

Original Research Article

Knowledge, attitude and practices about hepatitis B in paramedical and supporting staff at a tertiary care hospital: a cross sectional study

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ABSTRACT

Background: Healthcare workers including nurses, lab technicians and multi-purpose workers are at a higher risk of contracting hepatitis B virus infection than the general population as they are exposed to blood, body fluids and sharps due to their professional activities. The objective of this study was to compare the knowledge about hepatitis B infection, its transmission and prevention among two groups, nurses and lab technicians versus MPWs.

Methods: A cross-sectional study was carried out among 257 nurses and lab technicians versus 159 MPWs working at a tertiary care center. After clearance by the institutional ethical committee and informed consent of the participants, they were requested to fill a close ended questionnaire. The data was analyzed statistically using the JASP software.

Results: The self-perceived risk of contracting infectious diseases owing to their profession was similar in nurses and lab technicians and MPWs. The awareness about hepatitis B infection, all the correct modes of transmission of the virus and the chances of the infection leading to liver diseases and cancer was higher in nurses and lab technicians than in MPWs. Awareness regarding prevention of infection and the vaccination rates were also higher among nurses and lab technicians. Knowledge about methods of prevention of the infection was found to be significantly more among the nurses and lab technicians.

Conclusions: Overall, there is a significant gap in the knowledge about hepatitis B infection, its transmission and prevention in the MPWs. Vaccination coverage is also low in MPWs.

Keywords: Hepatitis B, Nurses, Multi-purpose workers, Awareness, Vaccination

INTRODUCTION

Hepatitis B is a major public health problem worldwide and is the 10th leading cause of death.¹ The common modes of transmission include from mother to child during delivery, contact with blood or body fluids during unsafe sexual intercourse with an infected partner, unsafe injections or exposure to sharp instruments. In India, the prevalence of hepatitis B infection is about 4% with a disease burden of about 50 million.² Hospital staff including nurses, lab technicians and multi-purpose workers (MPWs) are at a high risk for contracting the

infection as they are involved in the handling of potentially infectious material such as needles, sharps, blood and body fluids and other biomedical waste thus the knowledge about hepatitis B infection and its prevention is essential.

The aim of the study was to compare the awareness among the two study groups, nurses and lab technicians versus MPWs.

The information about the knowledge gap between the two study groups will aid in devising suitable awareness strategies in the future.

METHODS

This was a cross sectional observational study which includes 256 nurses and lab technicians (230 nurses and 26 lab technicians) versus 159 multipurpose workers (ward boys, janitors and garbage handlers) of a tertiary healthcare centre. After obtaining informed consent from the participants, data regarding awareness of hepatitis B infection, its transmission and prevention was collected by a close ended questionnaire. Identity of the participants was not disclosed. The data was collected in the months of April 2021 to June 2021. The data was analysed statistically using JASP version 0.16.0.0 analysis software. Analysis of categorical data was represented as percentages and of continuous data as mean±standard deviation.

RESULTS

The study groups comprised of 159 MPWs and 230 Nurses and 26 lab technicians (total 256). A Chi-square test of independence was performed to compare the risk perception of contracting infectious diseases between the two study groups. The difference between these groups was not significant, p=0.943. 100% of the nurses and lab technicians had heard about hepatitis B infection, whereas the knowledge about the same was seen only in 59.12% of the MPWs. A Chi-square test of independence showed a significant difference between the awareness about the hepatitis B infection between the two groups, p<0.001.

Table 1: Risk perception of contracting infectious disease among the study groups due to their work environment.

Group	Do you consider yourself at a risk of infectious diseases due to your profession?			Total
	No	Yes		
MPW	N	72.00	87.00	159.00
	%	45.283	54.717	100.00
Nurses and lab technicians	N	115.00	141.00	256.00
	%	44.922	55.078	100.00
Total	N	187.00	228.00	415.00
	%	45.06	54.940	100.00

Awareness about transmission of hepatitis B virus

The participants had to choose from the following options: Direct contact with blood and other body fluids; needle stick injuries/sharing needles; unprotected sexual intercourse; From mother to child during birth. Of these options, all of the above were correct. A Chi-square test of independence showed a significant difference between the awareness of modes of transmission of hepatitis B between the two groups, p<0.001. A Chi-square test of independence performed to compare the difference between the two groups showed significant difference in the awareness about liver diseases caused by hepatitis B

infection, p<0.001. A Chi-square test of independence showed that the difference between awareness regarding the preventability of hepatitis B infection in the two study groups is significant, p<0.001.

