

University of Dundee

A study on knowledge attitude and practices related to hepatitis B infection among nursing students of government nursing college, Jagdalpur, Bastar, Chhattisgarh

Nalli, Susheel Kumar; Sinha , Teeku; Arora, Garima; Khan , Qamrul H.

Published in:
International Journal of Community Medicine and Public Health

DOI:
[10.18203/2394-6040.ijcmph20173853](https://doi.org/10.18203/2394-6040.ijcmph20173853)

Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):
Nalli, S. K., Sinha , T., Arora, G., & Khan , Q. H. (2017). A study on knowledge attitude and practices related to hepatitis B infection among nursing students of government nursing college, Jagdalpur, Bastar, Chhattisgarh. *International Journal of Community Medicine and Public Health*, 4(9), 3407-3412. <https://doi.org/10.18203/2394-6040.ijcmph20173853>

General rights

Copyright and moral rights for the publications made accessible in Discovery Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from Discovery Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the public portal.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Original Research Article

A study on knowledge attitude and practices related to hepatitis B infection among nursing students of government nursing college, Jagdalpur, Bastar, Chhattisgarh

Susheel Kumar Nalli, Teeku Sinha*, Garima Arora, Qamrul H. Khan

Department of Community Medicine, Government Medical College, Jagdalpur, Chhattisgarh, India

Received: 19 July 2017

Accepted: 08 August 2017

***Correspondence:**

Dr. Teeku Sinha,

E-mail: teekusinha1974@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 virus is a potentially critical and familiar occupational hazard for health care workers including nursing students particularly those who are exposed to the populations whose HBsAg prevalence is high. The aim of the study was to assess the Hepatitis-B - knowledge, perception and vaccination status among nursing students.

Methods: A cross-sectional study was conducted by Department of Community Medicine, Government Medical College, Jagdalpur, Chhattisgarh in July 2016, among nursing students of Government Nursing College, Jagdalpur, Chhattisgarh. Using purposive sampling data was collected via a pre-tested self-administered questionnaire. Overall 218 nursing students participated in the study. Statistical analysis was done using Stata version 12.1. Chi square test was used to identify any statistically significant difference among the nursing batches.

Results: The study found that only 18.9% of the 1st year students are vaccinated. Knowledge regarding treatment options was found out to be significantly ($p < 0.05$) low among all nursing batches.

Conclusions: There is lack of knowledge among all students regarding its treatment. Only 18.97% of the 1st year students reported to be vaccinated which puts them at a greater risk of acquiring the infection in future. Therefore, it is recommended that they should get themselves vaccinated before entering clinical rotations. More studies should be conducted on nursing/ medical staff to assess their knowledge on Hepatitis B infection in tribal areas which have high prevalence.

Keywords: Hepatitis B, HBV, Hepatitis B vaccine, Nursing students, Knowledge

INTRODUCTION

Nursing professionals form the fundamental element in the healthcare panel. During the course of acquiring their under graduate degree at some phase of their learning they are taught about the occupational hazards they are prone to, and the precautions to be followed to control and prevent them. Among the numerous risks the nursing professionals are exposed to, Hepatitis-B is one of the most dangerous and fatal one. Hepatitis is an inflammatory disease of the liver, caused by Hepatitis-B

virus (HBV) transmitted parenterally. HBV infection is a global public health problem. Globally, more than 2 billion are infected and about 6% of the world population is carrier for HBV. India has a point prevalence of 2.1% and carrier rate of 1.7%.¹ Based on the prevalence of Hepatitis-B surface antigen (HBsAg), different regions of the world are classified as highly endemic zone where prevalence rate is $\geq 8\%$, which includes South-east Asia, China, Africa, Pacific Islands, Amazon and parts of Middle east, Intermediate endemic zone where prevalence rate is 2-7%, which includes South Asia,

