

Knowledge, Attitude and Practice of Primary Healthcare Workers Toward Occupational Risk of Hepatitis B Virus at Security Force Hospital in Riyadh, Saudi Arabia

Reem Naif AL-Mutairi

Family Medicine Department, Diabetic Center, Hafer Albatan, Saudi Arabia.

ABSTRACT

Background: Hepatitis B virus (HBV) infection is a well-recognized occupational risk for all healthcare workers (HCWs) worldwide.

Objective: This study aimed to assess the knowledge, attitudes, and practices of primary healthcare workers (included physicians, nurses, lab and dental technicians) at SFH regarding the occupational risks of HBV.

Methods: In this cross-sectional study, a questionnaire survey was administered to 168 of primary healthcare workers at Family and Community Medicine Department in SFH in Riyadh, Saudi Arabia during November to December of 2014. The questionnaire contained questions concerning the knowledge base, attitudes and practices of primary healthcare workers regarding the occupational risks of HBV.

Results: The response rate of 79% yielded 133 questionnaires for analysis. One hundred fourteen (88.4%) of PHWs felt at high risk of contracting and spreading HBV. 87% considered the HBV vaccine safe for all ages but only 76.5% were vaccinated. 57 (44.9%) primary healthcare workers have no idea about the seromarkers of the highly infectious or contagious patients. Furthermore Only 23 (17.6%) recognized that HBV is resistant to alcohol and to some detergents. During surgical procedures, only 33.6% of primary healthcare workers always use double gloves and 34.9% of them wear glasses.

INTRODUCTION

Hepatitis B Virus (HBV) infection is a serious global health problem. It is more than two billion individuals with serological evidence of Hepatitis B infection worldwide. 400 million of these are chronic carriers.^{1,2} HBV is one of the most highly infectious diseases without seasonal distribution and is the tenth leading cause of death globally.³⁻⁵

The virus is transmitted in the blood and in secretions, which can be diagnosed during acute and chronic phases. Acute infection may cause a self-limited disease or fulminant hepatitis, which requires urgent liver transplantation.^{3,5,6}

Chronic hepatitis B (CHB) causes death associated with cirrhosis, liver failure, and hepatocellular carcinoma.^{3,6} The prevalence of Hepatitis B Virus infection varies greatly from one country to another and from different groups or regions of the same country.⁷ Specific risk groups are of great importance in the epidemiological profile of Viral Hepatitis. The incidence of Hepatitis B Virus is

Almost all our PHWs were willing to subscribe to regular training programs concerning HBV.

Conclusions: A lack of knowledge was determined especially among lab and dental technicians, the practices of our PHWs concerning the occupational risks of HBV appeared inappropriate and more suitable attitudes of PHWs toward the HBV infection. More education focusing on HBV is recommended.

Keywords: Knowledge, Attitude, Practice, Primary Healthcare Workers, Occupational Risk of HBV, Saudi Arabia.

*Correspondence to:

Dr. Reem Naif AL-Mutairi

Family Medicine Department,
Diabetic Center, Hafer Albatan, Saudi Arabia.

Article History:

Received: 10-07-2017, Revised: 29-07-2017, Accepted: 13-08-2017

Access this article online	
Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2017.3.5.013	

particularly high among those individuals whose habits, illness or occupations bring them into contact with infected blood, blood products or other body fluids such as saliva or semen.^{7,8}

According to the WHO reports, each year approximately three million of the overall 35 million Healthcare Workers worldwide experience percutaneous exposure to blood borne viruses resulting 66 000 Hepatitis B infections, mainly from low-income countries.⁹

Healthcare workers are known to have 2-4 fold risk of hepatitis infection compared to the general population.¹⁰ An additional risk factor for the acquisition of HBV among HCWs is the underlying prevalence of HBV infection in the population.^{3,11} Thus, the disease has particular implications for PHWs in Saudi Arabia, which is considered to be an area of endemic HBV infection.^{3,12}

Poor compliance and adherence to universal precaution standards by hospital management and HCWs as well as the lack of

advanced knowledge of HCWs as health providers were considered among the factors that may constitute a major obstacle barring the implementation of preventive programs^{9,13,14}. The present study was designed to assess the level of knowledge, the attitude and practice of primary health care workers toward occupational risk of HBV in SFH in Riyadh, Saudi Arabia.

METHODS

A descriptive cross-sectional study was carried out among primary healthcare workers at primary health care clinics at Department of Family and Community Medicine in Security forces hospital in Riyadh, Saudi Arabia.

All were invited to participate in the study (n=168). Those who joined the hospital during study period were excluded from

participation. The data was collected using a validated structured English questionnaire. It consisted of 29 "closed-ended questions". The first part covered the demographic characteristics of the primary healthcare workers. The second part of the questionnaire contained 23 closed-ended questions with variable items 2-15 focusing on the primary healthcare workers' knowledge base, attitudes and important points concerning the prevention and control of HBV in their daily practices.

The study was approved by research committee at academic department of SFH.

Categorical data was summarized as number and percentages, to study the association between demographic data and study questionnaire about knowledge, practice and attitude, chi-square test was used. All the analysis are performed using SPSS 20.

Table 1: Distribution of primary healthcare workers to their general characteristics.

