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RESEARCH ARTICLE

EXAMINING THE KNOWLEDGE AND ATTITUDE REGARDING HEPATITIS B VACCINE AMONG PRIMARY HEALTH WORKERS; A CROSS-SECTIONAL STUDY IN AL-MADINAH AL-MUNAWARAH

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ABSTRACT

There is significant variation in the knowledge and attitude of health workers relating to the vaccination of HBV infection. Therefore, the present study aims to examine the knowledge and attitude of health workers towards HBV infection and its vaccination in Al-Madinah Al-Munawarah. A cross-sectional study was conducted by recruiting 53 health workers in Al-Madinah Al-Munawarah. The data for this study was collected using a self-administered questionnaire, based on Likert scale (Yes, No, Not Sure). The data entry and analysis for this study was carried on using Statistical Package for Social Science. Majority of the health workers (84.9%) were aware that HBV can be acquired from patients. Moreover, 75.5% were aware of HBV vaccine and that it helps in preventing the development of HBV. Majority of the health workers (94.3%) believed that their jobs puts them at risk of contracting HBV infection. The study has concluded that level of knowledge among the health workers was satisfactory and it was significantly associated with positive attitudes toward vaccination.

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INTRODUCTION

Hepatitis B (HB) infection is known among the major public health problem as it is the leading cause of mortality across the world (Oyewusi *et al*., 2015; Al-Hazmi, 2015). According to Centers for Disease Control and Prevention (2017), HB infection being a blood borne infection is about 50 – 100 times more infectious as compared to other deadly diseases including Human Immunodeficiency Virus (HIV). The occurrence of chronic liver disease is directly associated with the development of HB infection that accounts for 80% of the mortalities associated with the development of liver cancer (Bello & Musa, 2016). After tobacco, the development of HB infection is termed as the most significant human carcinogen (Juon & Park, 2013; Al-Hazmi, 2015). The different ways of HB virus (HBV) is through blood transfusions, vertical transmission, sexual intercourse, or transfusion of body fluids (Nazzal & Sobuh, 2014). According to the recent report by WHO (2017), it has been shown that 257 million people get affected with chronic HBV. There is an increase in rate of mortality from hepatocellular carcinoma and liver cirrhosis because of chronic HBV infection (Turati *et al*., 2012). There is increased risk of contracting HBV among the health workers because of their job nature as they get exposed to blood-borne pathogens (Abeje & Azage, 2015). The health workers are not practicing effective preventive measures; although, there is significant increase in prevalence of HB. The risk of developing HBV is increased among these workers because they are in direct contact with infectious materials including needle stick of contaminated body fluids. This might have negative impact on their safety, well-being, and duty delivered by them (Ayalew *et al*., 2016). The occupational exposure to HBV may cause the health workers to acquire infectious pathogens and also influence their mental health. The duty performed by health workers expose them towards risk of developing HBV infection; however, their participation in vaccination is low (Adekanle *et al*., 2015). The universal precaution designed by Center of Disease Control should be familiarized by the health workers. These precautions are designed for preventing transmission of blood-borne pathogens, during the procedure of providing health care to the HBV patients. The blood and certain body fluids of HBV patients are considered as major source of transmitting infection under the universal precautions (Mesfin & Kibret, 2013). A safe and effective vaccine against HBV has been developed in the last 20 years that protects from developing infection and serious consequences of hepatitis. If the vaccine is administered before getting exposed to the infection might help in fighting against cirrhosis and liver cancer (Hamissi *et al*., 2014). It has been shown that administration of HBV vaccine provides long-term protection from developing HBV infection, may be for lifetime (Ayalew *et al*., 2016). The combination of hepatitis B immunoglobulin and a vaccination with hepatitis B vaccine is likely to be administered as passive immunization after getting exposed to

blood or bodily fluids. The compliance to standard precaution and pre-exposure vaccination are considered as the most cost-effective methods for preventing the development of HBV. It is important to have enough knowledge and adequate attitude towards the HBV infection and prevent its occupational exposures. The health workers are recommended to have post-vaccination testing with a gap of one to three months after having the vaccine dose as they are continuously in contact with the infected blood (Abdal *et al*., 2013). There is significant variation in the knowledge and attitude of health workers relating to the vaccination of HBV infection. Previous studies have narrated that the knowledge and attitude of health workers towards HBV infection and its vaccination is inadequate (Habib *et al*., 2011; Ayalew *et al*., 2016). Moreover, there are limited studies conducted in Saudi Arabia that assess the knowledge and attitude of HBV and its vaccination among health workers. Therefore, the present study aims to examine the knowledge and attitude of health workers towards HBV infection and its vaccination in Al-Madinah Al-Munawarah. The study also identifies the factors that affect the knowledge and attitude of health workers towards HBV infection and vaccination. The research questions addressed in the present study are as follows;

