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RESEARCH ARTICLE

HEPATITIS B VACCINATION IN BLOOD BANK WORKERS.

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Key words:-

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Abstract

Background: Blood Bank workers are not aware about the pathogenic effects of Hepatitis B virus which can be transmitted by handling blood and blood components. This Group of workers is a high risk group. They are unaware about morbidity and mortality caused by Hepatitis B virus. Knowledge about exposure to Hepatitis B virus is not known to most of the workers. This study was conducted to know the awareness about Hepatitis B vaccination.

AIM: To know the need, awareness and importance of Hepatitis B vaccination in Blood Bank workers.

Material And Method: Data collected from 5 Blood Bank staff working in Blood Banks located in Kolhapur city, regarding Hepatitis B vaccination. Blood Bank staff can be categorized into 2 main categories.

- 1) Those who look after the administrative work of Blood Bank. (e.g. PRO, Cashier, Clerk, Computer Operator)
- 2) Those who handle Blood, Blood components and Blood donors. (e.g. Technicians, Reception Staff, BTO, Call Boys, Material Washing Staff, sweeper)

Workers in category 2 were interviewed and data prepared, for that questionnaire was prepared and submitted to respective workers. From the answers received data was prepared. Total 100 workers interviewed in category 2 were considered.

Observation: From the data received we categorized workers in 3 Types as 1) fully vaccinated.

- 2) Incompletely vaccinated
- 3) Not vaccinated at all. Of which fully vaccinated were 14 %.

Conclusion: Most of workers have not taken Hepatitis B vaccination. Proper counseling and creating awareness about Hepatitis B virus may motivate blood bank workers to undertake full vaccination schedule against Hepatitis B virus.

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Introduction:-

Hepatitis B infection is a disease of the liver caused by the hepatitis B virus (HBV), which has a partially double-stranded circular DNA and belongs to the family Hepadnaviridae^(1,2). The natural course of hepatitis B virus (HBV) chronic infection is variable, ranging from an inactive HBsAg carrier state to a more or less progressive chronic hepatitis, potentially evolving to cirrhosis and hepatocellular carcinoma (HCC).⁽³⁾ Hepatitis B infection is one of the major public health problems globally and is the tenth leading cause of death. Worldwide, more than two billion of

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the population have evidence of past or recent HBV infection and there are more than 350 million chronic carriers of this infection. In India, HBsAg prevalence among the general population ranges from 2 to 8%, which places India in an intermediate HBV endemicity zone⁽⁴⁾. HBV is transmitted by body fluids, such as blood and serum, and can exhibit vertical transmission from mother to child. Sexual transmission, vertical transmission, and unsafe injections, including intravenous drug use, are the most common routes of infection for HBV⁽⁴⁻⁸⁾. Household contact and occupational health-care exposure to blood products and hemodialysis are other risk factors⁽⁹⁻¹³⁾. Among healthcare workers seroprevalence is two to four times higher than that of the general population⁽¹⁴⁾. It continues to be a global public health problem despite large-scale efforts to eliminate this chronic viral disease via education, screening, and vaccination programs (Alexander and Knowlley, 2006).⁽⁵⁾

The discovery of HBV vaccines and the results obtained from their introduction constitute a landmark of great importance for medical practice. Besides providing immunity against HBV infection, these vaccines indirectly protect against hepatocarcinoma. During the last few years, the American Health Inspection Service has demonstrated a decrease in the incidence of hepatitis B in Health Care Workers, probably due to the use of vaccines and recommended safety measures⁽¹⁵⁾. The vaccine contains one of the viral envelope proteins, hepatitis B surface antigen (HBsAg). It is produced by yeast cells, into which the genetic code for HBsAg has been inserted.⁽⁸⁾ A course of two to three (2–3) vaccine injections is given, the second injection at least one month after the first dose and the third injection being administered six months after the first dose. The first and second dose offer complete protection. The final injection (second or third depending on number of vaccines being administered) is to prolong protection against the HBV⁽¹⁾. Afterward an immune system antibody to HBsAg is established in the bloodstream. The antibody is known as *anti-HBs*. This antibody and immune system memory then provide immunity to HBV infection. The first vaccine became available in 1981⁽⁵⁾.