Variable	Level	N = 133	%
Gender	Male	74.00	57.8
	Female	54.00	42.2
	Missing	5.00	-
Age	25-35years	49.00	37.4
	36-45 years	41.00	31.3
	>45 years	41.00	31.3
	Missing	2.00	-
Nationality	Saudi	39.00	29.8
	Non-Saudi	92.00	70.2
	Missing	2.00	-
Job's status	Physician	53.00	40.5
	Nurse	63.00	48.1
	Dental technician	4.00	3.1
	Lab technician	11.00	8.4
	Missing	2.00	-
Years in practice	1-5 years	32.00	24.4
	6-10 years	33.00	25.2
	> 10 years	66.00	50.4
	Missing	2.00	-

Figure 1: Immunity status of primary healthcare workers regarding HBV.

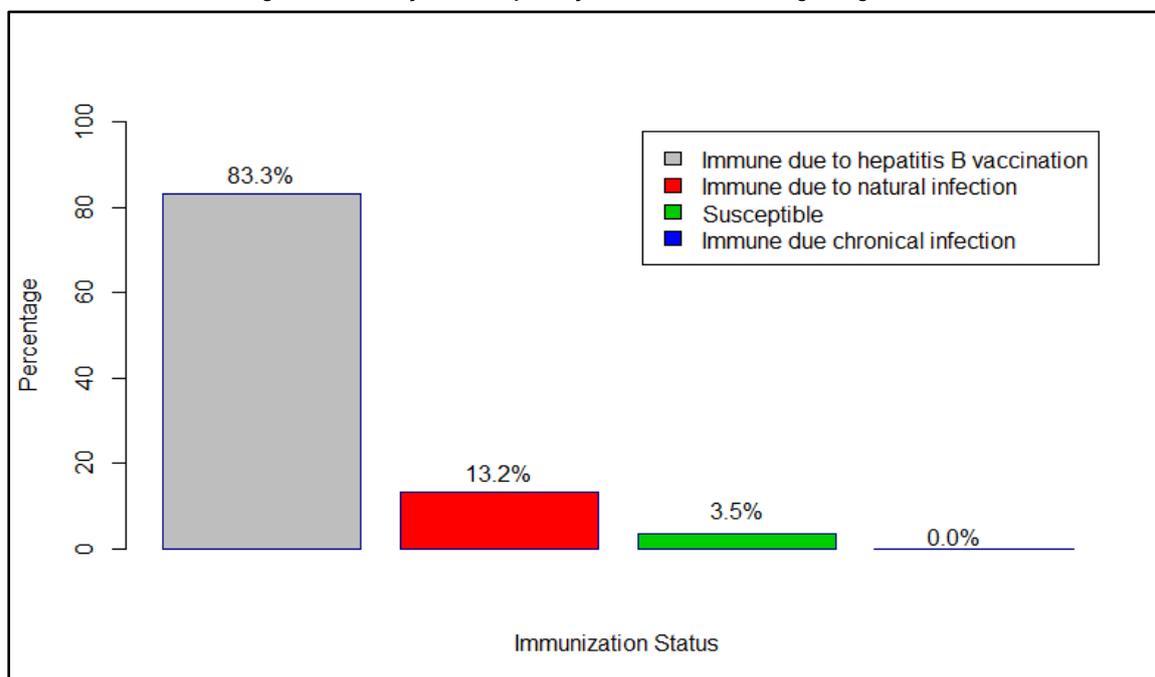


Table 2: A statistically significant association between primary healthcare workers and their knowledge about HBV infection

Covariate	Statistics	Level	job status				P-value*
			Physician N=53	Nurse N=63	Dental technician N=4	Lab technician N=11	
Do you have concerns regarding being infected with HBV?	N (Col %)	Yes	31 (58.49)	53 (85.48)	3 (100)	3 (33.33)	<.001
	N (Col %)	No	22 (41.51)	9 (14.52)	0 (0)	6 (66.67)	
Do you know your current status with HBV (immunized, susceptible or chronic carrier?)	N (Col %)	Yes	46 (86.79)	56 (91.8)	2 (50)	7 (63.64)	0.014
	N (Col %)	No	7 (13.21)	5 (8.2)	2 (50)	4 (36.36)	
Despite the availability of a highly effective vaccine against hepatitis B virus, approximately 2 billion people worldwide (1/3rd of the world) are infected :	N (Col %)	Agree	18 (33.96)	38 (61.29)	1 (25)	0 (0)	0.001
	N (Col %)	Disagree	0 (0)	3 (4.84)	0 (0)	1 (11.11)	
	N (Col %)	Not sure	35 (66.04)	21 (33.87)	3 (75)	8 (88.89)	
If you have an accidental needlestick from a patient with a known active HBV infection the appropriate action is:	N (Col %)	I will swab the wound with alcohol only	4 (7.55)	4 (6.45)	0 (0)	0 (0)	0.023
	N (Col %)	I will take the HBV vaccine immediately	1 (1.89)	4 (6.45)	0 (0)	0 (0)	
	N (Col %)	I will take the HBV vaccine plus H B immunoglobulin immediately	33 (62.26)	33 (53.23)	0 (0)	11 (100)	
	N (Col %)	I will take the HBV vaccine plus I lamivudine	7 (13.21)	2 (3.23)	0 (0)	0 (0)	
	N (Col %)	Not sure	8 (15.09)	19 (30.65)	2 (100)	0 (0)	
Active immunization	N (Col %)	Agree	51 (96.23)	62 (100)	3 (100)	6 (60)	<.001
	N (Col %)	Disagree	0 (0)	0 (0)	0 (0)	3 (30)	
	N (Col %)	Not Sure	2 (3.77)	0 (0)	0 (0)	1 (10)	
Wears disposable medical gloves	N (Col %)	Agree	48 (90.57)	57 (93.44)	2 (66.67)	9 (90)	0.017
	N (Col %)	Disagree	5 (9.43)	4 (6.56)	1 (33.33)	0 (0)	
	N (Col %)	Not Sure	0 (0)	0 (0)	0 (0)	1 (10)	
Routine blood screening for HBs Ag	N (Col %)	Agree	42 (79.25)	62 (100)	3 (100)	10 (100)	0.009
	N (Col %)	Disagree	10 (18.87)	0 (0)	0 (0)	0 (0)	
	N (Col %)	Not Sure	1 (1.89)	0 (0)	0 (0)	0 (0)	

