ORIGINAL ARTICLE

Assessment of Knowledge and Attitude regarding Hepatitis B infection and its prevention among medical undergraduate students of a medical college of Western Uttar Pradesh

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ABSTRACT

Background: Compared to the general population, healthcare workers (including medical students) have a greater chance of developing a hepatitis B infection. There has often been a lack of awareness and observance of precautionary measures among the students. **Aim & Objectives**: To assess knowledge, attitude & awareness of hepatitis B infection and preventive strategies among medical students. **Methodology**: This cross sectional study was conducted for 6 months, enrolled all medical undergraduate students from all the batches studying at a medical college in Agra. A questionnaire-based proforma was filled out by each participant. **Results**: Mean age (SD) of participants was 22 ± 0.92 years with 53% female participants. Mean knowledge score among the participants was 10.6 ±2.19 and mean attitude score was 26.4±2.24. Knowledge score was significantly associated with age, sex, professional year (p value 0.000), religion (p value 0.021). Attitude was significantly associated with age (p value 0.048), sex, permanent residence (p value 0.002), socioeconomic class, knowledge (p value 0.000). **Conclusion**: There is need to improve knowledge regarding hepatitis infection from the very beginning itself to ensure proper attitude and hopefully better preventive practices among the students those will become future doctors in coming time.

KEYWORDS

Hepatitis B Infection; Medical Undergraduate; KAP, Occupational Health

INTRODUCTION

Health care workers are defined as all individuals whose main goal is to improve health, are essential to health systems. Healthcare professionals in poor nations sometimes overlook the importance of occupational health as a public health concern, putting them at a variety of risks, which has a detrimental effect on their well-being and productivity at work. (1)

Among the many risks that healthcare professionals confront at work include needle stick injuries, back injuries, latex allergies, violence, and stress. HCWs are sometimes perceived as "immune" to illness or injury because part of their work description is to tend to the sick and injured. (2) The prevalence of acute infection of hepatitis B among health workers world-wide is 5.3%. (3)

Hepatitis B is a disease that can be prevented by vaccination, and there is a reliable vaccine available.(4) A higher risk of HBV infection was associated with occupational groups of attending doctors and surgeons, house officers for medicine and surgery, lab techs, and workers at blood banks, assistants, and nurse anaesthetists.(5) According to studies, specialties that involve blood or needle sticks more frequently are at a much higher risk than any other. The chance of occupational

exposure is significantly increased by the high prevalence of HBV in underdeveloped nations.(6, 7) Healthcare professionals and students pursuing professions related to health can play a role that is pivotal in the prevention of infection by raising awareness of the disease in patients and among the general public, given the importance of having the proper knowledge and attitude regarding hepatitis virus infections in preventing the infections from spreading. (8, 9) Studies conducted in other regions on the knowledge and attitudes of undergraduate students indicate substantial variations from place to place.(7,8,10,13)

The objectives of the study were

- To assess the level of knowledge and attitude regarding Hepatitis B infection and its prevention.
- To identify the factors associated with knowledge and attitude among medical undergraduate students of a government medical college of western Uttar Pradesh.

Material & Methods

Study Type and Study Design: Observational cross sectional study.

Study Setting: The study was conducted in a government medical college in Agra, Uttar Pradesh.

Study Population: All MBBS undergraduate students.

Sample Size Calculation: Complete enumeration of study population was done so no sampling technique used.

Inclusion Criteria: We enrolled all the 600 students from 1st to final prof (150 in each batch) as the participants of the study; those who gave written informed consent were included in the study.

Exclusion Criteria: Students who couldn't been contacted even after two attempts were excluded from the study.

Study Tools: Pretested semi structured questionnaire was used for socio demographic profile and related factors to knowledge and attitude. The questionnaire was prepared after extensive review of literature and inputs from subject experts of community medicine and general medicine. The questionnaire was pilot tested in similar population. Face and content validity was done and item level content validity index (I-CVI) calculated. Cronbach's alpha was calculated for reliability testing.

