

HEPATITIS B IMMUNIZATION STATUS OF STUDENTS IN NISHTAR MEDICAL  
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## ABSTRACT

**Background:** Hepatitis B virus (HBV) infection causes significant morbidity and mortality worldwide. Occupational exposure of health care workers and medical students increase their risk of acquiring HBV infection, and many authorities recommend vaccination. However, significant proportions of health care workers do not receive HBV immunization, and remain at increased risk to HBV infection. **Objectives:** To study the vaccination status against Hepatitis B among medical students enrolled in Nishtar Medical University and Hospital, Multan. **Methods:** This cross sectional, randomized, observational study was done at Nishtar Medical University and Hospital, Multan. It has almost 1200 medical students from first year to final year. All students were interviewed using a pre structured questionnaire to find out the vaccination status of these students and the reasons for not getting vaccinated. **Results:** A total of 350 medical students were approached to participate in the study but only 300 (85%) students gave response. Out of the total 300 students, 230 were vaccinated against Hepatitis B. Among these students only 150 (50%) had completed their full vaccination schedule and 80 (26.6%) did not completed their 3 doses of vaccination. Reasons for not being vaccinated were lack of knowledge about consequences (17%), casual behavior (30%), don't know where to obtain the vaccine (15%), fear of injection (15%), busy schedule (13%) and financial problems (10%). 180 (60%) students were screened before taking the vaccine. **Conclusions:** Despite of relation to medical profession, behaviour among student regarding hepatitis vaccination is not satisfactory. Awareness campaign is need of hour to spread awareness in people especially related to medical profession because they are prone to get infected in hospital settings during dealing with patients.

**KEYWORDS:** Hepatitis B, vaccination, medical students, Vaccine, attitude, awareness

## INTRODUCTION

Hepatitis B virus (HBV) infection is seen in all ages and all around the world with high morbidity and mortality. According to global statistics over two billion cases are infected with Hepatitis B of whom 350 million are chronic carriers.<sup>[1]</sup> Every year more than one million of the affected individuals die because of complication such as cirrhosis and liver cancer which happens despite the availability of an effective vaccine with minimal/transient side effects.<sup>[2]</sup> Pakistan Medical Research Council in its seroprevalence survey has shown national HBsAg prevalence as 2.5%. The gender wise distribution in Punjab province is 3.4% in males and 1.7% in females.

The Health care workers and medical students are at risk of infection with Hepatitis B through occupational exposure to blood and infectious body fluids.<sup>[3]</sup> Therefore it is important for medical students to be actively protected against HBV through vaccination. The introduction of hepatitis B vaccine has increased the annual budget for immunization services by

approximately 56%. It is predicted that more than 4000 future deaths shall be averted annually by this intervention.<sup>[4]</sup> It is found that the monovalent hepatitis B vaccine is considerably more cost-effective than the hepatitis B vaccine in combination with DPT. A safe and effective vaccine against HBV is available since 20 years and is effective in preventing infection when given before or shortly after exposure. The currently available Hepatitis B vaccine is extremely safe. A study from Lahore reported that 49% health care workers and 42% medical students were vaccinated against hepatitis B. Internationally the vaccination coverage among medical students was 11% in South Florida and 29% in Yemen.<sup>[5]</sup>

This study was planned in a public sector medical college in South Punjab to assess the status of vaccination in this group and determine the reasons of non- vaccination with the aim of improving the health status of the community.

## METHODOLOGY

This cross sectional, randomized, observational study was conducted from January 2018 to May 2018 at Nishtar Medical University and Hospital, Multan. 300 student who responded from first year to final year were included in the study. We tried to collect equal number of students from the classes, 60 students response was taken from each class year. A preformed questionnaire was given to all participants. After taking the consent, the students were explained the aims of the study and each student was given the questionnaire to fill themselves and they were allowed to fill the proforma anonymously, there was no need to mention their name. The information gathered was age, gender, year of study, screening before vaccination, history of vaccination, completion of all 3 doses and reasons for not getting vaccinated. Complete vaccination was defined as all three doses of vaccine and incompletely vaccination was less than 3 doses of vaccine.

The questions also include the history of Hepatitis B infection among the medical students. Collected data were analyzed by SPSS 21.

## RESULTS

A total of 350 medical students were approached to participate in the study but only 300 (85%) students gave response. Out of the total 300 students, 230 were vaccinated against Hepatitis B. Among these students

only 150 (50%) had completed their full vaccination schedule and 80 (26.6%) did not completed their 3 doses of vaccination. Reasons for not being vaccinated were lack of knowledge about consequences (17%), casual behavior (30%), don't know where to obtain the vaccine (15%), fear of injection (15%), busy schedule (13%) and financial problems (10%). 180 (60%) students were screened before taking the vaccine.