- How do the health workers prevent themselves from acquiring HBV?
- What do the health workers know about HBV vaccine as an important preventive measure?

MATERIAL AND METHODS

Study Design and Setting: The present study has employed cross-sectional analysis to examine the knowledge and attitude of health workers regarding HBV vaccination in the health-care centers situation in Al-Madinah Al-Munawarah. The study was conducted from April 2018 to December 2018.

Study Participants: The target population for this study was health professionals from different primary health-care centers. However, a representative sample of 53 health workers from recruited from different centers situated in Al-Madinah Al-Munawarah.

Inclusion and Exclusion Criteria: The participants having minimum 6 months of working experience and aged between 20 – 40 years were included in the study. Whereas, the student nurses and visiting consultants were excluded from the study.

Ethical Consideration: Each participant has to sign informed consent before getting enrolled in the study. It was clearly mentioned on the consent form that participation was not obligatory and there was no harm in either participating or refusing to participate in the study. The participants were ensured their anonymity as the names of none of the participants were recorded. Permission was also obtained from the administrative authorities at each included primary health care center. The study procedures commenced after getting approved by the Departmental Ethics Review Board, and the Joint Research Ethics Committee of the Health Science Center.

Data Collection Tool: The data for this study was collected using a self-administered questionnaire, based on Likert scale (Yes, No, Not Sure). The applicability of tools was tested and difficulties faced during the application were identified by conducting a pilot study.

Questionnaire Description

The questionnaire comprised of 3 sections;

- Section 1 – Demographic characteristics of the participants
- Section 2 – Knowledge about HBV virus and vaccination
- Section 3 – Attitude towards getting HBV vaccinations

Data Analysis: The data entry and analysis for this study was carried on using statistical Package for Social Science (SPSS Inc., Chicago, IL, USA, 2008) version 20.

The association between study variables was calculated through descriptive statistics and chi-square tests. The distributions and frequencies of the variables was determined using descriptive statistics.

RESULTS

In the present cross-sectional study, 53 health workers from primary health-care centre were approached. The demographic profile of the participants has been illustrated in table 1. The analysis showed that 73.6% of the health workers were males; while, 26.4% were females. Saudi and non-Saudi were not similarly presented, accounting for 81.1% and 18.9%, respectively.

Table 1. Demographic Profile of the Participants

Measure	Items	Frequency	Percentage (%)
Gender	Male	39	73.6
	Female	14	26.4
Age	20 – 25 years	26	49.1
	26 – 30 years	12	22.6
	31 –35 years	9	17.0
	36 – 40 years	6	11.3
Nationality	Saudi	43	81.1
	Non-Saudi	10	18.9
Educational Status	Bachelors	13	24.5
	Masters	30	56.6
	PhD	10	18.9
Work Experience	<1 year	24	45.3
	1 year	4	7.5
	2 years	6	11.3
	3 years	15	28.3
	> 4 years	4	7.5

Majority of them (56.6%) had master degree. Furthermore, majority of the health workers (45.3%) were in this field since less than 1 year. The level of knowledge among the health workers has been presented in table 2. The results have shown that majority of the health workers were aware about HBV virus and its vaccination. Majority of the participants (84.9%) were aware that HBV can be acquired from patient to health workers. Moreover, 75.5% were aware of HBV vaccine and that it helps in preventing the development of HBV. There was significant association between knowledge score about HBV vaccination and socio demographic characteristics (gender). **Table 3** has demonstrated that majority of the health workers (94.3%) believed that their jobs puts them at risk of contracting HBV infection and it is a serious disease (88.7%). They had a positive attitude towards getting vaccinated for HBV (92.5%).