RESULTS

The study included 133 primary healthcare workers with a response rate of 79%. Table 1 presents their general characteristics. The male to female ratio was found to be 1.4:1. Their age ranged from 25 to 60 years. Almost half of them (50.4%) had more than 10 years of practice. Of the primary healthcare workers, 63 (48.1%) were nurses, 53 (40.5) were physicians, 11 (8.4%) were lab technicians and 4 (3.1%) were dental technicians. Only 39 were Saudi nationals (29.8%).

Most of the surveyed (95; 72%) suggested that more attention should be given to the occupational risk of HBV. Majority of primary healthcare workers, 114 (88.4%), felt at high risk of contracting and spreading HBV.

One hundred and one respondents (76.5%) have been vaccinated against HBV. 114 (87) out of our healthcare workers aware of their immunity status, 95 (83.3%) of them were immune due to

vaccination while 15 (13.2%) due to natural infection. However, 4 (3.5%) PHWs were susceptible, and nobody was chronically infected but missing number for this question was 19. (Figure 1)

Our study shows that 57 (44.9%) primary healthcare workers have no idea about the seromarkers of the highly infectious or contagious patients. In addition, 70 (55.1%) primary healthcare workers surveyed appeared able to interpret HBV seromarkers. Only 23 (17.6%) of our primary healthcare workers recognized the resistance of HBV to alcohol and to some detergents. 77 (56.5%) of primary healthcare workers have low knowledge about prevalence of HBV worldwide. About three-quarters (96; 73.8%) of primary healthcare workers recognized that HBV isn't always symptomatic. 80 (61.1%) of PHWs recognized that HBV can survive for a prolonged period in the environment, while 99 (75.6%) recognized that HBV is more transmissible than HIV. 114 (87%) of our primary healthcare workers believed that the HBV

vaccine is safe for all ages. 114 (87%) of them recognized that HBV is preventable. Only 35 (34.7%) of primary healthcare workers have correct answer about the number of HBV genotypes. 44 (34.6%) of primary healthcare workers had correct answer about the site of HBV replicates and only 40 (31.5%) were knows the incubation period of HBV. 108 (82.4%) of our primary healthcare workers have wall knowledge about the consequences of viral hepatitis.

Primary healthcare workers' knowledge concerning HBV infection as distributed by their job status is shown in Table 2. Physicians and nurses had better knowledge about concern regarding being infected with HBV and current status with HBV ($p < 0.001$, $P < 0.014$ respectively). Also there was a statistically significant association

between primary healthcare workers and their knowledge about prevalence of HBV ($p = 0.001$), the nurses and physician better than dental and lab technicians. When asked concerning what the primary healthcare workers should do if suffer from a needle stick from a patient with a known active HBV infection. A total, 78 (60.5%) of the primary healthcare workers responded that they would immediately take the HBV vaccine with HBV immunoglobulin, 8 (6.2%) of the primary healthcare workers would swab the wound with alcohol only, and 5 (3.9%) of the primary healthcare workers would take the vaccine only. Furthermore, 9 (7%) of the primary healthcare workers would take the vaccine plus lamivudine, and 29 (22.5%) of the primary healthcare workers were not sure concerning their action.(Figure2)