**Table 1: Frequency distribution table of age of students who take part in study n=300.**

Age (years)	Frequency	Percent (%)
17	10	3
18	15	5
19	40	13.3
20	35	11.6
21	50	16.6
22	17	5.6
23	22	7.3
24	32	10.6
25	45	15
26	34	11.3

**Table 2: Knowledge about vaccine availability n=300.**

Knowledge	Frequency	Percent
Aware	230	76.6
Not aware	70	23.4

**Table 3: Frequency distribution table of status of vaccination of students of all years n=300.**

Year of study	Completely vaccinated	Incomplete vaccination	Not vaccinated	Don't remember
1st	25	19	14	2
2nd	24	14	18	4
3rd	27	16	15	2
4th	34	15	10	1
5th	40	16	3	1

**Table 4: Frequency distribution table of time of vaccination n=230.**

Time of vaccination	Frequency	Percent
Before admission	121	52.6
After admission	95	41.3
NA	14	6

**Table 5: Frequency distribution table showing the year of vaccination for those who were vaccinated after admission n=95.**

Year	Frequency	%age
1st	34	34.9
2nd	16	16
3rd	8	8.4
4th	12	12.3
5th	25	26.3

**Table 7: Frequency distribution table showing the cause of being non-vaccinated n=70.**

Reason/Cause	Frequency	%age
Didn't know consequences	12	17
Fear of prick/side effects	10	15
Don't know where to obtain the vaccine	10	15
Casual behavior	21	29
Financial problems	7	10
Busy in schedule	8	13
Others(not specified)	2	1

**Table 8: Frequency of students who submitted the vaccination certificate at time of admission n=140.**

Status	Frequency	%age
Yes	125	86
No	16	14

## DISCUSSION

70% medical students were fully vaccinated against Hepatitis B, even people related to medical field are at high risk of getting infection during dealing with patients and also they can become of infection for patient.<sup>[6]</sup> The need for HBV vaccination in this group should be a priority. The 60% vaccination in our subjects is similar to a study done in North Sydney 64% but higher than the study done in Lahore (42.2%), South London (33%), Sweden (40%), Egypt (16%), and Yemen (29.5%).<sup>[7]</sup> The fact indicates that discrete qualitative variables affect the uptake of vaccine more than its availability.

The increase in the uptake of vaccine with the advancing age and professional years in MBBS indicate increasing awareness about the disease.<sup>[8]</sup> Similar result were found in the nursing students of tertiary care hospital of Peshawar. Higher vaccination coverage in girls was seen in the present study and same was reported from Lahore. Despite the availability of HBV vaccine for more than two decades over 90% coverage has not been achieved in this group.<sup>[9]</sup> The most frequent reason for not getting vaccinated in the present study were lack of knowledge of consequences (17%), casual behavior (30%), don't know where to obtain the vaccine (15%), fear of injection (15%). These are serious issues and need to be improved by educating them. These are also baseless reasons and need to be improved by education. Casual behaviour was cited as the main reason for not getting vaccinated. 49% students were vaccinated before admission to university and 31% students got vaccinated after admission to university. 47% students got their vaccination without screening and 77% students didn't checked their Anti-HBs titers. 55% students have their siblings vaccinated and 52% students have their roommates vaccinated. Hepatitis B is leading cause of cirrhosis and hepatocellular carcinoma, its ratio is increasing day by day in Pakistan. Government needs to take serious actions regarding prevention and control of this infection at a major level. Medical students should get vaccination of hepatitis B, so that they can be on safe side throughout their future. Awareness should be enlightened among them.

## CONCLUSION

Despite of relation to medical profession, behaviour among student regarding hepatitis vaccination is not satisfactory. Awareness campaign is need of hour to spread awareness in people especially related to medical profession because they are prone to get infected in hospital settings during dealing with patients.

## REFERENCES

1. Purcell, R.H. The Discovery of the Hepatitis Viruses. *Gastroenterology*, 1993; 104: 955-963.
2. Shepard, C.W., Simard, E.P., Finelli, L., Fiore, A.E. and Bell, B.P. Hepatitis Virus Infection Epidemiology and Vaccination. *Epidemiologic Reviews*, 2006; 28: 112-125.
3. Centres for Disease Control and Prevention US Department of Health and Human Services, Public Health Service: Health Information for International Travel 2008. Atlanta, 2007.
4. Sepkowitz, K.A. Occupationally Acquired Infections in Health Careworkers. Part II. *Annals of Internal Medicine*, 1996; 125: 917-928.
5. Centres for Disease Control and Prevention Immunization of Adolescents: Recommendation of the Advisory Committee on Immunization Practices, American Academy of Pediatrics, American Family Physicians and American Medical Association. *Morbidity and Mortality Weekly Report*, 1996; 45: 1-14.
6. Chen, H.L., Chang, M.H., Hsu, H.C., Hsu, H.Y., Lee, P.I., Lee, C.Y., *et al.* Seroepidemiology of Hepatitis B Virus Infection in Children. Ten Years of Mass Vaccination in Taiwan. *JAMA*, 1996; 276: 906-908.
7. La Torre, G., Nicolotti, N., de Waure, C., Chiaradia, G., Specchia, M., Mannod, A., *et al.* An Assessment of the Effect of Hepatitis B Vaccine in Decreasing the Amount of Hepatitis B Disease in Italy. *Virology Journal*, 2008; 5: 84.
8. Payton, C.D., Scarisbrick, D.A., Sikotra, S. and Flower, A.J.E., 1993.
9. Vaccination against Hepatitis B: Comparison of Intradermal and Intramuscular Administration of Plasma Derived and Recombinant Vaccines. *Epidemiology & Infection*, 110: 1771-1780.
10. Ginsberg, G.M. and Shouval, D. Cost Benefit Analysis of a Nation Wide Neonatal Inoculation Programme against Hepatitis B in an Area of Intermediate Endemicity. *Journal of Epidemiology and Community Health*, 1992; 46: 587- 594.