Eastern and Southern Europe, Russia and America (central and south) and low endemic zone where the prevalence rate is <2%, which includes United States, Western Europe and Australia.² Tough India falls under the intermediate endemic zone it has around one-fifth of world's population, which accounts for a large proportion of the worldwide Hepatitis-B infection burden. India harbors 10-15% of the entire pool of Hepatitis-B virus carriers of the world.³ A very high prevalence of Hepatitis-B infection has been reported from the tribal population with prevalence rate of 4.4% HBsAg in baiga tribes of Madhya Pradesh.⁴ Joshi et al studied 11 different tribal populations of five districts of Madhya Pradesh and found HBsAg carrier rate of 2.99-21.54% among various tribes which provides ample evidence that the nursing professionals who work in this particular geographical area are at greater risk of exposure to Hepatitis-B virus.⁴ Hence, the current study was designed and conducted among the nursing students at Government Nursing College Jagdalpur Chhattisgarh, to assess their Hepatitis-B - knowledge, perception and vaccination status.

METHODS

A cross-sectional study was conducted by the Department of Community Medicine, Government Medical College Jagdalpur, Chhattisgarh, India in July 2016 using purposive sampling. Data was collected from the Nursing students (first year to final year) at Government Nursing College Jagdalpur, Chhattisgarh, via a pre-tested self-administered questionnaire. For the convenience of participants the informed consent and questionnaire was provided in vernacular language (Hindi). Inclusion and

exclusion criteria: all the nursing students willing to participate were included and nursing students not willing to participate and those not present on the day of data collection were excluded. Ethical approval was taken from the institutional ethics committee, Government Medical College Jagdalpur, Chhattisgarh. Data was analysed using Stata version 12.1. and presented in tabular and graphical formats. Chi square test was used to identify any statistically significant association ($p < 0.05$) among the nursing batches for the explanatory variables.

RESULTS

A total of 218 female nursing students participated in this study, among which there were 58 1st year students, 55 2nd year students, 50 3rd year students and 55 4th year students. The age of the participants ranged from 18 to 38 years with a mean age of 20.8 years. All the students belonged to government nursing College and were English and Hindi speakers.

Table 1 gives the description on the level of knowledge and awareness about Hepatitis B infection among four academic batches. More than 95% of the total study participants had heard about Hepatitis B infection. 2nd (78.18%), 3rd (82%) and 4th (81.82%) year students were aware of its causative agent when compared to 1st year nursing batch ($p < 0.001$). Similarly, knowledge on HBV incubation period was better among 3rd and 4th year nursing students when compared to 1st year and 2nd year ($p < 0.001$). 4th year students had significantly better knowledge regarding vaccination schedule in comparison to other academic batches.

Table 1: Description on the level of knowledge and awareness about hepatitis B.

| Variables | 1 st year N=58 % | 2nd year N=55 % | 3rd year N=50 % | 4th year N=55 % | Total N=218 % |
|--|-----------------------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Ever heard about Hepatitis B Infection? (yes) | 96.55 | 92.73 | 98 | 94.55 | 95.41 |
| Hepatitis B is caused by HBV (yes) ** | 39.66 | 78.18 | 82 | 81.82 | 69.72 |
| Incubation Period of Hepatitis B infection is 30-180 days? (yes)** | 12.07 | 14.55 | 40 | 47.27 | 27.98 |
| World hepatitis day is celebrated on 28th July? (yes) | 17.24 | 21.82 | 18 | 7.27 | 16.06 |
| Should hepatitis B vaccination be given at birth? (yes) ** | 53.45 | 43.64 | 60 | 81.82 | 59.63 |
| The minimum number of doses for a complete primary HBV vaccination is 3 doses? (yes) ** | 56.9 | 94.55 | 90 | 94.55 | 83.49 |
| Is there any diagnostic test available? (Yes) # | 68.97 | 80 | 78 | 94.55 | 80.28 |
| Are healthcare professionals at risk of transmission? (Yes) ** | 63.79 | 94.55 | 98 | 96.36 | 87.61 |
| HBV is the most contagious blood-borne pathogen through accidental exposure to blood (Yes) | 62.07 | 72.73 | 74 | 83.64 | 72.94 |
| Contaminated food is not a risk factor for HBV transmission (yes) | 20.69 | 32.73 | 34 | 32.73 | 29.82 |

N = Number of participants # $p < 0.05$ ** $p < 0.001$.