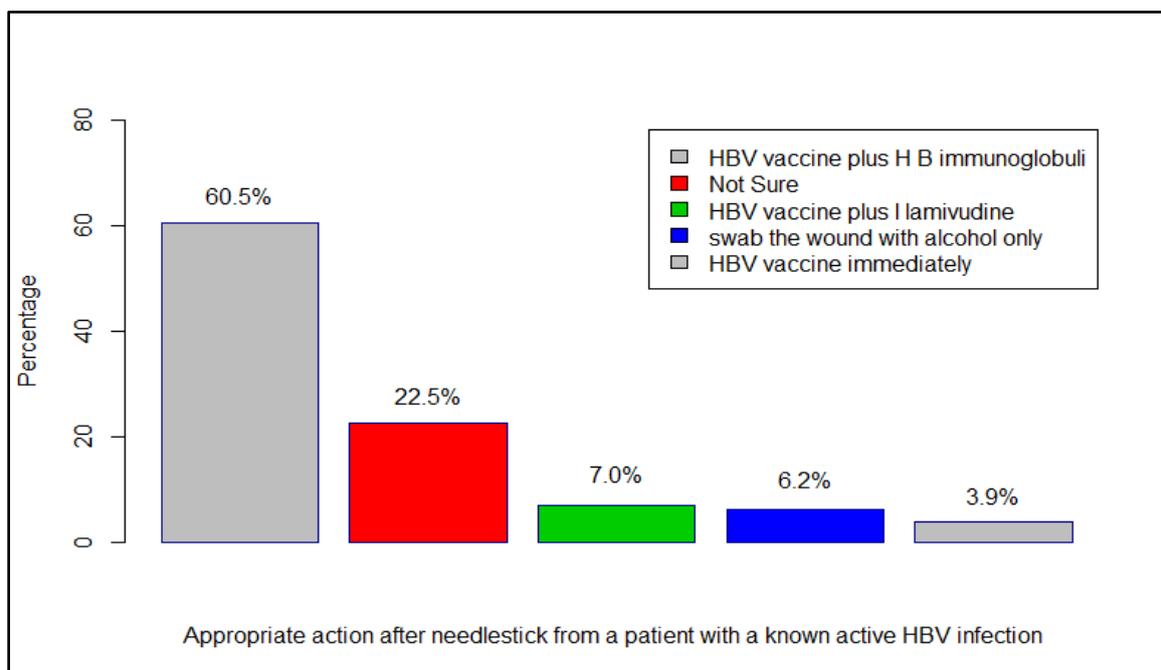


Figure 2: Appropriate action of Primary healthcare workers after needlestick from a patient with a known active HBV infection.

There was statically significant between job status of primary healthcare workers and their action when suffer from a needle stick from a patient with a known active HBV infection ($p = 0.023$), physicians and nurses had better knowledge than lab and dental technicians. Majority (122; 93.13%) of our primary healthcare workers had a strongly agreement that HBV can be prevented by active immunization with statically significant ($p < 0.001$). Also, majority (116; 88.5%) of primary healthcare workers recognized that use disposable medical gloves can prevent transmission of HBV with statically significant ($p = 0.017$) and (117; 89.3%) of them recognized that routine blood screening for HBsAg can prevent transmission of HBV most of them were nurses with statically significant ($p = 0.009$).

The primary healthcare workers' knowledge regarding the modes of HBV transmission, which was distributed by their years in practice, is shown in Table 3. There was a strong agreement that blood 130 (99.2%), needle sticks 126 (96.2%), sexual intercourse 114 (87%), semen or vaginal secretions 121 (92.4%), and vertical transmission 116 (88.5%) are efficient modes of transmission. Only 54 (41.2%) of our primary healthcare workers recognized that HBV didn't transmission by breastfeeding, 64 (48.9%) recognized that HBV didn't transmission by drinking from the same cup used by an infected person and 41 (31.3%) recognized

that HBV cannot transmission by saliva, but there was not statically significant for these results.

About one-third (44; 33.6%) of primary healthcare workers always used double gloves and 111 (87.4%) of them always used mask during surgery. 38 (30.2) of primary healthcare workers ever used glasses during surgery.

There was significant association between Nationality of PHWs and always used double gloves during surgery ($p = 0.021$), non-Saudi were more users than Saudi (as shown in table 4).

Table 5 shows association between primary healthcare workers' attitudes regarding HBV infection and their age. 92 (71.3%) of our PHWs had concerns regarding being infected with HBV with statically significant ($p = 0.015$). More than 45 years old of primary healthcare workers more concerns regarding being infected with HBV than other age. More than half of them (75; 57.7%) of them agreed to accept an infected person in the same work place with statically significant ($p = 0.011$). Those between 36-45 years more accepted an infected person than other. Majority (120; 92.3%) of them suggested that vaccination against HBV must be mandatory for all healthcare workers in Saudi Arabia and (95; 72%) of the surveyed suggested that training programs concerning the occupational risk of HBV should be offered to all HCWs but without statically significant.

Table 3: Association between primary healthcare workers' knowledge regarding the modes of HBV transmission and their duration practice.

