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

Vasantha Mallika M. C., Sivaanusuya S.*

Department of Community Medicine, Sree Mookambika Institute of Medical Sciences, Kanyakumari, Tamil Nadu, India

Received: 20 October 2019
Revised: 04 November 2019
Accepted: 31 December 2019

*Correspondence:
Dr. Sivaanusuya S,
E-mail: anusudhagaran@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

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).3 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.3,5 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.6,11

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.](image)

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

Table 1: Distribution of medical students based on religion.
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).

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. 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%). 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%). 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. 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.

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.

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, Askarian et al, shows 30% partially and 26.7% fully vaccinated. 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. 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. 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.

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%). 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%). 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. 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.

ACKNOWLEDGEMENTS

Authors would like to thank college management, Department of community medicine and all the participants.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee
REFERENCES

1. Abidin SN, Rahman NA, Haque M. Knowledge and attitudes of health-based students in a public university in Malaysia on hepatitis B infection. Cukurova Med J. 2019 Jan 1;44(1):160-8.
2. Malik AH, Lee WM. Chronic hepatitis B virus infection: treatment strategies for the next millennium, Annals Int Med. 2000 May 2;132(9):723-31.
3. Saleem T, Khalid U, Ishaque S, Zafar A. Knowledge, attitudes and practices of medical students regarding needle stick injuries. J Pak Med Assoc. 2010;60(2):151.
4. World Health Organization. Hepatitis B, 2012. Available at: http://www.who.int/mediacentre/factsheets/fs204/en/index.html. 20 June 2012.
5. Park K. Parks textbook of Preventive and social medicine, 24th ed. Banarsidas bhanot publishers; 2017:227-232.
6. World Health Organization. Hepatitis B Fact Sheets. (Online) 2000. Available at: https://www.who.int/news-room/fact-sheets/detail/hepatitis-b. Accessed 3 June 2018.
7. Centers for Disease Control and Prevention. (2015). Viral Hepatitis-Hepatitis C Information. Available at: http://www.cdc.gov/hepatitis/. Accessed 11 March 2016.
8. Nagpal B, Hegde U. Knowledge, attitude, and practices of hepatitis B infection among dental students. Inter J Med Sci Public Health. 2016;5(06):1.
9. Shah DK, Jha RK, Ansari S, Sah P, Dhungana GP, Basnet S. Knowledge and awareness regarding hepatitis B among preclinical medical and dental students of Chitwan Medical College Nepal: a questionnaire-based study. Inter J Med Sci Public Health. 2016 Nov 1;5(11):1.
10. Sharma S, Dixit M, Mittal H, Jain J, Jain D, Khandelwal A. Assessment of knowledge, attitudes and practices toward prevention of hepatitis B virus infection among medical students in Geetanjali Medical College, Udaipur. Inter J Commu Med Public Health. 2018 Mar 23;5(4):1509-13.
11. Taneja N, Biswal M. Safe disposal of infectious waste—Indian perspective. J Hospital Infect. 2006 Apr 1;62(4):525-7.
12. Jayakiruthiga S, Rajkamal R, Gopalakrishnan S, Umadevi R. Knowledge, attitude and practices concerning hepatitis B infection, among medical students in urban area of Chennai, Tamil Nadu. Inter J Commu Med Public Health. 2018 Jul 23;5(8):3635-8.
13. Setia S, Gambhir RS, Kapoor V, Jindal G, Garg S. Attitudes and Awareness Regarding Hepatitis B and Hepatitis C. Amongst Health. care Workers of a Tertiary Hospital in India. Annals Med Health Sci Res. 2013;3(3):551-8.
14. Askarian M, Yadollahi M, Kouchak F, Danaei M, Vakili V, Momeni M. Precautions for health care workers to avoid hepatitis B and C virus infection. Int J Occup Environ Med (The IJOEM). 2011 Sep 17;2(4 October).
15. Khurram M. Knowledge, attitude and practices (KAP) of medical students towards hepatitis B and C. Ann Pak Inst Med Sci. 2008;4:116-20.
16. Dineshobhai CG, Jitendrabhai JK, Girija PK, Nirmal PC. Study of knowledge attitude and practice amongst interns, residents and para-medical staff regarding transmission and prevention of hepatitis-B of CU Shah Medical College and Hospital, Surendranagar. Inter J Commu Med Public Health. 2018 Dec 24;6(1):243-7.
17. Tandon BN, Acharya SK, Tandon A. Epidemiology of hepatitis B virus infection in India. Gut. 1996 Jan 1;38(Suppl 2):S56-9.
18. Afihene MY, Duduyemi BM, Hannah-Lisa A, Khatib M. Knowledge, attitude and practices concerning Hepatitis B infection, among healthcare workers in Bantama, Ghana: a cross sectional study. Inter J Commu Med Public Health. 2017 Feb 5;2(3):244-53.
19. Khan N, Ahmed SM, Khalid MM, Siddiqui SH, Merchant AA. Effect of gender and age on the knowledge, attitude and practice regarding hepatitis B and C and vaccination status of hepatitis B among medical students of Karachi, Pakistan. J Pak Med Assoc. 2010 Jun 1;60(6):450-5.
20. Singh A, Jain S. Prevention of Hepatitis B: knowledge and practices among Medical students. Healthline. 2011 Jul;2(2):8-11.
21. Noubiap JJ, Nansseu JR, Kengne KK, Ndoula ST, Agyengi LA. Occupational exposure to blood, hepatitis B vaccine knowledge and uptake among medical students in Cameroon. BMC Med Edu. 2013 Dec;13(1):148.
22. Abdela A, Woldu B, Haile K, Mathewos B, Deressa T. Assessment of knowledge, attitudes and practices toward prevention of hepatitis B virus infection among students of medicine and health sciences in Northwest Ethiopia. BMC Res Notes. 2016 Dec;9(1):410.
23. Noor N, Gul A, Ahmed BP. Hepatitis B: knowledge, attitude and practices of dental house officers. Pak Oral Dental J. 2018 Sep 10;38(2):259-61.

Cite this article as: Vasantha Mallika MC, Sivaannusuya S. Knowledge attitude and practice on prevention of hepatitis B infection among medical students of a tertiary care centre in Tamil Nadu, India. Int J Res Med Sci 2020;8:492-6.