

# Knowledge, Attitude and Practice of Health Care Providers with Regard to Hepatitis-B Infection in Bisha Province, Saudi Arabia

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## ABSTRACT

### BACKGROUND

Health care providers are at greater risk of Hepatitis B infection as they are exposed to blood and biomedical waste products making them vulnerable to be infected when compared to the general population. A thorough understanding and awareness is essential in order to protect themselves and the patient community from this deadly disease.

### METHODS

A total of 231 respondents completed the cross sectional study. A 21 variable questionnaire was employed to assess knowledge, attitude and practice regarding Hepatitis B amongst health care workers after obtaining consent and institutional permission. Data was analysed using SPSS 20.0 version.

### RESULTS

A response rate of 93.6 % resulted in 231 questionnaires to be analysed. The study results suggest that 92.6 % of the respondents expressed concerns regarding HBV (Hepatitis B Virus). 88.7 % of them were vaccinated for the viral infection.

### CONCLUSIONS

A deficiency in awareness was noted regarding attitude and practice concerns of health care workers towards HBV, though awareness was adequate. Regular training programmes are suggested for committed combating of the infection.

### KEY WORDS

Attitude, Hepatitis B, Health Care Providers, Knowledge

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## BACKGROUND

Hepatitis B virus (HBV) infection accounts to a greater frequency of liver infections, and is the 10<sup>th</sup> leading cause of public health concern, worldwide.<sup>1</sup> Globally the statistics of people suffering with acute infectious stage of HBV is two billion and over 350 million are carriers of chronic HBV infection.<sup>2</sup> The mortality rate of this infection is about one million every year due its complications such as cirrhosis, primary hepatocellular carcinoma and liver cancer.<sup>3</sup> In India alone, about 100,000 people die every year due to this infection and around 40 million are in carrier stage.<sup>4</sup>

Health care provider (HCP) are at greater risk of contracting the infection owing to the occupational exposure to blood borne pathogens and for the fact that the virus gets transmitted through blood and secretory fluids, which could be easily diagnosed in both acute and chronic stages.<sup>5, 6</sup>

It is alarming to note that the incidence of HBV infection is estimated at 3.5 to 4.6 incidence for every 1000 HCP, which is clearly higher than the normal population.<sup>7</sup> Literature evidence also demonstrates that HBV infection contraction by HCP is four times greater than the general population.<sup>8</sup> Also, the greater prevalence of HBV in the normal populations puts the HCP at greater risk. The study of Alrowaily MA et al,<sup>9</sup> has reported a greater prevalence of HBV in the country men of Saudi Arabia. It is hence imperative for the HCP to be aware of this occupational risk. In this background, the study was conducted to evaluate knowledge, attitude and practice regarding HBV in health care provider of Bisha Province, Saudi Arabia.

## METHODS

A descriptive study was conducted in Bisha province to assess the knowledge, attitude and practice of health care personnel towards Hepatitis B infection, from March 2020 to April 2020. The study protocol was approved from the Institutional Review board of Riyadh Elm University (FPGRP / 2020 / 453 / 107 / 101). A total of 231 HCP comprising of dentists, physicians, nurses, dental auxiliaries, physiotherapist and x-ray technicians formed the study sample. Informed consent of all participants was obtained after clearly explaining the purpose of the study.

Based on the assumption of 80 % prevalence of correct knowledge regarding HBV in HCP, the sample size was obtained at 246, at a confidence interval of 95 % and 5 % margin of error. (Based on single population proportion). Total enumeration sampling technique of all health care providers of Riyadh Elm University in Bisha Province were taken as the sample for the present study.

A pre-designed, self-administered questionnaire was used to elicit the information which was adapted as per the study of Yu Ling Quinet al.<sup>10</sup> The variables elaborated demographic characteristics, knowledge regarding HBV route of transmission, vaccination history, appropriate preventive measures on accidental exposure and clinical outcome. Practice related questions detailed on use of standard or universal precautions during treatment and vaccination a total of 21 multiple choice questions were used. Only completed questionnaire was retained.

The questionnaire was pilot tested on a group of 20 HCPs prior to the start of the study in order to ensure for the content clarity and relevance. No modifications were made in the questionnaire after evaluating. The respondents in the pilot study were not included for the final analysis. The questionnaire was distributed using Google forms. Confidentiality of all participants was ensured.

## Statistical Analysis

Data collected was transferred to spreadsheets and analysed using SPSS Ver. 20.0. Frequencies and percentages for each variable were calculated. Comparison analysis between respondents based on their job title was done by employing Chi square test, setting a level of significance at 5 %.

