

Assessment the knowledge among male primary intermediate and secondary School teachers about Hepatitis B at Makkah Al Mukarramah in Saudi Arabia 2021

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Abstract

Background:

Saudi Arabia is considered to be an area of endemic hepatitis B virus (HBV) infection. Among Saudi children, the overall HbsAg carrier rate dropped from 6.7% in 1989 to 0.3% in 1997 after mass HB vaccination program among adults prevalence is 0.22%. The prevalence varied by region, ranging from 0.03% to 0.72% with a mean prevalence of 0.15%. The coverage of hepatitis B vaccination remains low in developing countries to date. Building capacity in hepatitis B virus prevention and management for students is one of the pillars of the national viral hepatitis control strategy. The hepatitis B virus (HBV) is considered a global problem which threatens the public health It may cause chronic infection which develops to liver cirrhosis and leads to death. The population infected with HBV has been found to be about 2 billion people, whereas annually 360 million people getting chronic liver disease and 600 thousand facing death either from chronic liver disease or liver cancer globally. **Aim of the study:** To assessment the knowledge among male School teachers about Hepatitis B at Makkah Al Mukarramah in Saudi Arabia 2021 **Methods:** A Cross sectional community based study was adopted. It included all male school teachers in primary, intermediate and secondary stages at primary health care center in Makkah Al Mukarramah. A self-administered valid questionnaire

was utilized for data collection. It included personal data, questions regarding etiology, epidemiology, symptomatology, risk factors, preventive measures and outcome of hepatitis B.

Results: Conclusion: inadequacy of knowledge regarding HBV among teachers sector, Makkah in certain key areas of HBV. This lack of knowledge is a matter of concern since teachers could disseminate their information to young youth at schools. Exposure to information, support from institutions, and financial support related to vaccination cost have a positive impact on the knowledge about hepatitis B infection and vaccination coverage.

Keywords: knowledge, male, primary, intermediate, secondary, School, teachers Hepatitis B Makkah, 2021

Introduction

More than two thousand million people have been infected with Hepatitis B virus elsewhere. Of these, about 350 million remain infected chronically and become carriers of the virus.[1] of whom approximately 75% are Asian.[2]

Saudi Arabia has a high burden of viral hepatitis, with hepatitis B and C as the major causes of liver cirrhosis, liver cancer and liver-related deaths, the incidence of liver cancer and had the highest rate of death from liver cancer in the world in 2018 [3]. A recent estimation and projection by the Ministry of Health, Center for Disease Analysis and the World Health Organization (WHO) reports is living with chronic hepatitis B (CHB) or C infection. Without intensified interventions, complications and liver-related deaths due to viral hepatitis will continue to rise [4]. Hepatitis B is endemic in China and other parts of Asia, 8% to 10% of the adult population are chronically infected.[5] In the Middle East and Indian sub-continent, an estimated 2% to 5% of the general population is chronically infected.[6] Less than 1% of the population in western Europe and North American is chronically infected.[7]

A study done to explore Saudi dental patients' awareness of hepatitis B virus (HBV) and hepatitis C virus (HCV) infections and its knowledge of transmission as well as to compare the HBV and HCV knowledge and practices of men and women. The study concludes that efforts should be made to develop and implement hepatitis B and C educational campaigns for Saudi community. These efforts might be suitable for male and female audiences. Targeted community-wide awareness-raising campaigns and health care worker education is required to improve knowledge of HBV and HCV.[8] Saudi Ministry of Health (MOH) reported in 2007 that HBV infection is the second most common viral disease after Chickenpox Virus[9]. In Saudi Arabia, HBV chronic infection is considered as a serious condition. Hepatitis B virus (HBV) infection is endemic in the Kingdom of Saudi Arabia which is between 7% and 8% [10] Depending on the regions, studying the prevalence of HBV in Saudi Arabia, at the last 2 years showed marked variations according to regions such as southwestern regions as 8.7%, the eastern region as 6.7%, and the northwestern region as 3.0% [11]. Madina had higher prevalence as 9.02% and the central city of Riyadh had the lowest prevalence estimated as 1.5% [12]. In the last two decades in Saudi Arabia, prevalence of HBV infection among the general population and the infection in different age groups, health care workers [13], pregnant women, This study

aimed thousand facing death either from chronic liver disease or liver cancer globally. Aim of the study: To assessment the knowledge among male School teachers about Hepatitis B at Makkah Al Mukarramah in Saudi Arabia 2021

Literature Review

Millions of pilgrims from various countries come to the city of Makkah Al Mukarramah annually which show greater number of HBV infections[14] The prevalence among pilgrims was 4.1%, - higher in males (87.5%) and in age group of 40-59 years (60%). It was higher in Nigerian pilgrims[15]

A study among dentists in Monte Carlo reported that lifestyle factors, such as alcohol consumption and tobacco use, had a negative association with vaccine uptake [16]. The study estimated that non-smokers and people not consuming alcohol were 2.5 and 3.0 times more likely to receive the hepatitis B vaccine, respectively [17]. Correspondingly, a variety of other studies found a lower prevalence of vaccination among people consuming alcohol [18]. This association might be explained by increased health awareness, as people with a healthy lifestyle tend to protect themselves from any potential disease, including hepatitis B.

