

# Perception of undergraduates enrolled in health science courses from Asmara Eritrea towards Hepatitis B

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## ABSTRACT

**Introduction:** Hepatitis B (HB) is one of the highly infectious and the most common cause of chronic hepatitis, liver cirrhosis, and hepatocellular carcinoma. It is transmitted through blood and body fluids. Most healthcare related personnel are at very high susceptibility towards this infection from the infected patients. **Aims:** To evaluate the knowledge and practice towards the hepatitis disease and its cross-infection among dental and medical undergraduate students for the first time ever from Eritrea. **Settings and Design:** It is a cross-sectional survey conducted in the only institute offering undergraduate courses in the field of health sciences. **Materials and Methods:** A total of 115 medical and 50 dental undergraduate students from a health science institute situated in Asmara Eritrea filled the form and submitted for evaluation. The questionnaire consisted of the demographic variables such as college of study, year of course, age, gender, apart from questions regarding the knowledge, attitude, and practice towards hepatitis and its transfusion. All the data was transferred to excel and applied statistical test using SPSS software. **Statistical Analysis Used:** Chi-square test was to test the association between the knowledge and practice variable within the stream of study. **Results:** The overall knowledge of the undergraduate students was found to be very high when assessed through this survey although practice scores were not satisfactory. When asked, "Do you think you can be affected by Hepatitis?", in regular practice 33 individual gave incorrect answers. **Conclusion:** There is no doubt that the overall knowledge of the undergraduate students is found to be very high but practice scores and awareness towards chances of cross-infection is poor which requires further sessions of education and practice-based courses to be planned for the students.

**Keywords:** Hepatitis, knowledge, transmission, undergraduate

## Introduction

Hepatitis B (HB) is one of the seven types of the hepatitis virus that has been recognized and identified as hepatitis A to G, of which, F is hypothetical.<sup>[1]</sup> It is a serious blood-borne infection having a serious effect on the liver. It is highly infectious and the most common cause of chronic hepatitis, liver cirrhosis, and hepatocellular carcinoma.<sup>[2]</sup>

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Due to the underlying reason that the virus involved in it is transmitted through blood and body fluids, many healthcare related personnel are at very high susceptibility towards this infection from the infected patients.<sup>[3]</sup>

Millions of people are living with viral hepatitis and yet millions are at risk. Most people who were infected long ago with hepatitis are unaware of this chronic infection. They are at high risk of developing severe chronic liver disease and can unknowingly transmit the infection to other people, especially towards healthcare professionals.

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The highly reputed institute such as the Center for Disease Control estimates that every year, nearly 385,000 injuries due to sharps take place among health-care-related workers.<sup>[4]</sup> The same can even lead to transmission of this disease among health care workers at an alarmingly high rate.

Although the burden of disease is very high, the problem has not been addressed in a serious way for many reasons, including the relatively recent discovery of the causative viruses and the silent nature of the disease progression which can lead to chronic liver disease.

As a part of their academic schedule and training sessions these health science students, including medical students and dental students constitute a high-risk group for hepatitis infection during their training period or when they first start working. Unfortunately, in Eritrea, there is a paucity of studies on students' knowledge, attitudes, and practices regarding hepatitis infections and this to the knowledge of the authors shall be the first comparative assessment among the medical and dental undergraduate students. Thus, the main objective of this study was to evaluate knowledge levels about hepatitis infection among students at Orotta School of Medicine and Dental Sciences.

## Materials and Methods

The present cross-sectional study is being conducted in Asmara, which is the capital city of Eritrea, the young and progressively developing nation. Eritrea is a country situated in northeast Africa on the Red Sea coast bordered by Sudan, Ethiopia, and Djibouti, and occupies a strategic area in the Horn of Africa. It has been approved by the Ministry Of Health State Of Eritrea dated 04/03/2019.

The Orotta School of Medicine and Dental Medicine is the only higher education centre imparting graduation programme in the field of medicine and dentistry. This institute is situated in the capital city of Asmara. All the students from both the institutes were being invited to participate in the present study and were provided with a pre-tested proforma. The students were informed regarding the anonymity technique of data collection which was strictly being followed. This should have made the students feel comfortable and relaxed while answering the desired questions.

The questionnaire consists of the demographic variables such as college of study, year, of course, age, gender, apart from the questions regarding the knowledge and practice towards hepatitis and its transfusion.

The questionnaire was reviewed by two experts for its validity. It was also pretested to assess reliability. All questions were clearly understood. The Research Ethics Committee at the Orotta College of Medicine and Dental Sciences approved the study.

The statistical package for social sciences SPSS was used for data analysis. The analysis was done by determining frequencies, percentages, and Chi-square test with a  $P$  value  $\leq 0.05$  regarded as statistically significant.

Among the total enrolled students in the university, a total of 115 medical and 50 dental undergraduate students filled the form and submitted for evaluation correctly, as few of the forms had to be excluded due to missing data, the total sample size reduced to 165 student.