Table 2: Hepatitis B vaccination awareness and hepatitis B treatment.

| Variable | 1 st year N=58 % | 2 nd year N=55 % | 3 rd year N=50 % | 4 th year N=55 % | Total N=218 % |
|---|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|---------------------|
| Are you vaccinated for Hepatitis B (Yes) ** | 18.97 | 98.18 | 94 | 100 | 76.61 |
| Do you think Hepatitis B vaccine must be mandatory for all health care professionals (Yes) | 91.38 | 98.18 | 98 | 100 | 96.79 |
| Is there any permanent cure for Hepatitis B Infection? (Yes) # | 51.72 | 61.82 | 40 | 52.73 | 51.83 |
| What is the mode of treating or curing the infection # | | | | | |
| Symptomatic treatment with drugs, but not cured completely | 36.21 | 32.73 | 60 | 49.09 | 44.04 |
| It can be cured with drugs | 41.38 | 60 | 28 | 38.18 | 42.2 |
| Don't know/ not aware | 22.41 | 7.27 | 12 | 12.73 | 13.76 |
| Can hepatocellular carcinoma (Cancer of liver) be prevented by Hepatitis B Vaccine (Yes) ** | 31.03 | 70.91 | 32 | 47.27 | 45.41 |
| Do you think Hepatitis B infection is 50-100 times more infectious than HIV? (yes) # | 41.38 | 52.73 | 40 | 45.45 | 44.95 |
| In your practice, will you manage/treat patient infected with Hepatitis B virus (Yes) | 94.83 | 98.18 | 98 | 98.18 | 97.25 |
| Will you accept a student in your class who is positive for HBV (Yes) | 94.83 | 98.18 | 100 | 100 | 98.17 |

N = Number of participants # p< 0.05 ** p<0.001

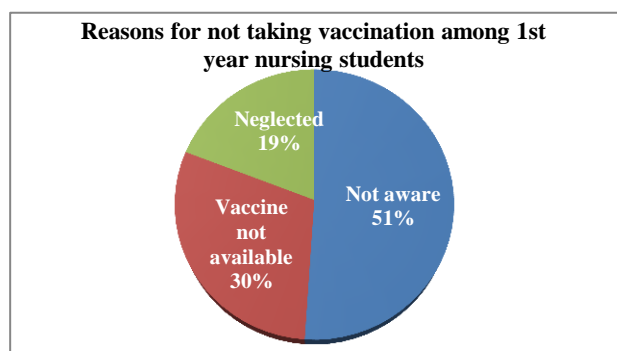


Figure 1: Explains the reasons among 81.03% 1st year students for not being vaccinated.

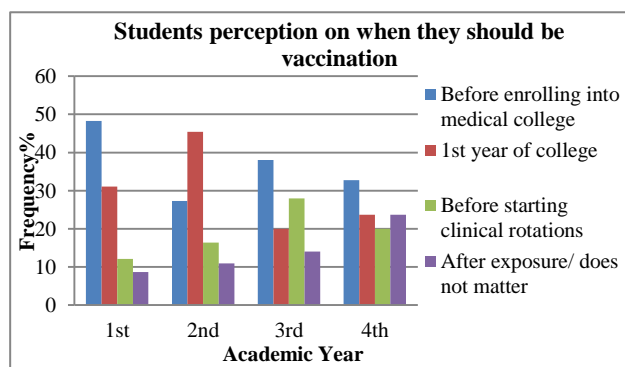


Figure 2: Shows students perception on by when they should be vaccinated.

More than 94% of 2nd year, 3rd year and 4th year participants agreed that healthcare professionals are at a

risk of transmission of Hepatitis B infection. The participants had little awareness when asked if contaminated food was a risk factor for HBV transmission.