Covariate	Statistics	Level	Years in practice			Parametric P-value*
			1-5 years N=32	6-10 years N=33	> 10 years N=66	
Could transmit in the blood.	N (Col %)	Agree	31 (100)	32 (96.97)	65 (100)	0.231
	N (Col %)	Disagree	0 (0)	1 (3.03)	0 (0)	
Semen and vaginal secretions are modes of HBV transmission.	N (Col %)	Agree	29 (93.55)	32 (96.97)	58 (89.23)	0.682
	N (Col %)	Disagree	1 (3.23)	1 (3.03)	4 (6.15)	
	N (Col %)	Not Sure	1 (3.23)	0 (0)	3 (4.62)	
Infected mothers during delivery to their infants.	N (Col %)	Agree	27 (87.1)	30 (90.91)	57 (87.69)	0.705
	N (Col %)	Disagree	3 (9.68)	1 (3.03)	3 (4.62)	
	N (Col %)	Not Sure	1 (3.23)	2 (6.06)	5 (7.69)	
Hepatitis B virus could be spread by saliva.	N (Col %)	Agree	18 (58.06)	21 (63.64)	39 (60)	0.345
	N (Col %)	Disagree	8 (25.81)	10 (30.3)	23 (35.38)	
	N (Col %)	Not Sure	5 (16.13)	2 (6.06)	3 (4.62)	
Contact with an open uncovered wound could be an efficient route of transmission for HBV.	N (Col %)	Agree	23 (74.19)	25 (75.76)	59 (90.77)	0.191
	N (Col %)	Disagree	4 (12.9)	3 (9.09)	3 (4.62)	
	N (Col %)	Not Sure	4 (12.9)	5 (15.15)	3 (4.62)	
In more than one-third of hepatitis B cases, there is no known source.	N (Col %)	Agree	16 (51.61)	13 (39.39)	35 (53.85)	0.329
	N (Col %)	Disagree	4 (12.9)	9 (27.27)	16 (24.62)	
	N (Col %)	Not Sure	11 (35.48)	11 (33.33)	14 (21.54)	
Hepatitis B virus may be transmitted from a pregnant woman to her unborn child;	N (Col %)	Agree	21 (67.74)	23 (69.7)	47 (72.31)	0.729
	N (Col %)	Disagree	3 (9.68)	5 (15.15)	10 (15.38)	
	N (Col %)	Not Sure	7 (22.58)	5 (15.15)	8 (12.31)	
An infected mother may transmit hepatitis B to her newborn baby through breast milk;	N (Col %)	Agree	13 (41.94)	10 (30.3)	29 (44.62)	0.373
	N (Col %)	Disagree	12 (38.71)	13 (39.39)	27 (41.54)	
	N (Col %)	Not Sure	6 (19.35)	10 (30.3)	9 (13.85)	
You may contract hepatitis B by drinking from the same cup used by an infected person	N (Col %)	Agree	15 (48.39)	12 (36.36)	29 (44.62)	0.429
	N (Col %)	Disagree	13 (41.94)	16 (48.48)	33 (50.77)	
	N (Col %)	Not Sure	3 (9.68)	5 (15.15)	3 (4.62)	

Table 4: Association between primary healthcare workers' practice regarding HBV infection and their nationality.

Covariate	Statistics	Level	Nationality		Parametric P-value*
			Saudi N=39	Non-Saudi N=92	
Have you ever used double gloves during surgical procedures?	N (Col %)	Always	7 (18.42)	36 (39.56)	0.021
	N (Col %)	Often	11 (28.95)	10 (10.99)	
	N (Col %)	Sometimes	15 (39.47)	29 (31.87)	
	N (Col %)	Never	5 (13.16)	16 (17.58)	
Have you ever used glasses during surgical procedures?	N (Col %)	Always	13 (35.14)	24 (27.59)	0.743
	N (Col %)	Often	5 (13.51)	9 (10.34)	
	N (Col %)	Sometimes	8 (21.62)	22 (25.29)	
	N (Col %)	Never	11 (29.73)	32 (36.78)	
Have you ever used a mask during surgical procedures?	N (Col %)	Always	31 (83.78)	78 (88.64)	0.862
	N (Col %)	Often	2 (5.41)	4 (4.55)	
	N (Col %)	Sometimes	3 (8.11)	5 (5.68)	
	N (Col %)	Never	1 (2.7)	1 (1.14)	

Table 5: Association between primary healthcare workers 'attitude regarding HBV infected and their age.

Covariate	Statistics	Level				P-value*
			25-35 years N=49	36-45 years N=41	>45 years N=41	
Do you have concerns regarding being infected with HBV?	N (Col %)	Yes	25 (55.56)	31 (75.61)	34 (82.93)	0.015
	N (Col %)	No	20 (44.44)	10 (24.39)	7 (17.07)	
Chronic infection with viral hepatitis B is shameful.	N (Col %)	Agree	16 (34.04)	10 (24.39)	17 (41.46)	0.576
	N (Col %)	Disagree	28 (59.57)	27 (65.85)	21 (51.22)	
	N (Col %)	Not Sure	3 (6.38)	4 (9.76)	3 (7.32)	
Do you feel confident in dealing with a patient who is HBs Ag-positive?	N (Col %)	Agree	31 (65.96)	34 (82.93)	28 (68.29)	0.057
	N (Col %)	Disagree	8 (17.02)	6 (14.63)	11 (26.83)	
	N (Col %)	Not Sure	8 (17.02)	1 (2.44)	2 (4.88)	
Do you feel comfortable treating HBV-infected patients?	N (Col %)	Agree	29 (61.7)	29 (70.73)	23 (56.1)	0.650
	N (Col %)	Disagree	11 (23.4)	8 (19.51)	13 (31.71)	
	N (Col %)	Not Sure	7 (14.89)	4 (9.76)	5 (12.2)	
Do you feel comfortable managing a patient who is HBs Ag-positive?	N (Col %)	Agree	30 (63.83)	30 (73.17)	23 (56.1)	0.476
	N (Col %)	Disagree	11 (23.4)	6 (14.63)	13 (31.71)	
	N (Col %)	Not Sure	6 (12.77)	5 (12.2)	5 (12.2)	
Do you recommend the mandatory HBV vaccination for all the health care workers in Saudi Arabia?	N (Col %)	Agree	42 (89.36)	38 (92.68)	39 (95.12)	0.080
	N (Col %)	Disagree	1 (2.13)	3 (7.32)	2 (4.88)	
	N (Col %)	Not Sure	4 (8.51)	0 (0)	0 (0)	
People who are HBs Ag-positive should not be allowed to work in restaurants or cafeterias.	N (Col %)	Agree	31 (65.96)	20 (48.78)	26 (63.41)	0.151
	N (Col %)	Disagree	8 (17.02)	16 (39.02)	12 (29.27)	
	N (Col %)	Not Sure	8 (17.02)	5 (12.2)	3 (7.32)	
Do you accept a colleague with H BV in the same work place?	N (Col %)	Agree	20 (42.55)	32 (78.05)	23 (56.1)	0.011
	N (Col %)	Disagree	16 (34.04)	4 (9.76)	13 (31.71)	
	N (Col %)	Not Sure	11 (23.4)	5 (12.2)	5 (12.2)	
Training programs for HBV should be offered for all health care providers:	N (Col %)	Strongly recommended	33 (68.75)	31 (75.61)	29 (70.73)	0.350
	N (Col %)	Recommended	14 (29.17)	10 (24.39)	9 (21.95)	
	N (Col %)	Fairly recommended	1 (2.08)	0 (0)	3 (7.32)	

