



HEPATITIS B: KNOWLEDGE AND VACCINATION STATUS OF NURSING STAFF OF A MEDICAL COLLEGE OF WEST BENGAL.

Community Medicine

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ABSTRACT

Background: The risk of acquiring Hepatitis B the infection is more in health care worker than in general population. The nurses are exposed to this infection due to their work. Methodology: An observational cross sectional study was carried out among nursing staff of R G Kar Medical College with the help of pre designed semi structured questionnaire. Data on demographic characteristics, knowledge, occupational exposure, vaccination status were collected. **Result:** Among study population 57.3% were completely vaccinated & 12.5% incompletely vaccinated. Satisfactory knowledge was found in 68.9% of the nursing staff. The major reason for incomplete and non vaccination was non availability through government sources and forgetfulness. **Conclusion:** Hepatitis B vaccination coverage was not satisfactory. Mandatory vaccination at the time of their training & frequent educational program about the disease is very much required.

KEYWORDS

Hepatitis B. vaccination, knowledge, nursing staff. medical college

INTRODUCTION

Hepatitis B is a viral infection that can cause both acute & chronic hepatitis. It can prove fatal due to cirrhosis of the liver & liver cancer which are the consequences of the chronic infection & due to fulminant liver failure in acute exaggeration. In 2015, according to WHO estimate 257 million people were living with chronic hepatitis infection and it had caused more than 8 lakh death. In WHO South east region 2% of general population is infected with hepatitis B (WHO,2019).

The infection spreads through perinatal, sexual & percutaneous or mucus membrane exposure to infected serum, saliva or semen (Alter et al 1990). Accidental percutaneous exposure to infected blood or body fluids of patients is the principle mode of transmission of Hepatitis B infection in health care workers (Banatvala, 2000). The high prevalence of HBV infection in developing countries increases the risk of occupational exposure as has been proved by sero-prevalence study among health care workers which is 2 to 4 times more than the general population (Singhal et al, 2011).

Hepatitis B is more infectious than HIV (CDC 2001) & vaccination is the best cost effective method of its prevention (Banatvala ,2000). Vaccination & adoption of universal precautions in developed countries has paid its dividends (Kumar et al 2000). Safe & effective vaccine against Hepatitis B infection is available since 1981. Realizing its necessity, the Government of India has planned & introduced Hepatitis B vaccine in its National Immunisation Program & expanded to entire country in 2010 after successful pilot projects being conducted in different parts of the country. Since there is no national policies & guidelines advocating & supporting mandatory Hepatitis B vaccination among health care workers who are the high risk group, acceptance of vaccination by health care workers is an essential issue which needs to be evaluated .In this background present study was carried out to determine the coverage of Hepatitis B vaccination among nursing staff of a tertiary health institution in Kolkata and also to ascertain their knowledge about hepatitis B infection.

MATERIALS AND METHODS

Present observational cross sectional study was conducted among the in-service nursing staffs of R G Kar Medical College & Hospital, a tertiary hospital of West Bengal. As per the data available from the Nursing Superintendent office, there were 490 staffs in the institute. Out of which 377 could be interviewed as the rest were either on study leave, medical or maternity leave. A pre designed pre tested semi structured schedule was used to collect data from the participants. There are 18 questions regarding assessment of knowledge regarding Hepatitis B infection. Each question has 1 correct answer with 1 mark for correct answer & 0 for incorrect or don't know response. A score of 72.2% & above is considered satisfactory knowledge and score below

72.2% is considered unsatisfactory. Out of the 18 questions, 8 were related to transmission, 4 were related to sequel and 6 were related to prevention of Hepatitis B infection. Questions regarding source of information about the infection, reasons for receiving or not receiving the vaccine were semi structured to get all the possible reasons. Acceptance of vaccination refers to history of receiving at least one dose of Hepatitis B vaccine. Receiving 3 doses was regarded as complete & 1 or 2 doses as incomplete vaccination.

All the collected data were entered in MS Excel spread sheet. Frequency and percentages were calculated. Chi square test was performed to test the association. P value <0.05 was considered significant.

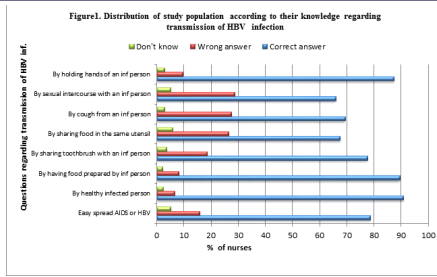
RESULTS

Total 377 nursing personnel participated in the study. Overall acceptance of vaccination amongst the study subjects was 69.8% of which 57.3% are completely vaccinated, 12.5% are incompletely vaccinated. Nil vaccination status was in 30.2%. The highest acceptance was in the age group 31 to 40 yrs (78.1%) & the lowest was in 51 to 60 yrs group (56.6%). Vaccination status differ with age group and this difference was found to be statistically significant($\chi^2=12.84, p=0.045$).