Modified BG Prasad scale was used to classify the participants' socioeconomic class and thereafter categorized them into 3 categories Upper (including class I and class II), Middle (including class III and class IV) and Lower (including class V). A total of 15 questions were used for assessing the knowledge score each carrying one point for correct and zero for incorrect. The total score was calculated with minimum score as 0 and maximum as 15. The total score was then categorized in having good knowledge (8-15) and poor knowledge (0-7). A total of 10 questions were used for assessing the attitude. The questions that were allotted were then graded from 1 to 3. The total score ranged from 10 to 30 and was classified into positive (21-30), neutral (11-20) and negative (0-10).

Data Collection and Analysis: The data was collected through Google forms and was entered to MS excel, the data was analyzed after data cleaning, the normality was checked and other statistical tests such as chi square and Fischer exact test were applied to find out the factors associated with knowledge and attitude using Jamovi software.

Ethical Issues: The ethical clearance was taken from institutional ethics committee vide letter no. IEC/2018/02.

The necessary permission from institute's dean was obtained prior to data collection.

The written informed consent was taken from each participant.

Results

Out of total 600 participants that were enrolled in the study 573 responded with the response rate of 96%.

Table 1 Socio-demographic profile of participants.

Variable	Frequency (%) (n = 573)
Age	
17-21	276(48.2)
22-30	297(51.8)
Sex	
Male	269(46.9)
Female	304(53.1)
Socio Economic Class	
Upper	401(70.0)
Middle	114(19.9)
Lower	58(10.1)
Religion	
Hindu	529(92.3)
Others	44(7.7)
Professional year	
1st	145(25.3)
2nd	146(25.5)
3rd	144(25.1)
Final	138(24.1)
Permanent	
Residence	172(30.0)
Rural	401(70.0)
Urban	

Table 1. Out of the 573 participants' more than half were of the age more than 22 years (51.8%) of the total, with mean age of 22 ± 0.92 years and with 53% female participants. Nearly all of the students were of Hindu religion (92.3 %). Around three-fourths (70%) of total participants belonged to upper socio economic class of modified BG Prasad classification (2019) and resided in urban areas.

Table 2. Knowledge and factors associated with it among student participants

Variables	Good Knowledge n= 515(89.9)	Poor Knowledge n= 58(10.1)	Total n= 573(100)	p-Value
Age (in years)				0.000
17-21	232(45)	44(75.9)	276(48.2)	
>21	283(55)	14(24.1)	297(51.8)	
Sex				0.000
Male	228(44.3)	41(70.7)	269(46.9)	
Female	287(55.7)	17(29.3)	304(53.1)	
Socio Economic Class				0.492
Upper	364(70.7)	37(63.8)	401(70.0)	
Middle	101(19.6)	13(22.4)	114(19.9)	
Lower	50(9.7)	8(13.8)	58(10.1)	
Religion				0.021
Hindu	471(91.5)	58(100)	529(92.3)	
Others	44(8.5)	0(0.0)	44(7.7)	
Professional Year				0.000
1st	119(23.1)	26(44.8)	145(25.3)	
2nd	126(24.5)	20(34.5)	146(25.5)	
3rd	136(26.4)	8(13.8)	144(25.1)	
Final	134(26.0)	4(6.9)	138(24.1)	
Permanent Residence				0.046
Urban	367(71.3)	34(58.6)	401(70.0)	
Rural	148(28.7)	24(41.4)	172(30.0)	

Table 2 Mean knowledge score came out to be 10.6 with SD of 2.19. It was found that nearly all of the participants had good knowledge (90%).

It was seen that good knowledge was more among participants aged more than 21 years (55%), and among female participants (55.7%) than among aged less than 21 and among males. It was seen that good knowledge increased with increased in socio economic class, around 70%, 20% and 10% in upper, middle and lower Socio economic class respectively. The level of poor knowledge decreased as the level of professional year increased as 44.8%, 34.5%, 13.8% and 6.9% in first, second, third and final prof year. The good knowledge was more in the participants residing in urban areas (71.3%)

Variables like age, sex, religion, professional year and residence is found to be significantly associated with knowledge.