Table 2: Awareness about hepatitis B infection.

Group	Have you heard of hepatitis B?			Total
	No	Yes		
MPW	N	65.00	94.00	159.00
	%	40.881	59.119	100.00
Nurses and lab technicians	N	0.00	256.00	256.00
	%	0.00	100.00	100.00
Total	N	65.00	350.00	415.00
	%	15.663	84.337	100.00

Table 3: Percentage of people who selected all of the above.

Group	All correct answers, N (%)
MPW	48/159, (30.189)
Nurses and lab technicians	189/256, (73.828)

Table 4: Awareness about liver diseases caused by hepatitis B infection.

Group	What are the chances of hepatitis B leading to liver disease or cancer?				Total
	Don't know	High	Low		
MPW	N	111.00	33.00	15.000	159.0
	%	69.811	20.755	9.434	100.0
Nurses and lab technicians	N	22.000	203.00	31.000	256.0
	%	8.594	79.297	12.109	100.0
Total	N	133.00	236.00	46.00	415.0
	%	32.048	56.867	11.084	100.0

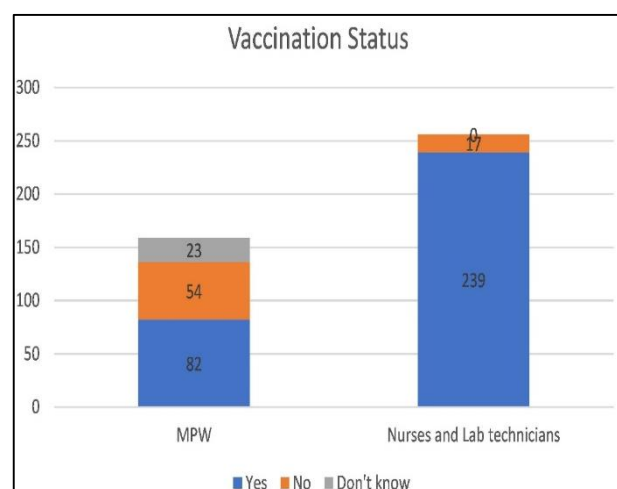


Figure 1: Vaccination status.

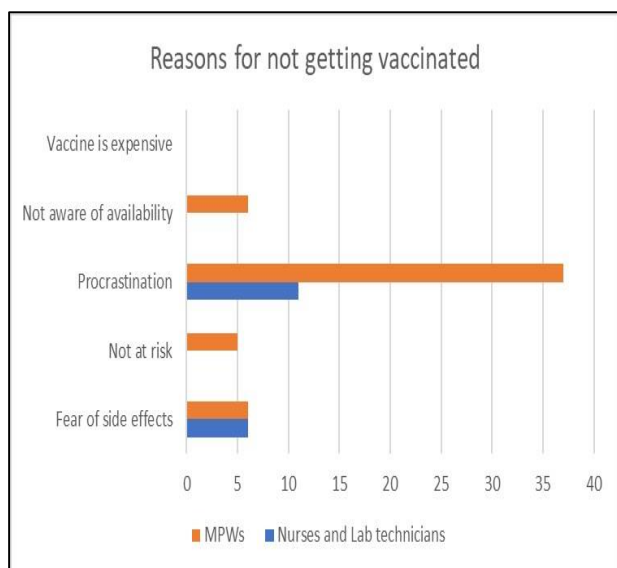


Figure 2: Reasons for not getting vaccinated.

Awareness about preventive measures

The participants had to choose from the following options: use of personal protective devices; safe handling of sharp instruments; safe injection practices; use of sterile instruments and devices; vaccination. Each correct answer was awarded one point and a total of score out of 5 was calculated for each participant. Assumption checks for normality and variance were done and there exists a statistically significant difference between the test score of the two study groups as determined by the Welch version of the independent samples t-test, (263.842=-5.010, p<0.001). Nurses and lab technicians had higher level of awareness about the methods of prevention. The vaccination status of nurses and lab technicians is depicted in (Figure 1). 51.572% (82 out of 159) MPWs had taken the hepatitis B vaccine whereas the percentage of nurses and lab technicians who had taken the vaccine was 93.359 (239 out of 256). A Chi-square test of independence showed a significant difference between the vaccination rates of the two study groups p<0.001. The most common reason for not getting vaccinated in both study groups was “procrastination” (68.52% i.e., 37 out of 54 MPWs and 64.71% i.e., 11 out of 17 nurses).