The students from medical and dental colleges were distributed in relation to gender and year of study from the second-year only since the basic sciences curriculum was same for all of the students in the first year with no discrimination. but Further exposure towards the patient might vary and hence being analyzed similarly to what has been reported by the other authors also.

## Results

**Table 1:** Demographic distribution of study subjects: A total of 165 students participated in the present study among which 115 were enrolled in medical college while 50 in dental college, respectively. Males (108) were in abundance for the present study. Maximum students belonged to intern batch in both the streams while minimum students were reported from second-year medical students and third-year dental students.

**Table 2:** Illustrates the knowledge regarding HBV among medical and dental student, it is being evident that only two questions were reported to have a highly significant difference i.e. Do you think hepatitis can affect liver and do you think any other organ can get affected by hepatitis. Minimum correct answers are being reported for the question as can hepatitis be transmitted by contaminated water. Maximum correct response reported is for the question, Is jaundice one of the common symptom of HBV? With 113 and 48 responses from medical and dental students.

**Table 3:** Practice reading prevention of HBV among medical and dental student: Among the questions regarding the practice towards HBV only one of the questions presented a significant difference among medical and dental students for the correct and incorrect answers rest all could not achieve a significant difference. The maximum reported correct answer is for the use of new syringe for every patient.

## Discussion

The present study addressed the current scenario of the knowledge and practice towards hepatitis among medical and dental students from the city of Asmara Eritrea.

According to prevention and control of viral hepatitis infection framework for global action a report by WHO in 2012,<sup>[5]</sup> the burden of viral hepatitis, though not accurately known, is believed

to be one of the highest in the world. Hepatitis A, B, C, and E are the types mostly found in the region. The prevalence of HBV is estimated at 8% in West Africa and 5–7% in Central, Eastern, and Southern Africa.<sup>[5]</sup>

Although there are many studies being conducted towards assessing the knowledge and awareness towards hepatitis among undergraduate students still this survey is of great importance as there has been no such survey ever been conducted in Eritrea and along with which these students enrolled in the survey belong to the only registered medical and dental institute rendering undergraduate degrees in the field of healthcare from this country. The basic knowledge of this disease among these undergraduate students can be life saving for hundreds

and thousands of patients who will be treated by these future doctors.

In Eritrea, the current healthcare need is dependent on these future doctors, the government is spending a lot to become more and more self-sustained in the healthcare sector. These doctors will be posted at various healthcare centers spread across the country and hence their basic knowledge towards such deadly and infectious disease is important.

Among the major highlighted finding of the current survey is that in spite of the good knowledge and awareness towards the disease, students from both groups did not consider themselves at any risk towards the disease.

About 93% of the medical students and 91% of dental students in a survey conducted in India,<sup>[6]</sup> were found to be aware of the vaccines available for hepatitis while 98% of medical students and 86% of the dental students were found to be aware of vaccine towards hepatitis in the present study which was found to be exactly same among medical students of Hyderabad<sup>[7]</sup> in India.

Healthcare people, especially medical and dental undergraduate students are in direct contact with patients hence are vulnerable to the acquisition of these infectious diseases. They are expected to know the intensity of the condition as many patients can be the carrier of the disease with whom they are being involved with blood transfusion, injections, and surgical operations in their

**Table 1: Demographic distribution of study subjects**

Variable	Medical	Dental	Total	Chi-square Value	P
Gender					
Male	76	32	108	0.671	0.796 (NS)
Female	39	18	57		
	115	50	165		
Year of Study					
2 Year	19	13	32	2.02	0.569 (NS)
3 Year	25	10	35		
4 Year	32	12	44		
Intern	39	15	54		
Total	115	50	165		

**Table 2: Knowledge regarding HBV among medical and dental student.**

Question	Option	Medical	Dental	Total	Chi-square	P
Can HBV affect any age group	Correct	110	47	157	0.206	0.650 (NS)
	Incorrect	5	3	8		
Do you think that HBV can affect the liver?	Correct	111	41	152	10.1	0.001 (HS)
	Incorrect	04	09	13		
Do you think that HBV can affect another organ other than liver?	Correct	111	42	153	8.10	0.004 (HS)
	Incorrect	04	08	12		
Is jaundice one of the common symptoms of HBV?	Correct	113	48	151	0.753	0.386
	Incorrect	02	02	04		
Can Hepatitis B be transmitted by contaminated blood and	Correct	110	47	157	0.206	0.650 (NS)
	Incorrect	05	03	08		
Can Hepatitis B be transmitted by unsterilized needles and surgical instruments?	Correct	112	46	158	2.49	0.114 (NS)
	Incorrect	03	04	07		
Can Hepatitis B be transmitted by unsafe sex?	Correct	109	45	154	1.28	0.218 (NS)
	Incorrect	06	05	11		
Can Hepatitis B be transmitted from mother to child?	Correct	100	44	144	0.342	0.853 (NS)
	Incorrect	15	06	21		
Can Hepatitis B be transmitted by contaminated water/food?	Correct	97	37	134	2.45	0.118 (NS)
	Incorrect	18	13	31		
Can hepatitis B be transmitted through skin contact	Correct	99	47	146	2.14	0.143 (NS)
	Incorrect	16	03	19		
Do you think HBV has a laboratory test?	Correct	109	49	158	0.888	0.346 (NS)
	Incorrect	06	01	07		
Is Hepatitis B curable/treatable?	Correct	112	48	160	0.230	0.632
	Incorrect	03	02	05		
Could we prevent HB transmission?	Correct	98	49	147	5.86	0.016 (S)
	Incorrect	17	01	18		