Table 3. Attitude and its associated factors among student participants

Variables	Positive Attitude n= 558(97.4%)	Neutral Attitude n= 15(2.6%)	Total n= 573(100%)	p-Value
Age (in years)				0.048
17-21	265(47.5)	11(73.3)	276(48.2)	
>21	293(52.5)	4(26.7)	297(51.8)	
Sex				0.002
Male	256(45.9)	13(86.7)	269(46.9)	
Female	302(54.1)	2(13.3)	304(53.1)	
Socio Economic Class				0.000
Upper	397(71.1)	4(26.7)	401(70.0)	
Middle	110(19.7)	4(26.7)	114(19.9)	
Lower	51(9.1)	7(46.7)	58(10.1)	
Religion				0.881
Hindu	515(92.3)	14(93.3)	529(92.3)	
Others	43(7.7)	1(6.7)	44(7.7)	
Professional Year				0.342

Variables	Positive Attitude n= 558(97.4%)	Neutral Attitude n= 15(2.6%)	Total n= 573(100%)	p-Value
1st	143(25.6)	2(13.3)	145(25.3)	
2nd	141(25.3)	5(33.3)	146(25.5)	
3rd	138(24.7)	6(40.0)	144(25.1)	
Final	136(24.4)	2(13.3)	138(24.1)	
Residence				0.002
Rural	162(29.0)	10(66.7)	172(30.0)	
Urban	396(71.0)	5(33.3)	401(70.0)	
Knowledge				0.000
Good	508(91.0)	7(46.7)	515(89.9)	
Poor	50(9.0)	8(53.3)	58(10.1)	

Table 3. Mean attitude score came out to be 26.4 with SD of 2.24. Almost all the participants were of positive attitude towards hepatitis B.

It was found that positive attitude was more among the participants aged more than 21 years (52.5%), more among female participants (54.1%). Positive attitude increased with increasing socio economic class 9%, 20% and 71% in lower middle and upper class respectively. The level of positive attitude was more among participants residing in urban areas (71%).

Variables like age, sex, SES, residence were found to be significantly associated with attitude score and variables like religion and SES were not found to be significantly associated with attitude.

It was also found that attitude and knowledge were associated and the positive attitude was more among participants with good knowledge.

DISCUSSION

It is a well-known fact that Hepatitis B infection has higher prevalence in health care workers due to their occupational risks, as the medical undergraduates would experience the same risks in future, so assessing their knowledge and attitude would help us in knowing their perceptions and in future may affect their practices.

This cross sectional study was conducted in a medical college in western Uttar Pradesh with participants being undergraduate medical students of all the batches that were studying at the time of study.

With 96% response rate in our study females participants were 53% comparing these with Thote SR et al (10) received a response rate of 91.6% with 63% males and 37% females. Baig VN et al (11) showing response rate of around 71% with 67% males, lower response rate may be due to the fact that they conducted study on clinicians and medical students both, in study by Mallika MV et al (7), most of the participants, near to 90% were females. Choudhury P et al (12) showing response rate of 83% with 96% females, as this study was conducted on MBBS and BDS students. Sharma S et al (13) in conducted his study on 200 medical students with 72% males. Rathi A et al (14) got a response rate of 81% in her study with 70% males and 30% females, similar to this Chabbra D et al (15) in her study had 67% males as participants.

Kakati R et al (16) had 100% response rate with equal number of male and female participants.

Mean age of participants in our study was 22±0.92 years, similar findings were observed in other studies such as Singh A et al (17) which was conducted on 150 medical students with mean age of 21.02±1.5 years, in Gujjarlapudi C et al (18) the median age of participants were 21±1.3 years, majority belonging to age group of 20-22 years. Baig VN et al (11)in this study the mean age was 26.08±8.69 years mean age in this study might be due to participants that were included were both clinicians and medical students, Rathi A et al(14) age ranged from 17-25 years with maximum participants in age group 19-20 years. Chabbra D et al (15) the participants had mean age 21±5.7 years.