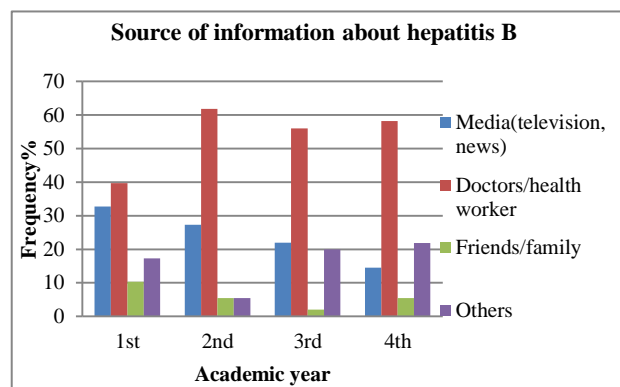


Figure 3: Shows the source of information about hepatitis B infection among academic years.

Table 2 gives the description of awareness regarding vaccination among study participants. Statistically significant difference (p<0.05) was observed between academic levels with their vaccination status, with 4th year to be 100% vaccinated followed by 2nd (98.18%), 3rd year (94%) and 1st year (18.97%). Knowledge regarding these three variables: what is the mode of treating or curing the infection, can hepatocellular carcinoma be prevented by hepatitis B and do you think Hepatitis B is 50-100 times more infectious than HIV was relatively low (<50% overall correct answers; p<0.05).

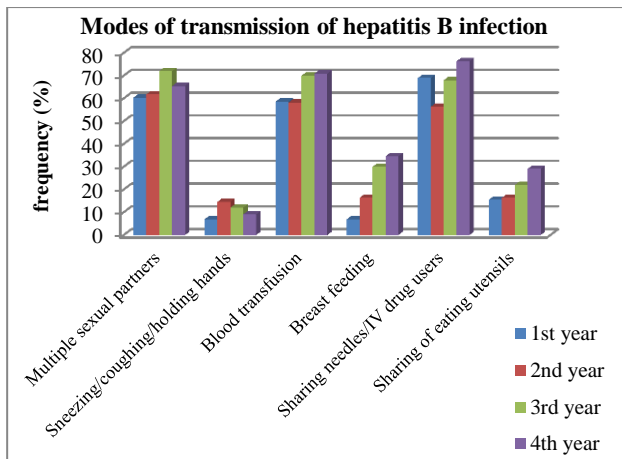


Figure 4: Shows knowledge on the modes of transmission of hepatitis B infection among all study participants.

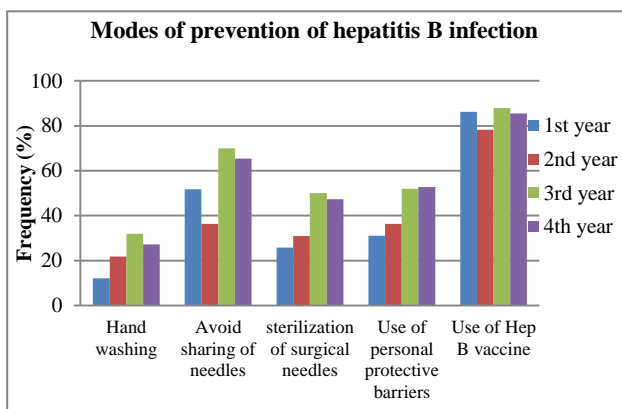


Figure 5: Shows knowledge on the modes of prevention of hepatitis B infection among all study participants.

DISCUSSION

HBV infection can not only be treated but can also be prevented.^{5,6} Nursing students are at a greater risk of acquiring HBV infection due to an early exposure to hospital setting.⁷ Therefore, providing them appropriate understanding and instructions on occupational health hazard is of utmost importance.⁷ The existing study, to our knowledge, is the first of its kind to assess knowledge, perception and vaccination status among all four nursing academic batches of Government Nursing College, Jagdalpur, Chhattisgarh. Jagdalpur is a city in Bastar district which is predominantly a tribal region.⁸

Conferring the findings of this study, all academic batches showed good knowledge by reporting that they had heard about Hepatitis B infection (95.41%). On further questioning about the causative organism and its incubation period, 2nd, 3rd and 4th year students had better knowledge when compared to 1st year students. This finding is nearly consistent with the findings from previously conducted study by Ibrahim and Idris on 1st

year and 5th year medical students.⁹ This difference in knowledge is possible as hepatitis B is well-informed in the 2nd year of their nursing curriculum.

