

Knowledge, Attitude and Practice among Jazan University Students in Health Sciences Colleges Regarding Hepatitis B Virus and its Vaccine

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Abstract

Background: Hepatitis B virus (HBV) is a blood-borne infectious disease. Patients with hepatitis B may feel like influenza and might, in other cases, be asymptomatic, but blood analysis can detect the disease. Hepatitis B usually starts to cure on its own after a few months, but the disease can turn into chronic hepatitis if the virus is not cured and usually lasts a lifetime. **Objective:** this study aimed to estimate the knowledge, attitude and practice about hepatitis B virus and its vaccine among health science college's students of Jazan University, KSA. **Methodology:** this cross-sectional study conducted targeting health sciences students of Jazan University in 2017. Data were collected using self-administered questionnaire which has been distributed among 400 students using stratified random sampling technique, the self-administration questioner aimed to estimate knowledge practice and attitude towards HBV and its vaccination and whether the students were vaccinated or not. Analysis has been done by using computer program (SPSS) for displaying frequency, mean and percentage. Descriptive statistics and correlation analysis have been used to detect the association. **Results:** this study found that overall knowledge about HBV hazards and prevention among students was good and satisfactory (90.6%). The majority of the respondents (73.1%) had positive attitude toward HBV and its vaccine, 58.5% had poor practice, 63.3% received vaccination and only 39.2% were fully vaccinated. **Conclusion:** Medical and health sciences students were at high risk of exposure to the HBV by direct contact with patients and their body fluids or accidental injury by needles, that's why students should be vaccinated upon entry to colleges or before starting clinical training and well-educated about post-exposure prophylaxis when exposed to these injuries.

Introduction

Hepatitis means inflammation of the liver. This condition is often caused by a virus., the most common causes of viral hepatitis are hepatitis A virus (HAV), hepatitis B virus (HBV) and hepatitis C virus (HCV). Despite most HBV infected people do not develop active liver disease, it's a dangerous infection that affects the liver and leads to serious complication including change from acute to chronic hepatitis, liver cirrhosis and hepatocellular carcinoma putting the patients at risk of death from the complication. Most of infected adults with the virus recover, but (5%–10%) are unable to clear the virus and become chronically infected [1] and according to WHO, 240 million people were chronically infected with hepatitis B and more than 686,000 people die every year due to complications of hepatitis B [2]. The health care workers are at high risk of HBV infection because of high rate of accidental exposure to body fluids of patients. HB vaccine is very important to prevent the infection and it is safe and effective given as 3-4 shots over a 6 months [3]. Health sciences college's students may be at high risk of infection when they become in contact with the

patients inside the hospital, so they should be aware of how to be more careful and eager to protect themselves from infectious disease during interaction with patients in the future [4]. Lots of cross-sectional studies [4-6] have been conducted in the recent years about HBV prevalence and in spite of the variable results and they generally indicated high prevalence specially among health care workers. **Mueller et al.** [5] studied 600 health care workers in a tertiary hospital in Tanzania at the Buganda Medical Centre (BMC) and the authors found that one third of HCWs were susceptible to HBV infection, although 63.5 % stated in their questionnaires that they had been vaccinated against HBV which indicated high prevalence of chronic HBV infection among Tanzanian HCWs [5]. In Najran region a study found that, the overall seroprevalence of HBV of 1.7% and 8.7% was found among HS and HCWs, respectively. Two-thirds of HS (66.7%, 200) and 23.3% (70) of HCWs lack anti-HBs and are susceptible to HBV infection. An overall seroprevalence of HCV of 0% and 0.3% was found among the HS and HCWs, respectively [6]. In 2013 at Haramaya University of Ethiopia