Table 5: Prevention of hepatitis B infection.

Group	Do you think hepatitis B can be prevented?			
	Don't know	No	Yes	Total
MPW	N 20.00	26.00	113.00	159.0
	% 12.579	16.352	71.069	100.0
Nurses and lab technicians	N 0.00	5.00	251.00	256.0
	% 0.00	1.953	98.047	100.0
Total	N 20.00	31.00	364.00	415.0
	% 4.819	7.470	87.711	100.0

DISCUSSION

Hepatitis B is a major yet preventable public health problem worldwide and is the 10th leading cause of death.¹ In India, the prevalence of hepatitis B infection is about 4% with a disease burden of about 50 million.² The common modes of transmission include from mother to child during delivery, contact with blood or body fluids during unsafe sexual intercourse, unsafe injections or exposure to sharp instruments. The spectrum of diseases caused by the virus range from acute infection, which may be asymptomatic or symptomatic to chronic (5-10% of the cases).^{3,4} The presentations of chronic hepatitis B infection can vary from an asymptomatic carrier state, chronic hepatitis, cirrhosis to hepatocellular carcinoma.³ Hospital staff including nurses, lab technicians and MPWs. MPWs are at a high risk for contracting the infection as they come in contact with the infectious materials like blood, body fluids, needles and sharps. In our study, we found that 54.72% of the MPWs believed that they were at a risk of contracting infectious diseases because of their profession whereas 55.08% of the nurses and lab technicians believed the same.

Table 6: Mean score for each group.

Score/5	Group	N	Mean±SD	SE
	MPW	159	2.80±2.28	0.18
Nurses and lab technicians	256	3.84±1.68	0.11	

In a similar study, 95% of all participants were aware of their increased risk of contracting hepatitis B due to their profession.⁵ In another study, it was found that there was a self-perceived risk of contracting infections among the nurses and they believed that this was an unavoidable occupational hazard.⁶ With respect to awareness about the hepatitis B infection, our study showed that all the nurses and lab technicians were aware about the infection, whereas only 59.12% of the MPWs were aware about the same. In similar studies it was found that majority of the participants were aware of the infection.^{6,7} The results of our study showed that only 30.19% of the MPWs correctly knew all the modes of transmission of Hepatitis B, whereas 73.83% of the nurses and lab technicians were aware of all the correct modes. In a similar study conducted on healthcare workers, it was found that most of the participants believed that hepatitis B can be transmitted from mother to child, unprotected sex, needle stick injury and blood transfusion.^{7,8} The current study showed that 79.30% nurses and lab technicians whereas only 20.76% MPWs believed that the risk of hepatitis B leading to liver disease or liver cancer was high. In this study 98% of the nurses and lab technicians were of the opinion that hepatitis B virus infection can be prevented, whereas only 71.1% of the multipurpose workers believed the same. A similar study showed that 80.7% of the nurses felt that hepatitis B is preventable.⁹ The knowledge about preventability of the infection is better among the nurses and lab technicians surveyed in our

study. Infectious diseases can be prevented by practicing the universal safety precaution.¹⁰ The participants were asked to mark the correct options from the modes of transmission relevant to hepatitis B. Nurses and lab technicians were found to have a higher level of awareness about the same. Our study showed that 93.4% of the nurses and lab technicians were vaccinated against hepatitis B. The results are similar to those found in another study which showed that 92.4% of the nurses were vaccinated.⁶ The vaccination rate among the MPWs was 51.6%.

Similar results were found in another study which showed that 40% of the housekeeping staff was completely vaccinated and a further 11% (total 51%) was partially vaccinated against hepatitis B.¹¹ The most common reason stated for not getting vaccinated by participants in both the study groups of our study was “procrastination”.

Other studies have highlighted the main reasons for not getting vaccinated as lack of awareness about the existence of the vaccine, lack of knowledge about Hepatitis B infection and lack of knowledge about the necessity of vaccination.^{11,12}

Limitations

Limitations of current study were that the study involved participation of healthcare workers from a tertiary care hospital from an urban area, and the staff of such a hospital is likely to be more aware of the disease than the staff in rural hospitals, hence the results of this study cannot be extrapolated to the general population. The survey data collected was self-reported which establishes a recall bias. It is also possible that participants chose socially acceptable answers.

CONCLUSION

This study will help to address the knowledge gap about hepatitis B infection and its prevention among the MPWs. Regular and repeated training programs for the healthcare workers and making the hepatitis B vaccine mandatory can help tackle this issue.

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