرغب بالمشاركة
لا أرغب بالمشاركة

تشكر لكم حسن تعاونكم.

اسم الطالبة: مريم عبدال + خيرات الموسى
كلية: طب الأسنان
اسم المشرف على الدراسة: د. بوبي جوزيف
Knowledge, attitude and practice of HBV vaccination among dentists

28/2/2012

Ministry of Health

State of Kuwait

Act. Undersecretary for Planning & Quality

Reference: GUSA12/10/8/2013

2013/10/21

Dr. [Name]

Ministry of Health

Kuwait
لا يتطلب الأمر اعتماد توصية اللجنة والموافقة على مخاطبة الجهات ذات الصلة بموضوع البحث (السيد الوزير المساعد لشؤون طب الأسنان) بهذا الشكل للعمل على تسهيل مهمة الباحثين.

مع مراعاة التزامنا بالمحافظة على حقوق المرضى، وسرية المعلومات وعدم تداولها خارج إطار البحث والحصول على الإقرار المستنير من المشاركين بالبحث حسب الضوابط المنظمة لذلك.

فيما يلي، فإننا نقبل بالالتزام:

الدكتور / وليد خالد الفلاح
الوزير المساعد لشؤون التخطيط والجودة
رئيس اللجنة الدائمة لتنسيق البحوث الطبية والصحية

مرفق:
- الكتاب الورد من آ.د. عميد كلية الطب (المراجع 23/1/75)

P.O. Box: (5) 13001 Safat, Kuwait
Tel: 2486724 - 24867159 Fax: 2486739 - 24877957
الموضوع: تسهيل مهمة الطالبة / مريم عبد الله و الطالبة / خيرات الحموسي بإشراف الدكتور يسري جوزيف كلية طب الأسنان

يرجى التفضل بالإحاطة بأن اللجنة الفرعية المفوضة من اللجنة الدائمة لتنسيق البحوث الطبية والصحية المشكلة بموجب القرار الوزاري رقم 207/2012 قد أوصت باجتماعها المنعقد يوم 10/2/2013 الموافق 1/10/2013 إجراء البحث المقدم من الطالبة / مريم عبد الله و الطالبة / خيرات الحموسي بإشراف الدكتور يسري جوزيف كلية طب الأسنان تحت عنوان Knowledge, attitude and practice of HBV vaccination among dentists

ويتم البحث باستخدام استبان لجمع البيانات من أطباء الأسنان بعيادات و مراكز الأسنان بعد Informed Consent

إспешاء الإقرار المستنير من المشاركين بالبحث ولا يتضمن البحث الإطلاع على ملفات المرضى أو إجراء أي فحوصات أو تداخلات لهم.

لذلك يرجى الموافقة على توصية اللجنة الفرعية وتأمل مخاطبة السيد/ الوكيل المساعد لتسهيل مهمة الباحثين مع التزامهما بالمحافظة على حقوق المشاركين في الخصوصية وسرية المعلومات وعدم تداولها خارج إطار البحث و الحصول على الإقرار المستنير من المشاركين بالبحث حسب الضوابط المنظمة لذلك.

هذا وتفضلوا بقبول فائق الشكر والتقدير

نسبة: الدكتور / عميد كلية طب الأسنان

المؤرد

الدكتور يسري جوزيف

عنوان:

نسبة: الدكتور / عميد كلية طب الأسنان

المؤرد

الداً/ 10/2/2013

للهيام و الدعم
Knowledge, attitude and practice of dentists in Ministry of Health and Kuwait University Dental Centers regarding vaccination against Hepatitis B virus (HBV)

This questionnaire has been designed with the purpose of using the information to assess knowledge, attitude and practice of dentists regarding hepatitis B (HBV) vaccination.