a study revealed that 95.3% of medical and health science students had poor knowledge about hepatitis B disease, its modes of transmission and prevention and even hadn't been fully vaccinated against it [7]. In February 2014 at the Syrian Private University, **Ibrahim and Idris** found that 40.62% of students were unaware that contaminated blood, contaminated needles, unprotected sex with an infected person and birth to an infected mother are all modes of HBV transmission [8]. A study on students of health colleges in Saudi Arabia between 2000-2007 showed that HBV prevalence for males and females was 0.17% and 0.78% respectively in the 18–21-year-olds and 0.39% and 0.90% in the 22–30-year-olds [4]. A descriptive study conducted in Nigeria during 2014 concluded that most of clinical students of OAU (Obafemi Awolowo University) had poor knowledge about HBV transmission and exposure and had poor vaccine uptake [9] and eventually on March 2015 in Saudi Arabia study showed that hepatitis B vaccination status among medical students at KFU (King Faisal University) was low [10]. As HBV is easily transmitted during contact directly with body fluids of affected persons and also through sexual contact, sharing needles and syringes, sharing razors and toothbrushes and vertically from mother to child [3], its prevalence was inversely proportionate with knowledge, attitude and practice (KAP) of the population.

Objective

This study aimed to estimate the knowledge, attitude and practice about hepatitis B virus and its vaccine in health science college's students of Jazan Students, KSA.

Participants and methods:

Study design

This was a cross-sectional type of observational epidemiologic study.

Sample size

It was calculated by using this equation $\{n = Z^2 * P (P - 1) / d^2\}$ where:
 - Anticipated population proportion (P)
 - Confidence level 95 %
 - Absolute precision required on either side of the anticipated population proportion (in percentage points) $d = 5\%$ (0.05)
 - The anticipated population proportion (P) of the sample is estimated to be 50% because this is the safest choice for (P) since the sample size required is larger when $P=50\%$. for 95%

confidence level $z = 1.96$, then the formula becomes as following: $n = (1.96)^2 * 0.5 * (1 - 0.5) / (0.05)^2 = 384.1$

Study population

Faculty of Medicine and Surgery, Faculty of Dentistry, Faculty of Nursing and Medical Laboratory. As the students of this faculties had contact with patients more than others, they were at higher risk. 3 groups were chosen from 3 faculties, 142 male and females attending Faculty of Medicine and Surgery as study group, 116 male and females comparable group attending Faculty of Dentistry, another 142 male and female as another comparable group attending Faculty of Nursing and Medical Laboratory. Total of 400 students were the estimated subjects for this study.

Sample type

Stratified random sampling.

Data collection

A self-administration questioner prepared by Arabic language composed of two parts: demographic information part, and 'Yes' or 'No' or 'I Do Not Know' questions and multiple-choice questions aimed to estimate basic knowledge and attitudes and practice toward HBV and its vaccination and if the students took the vaccine or not. In order to ensure clarity and relevance of this questionnaire, it was pre-tested during pilot study that was conducted among 30 students. The results of pre-tested were evaluated critically with some modifications, but not included in the final analysis.

Statistical analysis

The collected data were analysed by using the Statistical Package for Social Sciences (IBM SPSS), International Business Machines Corp., NY, USA) for displaying frequency, mean and percentage. Descriptive statistics and correlation analysis were used to detect the association.

Ethical consideration

Institutional ethical clearance obtained from Faculty of Medicine (Jazan University), consent obtained from health science colleges, Faculty of Medicine and Surgery, Faculty of Nursing and Medical Laboratory, Faculty of Dentistry, to ensure participants respects and confidentiality. Participants were informed about the nature of the study and that the data collected from them were used only on scientific purpose, then verbal consent was taken from all

participants.