Table1. Vaccination status of study population according to age groups. (n=377)

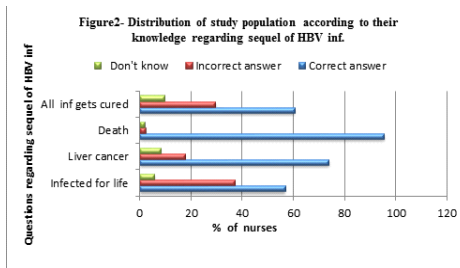
Age Group (in years)	Complete vaccination	Incomplete vaccination	No vaccination	Total
21-30	33 (55%)	07 (11.7%)	20 (33.3%)	60
31-40	100 (66.2%)	18 (11.9%)	33 (21.9%)	151
41-50	49 (54.5%)	13 (14.4%)	28 (31.1%)	90
51-60	34 (44.8%)	09 (11.8%)	33 (43.4%)	76
Total	216 (57.3%)	47 (12.5%)	114 (30.2%)	377

The non acceptance of vaccination was highest in nursing staff posted at Nursing superintendent Office and Nursing Training School (39.3%).It was found that the source of vaccination was hospital (72.6%), private practitioner (20.5%) & local Hepatitis B camp (6.9%). About 44.1% of the vaccinated respondents had to bear the expenses of the vaccine & the rest 55.9% were borne by the employer. Majority of the study participant had correct knowledge about the different aspect of hepatitis B transmission (Fig1).But, a sizeable had wrong idea about mode of transmission. 78.8% of nurses had the correct knowledge that Hepatitis B is more infectious than HIV. Apparently healthy but infected Hepatitis B patient can transmit infection is believed by 91% of respondents.

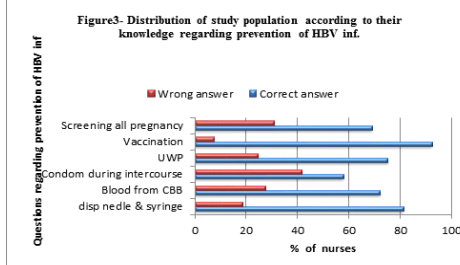


Once infected with Hepatitis B, person will remain infected for life was believed by 57% of nurses whereas 37% didn't believe & 6% had no idea. 74% of the nurses believed that Hepatitis B can cause liver cancer whereas 17.8% didn't & 8.2% had no idea. Hepatitis B can cause death was believed by 95.7% of respondents whereas 2.4% didn't & 1.9% had no idea. All Hepatitis B infected patients gets cured is believed by 29.7% whereas 60.7% believes no & 9.6% had no idea (Fig 2).

81.4% of the nurses believed Hepatitis B can be prevented by using disposable needle & syringe. 72.4% believed that using blood from a certified blood bank is also a preventive measure. Using condom during intercourse prevents Hepatitis B is supported by 58.1% of the nurses. Practicing UWP(Universal Wound Protection) is a preventive strategy is supported by 75.3% of the respondents. 92.2% of the nurses believe vaccination is a preventive method & screening of all pregnant mothers to prevent Mother to child transmission (MTCT) is believed by 69.2% of the respondents(Fig 3).



Knowledge regarding prevention of Hepatitis B infection



Over all 68.9% of the nurses have satisfactory knowledge ($\geq 72.2\%$) with a score of 13 & above out of 18. The main source of information regarding Hepatitis B is books (70%) followed by class room teaching (51.2%), workshop on Hepatitis B vaccination (41.6%) & seminars (34.5%). Clinical experience, internet and poster were the other sources of information.

The main reason (62.3%) for taking this vaccine among the nurses was to protect against the infection. Other reason cited were suggestion from seniors & friends (33.1%) followed by perception of risk exposure (19.4%) & availability at cheaper rate (8%).

Reasons for incomplete & nil vaccination status

The main reason for incomplete vaccination in the study subjects was forgetfulness (59.6%) followed by unavailability of vaccine through government sources (38.3%). The main reason for nil vaccination was unavailability of vaccine through government sources (35%) followed by forgetfulness (26.3%).

Perceived susceptibility & the risk of exposure to infection

73.7% of the nurses felt that they were at risk of acquiring Hepatitis B infection, whereas 16.7% felt they were not at risk & 9.6% have no idea about the risk. Moreover it has been found that 70.4% of fully vaccinated staff wrongly believed that they were still at risk of

acquiring the infection & at the same time 78.3% of unvaccinated or incompletely vaccinated felt correctly that they are at risk of acquiring the infection. Needle prick was the most common exposure, others were by exposure to blood and exposure to body fluid.

DISCUSSION

Hepatitis B infection is a vaccine preventable disease and its acceptance in health care workers including nursing staffs is different in different settings. The result of present study showed that complete vaccination in the nurses was 57.3% which is comparable with other studies. The prevalence of incomplete & no vaccination were 12.5% & 30.2% respectively. In tertiary care Armed Force hospital, complete vaccine coverage in nursing staffs was 68.8% (Chaudhari et al,2009). In a tertiary care hospital in north India coverage was as low as 44.8% (Pathak et al,2013).Vaccination coverage in tertiary hospital of Nainital(Joshi et al,2014) and Delhi (Singhal et al, 2011) was 51.7% and 76.6% respectively.

In the present study majority of nursing staff had satisfactory knowledge. In another study from Chhattisgarh also most of the nursing student had satisfactory knowledge (Nalli et al.2017).

The present study also attempted to find out the factors responsible for vaccination status of the study population. The predominant reason (62.3%) for vaccination was to protect oneself from hepatitis B infection in this study. The main reason for incomplete & non acceptance of vaccination in this study was negligence/forgot (59.6%) & unavailability of vaccine through government sources (35%) respectively. The main reasons of non vaccination in other studies were negligence, fear of side effect, unavailability of vaccine in government source.(Pathak et al, 2013). Similar finding was reported by Chhattisgarh study(Nalli et al ,2017).

CONCLUSION

The complete vaccination (57.3%) in the nursing staffs is still not satisfactory considering the risk they had to face daily on exposure to infectious materials of the infected patients. Non availability of vaccine through government sources & negligence were the main reasons cited. About three fourth (68.9%) of the staff had satisfactory knowledge.

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