DISCUSSION

Primary healthcare workers play an important role in the safety against infectious agents, such as HBV.^{3,10,15,16} The primary healthcare workers can augment their knowledge and improve skills to limit their occupational risk of HBV.^{17,18}

The current study, to our knowledge, is the first comprehensive PHC setting-based study performed in Riyadh to collect data regarding the knowledge, attitudes, and practices of Primary healthcare workers toward the occupational risk of HBV and is the second study performed in Saudi Arabia after a study was done in Al Jouf Province, which evaluated Knowledge, attitudes and practice of primary healthcare physicians concerning the occupational risks of hepatitis B virus.³

Our study showed that primary healthcare workers were aware of the magnitude of the occupational risk of HBV as 95 (72%) primary healthcare workers surveyed suggested that more attention should be given to the occupational risk of HBV, and 114 (88.4%) of them perceived that they are at a high risk of contracting and spreading HBV. In addition, 71.3% of these PHWs had concerns regarding contracting HBV with statistically significant (Physicians and nurses had better knowledge than lab

and dental technicians (p<0.001). Our findings are similar to al Joufs' study.³ The referred study showed same figure about concern of being infected with HBV was 70.8% among the surveyed physicians.³ Those findings could be due to Increase awareness of the PHC workers about HBV. Most of our primary healthcare workers 114 (87%) recognized that HBV is preventable. 114 (87%) of them surveyed believed the HBV vaccine to be safe for all ages, and 101 (76.5%) of the physicians were vaccinated. Fortunately, our study showed that the rate of vaccination among our PHWs is consistent with that found in various other countries (India, Nigeria, Iran & England).^{10,15-17} Primary healthcare workers should be aware of their anti-HBs titers.^{10,16,19} We found that 114 (87%) our PHWs knows their status regarding anti-HBs, among those 95 (83.3%) were immune due to HBV vaccination, and 14 (13.2%) were immune due to natural infection. However, 4 (4.9%) PHWs were susceptible, but missing number for this question was 19, which is unaccepted. Although 101 of the total were vaccinated, only 95 were immune due to HBV vaccination. Our findings could be due to that Variability of HBV response or it could be due to 'incompletion of

three doses of HBV vaccine'.²⁰ It could be also due to 'the anti-HBs titers declined with time after vaccination'.²¹

We found four PHWs susceptible. Those PHWs who were susceptible to HBV infection should be protected and should receive the full three doses of the hepatitis B vaccine.^{21,22}

Our study shows that 57 (44.9%) primary healthcare workers have no idea about the seromarkers of the highly infectious or contagious patients and only 70 (55.1%) primary healthcare workers surveyed appeared able to interpret HBV seromarkers.

Furthermore, only 23 (17.6%) of our primary healthcare workers recognized the resistance of HBV to alcohol and to some detergents. 77 (56.5%) of primary healthcare workers have low knowledge about prevalence of HBV worldwide. Only 35 (34.7%) of primary healthcare workers have correct answer about the number of HBV genotypes. 44 (34.6%) of primary healthcare workers had correct answer about the site of HBV replicates and only 40 (31.5%) were knows the incubation period of HBV.

Our findings are in agreement with those reports from other countries (Nigeria, Sudan and Asia-Pacific region), which demonstrate that the PHWs have an incomplete knowledge concerning hepatitis B.^{18,23,24} Attributable reasons for those results could be inadequate training programs concerning of HBV.

About three-quarters 96 (73.8%) of our primary healthcare workers recognized that HBV isn't always symptomatic. 80 (61.1%) of PHWs recognized that HBV can survive for a prolonged period in the environment and 80 (61.1%) recognized that HBV is infectious outside the body. And 99 (75.6%) recognized that HBV is more transmissible than HIV.