Aim of our study to know the need, awareness and importance of Hepatitis B vaccination in Blood Bank workers.

Material and Method:-

Data collected from 5 Blood Bank staff working in Blood Banks located in Kolhapur city, regarding Hepatitis B vaccination. Blood Bank staff can be categorized into 2 main categories.

1. Those who look after the administrative work of Blood Bank. (e.g. PRO, Cashier, Clerk, Computer Operator)
2. Those who handle Blood, Blood components and Blood donors. (e.g. Technicians, Reception Staff, BTO, Call Boys, Material Washing Staff, Sweeper)

Workers in category 2 were interviewed and data prepared, for that questionnaire. Was prepared and submitted to respective workers. From the answers received data was prepared. Total 100 workers interviewed in category 2 were considered.

All Blood Bank Workers were interviewed using a structured self-completed questionnaire consisting of 5 aspects of Hepatitis B Virus, Pathogenicity and Vaccination. The questionnaire consisted of (1) Name and demographic characteristics; (2) Years of work experience in Blood Bank. (3) HBV information and Pathogenic effects; (4) Vaccination status. (5) If not vaccinated, any reason. The language of instruction was Marathi. Therefore, the questionnaire was given in Marathi. All the workers were interviewed, questions were explained; Before the distribution of the questionnaire, the objectives of the study were explained to the participants, and they were informed that their participation was voluntary.

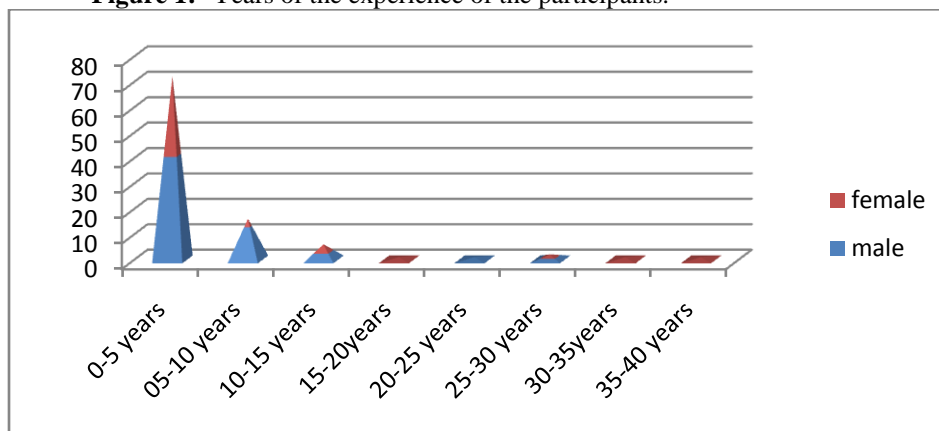
Results:-

The demographic characteristics of the study sample are shown in Table 1 and Figure 1. A total of 100 Blood Bank Workers responded to the questionnaire, 59(59%) males and 41 (41%) females. The years of the experience of the participants ranged from 2 months to 40 years.

Table 1:- Descriptive characteristics of the subjects included in the analyses.

| Characteristics | Number of subjects (%) |
|------------------------|------------------------|
| 1) Sex | |
| Male | 59(59%) |
| Female | 41(41%) |
| 2) Years of experience | |

| | |
|-------------|---------|
| 0-5Years | 72(72%) |
| 5-10 Years | 16(16%) |
| 10-15 Years | 06(6%) |
| 15-20Years | 01(1%) |
| 20-25Years | 01(1%) |
| 25-30 Years | 02(2%) |
| 30-35 Years | 01(1%) |
| 35-40 Years | 01(1%) |

Figure 1:- Years of the experience of the participants.

The study revealed the weakness of general knowledge about hepatitis B among the Blood Bank Workers. As documented in Table 2, the survey showed that, out of 100 participants who completed the survey, around 67% of subjects are aware of hepatitis B infection, and only 14% fully vaccinated per schedule, which is significantly associated with years of experience.