The prevalence of HBsAg in 1990s was high in Saudi Arabia among infants and children but when the national vaccination program was initiated, the HBV infection decreased in infants and children. However, the prevalence in the adults was still high since they did not take the vaccine doses earlier before their exposure to the infection[19] Factors that affect a person's immunity and make someone a non-responder to HBV vaccine include obesity, genetics, smoking, immune deficiency, male gender and technical errors in vaccine storage [20] Since no study has precisely been carried out to have awareness about hepatitis B in Saudi Arabia, our aim, in the present

study, was to estimate the awareness of hepatitis B virus among Saudi population of Makkah Al Mukarramah city. Awareness about the hepatitis B infection has been viewed earlier in various perspectives (Bakir et al., 1995; Hussain, 1999; Ashri, 2008; Jaquet et al., 2017; Liu et al., 2017; Roupa et al., 2019). However, further comprehensive studies were thought to be required to have better understanding regarding HBV and other infections in the city of Makkah Al Mukarramah. The percentage of students having received the hepatitis B vaccine was 83.9%, higher than previously reported among health care workers (HCWs) (68.8%) in KSA [21] and higher than was estimated by WHO for its 14 geographical regions (18%–77%) [22]. In 2006, following the World Health Organization (WHO) recommendation, implemented the first dose of hepatitis B vaccination for the infants within the first 24 hours after birth [23]. Since most of the medical students were born before 2006, they likely have not received timely birth dose within 24 h after birth. The KSA guidelines for hepatitis B diagnosis and treatment recommends hepatitis B vaccination for all medical professionals [24]

Rationale:

Another strong predictor for hepatitis B knowledge and vaccination status was education. that the higher the level of education, the more likely a person was to have good knowledge and to receive hepatitis B vaccination. This is most likely due to the fact that education affects health through an individual's improved ability to acquire and process health-related knowledge, and

improved health behavior, also indicate that factors related to School teachers and profession as HCW, had strong evidence as predictor variables for hepatitis B knowledge and vaccine uptake among the high-risk . People working in high-risk conditions of hepatitis B transmission were more likely to have good knowledge of the disease and tend to protect themselves from infection through vaccination .

Aim of the study:

To assessment the knowledge among male School teachers about Hepatitis B at Makkah Al Mukarramah in Saudi Arabia 2021 .

Objectives:

To assessment the knowledge among male School teachers about Hepatitis B at Makkah Al Mukarramah in Saudi Arabia 2021 .

Methodology:**Study design:**

This study is descriptive type of cross-sectional study was conducted among 200 candidates This study included male school teachers in primary, intermediate and secondary stages at PHC in Makkah Al Mukarramah.

Study Area

The study has been carried out in the city of Makkah Al-Mokarramah Makkah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. It is located in the western area in Kingdom of Saudi Arabia and called the Holy Capital. Contains a population around 2 million. This study has been conducted in Makkah in the primary health care centers in Makkah. Saudi Arabia. An asthma knowledge questionnaire was used to measure the knowledge. During the April to June, 2019, participants were , in the western region of Saudi Arabia. And it reflects a diversified demographic profile with a considerable portion of the population comes from rural descent, while others come from an urban one. This difference translates into biological, socioeconomic and lifestyle differences in the Makkah population.

Study Population

The study has been conducted regarding male school teachers in primary, intermediate and secondary stages at PHC in Makkah Al Mukarramah. During the April to June, 2019 the period of study in 2021

Selection criteria:**Inclusion criteria**

- male school teachers in primary, intermediate and secondary stages.
- All nationalities

Exclusion criteria :

No specific exclusion criteria.

Sample size

Male school teachers in primary, intermediate and secondary stages at Makkah around .

