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Original Research Article

Knowledge attitude and practice on prevention of hepatitis B infection among medical students of a tertiary care centre in Tamil Nadu, India

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ABSTRACT

Background: Hepatitis B infection is a serious global public health problem. About two billion people are infected with hepatitis B Virus (HBV) all over the world. The prevalence of HBV infection in India is 4%(2%-8%) with more prevalence among health care workers. Medical students represent a group that is at high-risk for acquiring and spreading hepatitis B infection. Despite increasing prevalence of HBV infection, there is paucity of knowledge, attitude and practice on HBV among medical students. Objective of the study was to assess the knowledge, attitude and practices on prevention of hepatitis B infection among medical students of Sree Mookambika Institute of Medical Sciences, Kulasekharam.
Methods: A cross sectional study was conducted among 205 MBBS students using a pretested self-administered questionnaire for assessing the knowledge, attitude, and practice on prevention of HBV infection after obtaining informed consent from the participants.
Results: Among 205 MBBS students, correct response towards Knowledge, Attitude, and Practices were given by 77.07%, 77.56%, and 76.59% respectively, 79.5% of the students were fully vaccinated; 20.5% were partially vaccinated against Hepatitis B Virus infection.
Conclusions: The medical students are at a very high risk of contracting HBV infection during their training period in view of low HBV vaccine uptake rate and high chance of accidental exposure to blood infected with HBV. Creating awareness among medical students on various aspects of Hepatitis B infection through health education programs before their exposure in medical colleges and subjecting them to active immunization against HBV are mandatory to control the spread of Hepatitis B viral infection.

Keywords: Attitude, Hepatitis B, Knowledge, Medical students, Practice

INTRODUCTION

Viral Hepatitis is an infection of global concern affecting liver caused by various types of viruses. Most common types of viruses that cause viral hepatitis in India are Hepatitis A, B, C and less commonly D and E viruses.[1,2]

According to the World Health Organization (WHO), hepatitis B infection is the world's most common liver infection, caused by hepatitis B virus (HBV).[2] Hepatitis B infection (formerly known as "serum" hepatitis) can be both acute/or chronic, and may range from symptomatic infection or mild disease, to severe, and rarely life threatening fulminant hepatitis. Hepatitis B viral infection is highly contagious, and it is transmitted through infected person's blood or body fluids such as saliva, vaginal secretions and semen. Other risk factors are overcrowded hospitals, insufficient safety and protective

measures, improper handling of blood and body fluids and reutilization of needles that are contaminated.[3]

Globally more than 2 billion people show evidence of present/ or past Hepatitis B viral (HBV) infection and more than 240 million are chronic carriers for virus with estimated 6,86,000 deaths every year.[1,4] Global countries have been divided into three groups (high, intermediate and low) according to the endemicity to HBV infection.

India falls in the intermediate endemicity zone with prevalence of Hepatitis B surface antigen among the general population of 4% (2%-8%).[5-7] Among health-care workers, seroprevalence is two to four times higher than that of the general population.[4,5] Medical students represent a group of population that is at high-risk for acquiring and spreading hepatitis B infection (HBV). Studies show that despite increasing prevalence of HBV, there is paucity of knowledge, attitude and practice (KAP) on Hepatitis B infection and its prevention among medical students.[8-11]

Objective of the study was to assess the knowledge, attitude and practices on prevention of hepatitis B infection among medical students of Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu.

METHODS

It is a cross-sectional study with the study period of 2 months February and March 2019. Study setting took place in Sree Mookambika Institute of Medical Sciences (SMIMS), Kulasekharam, Kanyakumari district, Tamil Nadu. Study participants were Medical students of batch 2015, 2016, 2017 and 2018. Sample size calculation includes 205 MBBS students that were selected by random sampling method with p=32% and relative precision 20%.[12]

Inclusion criteria

- MBBS students of batch 2015, 2016, 2017 and 2018 willing to take part in the study were included.

Exclusion criteria

- Those who were not willing to give consent for participating in the study
- Those who were absent on the day of data collection were excluded from the study.