One of the most effective ways to prevent HBV infection is to get vaccinated and to avoid exposure to contaminated blood or body fluids.¹⁰⁻¹² 4th year nursing students expressed superior understanding of vaccination schedule (Table 1) when compared to 1st year students. Similar results were observed by studies conducted by Singh and Jain and Giri and Phalke on medical students.^{13,14}

Statistically Significant difference ($p < 0.001$) was witnessed in their vaccination status. Only 18.97% of 1st year students reported being vaccinated for HBV when compared to 2nd (98.18%), 3rd (94%) and 4th (100%) year students. The findings revealed that as students progressed towards their successive academic years their vaccination status improved, which is similar to Noubiap et al's findings.¹⁵

Upon further probing on the reasons for not taking vaccination, 51% of the non-vaccinated 1st year students reported that they were "not aware" of vaccine availability (Figure 1), which is similar to the findings of Biradar et al's study on first year medical students¹⁶. Statistically significant difference ($p < 0.05$) was observed among all academic batches when asked as to when they should be ideally vaccinated. 48.28% 1st year, 38% 3rd year and 32.73% of the 4th year students felt they should be vaccinated before enrolling into medical college. However, 45.45% of the 2nd year students felt getting vaccinated in the 1st year of college was appropriate.

More than 50% of the study participants were aware about the modes of transmission of hepatitis B infection. It can therefore be said that their knowledge was relatively lower when compared to participants from other studies conducted on medical students by Singh et al (86.7% had correct knowledge), Giri and Phalke (90% had correct knowledge) and Magdey et al (77.7% had correct knowledge).^{13,14,17} However, Khan et al's study showed similar level of knowledge (57.1%) among medical students as that shown by present study.¹⁸

Doctors/health worker was the most common source of information among all academic batches with media being the 2nd choice. However, Biradar et al s showed Media to be more a powerful source than doctors. Doctors/health workers and media can be unquestionably used in creating more awareness regarding other communicable diseases as well.

Majority of the students in our study (>70%) answered the use of Hepatitis B vaccine as the most reliable means to prevent infection. Similar results were seen in Biradar et al study.¹⁶ The results are consistent with their current status of vaccination, excluding the 1st year nursing students.

Knowledge regarding treatment among all academic batches was low in our study (Table 2). Imparting knowledge regarding the disease etiology, causative factors, modes of transmission and its prevention is insufficient if the health worker is not aware of its possible treatment options. Likewise, more awareness needs to be created among the nursing students on the potency of HBV as only 44.95% of them correctly answered about its infectious nature.

It is commendable to obtain a very positive attitude among all nursing students when they were asked if they would treat a patient with HBV and accept HBV positive colleague.

Regardless of the findings in the study, we accept the limitations of this study because all the information obtained was self-reported and may not essentially reflect the accurate knowledge. Moreover, the study participants involved only females and the results cannot be generalized to other private nursing colleges located in Jagdalpur, Chhattisgarh. Due to lack of studies conducted purely on all academic batches of nursing students we have compared our findings to that of studies on medical students. Moreover, the tools for assessing knowledge on Hepatitis B infection varied among the investigators.

CONCLUSION

Most of the nursing students had good knowledge about the disease, modes of transmission and its prevention. However, as anticipated 3rd year and 4th year academic batches had more knowledge over 2nd year followed by 1st year students. There is however, a lack of knowledge among all students regarding its treatment. Only 18.97% of the 1st year students reported to be vaccinated which puts them at a greater risk of acquiring the infection in future. Therefore, it is recommended that they should get themselves vaccinated before entering clinical rotations. More studies should be conducted on nursing/ medical staff to assess their knowledge on Hepatitis B infection in tribal areas which have high prevalence.