DISCUSSION

The present study has included 53 health workers from different health-care centers in Al-Madinah Al-Munawarah. The main aim of the study was to examine the knowledge and attitude of health workers towards HBV vaccination. However, the results have shown that the overall prevalence of HBV vaccination among the health-care professionals was satisfactory. A similar study conducted by Abdal *et al*. (2013) showed no significant association between socio-demographic variables and work-related variables. However, the health workers with positive attitude towards vaccination had high knowledge score (Abdal *et al*., 2013). A study conducted in 2012 reported that knowledge of individuals regarding different aspects of HBV including its transmission, prevention, and vaccination was high. Around 81.5% of the participants considered vaccination as a standard precautionary measure against HBV infection (Alnoumas *et al*., 2012). Previous studies have confirmed the fact that vaccination is among the effective ways that helps in preventing the development of HBV infection (Singhal *et al*., 2009; Kesieme *et al*., 2011; Nalli *et al*., 2017). The health workers should also try to avoid being exposed to contaminated blood or other body fluids of the affected individual.

Table 2. Knowledge about HBV virus and vaccination

Measure	Items	Frequency	Percentage (%)	p-value
HBV can be caused by bacteria	Yes	15	28.3	0.001
	No	8	15.1	
	Not Sure	30	56.6	
HBV is contagious	Yes	38	71.7	0.000
	No	11	20.8	
	Not Sure	4	7.5	
HBV carrier may look healthy without showing any symptoms of the disease	Yes	27	50.9	0.000
	No	5	9.4	
	Not Sure	21	39.6	
HBV can be lethal	Yes	12	22.6	0.000
	No	29	54.7	
	Not Sure	12	22.6	
Patients can spread hepatitis to health-care professionals	Yes	45	84.9	0.000
	No	5	9.4	
	Not Sure	3	5.7	
HBV vaccination is not for all people	Yes	6	11.3	0.000
	No	40	75.5	
	Not Sure	7	13.2	
HBV vaccination does not cause hepatitis	Yes	25	47.2	0.000
	No	16	30.2	
	Not Sure	12	22.6	
HBV vaccination can prevent hepatitis	Yes	40	75.5	0.000
	No	6	11.3	
	Not Sure	7	13.2	
HBV vaccination does not increase the risk for complications	Yes	43	81.1	0.000
	No	2	3.8	
	Not Sure	8	15.1	
The antibodies for HBV need to be checked after three titers	Yes	27	50.9	0.000

Table 3. Attitude towards getting HBV vaccinations

Measure	Items	Frequency	Percentage (%)	p-value
I am at risk because of the nature of my work	Yes	50	94.3	0.003
	No	3	5.7	
	Not Sure	-	-	
Vaccination prevents spread of infection to patients	Yes	32	60.4	0.000
	No	5	9.4	
	Not Sure	16	30.2	
Vaccination protects my family members	Yes	27	50.9	0.000
	No	10	18.9	
	Not Sure	16	30.2	
Vaccination is mandatory by higher health authorities	Yes	37	69.8	0.000
	No	11	20.8	
	Not Sure	5	9.4	
Hepatitis B is a serious disease	Yes	47	88.7	0.000
	No	-	-	
	Not Sure	6	11.3	
Hepatitis vaccine is effective in preventing the disease	Yes	49	92.5	0.001
	No	-	-	
	Not Sure	4	7.5	
The vaccine is available at my work place	Yes	16	30.2	0.000
	No	29	54.7	
	Not Sure	8	15.1	
The risk of death among vaccinated persons is reduced compared to the non-vaccinated	Yes	38	71.7	0.000
	No	5	9.4	
	Not Sure	10	18.9	

These findings were supported by Noubiap *et al*. (2013), who stated that there was improvement in the vaccination status as the health workers progressed their successive professional working years. The level of knowledge among the health-care professionals in the present study was satisfactory as they were aware about the modes of transmission of HBV infection and its prevention through proper vaccination. These results were consistent with the studies conducted by Singh and Jain (2011) and Giri and Phalke (2014). Moreover, Khan *et al*. (2010) has assessed the level of knowledge for HBV vaccination among the medical students, which showed that 57.1% were well-aware about the negative impact of HBV infection. A similar study conducted in University of Gondar hospital assessed the level of knowledge and attitude among the health-care professionals, which showed that 94% of them believed that HBV vaccination is necessary because their job duty puts them at greater risk of developing HBV infection (Ayalew *et al*., 2016).