## RESULTS

Out of the 240 questionnaires distributed, 231 respondents completed the form which was subsequently analysed resulting in a response rate of 93.9 %. The general characteristic of the health care personnel is presented in Table 1. Majority of the study population were between the ages of 30 – 40 years (55 %), followed by < 30 years (31.6 %) and 41 – 50 years (11.3 %). 64.9 % of the recruited population were males and 35.1 % females.

Characteristics	Health Care Personnel	
	Number	%
<b>Age (years)</b>		
< 30 years	73	31.6
30 – 40	127	55.0
41 – 50	26	11.3
51 – 60	4	1.7
> 60	1	0.4
<b>Gender</b>		
Male	150	64.9
Female	81	35.1
<b>Job Title</b>		
Dentist	44	19.0
Physician	57	24.7
Pharmacist	11	4.8
Nurse	108	46.8
Physiotherapist	1	0.4
Dental Auxiliary	8	3.5
X ray Technician	2	0.9
<b>Qualification</b>		
Bachelor	184	79.7
Master Degree	10	4.3
Diploma	31	13.4
PHD	1	0.4
Board	3	1.3
Intermediary	2	0.9
<b>Work Experience</b>		
< 5	66	28.6
5 – 10	98	42.4
10 – 20	50	21.6
20 – 30	16	6.9
> 30	1	0.4
<b>Employer</b>		
Public	214	92.6
Private	17	7.4
<b>Nationality</b>		
Saudi	184	79.7
Non-Saudi	46	19.9

