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Knowledge, Attitude and Behavior of Health Care Workers Regarding Hepatitis B Infection in Primary Health Care, Kuwait

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ABSTRACT

Background: Health care workers are a high-risk group for acquiring hepatitis B virus infection and for transmission to their patients and close contacts
Objective: The aim of the present study is to study health care workers' knowledge, attitudes and behavior towards hepatitis B virus transmission and protection in Kuwait.
Methods: This study was a cross-sectional survey that was conducted in all primary health center located in two randomly selected heath regions in Kuwait. An anonymous self-administered questionnaire was distributed to all currently working health care workers in the selected centers.
Results: Within 534 participants, 76.2% were aware that Hepatitis B can be acquired from patient to health workers, 57.7% knew that Hepatitis B can be transmitted from health workers to patients, 81.5% were aware about vaccination, 65.0% knew the complete vaccination schedule, 44.4% knew the intervals between doses. Also, 74.7% have ever been vaccinated. Among them, 84.0% received the complete doses. Lastly, 73.8% declared that they need more information regarding hepatitis B.
Conclusions: Health care workers in primary health care showed high to partial levels of knowledge and attitudes, regarding hepatitis B virus infection and vaccination with important gaps which need to be strengthened especially among non-vaccinated group.

INTRODUCTION

Hepatitis B virus (HBV) is a DNA virus and one of many unrelated viruses that cause viral hepatitis and can lead to liver cirrhosis and hepatocellular carcinoma. (Barker et al. 1970, Ozaras, 2009)More than three-quarters of its infections occur in Asia, Middle East and Africa. (Alavian, 2007, Williams, 2006)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)

HBV have common routes of transmission, such as occupational exposure among health care workers (HCWs), unprotected sexual contact, peri-natal transmission, intravenous drug use (Alavian et al. 2007, Pourkarim et al. 2009) or through blood products and contamination during medical procedures. (Alavian, 2007) Symptoms in HBV infection appear only in 35% of those infected. It has been demonstrated that patient medical histories are unreliable in identifying exposure to the infection. (Moghimi et al, 2009) The needle stick injuries are a hazard to HCWsand 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. Currently, between 5% and 10% of patients admitted to acute care hospitals acquire at least one infection and over the last decades the incidence has increased in both the United States and Europe. Eriksen et al. 2005, Pittet et al. 2005, Hopmans et al. 2007, Klevens et al. 2003, Pittet et al. 2008) Several effective evidence-based interventions for reducing the occurrence of HAIs has been proposed, and the Centers for Disease Control and Prevention has developedspecific guidelines aimed at preventing the transmission of pathogens within the hospital setting. (Brinsley et al.2005)

In Kuwait, a high prevalence of HBV was found among non-Kuwaiti Arabpopulation. (Ameen et al. 2005)and can lead to much morbidity and mortality.The aim of the present study is to evaluate primary health care workers' knowledge, attitudes and behavior towards HBV transmission and protection in Kuwait.

METHODOLOGY

The health care system in Kuwait is divided into five regional health authorities. Primary health care is provided through 92 centers distributed in the health regions proportionate to their population. This study was a cross sectional descriptive survey that was conducted from March to December 2011 in all PHC centers located in two randomly selected health regions (Capital and Farwaniya).

Data of this study was collected through a specially designed questionnaire that was derived from other published studies dealing with the same topic as well as from our own experience. It consisted of four sections. The first one was related to socio-demographic and occupational characteristics, the second was designed to test participants' knowledge about the risks of acquiring and/or transmitting HBV from/to a patient and precautions for prevention, the third and fourth sections contained questions related to participants' attitudes toward perception of the risk of acquiring HBV infection and practice of precautions. Correct answers to each item were based on a review of the available literature as well as policies and guidelines. (Brinsley et al. 2005, Greig, 2011).

A pilot study was carried out on 30 physicians and nurses (not included in the final study). This 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.

All the necessary approvals for carrying out the research were obtained. The Ethical Committee of the Kuwaiti Ministry of Health approved the research. A written format explaining the purpose of the research was prepared and signed by the physician before filling the questionnaire. In addition, the purpose and importance of the research were discussed with the director of the health center.

Statistical analysis

The Statistical Package for Social Sciences (SPSS-17) was used for data processing. Simple descriptive statistics were used (mean ± standard deviation for quantitative variables and frequency with percentage distribution for categorized variables).

RESULTS

Recruitment efforts resulted in participation of 534 persons with a response rate of 55%. Table 1 showed their socio-demographic and personal characteristics. Their mean age was 36.8±9 years. Females predominated male participants (69.7% versus 30.3%).