Results

Table 1: background characteristics of study capital

Characteristic	Gender		Total (N=400) 100%
	Male (n=200) 50%	Female (n=200) 50%	
Age			
• 19	2	6	2.0
• 20	29	39	17.0
• 21	37	38	18.8
• 22	68	53	30.3
• 23	36	50	21.5
• 24	21	8	7.3
• 25	6	5	2.7
• 26	1	1	0.5
Faculty name			
• Medicine	71	71	35.5
• Dentistry	58	58	29.0
• Nursing	0	0	17.8
• Medical lab.	71	71	17.8
Academic year			
• Second	41	44	21.3
• Third	44	38	20.5
• Fourth	68	85	38.3
• Fifth	33	17	12.5
• Sixth	14	16	7.5
Residence			
• Urban	81	83	41.0
• Rural	119	117	59.0
Level of father education			
• Elementary	30	26	14.0
• Average	28	28	14.0
• Secondary	32	30	15.5
• Academic	93	106	49.8
• Non educated	17	10	6.8
Level of mother education			
• Elementary	49	50	24.8
• Average	33	35	17.0
• Secondary	27	21	12.0
• Academic	48	60	27.0
• Non educated	43	34	19.3
Family history			
• Yes	13	25	9.5
• No	187	175	90.5
Sources of information			
• Internet	76	61	34.3
• Newspaper	0	14	3.5
• Conferences	10	11	5.3
• Friends	49	37	21.5
• Others	65	77	35.5

Table 1 showed background characteristic for study participants according to personal information such as age, college name, academic year and residence and level of parent education also family history of HBV was included. Using 400 samples 50 % of them were female and 50 % were male with mean age 21.88 +- 1.367. Most students live in rural areas 59% and other students live in urban 41%. 35.5% of students were from Faculty of Medicine and 29% from Faculty of Dentistry and 17.8 % from Faculty of Nursing and 17.8% from Faculty of Medical Laboratory students. 49.9% of students had high level of father education and 27% of them had high level of mother education 9.5% of students had family history of HBV. The sources of student information about HBV included : internet 34.3% , newspapers 3.5% ,conference 5.3% , friends 21.5% , other sources 35.5% mostly from academic lectures.

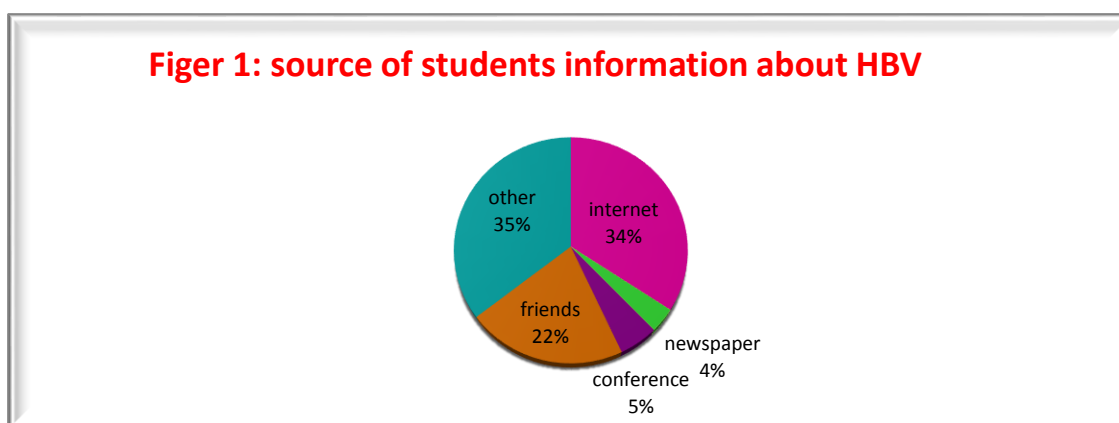


Fig. 1 shows the sources of students information about HBV. About third (34%) of their information obtained from the internet, 22% from friends and 5% from the conferences.