When asked what the primary healthcare workers should do if suffer from a needle stick from a patient with a known active HBV infection. In total, 78 (60.5%) of the primary healthcare workers responded that they would immediately take the HBV vaccine with HBV immunoglobulin, 8 (6.2%) of the primary healthcare workers would swab the wound with alcohol only, and five (3.9%) of the primary healthcare workers would take the vaccine only. Furthermore, 9 (7%) of the primary healthcare workers would take the vaccine plus lamivudine, and 29 (22.5%) of the primary healthcare workers were not sure concerning their action with statically significant ($p=0.023$), physicians and nurses had better knowledge than lab and dental technicians). 122 (93.13%) of our primary healthcare workers had a strongly agreement that HBV can prevented by active immunization with statically significant ($p<0.001$). in addition, 116 (88.5%) of primary healthcare workers recognized that Wears disposable medical gloves can prevent transmission of HBV with statically significant ($p=0.017$). And 117 (89.3%) of them recognized that routine blood screening for HBsAg can prevent transmission of HBV, most of them were nurses with statically significant ($p=0.009$). Those results in our study were better than that found in al Joufs' study,³ these could be due to the Riyadh city had well training programs, when compared with another city of our kingdom.

Regarding HBV transmission mode, which was distributed by years in practice, there was a strong agreement that blood 130 (99.2%), needle sticks 126 (96.2%), sexual intercourse 114 (87%), semen or vaginal secretions 121 (92.4%), and vertical transmission 116 (88.5%) are efficient modes of transmission. Only 54 (41.2%) of our primary healthcare workers recognized that HBV didn't transmission by breastfeeding, 64 (48.9%) recognized that HBV didn't spread by drinking from the same cup

used by an infected person and 41 (31.3%) recognized that HBV cannot transmission by saliva without statistically significant.

Our findings are similar to al joufs' study, which revealed that most of PHWs show a reasonable knowledge regarding the modes of HBV transmission. In spite of this knowledge, there were misconceptions and confusion regarding the specific modes of transmission (for example, saliva, and breast feeding and drinking from the same cup used by an infected person).³

In another side, our findings are different on a survey administered in India, which evaluated the knowledge and attitude toward hepatitis B and C infection among the health-care interns. This study showed a majority of the respondents demonstrated an adequate level of knowledge of hepatitis B and C infection and the routes of transmission of the infection and the fact that the infection can be transmitted as a nosocomial infection. This difference could be due to the referral study was more focus on nurses population or due to that India has a well training program concerning about HBV infection and rout of transmissions.²⁵

Almost one-third (33.6%) of primary healthcare workers always used double gloves with statically significant ($p=0.021$) and 87.4% of them always used mask during surgery. And only 34.9% of primary healthcare workers ever used glasses during surgery. In our study, we found that the use of barrier precautions during surgical procedures was inadequate.

Our findings are in agreement with aljoufs' survey and another survey administered in Georgia, which evaluated the occupational exposure to body fluids among healthcare workers. In this survey, the use of barrier precautions during patient contact was unusual.^{3,26} This finding could be because PHWs didn't always being exposed to do surgical procedures by their self, so they are not concern about the precautions. This study shows more suitable attitudes of PHWs toward the HBV infection. 120 (92.3%) of the PHWs surveyed showed more enthusiasm toward the statement that "vaccination against HBV must be mandatory for all HCWs in Saudi Arabia". In addition, nearly all primary healthcare workers surveyed suggested that more attention should be given to HBV and were willing to subscribe to regular training programs concerning the occupational risk of HBV.

Our findings are similar to those findings reported in AL joufs' study and in another recently conducted study in Morocco, which evaluated the knowledge and perception of hepatitis B among Moroccan HCWs. That study revealed that almost all the participants believed that HBV could be a serious health problem and regarded vaccination against HBV as essential for all HCWs.¹⁹ The current study to our knowledge is the first comprehensive PHC setting-based study performed in Riyadh (a city center of Saudi Arabia) to obtain data regarding the knowledge, attitudes, and practices of Primary healthcare workers toward the occupational risk of HBV.

LIMITATIONS

This study is a self-reported questionnaire based study. Therefore, in the present study, the subjective self-reported information may not necessarily reflect the actual clinical practices.

CONCLUSION

Lack of knowledge regarding prevalence, protection, seromarkers and some routes of transmission of HBV and inappropriate practices regarding the occupational risk of HBV appear pervasive

among the majority of our PHWs in SFH in Riyadh at Saudi Arabia. This finding may be observed because of the lack of structured training programs concerning HBV especially for lab and dental technicians.