Please (✓) the appropriate:

**PERSONAL DATA**

1. Gender:
   a. Male
   b. Female

2. Age:
   a. 25-30
   b. 31-35
   c. 36-40
   d. ≥ 40

3. Nationality:
   a. Kuwaiti
   b. Non-Kuwaiti

4. Marital status:
   a. Single
   b. Married
   c. Divorced
   d. Widowed

5. Do you have children?
   a. No
   b. Yes, how many:(   )

6. Educational status:
   a. Bachelor degree in dentistry
   b. Masters degree
   c. PhD degree
7. Current working status:
   a. Resident
   b. Assistant registrar
   c. Registrar
   d. General practitioner
   e. Specialist
   f. Consultant

8. From which country have you obtained your highest degree?
   a. Kuwait
   b. USA
   c. India
   d. Arab Countries
   e. European Countries
   f. Others, please specify: ...................

9. Government of work:
   a. Capital
   b. Hawalli
   c. Farwania
   d. Al-Ahmadi
   e. Al-Jahra

10. Number of years since graduation:
    a. <1
    b. 1
    c. 2
    d. 3
    e. ≥4

11. Number of years in practice:
    a. <1
    b. 1
    c. 2
    d. 3
    e. ≥4
KNOWLEDGE ABOUT (HBV)

12. Please respond to the following statements by entering (✓) in the appropriate box:

- HBV can be caused by bacteria
- HBV is contagious
- HBV carrier may look healthy without showing any symptoms of the disease
- HBV can be lethal
- Patients can spread hepatitis to dentists
- Dentists can spread the virus to their patients
- HBV vaccination is not for all people
- HBV vaccination does not cause hepatitis
- HBV vaccination can prevent hepatitis
- HBV vaccination does not increase the risk for complications
- HBV vaccination is contraindicated in pregnancy
- The antibodies for HBV need to be checked after three titers
- Potential routes of HBV in the dental setting may include which of the following:
  a. Broken skin in contact with saliva contaminated with blood of HBV positive patient
  b. Broken skin in contact with blood of HBV positive patient
  c. Broken skin in contact with saliva of HBV positive patient
  d. Intact skin with HBV positive patient
  e. Intact skin with intact skin of HBV positive patient
  f. Needle stick injury
  g. Aerosol produced by a hand piece

ATTITUDE TOWARDS (HBV) VACCINATION

13. I have a positive attitude towards HBV vaccination because of the following reasons:

- I am at risk because of the nature of my work
- Vaccination prevents spread of infection to patients
- Vaccination protects my family members
- Vaccination is mandatory by higher health authorities
- Hepatitis B is a serious disease
- Hepatitis vaccine is effective in preventing the disease
- The vaccine is available at my work place
• The risk of death among vaccinated persons is reduced compared to the non-vaccinated
• Others, please specify: .......................................................................................................................... 

14. I have a negative attitude towards HBV vaccination because of the following reasons:

YES                     NO
• I am worried about its adverse effects
• I am afraid of injection
• It is not effective in disease protection
• I am not at high risk of contracting HBV
• The vaccine is not available
• I have limited contact with high-risk persons
• Others, please specify: ..........................................................................................................................

PRACTICE

15. Were you infected with HBV before?
   a. No
   b. Yes, when: ............... 

16. Were you vaccinated against HBV?
   a. No
   b. Yes, when was the last vaccine received?.............. 

17. Do you routinely ask patients if they had been infected with HBV?
   a. No
   b. Yes
   c. Sometimes 

18. On average, what percentage of patients did you refer for hepatitis B vaccination during your career?
   a. < 10%
   b. 10-29%
   c. 30-39%
   d. 40-49%
   e. ≥50%
19. Do you recommend vaccination to your patients or family members?
   a. No
   b. Yes

20. Do you apply preventive measures at work (e.g. wearing mask, glasses, gloves, etc.)?
   a. No
   b. Yes

21. Are you up-to-date with the new guidelines regarding HBV vaccination?
   a. No
   b. Yes, through what:
      • Internet
      • Journal
      • Conference
      • Colleagues
      • Others, please specify: ........................................................................................................

22. Do you provide your patients with information about HBV vaccination?
   a. No
   b. Sometimes
   c. Yes

YOUR ANSWERS WILL BE TREATED AS STRICTLY CONFIDENTIAL
THANK YOU FOR YOUR CO-OPERATION
الاستبيان
جامعة الكويت, كلية طب الأسنان

مدى معرفة وسلوك وممارسات أطباء الأسنان في مراكز الصحة وعيادات جامعة الكويت لطب الأسنان تجاه فيروس التهاب الكبد الوبائي (ب) والتطعيم المستخدم ضده في الكويت.