Statement	N (right answer)	%
do you know about HBV	392	98%
bacteria can cause HBV	193	48.4%
Is HBV communicable disease	338	84.9%
do you think that HBV Carrier is well and has no symptoms of disease	250	62.5%
can HBV lead to death	329	82.3%
can The patient who has HBV transmit the infection among HCW	348	87.4%
Do you think the HBV can cause these signs and symptoms? fever	292	73.2%
loss of appetite	270	67.7%
Nausea	284	71.4%
Jaundice	324	81.2%
Vomiting	278	69.8%
pain in upper right quadrant of abdomen	291	73.3%
half of the patients have no symptoms	229	57.7%
Do you think that HBV can transmitted by these ways? A superficial wound touching the blood of a HBV patient	341	85.5%
A superficial wound touching the saliva of a HBV patient	237	59.8%
intact skin touching the blood of HBV patients	218	54.6%
Participate in the use of toothbrushes, shaving tools and contaminated surgical instruments	353	88.5%
The pregnant mother may transmit the virus to the child during childbirth	311	77.9%
Transfusion of contaminated blood	376	94.2%
Kissing or hugging the patient	176	44.2%
Organ transplantation of infected person	348	87.2%
Sexual relations	324	81.2%
Do you think that the HBV vaccine protect from HBV	351	88%
do you think that HBV vaccine don't cause HBV	221	55.4%
do you think that pregnant women can't take the vaccinations	119	29.9%

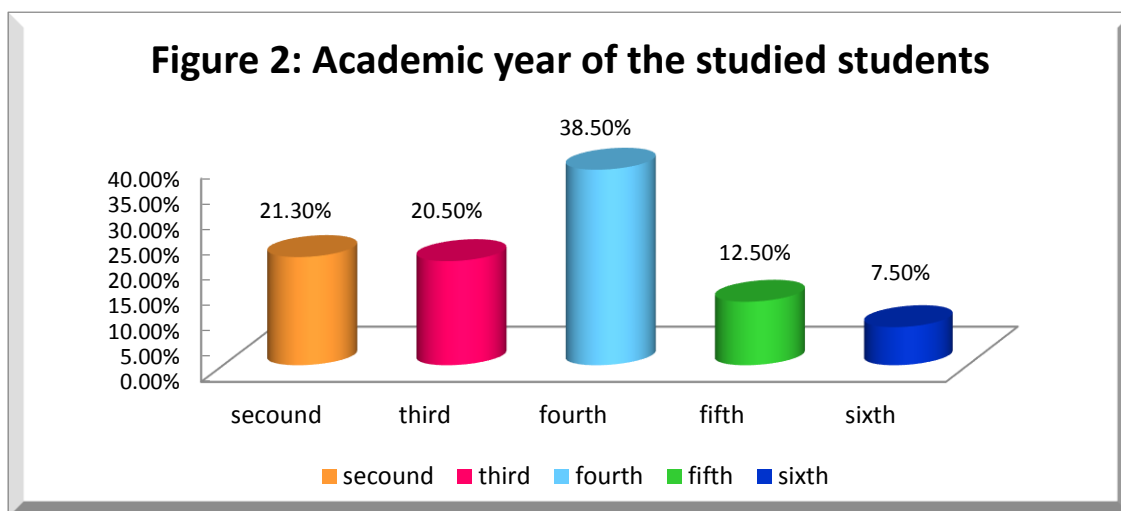


Figure 2: illustrates the academic year of the studied students. The highest percent (38.5%) was in the fourth year, 21.3% the second year, 20.5% from the third year.

Note: knowledge was assessed by giving 1 to correct answer and 0 to the wrong answer. The scale measured knowledge from maximum 24 to minimum 0. Scores <13 were taken as poor, ≥ 13 as adequate knowledge of Hepatitis B. Mean knowledge was 18.01 ± 4.14.

Table2: described the responses of the participants towards HB knowledge. Knowledge was assessed by questions focusing on HB aetiology, sign and symptoms, transmission, and vaccination. Each response was scored as ‘yes’ or ‘no’. The scoring range of the questionnaire was 24 (maximum) to 1 (minimum). A cut off level of < 13 was considered as poor whereas ≥13 was considered as good knowledge about HBV. Knowledge scores for individuals were calculated and summed up to give the total knowledge score. Out of the 385 participants, 349 (90.6%) were within the good knowledge range whereas 36 (9.4%) of poor knowledge. Good knowledge was apparent in responses to questions relating to basic knowledge (1-6 except question no.2 showed poor knowledge of students about which microbes can cause HBV). Good knowledge was apparent in responses to questions relating to symptoms (7-13), transmission of HBV (14-22 except question no.20 showed poor knowledge of students) and good knowledge of vaccination (23,24 except question no.25 showed very low knowledge of students).