The sample size has been calculated by applying Raosoft sample size calculator based on (The margin of error: 5%, Confidence level: 95%, and the response distribution was considered to be 20%) accordingly the Sample size is (200) the school teachers in primary, intermediate and secondary stages (male and female) after official communication with the school's dean in the Makkah and adding 10 more to decrease margin of error. After adding 5% oversampling, the minimum calculated sample has been 200. Computer generated simple random sampling technique was used to select the study participants.

Sampling technique:

Systematic random sampling technique is adopted. After that, by using random number generator, then simple random sampling technique has been applied to select the schools. Also, convenience sampling technique will be utilized to select the participants in the study. By using systematic sampling random as dividing the total students by the required sample size; (200).

Data collection tool

The self-administered questionnaire is designed based on previous studies and frameworks to assess the level of knowledge and awareness of Hepatitis B among male school teachers in primary, intermediate and secondary stages at secondary school students in Makkah. The questionnaire has been developed in English. The questions were first pre-tested and were revised and finalized after it has been pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. The survey is estimated to take 6 min to complete.

To collect the information, a set of questions were constructed and developed. All questions were closed-ended, with tick boxes provided for responses; participants answered the questionnaires from the April to June, 2021 the period of study in 2021.

The questionnaire consisted of questions that

First part General and Socio demographic information. These variables included contact data (email or mobile phone number), (age, gender, Sources of information). Other variables were education level, economic level.

A questionnaire has been developed that had Socio demographic data and questions related to knowledge and awareness respectively. The two senior faculty members checked the questionnaire's validity and comprehension, and it was revised according to their suggestions. A pilot study has been conducted on 20 secondary students to check the questionnaire's understanding and responses further, and its Cronbach's alpha was 0.75. The results of the pilot study were not included in the final analysis.

The level of knowledge has been categorized into "adequate" and "inadequate" as per each topic/question, and also as per each response/answer. Data entry and analysis were carried out using the Statistical Package for the Social Sciences. Pearson's Chi-square tests were performed to explore if there is any significant association between the knowledge and awareness level of the high school students and their (i) gender, (ii) age, and (iii) level of education.

Data collection technique:

Researcher has been visits the selected secondary school after getting the approval from the ministries of health and education. The researcher has been obtained permission from secondary school director and participants.

After the arrival of the participants has been explained the purpose of the study to all participants attending .

Data entry and analysis:

The Statistical Package for Social Sciences (SPSS) software version 24.0 has been used for data entry and analysis. Descriptive statistics (e.g., number, percentage) and analytic statistics using Chi-Square tests (χ^2) to test for the association and the difference between two categorical variables were applied. A p-value ≤ 0.05 has be considered statistically significant.

Pilot study

A pilot study has been conducted in the same sector due to the similarity to the target group using the same questionnaire to test the methodology of the study. As a feedback, the questionnaire has been clear and no defect has been detected in the methodology

Ethical Approval

This study was approved from regional research center and director of primary health care in Makkah. Each participants gave a verbal consent prior to recruitment and confidentiality was assured for each situation.

Budget: Self-funded**Results**

Table 1: Distribution the socio-demographic details of study participants The study included 200 teachers

Characteristics	No.	%
Age in years		
≤35	58	29
36-45	88	44
>45	54	27
Nationality		
Saudi	158	79
Non-Saudi	42	21
Qualification		
University	164	82
Diploma	22	11
Master	14	7
Specialty		
Physical education	16	8
Arabic	40	20
Religious studies	36	18

Social studies	22	11
Science	32	16
English	12	6
Mathematics	20	10
Administrators	18	9
Others	4	2
Educational stage		
Primary	60	30
Intermediate	58	29
Secondary	82	41

Regarding the age the most of the participant from the 36to45 were(44.0%). Most of them were Saudi (79.0%). Slightly more than half of them (82.0%) University Qualification. It was found that the majority Almost one quarter (20.0%) Arabic regarding the education stage were secondary were (41.0%).

Symptomatology

Table (2) Distribution the **Symptoms** details of study participants

Symptoms	Right answer	
	No.	%
Jaundice (true)	124	62
Loss of appetite, general weakness, nausea and vomiting (True)	88	44
Upper abdominal pain (True)	64	32
Intestinal obstruction (False)	176	88
ALL (Jaundice + Loss of appetite +upper abdominal pain)	8	4
Do not know	12	6

Symptomatology

As shown in table (2), jaundice was the most correctly recognized symptoms of hepatitis B (62.0%). Loss of appetite, general weakness, nausea and vomiting were recognized as symptoms of hepatitis B by 32.0% of participants, while upper abdominal pain recognized as hepatitis B

symptoms by only 32.0% of teachers regarding the Intestinal obstruction (False) the most of participant false were (88.0%)