ACKNOWLEDGEMENTS

The authors are very grateful to all nursing students who participated in the study. We specially thank Mrs. Sapna Thakur (Principal Govt Nursing College Jagdalpur), Mrs. N. Babita Rani (Demonstrator Govt Nursing College Jagdalpur) and our colleagues for their support in helping us collect the data.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Batham A, Narula D, Toteja T, Sreenivas V, Puliyeel JM. Systematic review and meta-analysis of data on point prevalence of hepatitis B in India. *Indian Pediatr* 2007;44:663-75.
2. Te HS, Jensen DM. Epidemiology of hepatitis B and C viruses: a global overview. *Clin Liver Dis*. 2010;14:1-21.
3. Reddy PH, Tedder RS. Hepatitis virus markers in the Baiga tribal population of Madhya Pradesh, India. *Trans R Soc Trop Med Hyg*. 1995;89:620.
4. Joshi SH, Gorakshakar AC, Mukherjee M, Rao VR, Sathe MS, Anabhavane SM, et al. Prevalence of HBsAg carriers among some tribes of Madhya Pradesh. *Indian J Med Res*. 1990;91:340-3.
5. Abedi F, Madani H, Asadi A, Nejatizadeh A. Significance of blood-related high-risk behaviors and horizontal transmission of hepatitis B virus in Iran. *Arch Virol*. 2011;156:629-35.
6. Wilkins T, Zimmerman D, Schade RR. Hepatitis B: diagnosis and treatment. *Am Fam Physician*. 2010;81:965-72.
7. Ojulung J, Mitonga KH, Iipinge SN. Knowledge and attitudes of infection prevention and control among health sciences students at University of Namibia. *African health sciences*. 2014;13(4):1071-8.
8. District Administration, Bastar (C.G.). Available at: <http://bastar.gov.in/>. Accessed on 23 November 2016.
9. Ibrahim N, Idris A. Hepatitis B awareness among medical students and their vaccination status at Syrian Private University. *Hepatitis research and treatment*. 2014;2014:131920.
10. Kesime EB, Uwakwe K, Irekpita E, Dongo A, Bwala KJ, Alegbeleye BJ. Knowledge of hepatitis B vaccine among operating room personnel in Nigeria and their vaccination status. *Hepat Res Treat*. 2011;2011:1-5.
11. Singhal V, Bora D, Singh S. Hepatitis B in health care workers: Indian scenario. *J Lab Physicians*. 2009;1:41-8.
12. Nwokediuko SC. Chronic hepatitis B: management challenges in resource-poor countries. *Hepat Mon*. 2011;11:786-93.
13. Singh A, Jain S. Prevention of Hepatitis B; knowledge and practices among Medical students. *Healthline*. 2011;2(2):8-11.
14. Giri PA, Phalke DB. Knowledge and vaccination status of hepatitis B amongst medical interns of Rural Medical College, Loni, Maharashtra, India. *South East Asia Journal of Public Health*. 2014;3(2):19-22.
15. Noubiap JJ, Nansseu JR, Kengne KK, Ndoula ST, Agyingi LA. Occupational exposure to blood, hepatitis B vaccine knowledge and uptake among medical students in Cameroon. *BMC Med Edu*. 2013;13(1):148.
16. Biradar SM, Kamble VS, Reddy S. Hepatitis B infection and vaccination: knowledge and attitude

among medical students. *Int J Community Med Public Health*. 2015;2(4):395-8.

17. Darwish MA, Al-Khalidi NM. Knowledge about Hepatitis B Virus Infection among Medical Students in University of Dammam, Eastern Region of Saudi Arabia. *Life Sci J*. 2013;10(2):860-7.
18. 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;60(6):450-5.

Cite this article as: Nalli SK, Sinha T, Arora G, Khan QH. A study on knowledge attitude and practices related to hepatitis B infection among nursing students of government nursing college, Jagdalpur, Bastar, Chhattisgarh. *Int J Community Med Public Health* 2017;4:3407-12.