REFERENCES

1. McMahon BJ. Epidemiology and natural history of hepatitis B. *Semin Liver Dis* 2005; 25 Suppl 1:3-8.
2. Lavanchy D. Hepatitis B virus epidemiology, disease burden, treatment, and current and emerging prevention and control measures. *J Viral Hepat* 2004; 11:97.
3. Alhazmi AH. Knowledge, attitudes and practice of primary healthcare physicians concerning the occupational risks of hepatitis B virus in Al Jouf Province, Saudi Arabia. *Journal of Infection and Public Health* 2014; (7): 257-270.
4. Te HS and Jensen DM. Epidemiology of hepatitis B and C viruses: a global overview. *Clin Liver Dis* 2010; 14: 1-21.
5. Abedi F, Madani H, Asadi A and Nejatizadeh. Significance of blood-related high-risk behaviors and horizontal transmission of hepatitis B virus in Iran. *Arch Virol* 2011; (156):629-35.
6. Wilkins T, Zimmerman D and Schade RR. Hepatitis B: diagnosis and treatment. *Am Fam Physician* 2010; 81:965-72.
7. Daw MA, Siala IM, Warfalli MM and Muftah MI. Seroepidemiology of hepatitis B virus markers among hospital health workers. *Saudi Medical Journal* 2000;21.
8. Guo YL, Shiao J, Chuang YC and Huang KY. Needle-stick and sharps injuries among healthcare workers in Taiwan. *Epidemiol infect* 1999; 122:259-265.
9. World Health Report 2002: Reducing risks, promoting healthy life [cited 2002 Oct 11]. Available from URL: http://www.who.int/whr/en.http://www.who.int/whr/2002/en/whr02_en.pdf
10. Cekin AH, Cekin Y and Ozdemir A. The level of knowledge, altitude toward and emphasis given to HBV and HCV infections among healthcare professionals. *International Journal of Occupational Medicine and Environmental Health* 2013; 26(1): 122-131.
11. Singhal V, Bora D and Singh S. Hepatitis B in health care workers: Indian scenario. *J Lab Physicians* 2009; 1:41-8.
12. Alrowaily MA, Abolfotouh MA and Ferwanah MS. Hepatitis B virus sero-prevalence among pregnant females in Saudi Arabia. *Saudi J Gastroenterol* 2008; 14: 70-2.
13. Chao J, Chang ET and So SK. Hepatitis B and liver cancer knowledge and practices among healthcare and public health professionals in China: a cross-sectional study. *BMC Public Health* 2010; 10:98.
14. Hosoglu S, Akalin S, Sunbul M, Otkun M and Ozturk R. Occupational Infections Study Group. Healthcare workers' compliance with universal precautions in Turkey. *Med Hypotheses* 2011; 77:(6):1079-82.
15. Kesieme EB, Uwakwe K, Irekpita E, Dongo A, Bwala KJ and Alegbeleye BJ. Knowledge of hepatitis B vaccine among operating room personnel in Nigeria and their vaccination status. *Hepat Res Treat* 2011; 1-5.
16. Kabir A, Tabatabaei SV, Khaleghi S, Agah S, Faghihi Kashani AH, Moghimi M et al. Knowledge, Attitudes and Practice of Iranian Medical Specialists regarding Hepatitis B and C. *Hepat Mon* 2010; 10: 176-82.
17. Kinnersley P. Attitudes of general practitioners towards their vaccination against hepatitis B. *BMJ* 1990; 300: 238.
18. Nwokediuko SC. Chronic hepatitis B: management challenges in resource-poor countries. *Hepat Mon* 2011; 11: 786-93.
19. Djeriri K, Laurichesse H, Merle JL, Charof R, Abouyoub A, Fontana L et al. Hepatitis B in Moroccan health care work-ers. *Occup Med (Lond)* 2008; 58: 419-24.
20. Romano L, Paladini S, Van Damme P and Zanetti AR. The world-wide impact of vaccination on the control and protection of viral hepatitis. *Dig Liver Dis* 2011; 43: S2—7.
21. Sukriti, Pati NT, Sethi A, Agrawal K, Agrawal K, Kumar GT et al. Low levels of awareness, vaccine coverage, and the need for boosters among health care workers in tertiary care hospitals in India. *J Gastroenterol Hepatol* 2008; 23: 1710-5.
22. Mast EE, Weinbaum CM, Fiore AE, Alter MJ, Bell BP, Finelli L et al. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: immunization of adults'. *MMWR Recomm Rep* 2006; 55: 1-33.
23. Mohamed R, Desmond P, Suh DJ, Amarapurkar D, Gane E, Guangbi Y et al. Practical difficulties in the management of hepatitis B in the Asia-Pacific region. *J Gastroenterol Hepatol* 2004; 19: 958-69.
24. Bakry SH, Mustafa AF, Eldalo AS, Yousif MA. Knowledge, attitude and practice of healthcare workers toward HBV infection, Sudan. *International of Risk & Safety in Medicine* 2012;24:95-102.
25. Setia S, Gambhir R, Kappor V and Jindal G. Attitudes and Awareness Regarding Hepatitis B and Hepatitis C Amongst Health-care Workers of a Tertiary Hospital in India. *Ann Med Health Sci Res* 2013; 3: (4): 551-8.
26. Butsashvili M, Kamkamidze G, Kajaja M, Morse DL, Triner W, Dehovitz J et al. Occupational exposure to body fluids among health care workers in Georgia. *Occup Med (Lond)* 2012; 62: 620-6.

Source of Support: Nil. **Conflict of Interest:** None Declared.

Copyright: © the author(s) and publisher. IJMRP is an official publication of Ibn Sina Academy of Medieval Medicine & Sciences, registered in 2001 under Indian Trusts Act, 1882.

This is an open access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Cite this article as: Reem Naif AL-Mutairi. Knowledge, Attitude and Practice of Primary Healthcare Workers Toward Occupational Risk of Hepatitis B Virus at Security Force Hospital in Riyadh, Saudi Arabia. *Int J Med Res Prof.* 2017 Sept; 3(5):61-68. DOI:10.21276/ijmrp.2017.3.5.013