**Table 3: Practice regarding prevention of HBV among medical and dental student**

Question	Option	Medical	Dental	Total	Chi-square Value	P
Have ever thought about HBV and its vaccine	Correct	113	43	156	10.2	0.001(NS)
	Incorrect	02	07	09		
Do you ask for the screening of blood before transfusion?	Correct	112	48	160	0.230	0.632 (NS)
	Incorrect	03	02	05		
Do you ask for a new syringe before use?	Correct	115	49	164	2.31	0.128 (NS)
	Incorrect	0	1	1		
Do you conduct any education session with the patient towards Hepatitis in regular practice?	Correct	13	7	20	0.238	0.626 (NS)
	Incorrect	102	43	145		
Do you think you can be affected by Hepatitis in regular practice?	Correct	97	35	132	4.48	0.034 (S)
	Incorrect	18	15	33		

practices. They should be aware of the risk involved and should consider them at risk for the same. In the present survey nearly 84% of the medical students and 70% of the dental students consider themselves at risk but other survey conducted in Davengere<sup>[7]</sup> City, India revealed that 72% medical professionals consider themselves at risk which is similar to the current finding but only 45% of dental undergraduate consider themselves at risk of the disease which is way less when compared to the similar studies.

Being in the field of humanity and empathy, it is expected from the undergraduates that they will be able to identify the patients who are the carrier to such deadly disease, do not differentiate among the patients, take necessary precaution while providing the required treatment and educate their patients towards this disease. In the present survey, only 13.7% of the total medical and dental students reported to be involved in educating others regarding the disease which is very low when compared with a 100% response towards educating others by in a survey by Pandharbale *et al.*<sup>[8]</sup> who conducted a survey among dental practitioners, auxiliaries, and students from the state of Maharashtra, India.

When asked whether the disease can be cured or is treatable a good number of students responded it as a curable disease with 97% medical and 98% dental students of present study, similar results are being reported among medical students enrolled in Hyderabad India,<sup>[7]</sup> Jalawar Medical College Rajasthan, India<sup>[9]</sup> with 74.6% but only 52% of the students enrolled in a medical college of Ethiopia<sup>[10]</sup> reported hepatitis as a curable disease.

Regarding hepatitis be transmitted by unsafe sex 94% of medical students and 90% of dental students in the present study reported to be transmitted while 77% of medical students from India<sup>[9]</sup> and 84% of students from medical fraternity from Ethiopia<sup>[10]</sup> reported unsafe sex as a cause for hepatitis. Another major cause of hepatitis transmission reported in the present study is by contaminated blood and blood fluids by 95% and 94% of medical and dental students respectively which is less than that of 97% of medical students from India<sup>[9]</sup> and Ethiopia.<sup>[10]</sup>

The knowledge towards hepatitis, in general, is found to be high among all the undergraduate students enrolled in medical

and dental education this is not the trend seen in other studies with preclinical undergraduates<sup>[11]</sup> and dental students of Saudi Arabia.<sup>[12]</sup> The pattern of knowledge is found to increase with increasing level of education, students in the current study belong to the clinical years only.

### Limitations

The only limitation of the present study is its cross-sectional nature and another limitation is that the study is based on student's perception and hence it is liable to information bias. Most of the knowledge, attitude, and practice surveys and being conducted to assess the magnitude of the condition for which if necessary, a detailed program could be planned.

Advantage of this cross-sectional survey is its magnitude at which it can present its results, this will be first of its kind and a national level survey as this is the only university providing medical and dental education in the country.

### Conclusion

Certainly, the overall knowledge of the undergraduate students was found to be very high when assessed through this survey but further sessions of education and practice-based courses must be planned for the students, regular vaccination programmes must be organized for the students and a proper track must be kept to keep record of every enrolled student. Occupational risk towards any of the infection or disease must be taken very seriously by the nation as a huge amount is being invested towards developing a health care manpower and such infectious diseases can waste the entire hard work and the resource being used in preparing the health care workforce.

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## Conflicts of interest

There are no conflicts of interest.

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