**Table 1. Distribution of Health Care Personnel According to Their General Characteristics**

Questions	Options	Dentist	Physician	Pharmacist	Nurse	Physio Therapist	Dental Auxiliary	X ray Tech	Total	Chi-Square and P Value
Do you have any concerns about hepatitis B	Yes	40.8 (88.6)	52.8 (94.7 %)	10.2 (100)	100.1 (91.7)	0.9 (100)	7.4 (100)	1.9 (100)	<b>214 (92.6)</b>	3.300 and 0.770
	No	3.2 (11.4)	4.2 (5.3 %)	0.8 (0)	7.9 (8.3)	0.1 (0)	0.6 (0)	0.1 (0)	<b>17 (7.4)</b>	
Have you got your vaccination for Hepatitis B	Yes	42 (95.5)	55 (96.5)	8 (72.7)	91 (84.3 %)	0 (0)	8 (100)	1 (50)	<b>205 (88.7)</b>	63.02 and 0.00
	No	2 (4.5 %)	1 (1.8)	0 (0)	14 (13.0)	0 (0)	0 (0)	1 (50)	<b>18 (7.8)</b>	
	Not sure	0(0.0)	1(1.8)	3 (27.3)	3 (2.8)	1 (100)	0 (0)	0	<b>8 (3.5)</b>	
Do you know your current status with HBV	Yes	38 (86.4)	55 (96.5)	9 (81.8)	94 (87.0)	0 (0)	8 (100)	1 (50)	<b>205 (88.7)</b>	16.42 and 0.012*
	No	6 (13.6)	2 (3.5)	2 (18.2)	14 (13.0)	1 (100)	0 (0)	1 (50)	<b>26 (11.3)</b>	
Do you think vaccine is a must for health care provider	Yes	42 (95.5)	56 (98.2)	8 (72.7)	99 (91.7)	1 (100)	8 (100)	1 (50)	<b>215 (93.1)</b>	26.98 and 0.00*
	No	2(4.5)	0 (0)	0 (0)	2 (1.9)	0 (0)	0 (0)	0 (0)	<b>4 (1.7)</b>	
	Not sure	0(0)	1 (1.8)	3 (27.3)	7 (6.5)	0 (0)	0 (0)	1 (50)	<b>12 (5.2)</b>	
All health care providers should be offered HBV programmes	Strongly recommended	37 (84.1)	53 (93.0)	9 (81.1)	89 (89.4)	1 (100)	7 (87.5)	1 (50)	<b>197 (85.3)</b>	23.05 and .189
	Recommended	3 (6.8)	3 (5.3)	1 (9.1)	13 (12.0)	0 (0)	1 (12.5)	0 (0)	<b>21 (9.1)</b>	
	Fairly recommended	2 (4.5)	0 (0)	1 (9.1)	3 (2.8)	0 (0)	0 (0)	1 (50)	<b>7 (3.0)</b>	
	Not recommended	2 (4.5)	1 (1.8)	0 (0)	3 (2.8)	0 (0)	0 (0)	0 (0)	<b>6 (2.6)</b>	
Inspite of an effective vaccine for Hepatitis B, 2 billion people are infected	Yes	29 (65.9)	47 (82.5)	5 (45.5)	56 (67.8)	1 (100)	7 (87.5)	0 (0)	<b>145 (62.8)</b>	26.29 and 0.01
	No	5 (11.4)	5 (8.8)	4 (36.4)	30 (21.5)	0 (0)	1 (12.5)	1 (50)	<b>46 (19.9)</b>	
	Not sure	10 (22.7)	5 (8.8)	2 (18.2)	22 (18.7)	0 (0)	0 (0)	1 (50)	<b>40 (17.3)</b>	
	Immune of natural infection	2 (4.5)	0 (0)	1 (9.1)	4 (3.7)	1 (100)	0 (0)	0 (0)	<b>8 (3.5) 3 (1.3)</b>	
Serological testing result of HBV is	Immune of HBV vaccination	3 (6.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	<b>168 (72.7)</b>	66.495 and 0.000
	Susceptible of HBV infection	32 (72.7)	52 (91.2)	5 (45.5)	71 (65.7)	0 (0)	7 (87.5)	1 (50)	<b>2 (0.9)</b>	
	HBV chronically infected	1 (2.3)	1 (1.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	<b>50 (21.6)</b>	
	Not sure	6 (13.6)	4 (7.0)	5(45.5)	33 (30.6)	0 (0)	1 (12.5)	1 (50)	<b>172 (74.5)</b>	
HBV replicates in	Liver	34 (77.3)	49 (86.0)	6 (54.5)	75 (69.4)	1 (100)	7 (87.5)	0(0)	<b>172 (74.5)</b>	29.84 and 0.190
	Liver and Spleen	4 (9.1)	3 (5.3)	0 (0)	0 (0)	0 (0)	1 (12.5)	0(0)	<b>16 (6.9)</b>	
	All body organs	5 (11.4)	5(8.8)	5 (45.5)	24 (22.2)	0 (0)	0 (0)	0 (0)	<b>41 (17.7)</b>	
	Blood	1 (2.3)	0(0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	<b>1 (0.4)</b>	
Incubation period of HBV is	Lymphatic tissues	0 (0)	0 (0)	0 (0)	1 (0)	0(0)	0(0)	0 (0)	<b>1 (0.4)</b>	35.09 and 0.068
	1 - 3 weeks	2 (4.5)	1 (1.8)	0 (0)	9 (8.3)	0 (0)	0 (0)	0 (0)	<b>12 (5.2)</b>	
	2 - 6 weeks	1 (2.3)	1 (1.8)	1 (9.1)	13 (12)	0 (0)	0 (0)	0 (0)	<b>16 (6.9)</b>	
	10 - 30 days	4 (9.1)	3 (5.3)	3 (27.3)	22 (20.4)	0 (0)	0 (0)	1 (50)	<b>33 (14.3)</b>	
Hepatitis B patient may or may not get jaundiced	6 weeks to 6 Months	33 (75)	50 (87.7)	7 (63.6)	59 (54.6)	1 (100)	8 (100)	1 (50)	<b>159 (68.8)</b>	48.706 and 0.00
	Not sure	4(9.1)	2 (3.5)	0(0)	5 (4.6)	0 (0)	0 (0)	0 (0)	<b>11 (4.8)</b>	
	Yes	40(90.9)	54 (94.7)	6 (54.5)	64 (59.3)		7 (87.5)	0 (0)	<b>172 (74.5)</b>	
	No	3 (6.8)	2 (3.5)	1 (9.1)	14 (13)		1 (12.5)	0 (0)	<b>21 (9.1)</b>	
The result of HBV infection could include	Not Sure	1 (2.3)	1 (1.8)	4 (36.4)	30 (27.5)		0 (0)	2 (100)	<b>38 (16.5)</b>	37.374 and 0.040
	Acute Liver Failure	1 (2.3)	0 (0)	0 (0)	7 (6.5)	0 (0)	0 (0)	0 (0)	<b>8 (3.5)</b>	
	Chronic Hepatitis	5 (11.4)	4 (7.0)	1 (9.1)	7(6.5)	0 (0)	0 (0)	1 (50)	<b>18 (7.8)</b>	
	Liver Cirrhosis	1 (2.3)	0 (0)	2 (18.2)	13 (12.0)	0 (0)	0 (0)	1 (50)	<b>17 (7.4)</b>	
After an accidental needlestick from active HBV patient, the best action is	Liver Cancer	0 (0)	0 (0)	0	4 (3.7)	0 (0)	0 (0)	0 (0)	<b>4 (1.7)</b>	33.369 and .001
	All of Above	37(84.1)	53 (93.0)	8 (72.7)	77 (71.3)	1 (100)	8 (100)	0 (0)	<b>184 (79.7)</b>	
	Swab the Wound with Alcohol	36 (81.8)	51 (89.5)	7 (63.6)	75 (63.6)	1 (100)	8 (100)	1 (50)	<b>179 (77.5)</b>	
	Take Hep B Vaccine	5 (11.4)	4 (7.0)	4 (36.4)	4 (36.4)	0 (0)	0 (0)	0 (0)	<b>44 (19.0)</b>	
Prevention and control remain the main method for addressing HBV	Not Sure	3 (6.8)	2 (3.5)	0 (0)	0 (0)	0(0)	0 (0)	1 (50)	<b>8 (3.5)</b>	12.67 and .391
	Yes	42 (95.5)	54 (94.7)	10 (90.9)	88 (81.5)	1 (100)	8 (100)	2 (100)	<b>205 (88.7)</b>	
	No	0 (0)	2 (3.5)	0(0)	8 (7.4)	0 (0)	0 (0)	0 (0)	<b>10 (4.3)</b>	
HBV is not infectious outside the body	Not Sure	2 (4.5)	1 (1.8)	1 (9.1)	12 (11.1)	0 (0)	0 (0)	0 (0)	<b>16 (6.9)</b>	38.874 and 0.000
	Yes	32 (72.7)	47 (82.5)	4 (36.4)	46 (42.6)	1 (100)	6 (75)	0 (0)	<b>136 (58.9)</b>	
	No	6 (13.6)	7 (12.3)	2 (18.2)	22 (20.4)	0 (0)	1 (12.5)	1 (50)	<b>39 (16.9)</b>	
HBV is less transmissible than HIV	Not Sure	6 (13.6)	3 (5.3)	5 (45.5)	40 (37.4)	0 (0)	1 (12.5)	1 (50)	<b>569 (24.2)</b>	69.160 and 0.000
	Yes	6 (13.6)	5 (8.8)	1 (9.1)	32(29.6)	1 (100)	5 (62.5)	0 (0)	<b>50 (21.6)</b>	
	No	32 (72.7)	47 (82.5)	8 (72.7)	33 (30.6)	0 (0)	3 (37.5)	0 (0)	<b>123 (53.2)</b>	
	Not Sure	6 (13.6)	5 (8.8)	2 (18.2)	43 (39.8)	0 (0)	0 (0)	2 (100)	<b>58 (28.1)</b>	