Nurses and doctors made up the majority of respondents interviewed accounting for 51.9% and 28.5% respectively whereas laboratory technicians, pharmacists, and other professions accounted for 19.6%of all respondents. Kuwaitis and non-Kuwaiti Arabs were more or less similarly presented, accounting for 31.6% and 30.4% respectively, while the non-Arabs constituted 38.0%. More than three-quarters of the respondents (81.8%) had university or higher educational level, 85.8% were married, less than 10% were current smokers, and 65.3% had monthly income <1000 KD whereas only 7.7% had $\geq$ 2000 KD income.

The mean years spent by participants in the current job was 11.5±8.6 years, with 48.7% of the them worked in their jobs for less than 10 years and the mean number of working hours / week ranged from 30 to 100 (42.5±6.1 hours).Only 2.2% had a family history of hepatitis A infection and 3.0% of HBV or HCV.

Table 2 presented HCWs' knowledge regarding HBV. More than threequarters of the respondents (76.2%) were aware that HBV can be acquired from patient to HCWs and 57.7% knew that the virus can be transmitted from HCWs to patients. Moreover, 74.0% of the respondents considered it as serious disease. The majority of the respondents (81.5%) were aware of HBV vaccine, 65.9% were aware about thenumber of doses of vaccination required for complete protection, whereas only 44.4% answered correctly about expected interval between the last dose and the dose preceding it. Lastly, 73.8% of HCWs declared that they need more information about hepatitis B.

Table 3 showed that most of the respondents (80.5%) felt that their jobs puts them at risk of contracting HBV infection, 68.9% believed that their lifestyle puts them at risk of infection, 87.1% believed that they need to be protected from hepatitis B infection, 68.4% believed that a health worker mayinfect patients if he is a carrier of HBV, 86.3% believed that it necessary to be protected by vaccination, and only 69.7% stated that their children received hepatitis B Vaccine.

As shown in table 4, about three quarters of the respondents (74.7%) have actually ever received Hepatitis B vaccine. Among them, only 84.0% completed the vaccination doses. Within those who have never received any dose of vaccine, 79.3% gave no specific reason for that.

Table 1: Socio-demographic characteristics of the respondents

Variable	No.	%
Age in years		
<30	124	23.2
30-	352	65.9
≥50	58	10.9
Gender		
Male	162	30.3
Female	372	69.7
Marital status		
Single	66	12.4
Married	458	85.8
Widow or divorced	10	1.8
Jobs		
Nurses	277	51.9
Physician	152	28.5
Laboratory technician	52	9.7
Pharmacist	28	5.2
Other	25	4.7
Nationality		
Kuwaiti	169	31.6
Arab	162	30.4
Non-Arab	203	38.0
Educational level		
2ry	97	18.2
University	287	53.7
Higher	150	28.1
Monthly income in KD		
<500	226	42.3
500-999	123	23.0
1000-1499	96	18.0
1500-1999	48	9.0
≥2000	41	7.7
Years on current job		
<10	260	48.7
10-	184	34.5
20-	62	11.6
≥30	28	5.2

Working hours/ week		
<40	192	36.0
40-59	330	62.9
≥60	6	1.1
Smoking / day		
non	494	92.5
1-10	14	2.6
11-20	17	3.2
≥20	9	1.7
Smoking duration (smokers only)		
<10	12	30.0
10-19	14	35.0
≥20	14	35.0
Family history of hepatitis A		
No	522	97.8
Yes	12	2.2
Family history of hepatitis B Or C		
No	518	97.0
Yes	16	3.0
Total	**534**	**100.0**

Table 2: Percentage of participants with correct answers regarding hepatitis B

Items	No.	%
Hepatitis B can be acquired from patient to health care workers	407	76.2
Hepatitis B can be transmitted from health care workers to patients	308	57.7
Hepatitis B is a serious disease	395	74.0
Awareness of hepatitis B vaccine	435	81.5
Doses of hepatitis B vaccine required for complete protection	352	65.9
Expected interval between the last dose and the dose preceding it	237	44.4
Total	534	100.0

Table 3: Attitude of respondents towards hepatitis B infection

Attitude towards hepatitis B infection.	Agree %	Uncertain %	Disagree %	Total
Your job puts you at risk of hepatitis B infection	80.5	9.6	9.9	534
Your lifestyle puts you at risk of hepatitis B infection	68.9	20.2	10.9	534
You need to be protected from hepatitis B infection	87.1	3.0	9.9	534
You may infect patients if you are carrier of hepatitis B virus	68.4	21.0	10.7	534
You consider it necessary to receive hepatitis B vaccine	86.3	3.4	10.3	534
Your children received hepatitis B Vaccine	69.7	14.2	16.1	534