However, the study results have also shown medical doctors have better level of awareness and knowledge of HBV vaccination as compared to the health-care professionals. This clearly indicates that there is variation in the knowledge of health-care professionals across different professions (Ayalew *et al*., 2016). These results were supported by another study conducted by Gashu (2015), who stated showed that knowledge of health-care professionals about occupational transmission of HBV infection was good and satisfactory. A study conducted by Alnoumas *et al*. (2012) in Kuwait showed that 80.5% of the health care workers knew that they were at higher risk of getting HBV infection because of their job; whereas, 86.3% accepted that it was necessary to receive the vaccine. Abeje and Azage (2015) showed that they were aware about the high risk of acquiring HBV infection, which is similar to results deduced in the present study.

Hassan *et al*. (2016) revealed that there was significant association between type of profession and level of knowledge of health workers regarding HBV transmission and prevention through vaccination. In the present study, majority of the health workers considered HBV vaccination among the most reliable means of preventing infection. These results were similar to the study conducted by Biradar *et al*. (2017). The health workers had positive attitude, when they were inquired about treating a HBV patient or getting along with HBV positive colleague. The hospital administrators and policy makers should consider the expansion of current preventive facilities provided to health workers against HBV infection because majority of them were concerned about the negative impact of being exposed to risky conditions. However, the study results are limited because the information in this study was obtained through self-reported questionnaire; therefore, it is not essential that it reflects the accurate knowledge. The study findings have been compared with studies conducted on medical students and not the health workers because of lack of studies concerning the knowledge and attitudes of health workers. Moreover, the sample size considered in this study is limited and no direct relationship between variables and outcomes was proved as it is a descriptive cross-sectional study.

CONCLUSION

The present study has assessed the knowledge and attitude of health workers toward HBV vaccination. The results depicted a positive attitude of health workers toward getting vaccines for preventing the development of HBV. The level of knowledge among the health workers was satisfactory and it was significantly associated with positive attitudes toward vaccination. The study results are likely to help in the development of awareness programs and other interventions for sustaining the level of knowledge regarding HBV vaccination among healthcare professionals. This would help in improving the level of knowledge and also decrease the burden of this disease among individuals at high risk. Future studies need to consider a larger sample size and covering different geographical regions to compare the level of knowledge among individuals from different geographical regions.

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Appendix

Questionnaire

Section 1: Demographic Detail

- Gender
- Male
- Female

- Age
- 25-30 years
- 31-35 years
- 36-40 years
- >40 years

- Nationality
- Saudi
- Non-Saudi

•Educational Status
•Bachelors
•Masters
•PhD

- Working Experience
- <1 year
- 1 year
- 2 years
- 3 years
- >4 years

Section 2: Knowledge about HBV virus and vaccination

- HBV can be caused by bacteria

Yes	No	Not Sure

- HBV is contagious

Yes	No	Not Sure

- HBV carrier may look healthy without showing any symptoms of the disease

Yes	No	Not Sure

- HBV can be lethal

Yes	No	Not Sure

- Patients can spread hepatitis to health-care professionals

Yes	No	Not Sure

- HBV vaccination is not for all people

Yes	No	Not Sure

- HBV vaccination does not cause hepatitis

Yes	No	Not Sure

- HBV vaccination can prevent hepatitis

Yes	No	Not Sure

- HBV vaccination does not increase the risk for complications

Yes	No	Not Sure

- The antibodies for HBV need to be checked after three titers

Yes	No	Not Sure

Continue …

Section 3: Attitude towards getting HBV vaccinations

- I am at risk because of the nature of my work

Yes	No	Not Sure

- Vaccination prevents spread of infection to patients

Yes	No	Not Sure

- Vaccination protects my family members

Yes	No	Not Sure

- Vaccination is mandatory by higher health authorities

Yes	No	Not Sure

- Hepatitis B is a serious disease

Yes	No	Not Sure

- Hepatitis vaccine is effective in preventing the disease

Yes	No	Not Sure

- The vaccine is available at my work place

Yes	No	Not Sure

- The risk of death among vaccinated persons is reduced compared to the non-vaccinated

Yes	No	Not Sure

****