**Table 2. Distribution of Study Subjects According to Their Job Title and Their Knowledge Regarding Hepatitis B**

As the study aimed to evaluate the variables in health care personnel, a wide array of health service men was included, with dentists forming 19 %, physicians accounting to 24.7 % and nurses to 46.8 %. Most of the health care personnel had a bachelor's degree (79.7 %). Nearly half of the professionals (42.4 %) had an experience of 5 to 10 years and 92. 6 % worked in the public sector. (Table 1).

On comparing knowledge related responses between HCPs, it was seen that majority of dentists (88.6 %) and physicians (94.7 %) did not have any concerns regarding Hepatitis B. A significant difference was observed between the health care personnel for knowing the current HBV status, wherein X ray technicians and physiotherapists were not well aware for the mandation of hepatitis B vaccine. A good

percentage of health care personnel were unaware of the number of people affected, with only 65.9 % of dentists, 45.5 % of pharmacists, 67.8 % of nurses and 0 % x-ray technicians knowing the right answer. A good majority of study population reported it was better to wash an accidental needle prick with alcohol and soap than getting vaccinated. (Table 2)

The comparative analysis on practice related responses yielded that 64 % and 19.5 % of the respondents used double gloves always and often. Only 1.7 % never used double gloves while performing a surgical procedure. It was disheartening to find that only around 30 % of the health care personnel wore glasses for protection. A good majority of them wore masks during surgical procedure (14.7 % often and 82.7 % always) (Table 3)