Table 3: Distribution of knowledge in participants .

knowledge		
	N	%
Weak	70	35
Average	90	45
High	40	20
Total	200	100
Chi-square	X²	19
	P-value	0.0001*

Table 3 and figure 1 show that Of the(45.0%) participants have average knowledge while is a significant relation between knowledge were P-value=0.001and X² 19

Figure 1 Distribution of knowledge in participants

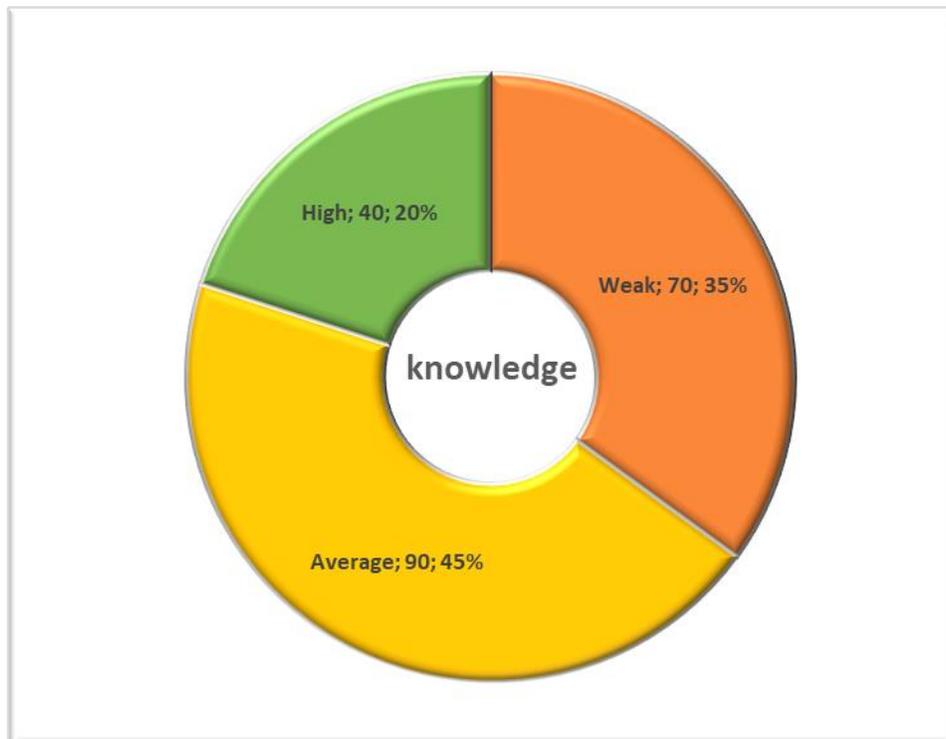


Table 4: Distribution the relation between knowledge of the teachers and socio-demographic data(age, Gender , Marital status and education)

			Weak		Average		High		Chi-square	
			N	%	N	%	N	%	X ²	P-value
Age in years	≤35	58	2 3	32.86	3 3	36.67	2	5.00	39.68	<0.001*
	36-45	88	3 6	51.43	4 0	44.44	1 2	30.00		
	>45	54	1 1	15.71	1 7	18.89	2 6	65.00		
Nationality	Saudi	15 8	6 3	90.00	8 0	88.89	1 5	37.50	51.936	<0.001*
	Non-Saudi	42	7	10.00	1 0	11.11	2 5	62.50		
Qualification	University	16 4	6 7	95.71	7 8	86.67	1 9	47.50	63.214	<0.001*
	Diploma	22	1	1.43	3	3.33	1 8	45.00		
	Master	14	2	2.86	9	10.00	3	7.50		
Specialty	Physical education	16	1	1.43	5	5.56	1 0	25.00	102.66 2	<0.001*
	Arabic	40	0	0.00	2 0	22.22	2 0	50.00		
	Religious studies	36	8	11.43	2 5	27.78	3	7.50		
	Social studies	22	9	12.86	1 1	12.22	2	5.00		
	Science	32	2 2	31.43	9	10.00	1	2.50		

	English	12	2	2.86	8	8.89	2	5.00		
	Mathematics	20	1 5	21.43	5	5.56	0	0.00		
	Administrators	18	1 1	15.71	6	6.67	1	2.50		
	Others	4	2	2.86	1	1.11	1	2.50		
Educational stage	Primary	60	1 6	22.86	2 3	25.56	2 1	52.50	23.639	<0.001*
	Intermediate	58	2 3	32.86	2 0	22.22	1 5	37.50		
	Secondary	82	3 1	44.29	4 7	52.22	4	10.00		

Table 4 and show that is a significant relation between knowledge of the teachers and socio-demographic data regarding age a significant relation where $X^2=39.68$ and P-value=0.001. Regarding the Nationality is a significant relation between Nationality and knowledge (increase in weak in Saudi Nationality (90.0%) were a significant relation where $X^2=51.936$ and P-value=0.001. Regarding the Qualification is a significant relation between Qualification and knowledge (increase in weak in University (95.71%) were a significant relation where $X^2=63.214$ and P-value=0.001.