Data collection was done by a pretested, semi-structured questionnaire containing questions in four major categories.

- Category 1 consisted of socio-demographic details, including the age, gender and religion.
- Category 2 had 10 questions for assessing the knowledge on prevention of HBV infection. The knowledge questions were scored using the response "correct" and "incorrect".
- Category 3 consisted of 5 questions to assess the attitude regarding the prevention of HBV infection.
- Category 4 had 5 closed-ended questions on practice with the answer options as "Yes" and "No". Each question answered correctly received score of 1 for a maximum score of 10.

By interview method using the pretested, semi-structured questionnaire, data were collected after obtaining Ethical Committee clearance from the parent institution and informed consent from the participants. Data were entered in Microsoft Excel. Proportions and percentages were made out, Data compilation and data analysis were done using SPSS 20.0 Trial version. Chi square test was done to find association.

RESULTS

A Cross sectional study was conducted among 205 medical students of Sree Mookambika Institute of Medical Sciences (SMIMS), Kulasekharam, to assess the knowledge, attitude and practice on prevention of hepatitis B infection. 86.8% of the study participants were females and 13.2% males (Figure 1). 171(83.4%) of them were belonging to Hindu, 18 (8.8%) Christian, (16) 7.8 % Muslim religion (Table 1); 25.4% I year MBBS students, 22.4% II year MBBS students, 24.9% III year MBBS students, 27.3% IV year MBBS students (Figure 2); with mean age 21.05±1.145 (19-25 years) (Figure 3).

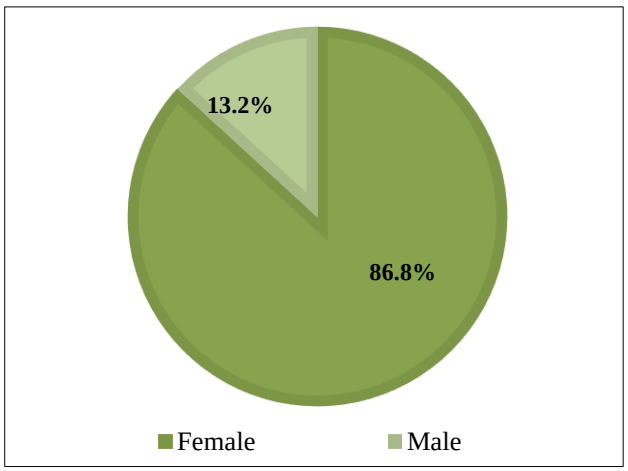

Figure 1: Gender wise distribution of the study participants.

Table 1: Distribution of medical students based on religion.

Religion	Number (%)
Hindu	171 (83.4%)
Christian	18 (8.8%)
Muslims	16 (7.8%)
Total	205 (100)

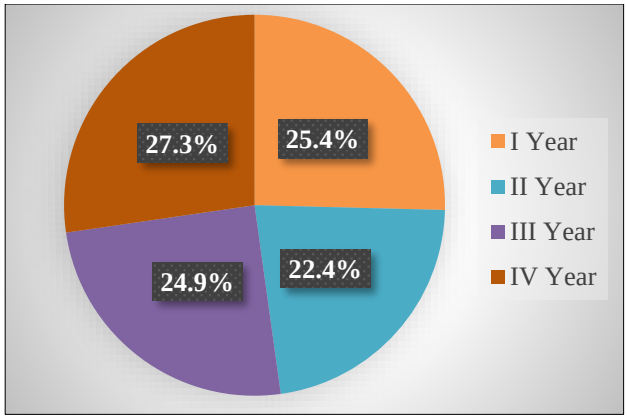

Figure 2: Batch wise (year of study) distribution of the study participants.