Questions	Options	Dentist	Physician	Pharmacist	Nurse	Physiotherapist	Dental Auxiliary	X-Ray Tech	Total	Chi-Square and (P Value)
Have You Ever Used Double Gloves during Surgical Procedure	Often	4 (9.1)	10 (17.5)	1 (9.1)	29 (26.9)	0 (0)	0 (0)	1 (50)	<b>45 (19.5 %)</b>	64.585 & 0.00
	Never	0 (0)	1 (1.5)	2 (18.2)	1 (0.9)	0 (0)	0 (0)	0 (0)	<b>4 (1.4)</b>	
	Always	33 (75)	40 (70.2)	1 (9.1)	68 (63.0)	0 (0)	7 (87.5)	0 (0)	<b>149 (64.5)</b>	
	Sometimes	7 (15.9)	6 (10.5)	7 (63.6)	10 (9.3)	1 (100)	1 (12.5)	1 (50)	<b>33 (14.3)</b>	
Have You Used Glasses during Surgical Procedure	Often	11 (25)	2 (3.5)	0 (0)	1 (0.9)	0 (0)	0 (0)	0 (0)	<b>14 (6.1)</b>	130.973 & 0.00
	Never	0 (0)	9 (15.8)	6 (55.5)	66 (61.1)	0 (0)	0 (0)	2 (100)	<b>83 (35.9)</b>	
	Always	24 (54.4)	12 (21.1)	0 (0)	13 (12.0)	0 (0)	5 (62.5)	0 (0)	<b>54 (23.4)</b>	
	Sometimes	9 (20.5)	34 (59.6)	5 (45.5)	28 (25.9)	1 (100)	3 (37.5)	0 (0)	<b>80 (34.6)</b>	
Have You Used Mask during Surgical Procedure	Often	0 (0)	6 (10.5)	2 (18.2)	24 (22.2)	0 (0)	0 (0)	2 (100)	<b>34 (14.7)</b>	111.634 & 0.000
	Always	44 (100)	51 (89.5)	4 (36.4)	83 (76.9)	1 (100)	8 (100)	0 (0)	<b>191 (82.7)</b>	
	Sometimes	0 (0)	0 (0)	5 (45.5)	1 (0.9)	0 (0)	0 (0)	0 (0)	<b>6 (2.6)</b>	

**Table 3. Distribution of Practice Variables among Health Care Personnel Regarding Hepatitis B**

Questions	Options	Dentist	Physician	Pharmacist	Nurse	Physiotherapist	Dental Auxiliary	X-Ray tech	Total	Chi Square and (P Value)
Do You Recommend Mandatory HBV Vaccine in all Health Care Workers of Saudi Arabia	Yes	42 (95.5)	56 (98.2)	10 (90.9)	104 (96.3)	1 (100)	8 (100)	2 (100)	<b>223 (96.5)</b>	8.646 & 0.733
	No	2 (4.5)	0 (0)	0 (0)	1 (0.9)	0 (0)	0 (0)	0 (0)	<b>3 (1.3)</b>	
	Not Sure	0(0)	1 (1.8)	1 (9.1)	3 (2.8)	0 (0)	0 (0)	0 (0)	<b>5 (2.2)</b>	
Do You Feel Comfortable Treating HBV Infected Patients	Yes	22 (50)	40 (70.2)	4 (36.4)	60 (55.6)	0 (0)	3 (37.5)	1 (50)	<b>130 (56.3)</b>	6.322 & 0.453
	No	21 (47.7)	14 (24.6)	3 (27.3)	17 (15.7)	1 (100)	3 (37.5)	0 (0)	<b>59 (25.5)</b>	
	Not Sure	1(2.3)	3 (5.3)	4 (36.4)	3 (28.7)	0 (0)	2 (25.0)	1 (50)	<b>42 (12.2)</b>	
Do You Accept a Colleague With HBV in the Same Work Place	Yes	14 (31.8)	35 (61.4)	1 (9.1)	52 (48.1)	0 (0)	0 (0)	0 (0)	<b>102 (44.2)</b>	34.512 & .001
	No	24 (54.5)	15 (26.3)	6 (54.3)	33 (30.6)	0 (0)	5 (62.5)	2 (100)	<b>85 (36.8)</b>	
	Not Sure	6 (13.6)	7 (12.3)	4 (36.4)	23 (21.3)	1 (100)	3 (37.5)	0 (0)	<b>44 (1.9)</b>	

**Table 4. Distribution of Attitude Variables among Health Care Personnel Regarding Hepatitis B**

A comparative analysis on attitude related responses showed that 96.5 % of the health care personnel of all cadre recommended HBV vaccine mandatorily in Saudi Arabia workers. Only about 56.3 % of the workers felt comfortable in treating HBV patients and 44.2 % felt comfortable working with a colleague affected with HBV in the office. (Table 4).