Table 2:- Hepatitis B knowledge questions and correct responses in percentage.

| Question | Correct responses (%) |
|--|--|
| Have you heard of hepatitis B? | Yes: 67% No: 33% |
| Are Blood Bank Workers more prone of getting hepatitis B? | Yes: 45% No: 55% |
| Does hepatitis B infection lead to pathogenic effects of liver including liver cancer? | Yes: 71% Not known: 29% |
| Does hepatitis B vaccination protect against the infection? | Yes: 43% No: 15% Not known: 42% |
| Have you received hepatitis B vaccine ? | Yes: 30% No: 70% |
| • Fully vaccinated per schedule | 14% |
| • Incompletely vaccinated | 16% |
| • Not vaccinated at all | 70% |
| What is the reason behind not being vaccinated? | <ul style="list-style-type: none"> • Lack of knowledge of pathogenic effects of hepatitis B: 29% • Lack of motivation about vaccine : 26% • Other preventive method used : 12% • Financial problem: 13% • Fear of process of vaccine: 3% • Lack of knowledge of vaccine schedule: 3% |

Out of the 100 subjects, only 14% of the Blood Bank Workers had taken the complete vaccination schedule of the hepatitis B Vaccine. (Figure 2). When asked about the reasons of not taking the hepatitis B vaccine, the answers varied between; Lack of knowledge of pathogenic effects of hepatitis B:29%,Lack of motivation about vaccine :26%,Other preventive method used :12%,Financial problem:13%,Fear of process of vaccine:3%,Lack of knowledge of vaccine schedule:3%. (Figure 3)

Figure 2:- Number of Blood Bank Workers who received the hepatitis B vaccine according to vaccine schedule.

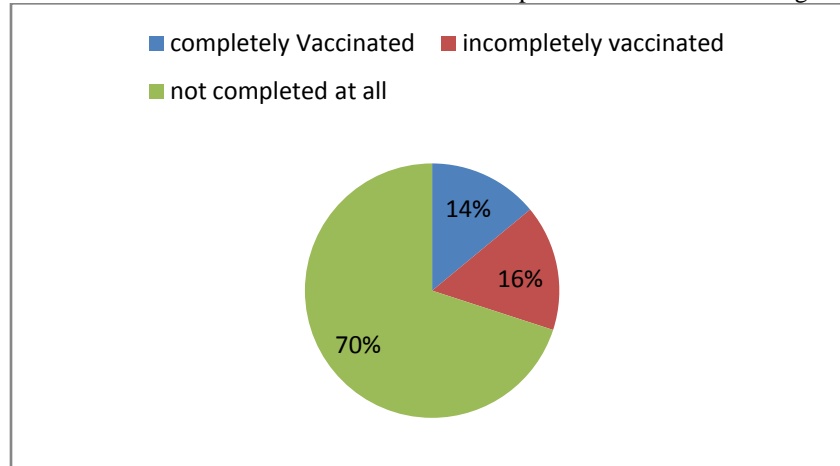


Figure 3:- The reason behind not being vaccinated against hepatitis B Virus.