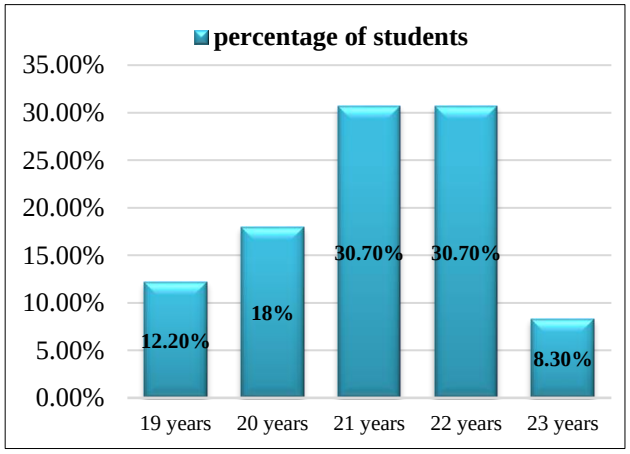

Figure 3: Age wise distribution of the study participants.

Knowledge on prevention of HBV

Out of 205 participants (Table 2) shows, 90.7% reported that HBV has viral etiology, 89.3% said that HBV causes Liver cancer, only 77.6% correctly said about doses and schedules of HB vaccine, 84.4% had known about pre and post-exposure prophylaxis, 93.7% correctly said about transmission of HBV infection by blood and body fluids, 97.6% were aware about the vaccines available for HBV infection, 94.6% correctly said about the methods of prevention of HBV infection.

Attitude towards prevention of hepatitis B infection

Regarding the attitude among medical students towards HBV infection, 92.7% believed that testing all individual is necessary, safe and effective; 83.9% said that HBV infected individuals can be allowed to do their daily work; 96.1% reported that they need not be isolated from others; 80.5% believed that no hospitalization is required throughout the course of treatment for HBV infection; 90.7% felt discomfort in handling HBV infected individuals (Table 3).

Table 2: Response to questions on knowledge related to prevention of hepatitis B.

Questions on knowledge	Correct answer N (%)	Wrong answer N(%)
Knowledge about Hepatitis B infection	200(97.6%)	5(2.4%)
Causative agent	186(90.7%)	19(9.3%)
Complications of HBV infection	183(89.3%)	22(10.7%)
Awareness about doses and schedule of vaccine	159(77.6%)	46(22.4%)
Knowledge on Pre- and Post-exposure Prophylaxis	173(84.4%)	32(15.6%)
HBV transmission by unsterilized instruments	183(89.3%)	22(10.7%)
HBV transmission by contaminated blood and body fluids	192(93.7%)	13(6.3%)
Awareness on risk factors-shared needles and unprotected sex	185(90.2%)	20(9.8%)
Awareness on availability of vaccine for HBV	200(97.6%)	5(2.4%)
Knowledge on preventive modes of HBV	194(94.6%)	11(5.4%)

Table 3: Attitude of participants towards prevention of hepatitis B.

Attitude	Yes (N %)	No (N %)
Testing all patients is necessary	190(92.7%)	15(7.3%)
All HBV infected patients are to be isolated	8(3.9%)	197(96.1%)
Can HBV patients be allowed to do their daily chores?	172(83.9%)	33(16.1%)
All HBV infected should be hospitalized throughout the treatment	40(19.5%)	165(80.5%)
Feels discomfort in handling HBV infected patients	186(90.7%)	19(9.3%)

Practice on prevention of hepatitis B infection

Out of 205 participants (Table 4) shows, only 79.5% of the students were fully vaccinated; 20.5% were partially vaccinated; 95.6% were following proper way of waste disposal regularly; 94.6% of the participants followed personal protection in handling HBV infected items and had taken necessary precautions; only 79.5% had undergone screening for HBV infection; 81% of students had attended the health education program related to hepatitis B infection and preventive measures.

Table 4: Response to practice on prevention of hepatitis B.