Statement	Agree N (%)	Disagree N (%)	Neutral N (%)
I am exposed to HBV because of the nature of my work.	317(79.4%)	47(11.8%)	35(8.8%)
Vaccination prevents the spread of infection.	358(89.5)	23(5.8%)	17(4.3%)
Vaccination is mandatory by order of the higher medical authorities.	261(65.3%)	70(17.5%)	67(16.8%)
HBV is a dangerous disease.	361(90.3%)	16(4%)	20(5%)
The risk of death of people who received vaccination was reduced compared to those who did not receive vaccination.	372(81.3%)	18(4.5%)	54(13.5%)
I am concerned about the side effects of vaccination.	127(31.8%)	246(61.5%)	25(6.3%)
I am afraid of the injection used for vaccination.	69(17.3%)	316(79%)	14(3.5%)
Vaccination is ineffective in the protection against disease.	55(13.8%)	294(73.5%)	45(11.3%)
I am not exposed to HBV infection.	82(20.5%)	242(60.5%)	74(18.5%)
Vaccination is not available?	72(18%)	264(66%)	61(15.3%)
I have little contact with HBV patients?	195(48.8%)	127(31%)	77(19.3)

Note: attitude was assessed by giving 1 to positive and 0 to negative attitude. The scale classified attitude as positive with score >6 and negative ≤6. Over all the respondents had positive attitude towards Hepatitis B with mean score of 7.80 ± 2.25. Attitude towards HB was assessed by asking 11 questions as shown in **table 3**. Each question was labelled with positive or negative attitude. A score of 1 was given to positive, while 0 was given to negative attitudes with a score range of maximum of 11 to a minimum of 0. Majority of the respondent 282 (73.1%) had positive attitudes toward HBV and its vaccination and 104(26.9%) had negative attitude about HBV and its vaccination. except for last question there were 195(48.8%) believed that they had a little contact with HBV patients. Overall, the respondents had positive attitude toward HBV and its vaccination

Statement	Yes N (%)	No N (%)
Have you ever had HBV?	12(3%)	385(97%)
Do preventive measures in the work of wearing masks, glasses and gloves?	235(60.3%)	155(39.7)
Have you received the HBV vaccination?	253(63.7%)	144(36.3%)
One dose	50(12.7%)	
Two doses	45(11.4%)	
Three doses	155(39.2%)	
Have you organized on the dates of taking the doses	193(49.1%)	59(15%)

Note: practice was assessed by giving 1 to positive and 0 to negative. The scale classified practice as good with score 3 and poor < 3. Over all the respondents reported to have poor practice towards Hepatitis B with mean score of 2.21+-0.76 Practices towards HB were assessed by asking 4 questions as shown in **table 4**. Each question was labelled with good or poor practice. Majority of respondents (58.5%) had poor practice toward HBV and vaccine and 41.5% of them had positive practice. 3% of students had HBV infection. and 63.3% received vaccination and only 39.2% of them complete 3 doses and 49.1% of them organized on the dates of taking the dose. 60.3% of the students were personal protective equipment during their practice.

Table 5: comparison between knowledge, attitude and practice of the studied students according to gender and college.