Regarding the Specialty is a significant relation between Specialty and knowledge (increase in high in Arabic (50.00%) were a significant relation where $X^2=102.662$ and P-value=0.001. Regarding the Educational stage is a significant relation between Educational stage and knowledge (increase in high in primary (52.50%) were a significant relation where $X^2=23.639$ and P-value=0.001

Discussion

The study included 200 teachers with a response rate of 100%. This high response rate can probably be ascribed to the personal contact of the researcher with the schools directors as well as to the explanation of the purpose of the study, scientific importance and value of the study to each teacher. According [25] these techniques (e.g. personal contact, using reminders and explaining the scientific importance and value of the study, ensuring the participants confidentiality) are linked to increase participation in surveys.

HBV infection is caused by DNA virus with incubation period of 21-135 days[26] HBV infection kills about 1.1 million people globally every year.[27] However, incidence of HBV infection could be brought down by giving proper education regarding its transmission and universal immunization of infants with hepatitis B vaccine. In the Present study, approximately the teachers were aware of the prevalence rate of hepatitis B carrier in KSA [28] were aware of the existence of hepatitis B vaccine. In a study carried in India among pregnant married women in the reproductive age, [20] only 20% of the women were aware about the mode of transmission

of HBV and practicing preventive measures like sterile needles, not indulging in drug abuse and tested blood transfusion. Fifty percent of the women were having the misconceptions regarding mode of transmission of HBV infection like face-oral route, physical contact etc. In the current study, Saudi teachers had sufficient knowledge regard some risk factors such as blood transfusion, needle stick injuries and trans placental spread from infected mothers while they had poor knowledge regarding sexual transmission as well they had misconceptions like the possibility of transmission of hepatitis B virus through lactating mother to her baby. [26]

In the present research, teachers' knowledge seems to be inadequate and inefficient for attaining effective prevention practices against viral hepatitis (particularly sexual protection and role of vaccination). Interviewees' self-acknowledgement of the need for information was evident, pointing to the need for investment in actions to disseminate appropriate knowledge on viral hepatitis and collaboration with schools to prepare teachers to promote prevention of HBV.[29]

In our study, So it is highly recommendable to utilize this source of information to spread education regarding prevention of the HBV infection.[30]

The teachers' knowledge in the present study was shown to be inadequate in relation to transmission (particularly sexual) and to prevention (sexual, improper patients' isolation and avoid eating with infected patients). In this category, it was found that, based on these findings; there is great concern about the use of utensils, such as dishes and glasses used by diseased people. The belief that the use of utensils contaminated by infected persons, especially those that come into contact with the mouth, is largely diffused in our society.[31] This may have a common origin in the impregnation of the collective imaginary with information that some diseases, such as h1n1 flu, can be transmitted in this way. Another contributing factor could be the popularization, in the media, of mistaken interpretations of research results about contamination with fecal coliforms of restaurant utensils, which usually results from use of contaminated water and not from being handled by diseased persons.[29]

In the current study, the teachers reported that lack of sterilization precaution in dental clinics and barbershops respectively were risk factors for acquiring hepatitis B viral infection. Comparable figures have been reported in another study conducted in India. [24]

Hepatitis B viral infection which eventually causes liver cirrhosis and liver cancer is fortunately preventable by vaccination [19] The majority of teachers in the present study (93.8 %) knew that hepatitis B infection leads to liver cirrhosis while only (71.9 %) knew that it leads to liver cancer. A lower percentage has been reported in another study conducted Taiwan.[22] Immunization with hepatitis B vaccine plays a very important role in controlling occurrence of HBV infection. [32] In the current study, 69.2% of the teachers recognized the existence of hepatitis B vaccine. In general, the information regarding hepatitis B vaccination was quite acceptable except for the number of doses.

Although discrepancy between information concerning the modes of transmission and recommendations on prevention has been observed in some occasions,[33, 34] In the current study, the majority of teachers reported blood born transmission and recommended not using sharp instruments of others to control spread of hepatitis B viral infection.[35]

While this study provided additional information to the field of education in the area of teacher know

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