Practice	Number (%)
Fully vaccinated	163(79.5%)
Partially vaccinated	42(20.5%)
Participants following proper way of waste disposal	196(95.6%)
Participants following personal protection in handling HBV infected	194(94.6%)
Participants undergone screening for HB infection	163(79.5%)
Participants attended health education programs related to hepatitis B	166(81%)

DISCUSSION

HBV infection is an occupational hazard for health workers who may act as carriers. However, incidence of HBV infection can be reduced by creating awareness on its transmission and by encouraging each individual for immunization against hepatitis B which is safe and effective at all levels of health care providers. In this study 93.7% and 90.2% said that HBV is transmitted by blood, contaminated blood products and unprotected sex respectively. This is similar to the studies conducted by Dr. Jayakiruthiga et al, Setia S et al, and Askarian M et al, which shows 92.5% and 91% respectively.[12-14] Khurram M in their study has shown majority of the transmissions are with sexual intercourse (84.3%), blood transfusion(77.6%), vertical transmission (>50 %), tattooing (>20 %), touching and sharing room (55.3%).[15] Dineshbhai CG et al, in their study had shown that HBV transmitted by blood transfusion (98%), sharing needles (87%), unprotected sex (64%) and by vertical transmission (71%).[16] A study done by Tandon BN et al, showed that 95.5% of the transmission was by Sharing needles and it was more than 90% in studies conducted by Afihene MY et al, and Khan N et al.[17-19] Studies conducted by Abdela et al, and Noubiap JJ et al, show transmission by close contact (62.2%), blood and unsterilized needle (>95%) and unsafe sex (84.1%).82.5% were aware of vaccination and number of doses of vaccines as per the study conducted by Singh A et al.[20-22]

The present study shows that 79.5% were screened for HBV infection, whereas only 55.3% were screened in a study done by Khurram M and Noubiap JJ et al, reveal that 90.7 % never screened.[15,21]

In the present study 20.5% were partially vaccinated and 79.5 percent fully vaccinated, which is comparable to studies conducted by Dr. Jayakiruthiga et al, where 26.7% were vaccinated.[12] Askarian et al, shows 30% partially and 26.7% fully vaccinated.[14] The studies by Khurram M, Dineshbhai CG et al, Abdela et al, and Noor N et al, found 80.6%,79%,88.5% and 70% fully vaccinated respectively.[15,16,22,23]

Study found that 84.4% knew and followed post exposure prophylaxis which is reduced in study by Khurram M which shows that only 63% were aware of and followed post exposure prophylaxis.[15] In the work done by Dineshbhai CG et al, 62% followed universal precautions whereas Noubiap JJ et al, and Abdela et al, found that 67.1% followed universal precautions.[16,21,22]

In this study 97.6% knew that vaccine is safe and effective with correct dose and schedule (77.6%), which is comparable to the findings by Abdela et al, (81.7%), Noubiap JJ et al, (89.5%) and Dr. Jayakiruthiga et al, (82.5%).[21,22,12]

In this study 89.3% of participants were of the opinion that HBV causes liver cancer which is reduced to (77.5%), in the study by Dr. Jayakiruthiga et al.[12] In this study 96.1% disagreed that HBV patients should be isolated and 83.9% told that they can go for work which is similar to Dr. Jayakiruthiga et al, (93.5%).[12] In the present study,81% attended the health programs of HBV, which is reduced to (50.5%) in the study by Dr. Jayakiruthiga et al.[12] The present study had a limitation as we were not able to consider answers regarding HBV vaccination and practice on precautions of hep B, as the study participants were of different academic years. And it is a questionnaire-based study, therefore, there could be a recall bias of the participants.

CONCLUSION

In the present study it was found that the knowledge, attitude and practice of medical students were good, but practice was not sufficient as only 79.5% of the medical students were fully vaccinated and only 79.5% were screened for hepatitis. The medical students are at a very high risk of contracting HBV infection during their training period in view of low HBV vaccine uptake rate and high chance of accidental exposure to blood infected with HBV. Creating awareness among medical students on various aspects of Hepatitis B infection through health education programs before their exposure in medical colleges and subjecting them to active immunization against HBV should be made mandatory to control the spread of Hepatitis B. Retraining of medical and paramedical students at regular intervals need to be continued to keep their knowledge up to date regarding universal precautions, post exposure prophylaxis and hospital waste management.

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