Regarding participant's response for transmission of HBV through various modes. 42 % of the total participants felt HBV can be transmitted by sharing toilet, which was significant. 16.9 % of the respondents felt HBV can spread by hugging and 87.9 % did not feel that it could be transmissible through sneezing and coughing. Only 30.3 % of the total participants knew that it can spread by needle prick and 96.1 % felt it could be transmissible through sexual intercourse.

## DISCUSSION

The current study was done to assess the awareness of health care personnel regarding HBV-transmission and prevention in Bisha Province as HCP are at a greater risk of contracting hepatitis infection.

Health care personnel of all sects are at greater risk of HBV exposure and infection due to usage of extensive use of sharp instruments contaminated with infected body fluids such as blood and saliva which forms the main mode of HBV transmission. Dentists in particular are at three to four fold times and surgical specialists about 6 times at greater risk than the general population. Vaccination and use of personnel protective equipment can control this disease to a major extent. HBV vaccine is recommended for all health care workers since its availability in 1982 due to their exposure to contaminated blood and body fluids.<sup>11</sup>

It was encouraging to know that 205 (88.5 %) of the study respondents were vaccinated for HBV infection, which was in concordance with Patil et al<sup>12</sup> reporting 96.2 % of their participants being vaccinated. But, contradictory to the study findings of Singhal et al<sup>13</sup> which reported only 41.9 % of their HCP to be vaccinated. At this point, it is necessary to

understand that not all people who are vaccinated are immune to the disease. In the study done by Al Hazmi Ahmad Homoud et al,<sup>14</sup> only 70 % of their vaccinated HCWs were immune. This could be explained by factors such as not everybody responds to the vaccine, incomplete vaccination dose and decline in anti-HBs titers due to passage of time.<sup>15,16</sup>

Complying with the standard precautions is a key factor in ensuring safety against HBV infection. The study results showed that a majority of respondents used gloves and mouth masks while attending patients with only 14.3 % and 2.6 % of them using it sometimes respectively and only 1.7 % of them never used gloves during any procedures. But, the figures for the usage of protective glasses were not promising with 35.9 % never using them at all. Compared to the study of AlHazmi Ahmad Homoud,<sup>14</sup> which reported only 28.3 % wearing eyeglasses and 38.3 % wearing facemasks, the current study results were more promising.

In order to optimize safety measurements, it is important that physicians must be aware of the various modes of HBV transmission. The present study findings demonstrated an appreciable degree of knowledge regarding transmission among respondents, which was similar to Al Hazmi Ahmad homoud.<sup>13</sup>

96.5 % of the respondents opined that vaccination against HBV is mandatory for all Saudi Arabia HCP and for regular training programs reflecting a positive attitude. This was similar to the study of Dieriri K et al<sup>17</sup>, which also showed positive enthusiasm in Moroccan health workers.

Acceptance of a colleague infected with HIV, however presented a dimmed response with only 44.2 % of the HCWs giving 'yes' as a reply. This numbers was slightly lesser to the study of Al Hazmi Ahmad homoud<sup>14</sup> having 60.8 % acceptance. This demonstrates that misconceptions about the infection must be addressed. A greater emphasis must be placed in the dental teaching curriculum at both undergraduate and post graduate levels for bettering concepts and understanding facts.

The proposal of national policy declaration for protecting dental health care personnel from infections by Tidbewal et al<sup>18</sup> must be adapted and emphasised for all health care

workers. This includes availability of vaccination in an aggressive manner coupled with comprehensive health and disability insurance. Such concepts will help beat the prejudices and fear amongst health care personnel bringing a positive attitudinal change towards hepatitis B patients and the infection.

However, generalization of the study results to the entire Bisha province must be exercised with caution owing to its single centre design. Studies with multi centre inclusion and a larger sample size are needed to draw broader conclusions about the disease awareness.

Additionally, biomedical waste management also needs to be considered in prevention of HBV infection. Health care personnel must be adequately trained and periodically evaluated for proper hospital waste disposal. Reinforcing health education and conduction training programs periodically is emphasised. Safety of health care personnel must be aimed at in a comprehensive effort.

### CONCLUSIONS

The present study showed that increasing awareness amongst health care provider of Bisha city is important considering the global menace of Hepatitis B infection. Comprehensively planned policies for HBV infection, diagnosis and vaccination is necessary for all health care personnel.

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