Out of the 15 point questionnaire for assessing knowledge the average knowledge in our study was found 10.60 with SD of 2.19 which is found to be good it was found that nearly all of the participants had good knowledge (90%), in Baig VN et al (11) the mean knowledge score was found to be 15.66±1.9 out of 20 point knowledge score which is found to be poor. Around 60% of the participants had adequate knowledge regarding Hepatitis B infection and transmission. In another study Choudhary P et al (12) mean knowledge score was 3.75±1.07 out of the 20 point question score for assessing knowledge. Sharma S et al (13) found that 80% of their participants had good knowledge. Thote SR et al (10) mean knowledge score was 8.61±1.09, 84% participants had good knowledge. Bajaj B et al (19) in their study revealed that majority of the students have sufficiently good

knowledge about the disease as well as its consequences. Tirounilacandin P et al (20) found that the majority of the participants had good knowledge regarding the mode of transmission and attitude towards HBV patients. Sannathimmappa MB et al (21) found that majority of the participants (85%) of the study were aware about hepatitis B infection.

It was found in our study that out of 30 pointer score for attitude assessment average attitude score was 26.4 with SD of 2.24 that is positive, almost all the participants had positive attitude. Baig VN et al (11) in their study found mean attitude score was 7.17±1.15, and around 80% of the participants had positive attitude. In Sharma S et al (13) it was found that 68% of that participants had positive attitude. Rathi A et al (14) found that nearly all the participants had positive attitude towards compulsory vaccination, similar results were found in Chabbra D et al (15) in which more than 90% of the participants had positive attitude towards vaccination.

Our study highlighted that factors such as age, sex, religion, professional year and residence of the participant are significantly associated with knowledge and variables like age, sex, SES, residence were found to be significantly associated with attitude of the participant, knowledge of the participant is also significantly associated with attitude, similar to our study were Baig VN et al (11) found that gender, designation, vaccination status and experience in medical field were significantly associated with knowledge but not attitude, Choudhury P et al (12) found that gender was not significantly associated with knowledge but knowledge and attitude are significantly associated. Rathi A et al (14) found that professional year was significantly associated with knowledge. Thote SR et al (10) found that residence of students was significantly associated with good knowledge. Kandi et al (22) also found that there as significant improvement in knowledge of participants with increasing professional year, first year (68%) to final year (100%), similar results were also found in Nisar et al (9) a significant difference was present among clinical and preclinical students regarding basic knowledge about hepatitis B (p value = 0.004).

Conclusion

This cross-sectional study successfully assessed the knowledge and attitude regarding Hepatitis B infection and its prevention among medical undergraduate students, highlighting that majority of the participants had good knowledge and nearly all the participants had positive attitude and is significantly associated with level of knowledge. We can conclude that increasing the knowledge as it increasing with professional year also increases the attitude towards HBV prevention.

Recommendation

Hepatitis B is a serious public health issue in India, and medical students—our future doctors—must be well-informed and protected. High good knowledge and positive attitude as found in the study must be sustained and propagated in subsequent MBBS batches. Importance of prevention through proper knowledge and vaccination are to be emphasised for reducing occupational hazards of HBV infection.

Limitation of the Study

This study was a single centre study, this limits the generalizability of the findings to other medical colleges in different regions of India. The interns were not included in current study, which could have given a more comprehensive understanding.

Relevance of the Study

Gaining insight into knowledge and attitudes of the students is crucial for identifying gaps and areas that need improvement. Study identified that the both knowledge and attitude regarding HBV infection and prevention increased with professional year, and also identified that the gap in knowledge was regarding HBV vaccination, which needs to be addressed.

Authors Contribution

All authors have contributed equally.

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Nil

Conflict of Interest

There are no conflicts of interest.

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Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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