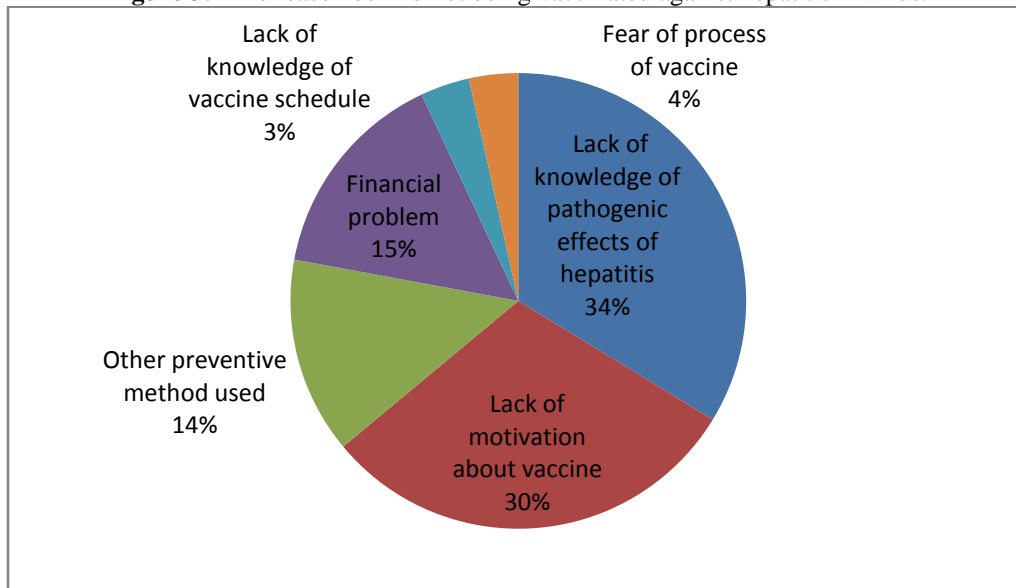
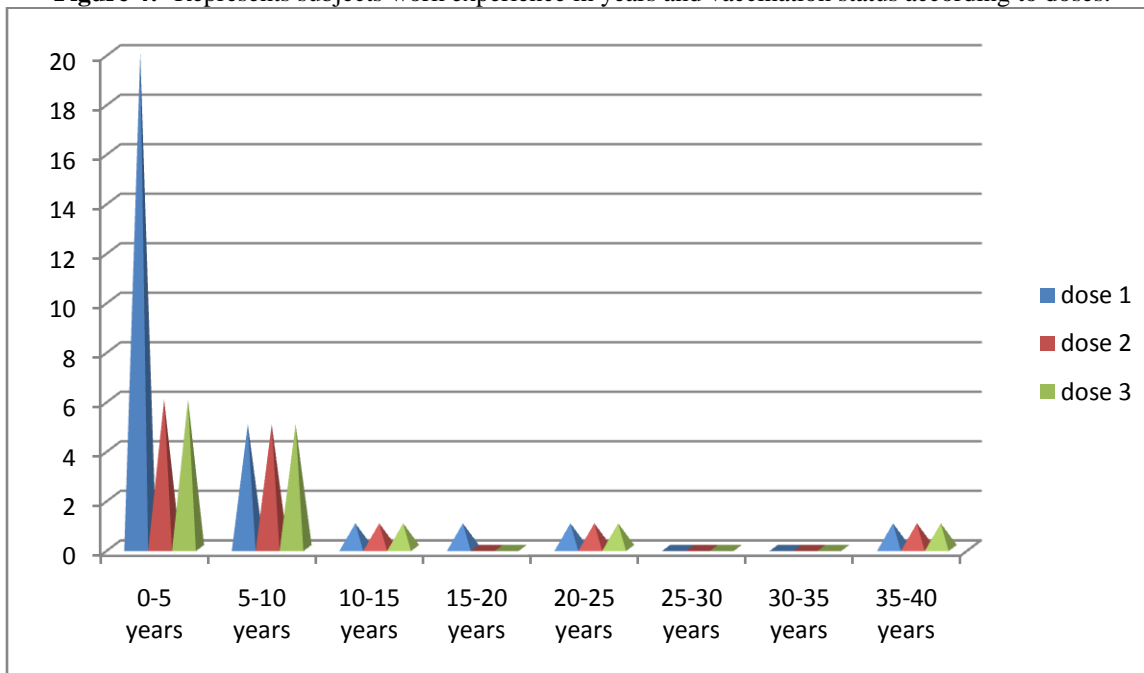


Figure 4:- Represents subjects work experience in years and vaccination status according to doses.**Conclusion:-**

The above study shows that 75% of workers working in Blood Banks have not taken prophylactic measures against Hepatitis B virus. The possible causes could be a) Motivation Factor b) Indifferent Attitude c) Lack of knowledge about morbidity caused by Hepatitis B Virus d) Lack of information about prophylactic measures against Hepatitis B virus.

Big percentage of experienced workers has showed more tendency towards getting vaccinated, which could be because of awareness about pathogenic effect of Hepatitis B Virus.

Increase in the number of workers to take full schedule of vaccine can be achieved by a) Motivation of workers about vaccination b) Mandatory approach c) Providing proper vaccine schedule d) Institutional approach.

One important realization from this study is that education is necessary; as Blood Bank Workers play an important role in dissemination of knowledge and raising awareness among Blood Donors, more educational efforts should be exerted on the Blood Bank Workers themselves for the importance of viral hepatitis disease and vaccination. Another suggestion for a new initiative could be providing free HBV vaccines to all the nonvaccinated Blood Bank Workers to encourage universal vaccinations for all Blood Bank Workers upon their entry.

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