والغرض من استخدام الاستبيان هو استخدام المعلومات لتقييم مدى معرفة وموقف وممارسة أطباء الأسنان إزاء التطعيم المستخدم ضد وباء الكبد (ب) (HBV)

الرجاء وضع علامة (✓) أمام اختيارك:

الرجاء وضع علامة (✓) أمام اختيارك:

الأول: الخصائص الاجتماعية الديموغرافية:

1. الجنس؟ ذكر □ أنثى □
2. العمر:
   - أ- 25-30
   - ب- 31-36
   - ت- 37-40
   - ث- >40
3. الجنسية:
   - أ- كويتي
   - ب- غير كويتي
4. الحالة الاجتماعية
   - أ- أعزب
   - ب- متزوج
   - ت- مطلق
   - ث- أرمل
5. هل لديك أطفال؟ لا □ نعم □ كم طفل؟ -----

3Membership □ 2Diploma □ 1B.M.,B.Ch. □
6. المستوى التعليمي؟ □
   - أي شهادات أخرى؟ ______
7. المسمى الوظيفي؟ □ مساعد مسجل □ مسجل □ مسجل أول □ اخصائي
□ اخصائي أول □ استشاري

8. من أي بلد تخرجت؟ □ الكويت □ المملكة المتحدة / أوروبا □ أمريكا □ كندا □ دول أخرى؟ ---

9. في أي محافظة تعمل؟ □ العاصمة □ حولي □ الروانية الإحمدي
□ الجهراء

10. منذ متى تخرجت؟
   □ أ- سنة □ ب- سنة □ ت- سنوات □ ث- ثلاث سنوات □ ج- أربع سنوات

11. منذ متى كنت تعمل في مجال طب الأسنان؟
   □ أ- سنة □ ب- سنة □ ت- سنوات □ ث- ثلاث سنوات □ ج- أربع سنوات

ثانيا: مدى المعرفة بتطعيم HBV

12. الهدف من هذا القسم هو تقييم مدى معرفة الأطباء بتطعيم HBV. الرجاء وضع علامة (✓) أمام اختيارك

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<td>هل يمكن الإصابة بHBV عن طريق البكتيريا؟</td>
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<td>HBV</td>
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مغذي HBV
قد يبدو أنه يتمتع بصحة جيدة ولا تظهر عليه أي عوارض للمرض

يمكن أن يؤدي حامل HBV للوفاة

يمكن أن ينقل المرضى المصابون بالتهاب الكبد الوبائي العدوى لأطباء الأسنان

يمكن لأطباء الأسنان نقل الفيروس لمرضى آخرين

تطعيم HBV لا يسبب التهاب الكبد الوبائي

تطعيم HBV لا يزيد فرص التعرض لتعقيدات

لا يمكن أخذ تطعيم HBV للمرأة الحامل

لا يمكن للفيروس أن يصبر

لا يمكن لتحفيز المضادات الحيوية في العلاج

الأسباب المحتملة للإصابة ب HBV في محيط طب الأسنان يمكن أن تتضمن التالي:

| A | جرح سطحي لامس لعاب ملوث بدم مريض HBV |
| B | جرح سطحي لامس دم مريض HBV |
| C | جرح سطحي لامس لعاب مريض HBV |
| D | بشرة سليمة لامست دم مريض HBV |
| E | بشرة سليمة لمريض HBV |
| F | الإصابة بحالة HBV |
| G | الإصابة بحالة HBV |
| H | الإصابة بحالة HBV |
| I | الإصابة بحالة HBV |
| J | الإصابة بحالة HBV |
| K | الإصابة بحالة HBV |
| L | الإصابة بحالة HBV |
| M | الإصابة بحالة HBV |
| N | الإصابة بحالة HBV |
| O | الإصابة بحالة HBV |
| P | الإصابة بحالة HBV |
| Q | الإصابة بحالة HBV |
| R | الإصابة بحالة HBV |
| S | الإصابة بحالة HBV |
| T | الإصابة بحالة HBV |
| U | الإصابة بحالة HBV |
| V | الإصابة بحالة HBV |
| W | الإصابة بحالة HBV |
| X | الإصابة بحالة HBV |
| Y | الإصابة بحالة HBV |
| Z | الإصابة بحالة HBV |
ثالثا: السلوك المصاحب للتطعيم ضد الانفلونزا الموسمية