Table 4: Behavior of respondents towards hepatitis B vaccination

Behavior	No.	%
Ever received hepatitis B Vaccine		
No	135	25.3
Yes	399	74.7
Reason for not being Vaccinated (for unvaccinated only)		
No specific reason	107	79.3
Cannot be infected from patient	6	4.4
Very careful	11	8.1
Too busy	11	8.1
Number of doses of vaccine received (for vaccinated only)		
one	15	3.8
Two	41	10.3
Three	335	84.0
Do not remember	8	2.0
Do you think you have received completed vaccination schedule?		
no	53	13.3
yes	328	82.2
Do not know	18	4.5
Do you feel you need more information about hepatitis B?		
No	140	26.2
Yes	394	73.8
Total	**534**	**100.0**

DISCUSSION

HBV is an important occupational hazard for health workers. It is preventable with a safe and effective vaccine. (WHO, 2000) It is easy to generally assume that health workers by virtue of their proximity to the health facility should have adequate knowledge about diseases and other health conditions.

Samuel et al. (2009) reported in their similar study that a 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. In the present study, participants' knowledge concerning the various aspects of HBV was generally high and consistent with current scientific evidence, since themajority 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. The current study revealed that 65.9% of the respondents knew the correct doses of hepatitis B vaccine required for complete protection and only 44.4% knew the expected interval between last dose and dose preceding it. Based on this consideration, this specific population needs to learn more in order to reduce the rate of HBV infection. Continuing medical benefits in the primary health care environment require continuing educational input. This finding is however at variance with another study done in Karachi (Pakistan) where the respondents demonstrated a very low knowledge of HBV infection. (Shaheen et al 2007)

Another finding was that the attitudes towards HBV infections were encouraging, since a high percentage of respondents reported positive specific beliefs. In particular, 80.5%% indicated that their job puts them at risk of HBV infection, 87.1% reported their need to be protected from HBV infection, and 86.3% considered it necessary to receive the vaccine. This finding is encouraging considering the fact that knowledge is usually the first step towards modification of a desirable behavior. However, despite the respondents' high knowledge of the infection, a third of them believed that infection could not be transmitted from them to patients This gap in knowledge of risk perception calls for concern among all people seeing that health workers have a high risk of being infected with HBV because of their high frequency of exposure to blood and other body fluids coupled with the high contagiousness of HBV. (Bhat, 2012)

The vaccine against HBV infection has been available since 1982. (WHO, 2000) Hepatitis B vaccine is 95% effective in preventing HBV infection and its chronic consequences, and it is the first vaccine against a major human cancer. (Margolis et al. 1991)However, vaccination rates in Elizabeth et al. (2001) study have been found to be low among health care providers although due to their level of exposure were supposed to have higher vaccine coverage rates.

In the current study, though many of the respondents had a positive attitude towards the HBV infection and vaccine, only 74.7% of them had ever received hepatitis B vaccine. Compared to some other studies where the vaccination rate among HCWs was 5.1%, it is considered high. (Elizabeth et al. 2001, Abdul et al. 2007)In consistent with other studies there are many potential reasons for not being vaccinatedas busy schedules, being very carefuland cannot be infected from patient, lack of knowledge about severity and vaccine efficacy, perception of low risk status, the bother of a sore arm. (Elizabeth et al. 2001, Abdul et al. 2007)It is however noteworthy that only 84.0% of those who started the vaccination program completed the schedule. This is not in line with a study done on viral hepatitis where 41.2% of vaccinated participants received the three doses. (Karl, 2008)It is however much higher than findings from othertwo studies done among health workers in which only 37.9 and 18.1% of their respondents were reported to be fully vaccinated against HBV infection. (Sofola et al. 2007, Adebamowo, 1998)

This lack of compliance to hepatitis B vaccination among health workers calls for concern among people seeing that the only way to prevent HBV infection among health workers is through effective vaccination program and adherence to universal precaution which often times cannot be guaranteed. Poor compliance of health workers to hepatitis B vaccination is an issue that deserves serious attention for which some authorshave advocated for mandatory vaccination program. (Gunson et al. 2003, Saffar et al. 2005) There is a need for health education campaigns for health workers so that they can understand the risks that they are exposed to based on the nature of their work.

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 HCWs tend to over-report compliance. A final limitation was that the response rate of 55% was disappointingly low that may affect the internal validity of the findings and may decrease the overall generalizability of the results.

CONCLUSIONS

Knowledge, attitudes and practices about hepatitis B among HCWs was high to partial, with important gaps which need to be strengthened especially among non-vaccinated group. Measures should be taken by health care managers as well as government by running awareness programs to avoid the occurrence of these problems.

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