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KNOWLEDGE, ATTITUDE AND PRACTICE AND DETERMINANTS TOWARDS HBV  
VACCINATION AMONG HEALTH CARE WORKERS: A REVIEW

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სამედიცინო პერსონალის ცოდნა, დამოკიდებულება, პრაქტიკა და განმსაზღვრელი  
ფაქტორები HBV ვაქცინაციის მიმართ: მიმოხილვა

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რეზიუმე

HBV ინფექციის გავრცელება სამედიცინო პერსონალში და HB ვაქცინაციით მოცვა მნიშვნელოვნად ვარირებს ქვეყნების მიხედვით. სხვადასხვა ფაქტორები, როგორცაა: გეოგრაფიული რეგიონი, ინდივიდის პერსონალური და ქცევითი ფაქტორები, სამუშაო გარემო, დანესებულების ტიპი, იმუნიზაციის პროგრამების ხელმისაწვდომობა და განხორციელება, ინფექციის პრევენციისა და რეგულირების პოლიტიკა, იმუნიზაციის პროგრამების ხელმისაწვდომობა და ეფექტური განხორციელება კრიტიკულად მნიშვნელოვან როლს ასრულებენ HBV ინფექციის პრევენციაში სამედიცინო პერსონალის HB სანინააღმდეგო ვაქცინაციით სრულად მოცვის გზით.

**Introduction:** Health care workers (HCWs) are at a greater risk of various blood-borne infections, including HBV. Approximately 3 million HCWs per year receive an injury with an occupational instrument, with around 2000000 exposures to hepatitis B virus (HBV) [1,2]. Although an effective HBV vaccine has been available since the early eighties, and despite the worldwide application of universal vaccination programs started in the early nineties, HBV still remains a prominent agent of morbidity and mortality [2] and vaccination coverage is suboptimal. In 2017 the World Health Organization (WHO) recommended that all HCWs should be vaccinated against HBV [3], however approximately 24% of global health care workers remain unvaccinated [4]. Vaccination coverage is only 18-39% in low and middle-income countries compared to 67-79% in high-income countries [5] and HCWs are at an intermediate level (2-8%) of hepatitis B virus (HBV) infection worldwide [6].

**Goals and Objectives:** The study aimed to ascertain determinants and barriers of vaccination uptake in HCWs and their knowledge, attitude and practice on HBV Vaccination.

**Methods:** Literature review was done. Articles were searched in PubMed, Google Scholar, ScienceDirect and Hepatitis B Abstract Library on HB vaccination associated determinants, barriers to up taking vaccines and knowledge, attitude and practice among healthcare workers towards HBV vaccination. Priority was given to original articles and meta-analysis.

**Results and discussion:** The reasons for not completing the HBV vaccine were mostly associated with several factors, however controversial data were demonstrated across countries. Low uptake of HBV vaccines mainly was associated to individual factors, such as: risk perception, marital status, gender, age, occupation category, awareness and education level, willingness to receive vaccination once offered, occupational exposure type, years of working, fear of vaccine side effect or being infected by the vaccines

and alike. In a teaching hospital in South Sudan it was found that respondents who felt that they are at low risk of acquiring HBV ( $\chi^2 = 21.006, p \leq 0.001$ ), lack of willingness to secure time to go for HBV vaccination ( $\chi^2 = 18.545, p \leq 0.001$ ), hepatitis B infection that can be prevented by vaccination ( $\chi^2 = 4.210, p \leq 0.031$ ), getting HBV through unprotected sexual intercourse ( $\chi^2 = 22.990, p \leq 0.006$ ), awareness of where to get hepatitis B vaccination ( $\chi^2 = 4.155, p \leq 0.011$ ), poor management of infectious medical waste that predisposes me to HBV infection ( $\chi^2 = 7.035, p \leq 0.030$ ), all HCWs that are at high risk of HBV infection ( $\chi^2 = 6.054, p \leq 0.048$ ), feeling of being susceptible to HBV infection ( $\chi^2 = 7.014, p \leq 0.030$ ), willingness to receive HBV vaccination ones offered a chance ( $\chi^2 = 14.109, p \leq 0.028$ ), and willingness to manage hospital infectious waste properly ( $\chi^2 = 19.105, p \leq 0.011$ ) were all significantly associated with hepatitis B vaccination low uptake [7]. Controversial results were found regarding gender [7,8] marital status association with vaccination [7,9]. Risk perception through needle stick injuries were low in Nigeria and South Sudan [10,7].

Studies conducted in Kenya [11] and Mangalore [12] among 266 and 297 respondents respectively found that the reasons for poor vaccination uptake included lack of knowledge of the need for vaccination, unawareness of the procedures or availability of the vaccines, concerns about side effects and forgetting, lack of time, lack of medical benefits. Vaccination barriers were mainly attributed to health facilities in terms of providing HCWs with HB vaccines and offering them free of charge, lack of guidelines [13,14]. Educational level, work experience, training on infection prevention, and history of exposure to blood and body fluids were found to be significantly associated with full-dose hepatitis B vaccination coverage [15].

Knowledge regarding different modes of transmission was less in nurses Nursing staff, Laboratory Technicians, Operation Theatre Assistants as compared to surgeons and residents [16]. and differences in physician and nurse acceptance of immunization were seen between Asian and non-Asian studies [17]. Other studies showed that low uptake of hepatitis B vaccination among the health workers could be attributed to the lack of approved policy by the Ministry of Health on hepatitis B vaccination, especially targeting health care workers who are highly vulnerable [7,9]. Vasilevsca M, Ku J and Fridman DN analyzing thirty-seven studies on in their systematic review and meta-analysis showed that Homogeneous effects on vaccine acceptance were identified with desire for self-protection (odds ratio [OR], 3.42 [95% confidence interval (CI), 2.42–4.82]) and desire to protect family and friends (OR, 3.28 [95% CI, 1.10–9.75]). Concern that vaccine transmits the illness it was meant to prevent decreased acceptance (OR, 0.42 [95% CI, 0.30–0.58]) [17].

**Conclusion:** Knowledge, attitude and practice play a significant role in full HBV vaccination of HCWs. Individual, institutional and policy factors and barriers are largely associated with low uptake of vaccines in developing countries.

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**SUMMARY**

Prevalence of HBV infection in healthcare workers and uptake of HB vaccine fluctuates and is influenced by a variety of factors including geographical region, host individual, behavioral factors,

working environment, facility type, availability and implementation of immunization programs, prevention and regulatory policy. Reviewed study findings highlight the crucial importance of and implication for reviewing policy and developing programs on prevention of HBV infection in healthcare workers through full HB vaccine uptake.

**Keywords:** HBV, vaccination, health care workers, knowledge, attitude