13. الهدف من هذا القسم هو تقييم مدى معرفة الأطباء بتطعيم HBV
لني نظرة إيجابية تجاه تطعيم HBV للأسابيع التالية:

<table>
<thead>
<tr>
<th>الأسباب</th>
<th>نعم</th>
<th>لا</th>
</tr>
</thead>
<tbody>
<tr>
<td>أنا معرض للإصابة بسبب طبيعة عملي</td>
<td></td>
<td></td>
</tr>
<tr>
<td>التطعيم يمنع انتشار العدوى للمرضى</td>
<td></td>
<td></td>
</tr>
<tr>
<td>التطعيم يحمي أفراد عائلتي</td>
<td></td>
<td></td>
</tr>
<tr>
<td>التطعيم إجباري بأمر من السلطات الطبية العليا</td>
<td></td>
<td></td>
</tr>
<tr>
<td>التهاب الكبد الوبائي بمرض خطير</td>
<td></td>
<td></td>
</tr>
<tr>
<td>التطعيم ضد مرض التهاب الكبد الوبائي فعال للوقاية من المرض</td>
<td></td>
<td></td>
</tr>
<tr>
<td>التطعيم متوفر في مقر عملي</td>
<td></td>
<td></td>
</tr>
<tr>
<td>تم تقليل خطر وفاة الأشخاص الذين تلقوا تطعيم بالمقارنة مع الذين لم يتلقوا تطعيم</td>
<td></td>
<td></td>
</tr>
<tr>
<td>أسباب أخرى: -- ---------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. لي نظرة سلبية تجاه تطعيم HBV للأسابيع التالية:

<table>
<thead>
<tr>
<th>الأسباب</th>
<th>نعم</th>
<th>لا</th>
</tr>
</thead>
<tbody>
<tr>
<td>أنا قلق بشأن الأثار السلبية</td>
<td></td>
<td></td>
</tr>
<tr>
<td>أخاف من الحقة</td>
<td></td>
<td></td>
</tr>
<tr>
<td>لعدم فعاليتها في الحماية من الأمراض</td>
<td></td>
<td></td>
</tr>
<tr>
<td>لا أتعرض لخطر الإصابة بمرض التهاب الكبد الوبائي بتطعيم غير متوفر</td>
<td></td>
<td></td>
</tr>
<tr>
<td>اتصالي بالمرضى ممن لديهم عرضة للإصابة بالمرض قليل</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
رابعا: الممارسات المتعلقة بالتطعيم ضد التهاب الكبد الوبائي ب

15. هل سبق وأصبت ب HBV من قبل؟ 

لا ☐ نعم ☐

16. هل تلقيت تطعيم ضد HBV؟ 

لا ☐ نعم ☐

17. ما هي متوسط نسبة المرضى المصابين بالتهاب الكبد الوبائي ب الذين حولتهم طوال مسيرتك العملية؟

<10% ☐ 10-29% ☐ 30-39% ☐ 40-49% ☐ ≥50% ☐

18. هل توصي مرضاك وأفراد عائلتك بتلقي التطعيم؟ 

لا ☐ نعم ☐

19. هل تتخذ إجراءات وقائية في العمل كارتداء الإقنعة والنظارات والقفازات؟ 

لا ☐ نعم ☐

20. هل لديك اطلاع بأحدث الارشادات المتعلقة بتطعيم HBV؟ 

لا ☐ نعم عن طريق ☐

الانترنت ☐ الصحف ☐ المؤتمرات ☐ الزملاء ☐ أحبانيات؟

20. هل توفر معلومات عن تطعيم HBV لمرضاك؟ 

لا ☐ أحيانا ☐ نعم ☐