Table :5	N	Good knowledge %	P-value	Positive attitude %	P-value	Positive practice%	P-value
Gender:							
Male	200	91.7%	0.474	78.7%	0.012	39.06%	0.336
Female	200	89.5%		67.3%		43.8%	
College:							
Medicine	142	96.9%	0.002	83.2%	0.0000	34.5%	0.016
Dentistry	116	90%		79.1%		53.5%	
Nursing	71	80%		47.8%		40.8%	
Laboratory	71	90%		69.5%		35.7%	

Table 5 showed that 91.7% of male had good knowledge regarding HBV and its vaccination and 89.5% of female had good knowledge. Regarding level of knowledge we found that knowledge in male was better than female p value 0.474 (p>0.05) so, there was no association between knowledge and gender, at level of attitude 78.7% of male and 67.3% of female had positive attitude regarding HBV and its vaccination. Regarding level of attitude we found that male was better than female p value 0.012(p<0.05) so, there was association between attitude and gender, at level of practice we found that female (43.8%) was better than male (39.06%) p value 0.336(p>0.05) so, there was no association

between practice and gender. It also showed that Faculty of Medicine 96% had higher level of knowledge compared to other faculties(p value 0.002(p<0.05) so, there was association between college and knowledge, at level of attitude we found that Faculty of Medicine was 83.2% better than other colleges(p value 0.000(p<0.05) so, there was association between college and attitude, at level of practice we found that Faculty of Dentistry (53.5%) was better than other college (p value 0.016 (p<0.05) so, there was an association between college and practice.

Table 6: Correlation between knowledge attitude and practice score

variable	Correlation coefficient	P value
Knowledge-attitude	0.212	0.001
Knowledge- practice	0.214	0.001
Attitude- practice	0.145	0.005

*Correlation significant at 0.01 level (2 tailed)

Correlations were interpreted using the following criteria: 0–0.25 = weak correlation, 0.25–0.5 = fair correlation, 0.5–0.75 = good correlation and greater than 0.75 = excellent correlation; revealing significant positive linear correlations between knowledge-attitude ($r = 0.212$, $p < 0.05$) knowledge-practice ($r = 0.214$, $p < 0.05$) and attitude-practice ($r = 0.145$, $p < 0.05$). The result reaffirmed the relationship between knowledge attitude and practice

Discussion

The aim of this study was to evaluate knowledge, attitude and practice toward HBV among student. Results of this study showed good knowledge and attitude but, poor practice as the mean score of knowledge toward HBV was 18.01 ± 4.14 . Majority of the participant knew about symptoms and ways of transmission of HBV. The primary source of information was academic lectures and internet. These results are in line with the results of study conducted in University of Dammam [16] and another study conducted in Northwest Ethiopia found that 86.2% of the participants had adequate knowledge about ways of transmission [10,11]. Opposite results were obtained in Syria and Haramaya Universities. In Ethiopia it was found that participants had weakness of general knowledge about hepatitis B, reasons that can be attributed to this difference were study location and variation of the demographic of participants. In addition, overall attitude toward hepatitis B was satisfactory. Majority of the students (71%) were aware that their occupation, but them at high risk and believed that HBV vaccine was available and safe. In the present study, majority of respondents (58.9%) had poor practice toward HBV and vaccine. 41.9% of them had positive practice, in spite of their good

knowledge and positive attitude. These results are in line with the results from a study conducted in Northwest Ethiopia and Quetta, Pakistan [10]. These findings are suggesting gap that should be addressed by health education about protective equipment.

Conclusion

The present study found that overall knowledge about HBV hazards and prevention among students was good and satisfactory. Majority of the respondents (73.1%) had positive attitude toward HBV and its vaccine. 58.5 % had poor practice; 63.3% of the students received vaccination and only 39.2% were fully vaccinated and major of them were organized on dates of doses.

60% of the students used protective equipment during their practice, which made them at lower risk.

Recommendations

Results of this study were satisfactory which reflected the awareness about seriousness of hepatitis B infection and significance of hepatitis B vaccine.

Students should be vaccinated upon entry to colleges or before starting clinical training. Colleges should have Student Health Departments; take responsibility for testing, vaccination, and observation the response to vaccine.

They must have training on protection themselves and prevention the infection before clinical practice.

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