

Assessment Of Knowledge, Awareness, Attitude, And Practice Among Healthcare Professionals Regarding Hepatitis B Disease And Vaccination

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Abstract

Objectives: *This study aims to evaluate the knowledge, awareness, attitude, and practice of healthcare professionals (HCPs) concerning hepatitis B virus (HBV) infection and vaccination.*

Methods: *A cross-sectional study was conducted using a pre-tested, validated questionnaire distributed among healthcare professionals. The questionnaire comprised sections on demographics, knowledge about HBV infection, awareness of hepatitis B, and attitudes toward HBV vaccination. Data analysis was performed using SAS® V9.2.*

Results: *The study revealed that 16.5% of participants had not received the hepatitis B vaccine. However, a majority believed in the commonality of hepatitis B (73.2%) and recognized vaccination as an effective preventive measure (75%). Barriers to vaccination included vaccine availability (48.7%) and safety concerns (37%).*

Among non-vaccinated participants, 31.2% considered the hepatitis B vaccine unsafe, while only 8% of vaccinated individuals shared this concern. Furthermore, 36.4% of non-vaccinated participants were unsure of the vaccine's effectiveness, compared to 24.3% in the vaccinated

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group. Financial constraints were cited by 18.2% of non-vaccinated participants but only 4% of vaccinated individuals.

Conclusion: While there is notable HBV vaccination coverage among HCPs in Saudi Arabia, it falls below global standards. Addressing barriers preventing non-vaccinated HCPs from getting immunized is crucial to improving vaccination rates.

KEYWORDS: Attitude and knowledge, healthcare professionals, Hepatitis B vaccine, , Hepatitis B virus, HBV, Vaccination awareness.

Introduction

Hepatitis B, caused by the hepatitis B virus (HBV), is a significant global health concern associated with chronicity, cirrhosis, liver cancer, and mortality if untreated. HBV imposes a substantial burden on health-care systems worldwide due to its high morbidity, mortality rates, and treatment costs. The global prevalence of hepatitis B is staggering, with approximately 257 million people chronically infected, leading to an estimated 1.45 million deaths annually. Transmission occurs through various means, including sexual contact, sharing contaminated needles, and perinatal transmission from mother to child. Despite available treatments such as interferon-alpha (IFN- α) and ribavirin, chronic HBV remains largely untreatable, emphasizing the importance of preventive measures like vaccination. (Salama et al., 2018)

Health-care professionals (HCPs), especially in regions like Saudi Arabia, are at heightened risk due to occupational exposure to HBV. The prevalence of chronic hepatitis B among HCPs is disproportionately higher than in the general population, highlighting the occupational hazards they face. Safe and effective hepatitis B vaccines have been pivotal in preventing acute and chronic infections, with a reported effectiveness of 95% and long-lasting protection. However, challenges persist in implementing preventive policies, raising awareness, and ensuring vaccination among HCPs. (Gm et al., 2017)

The Kingdom of Saudi Arabia has made significant strides in reducing HBV prevalence through mandatory vaccination programs. However, with a diverse HCP population, including expatriates from high-prevalence regions, there is a need to assess their knowledge, attitudes, and practices regarding hepatitis B vaccination. Understanding these factors is crucial for developing targeted interventions to enhance vaccination coverage and reduce the burden of hepatitis B among HCPs in Saudi Arabia. Thus, this study aims to assess HCPs' knowledge, awareness, attitudes, and practices toward hepatitis B vaccination in the context of Saudi Arabia's healthcare landscape and diverse HCP demographics. (Wang et al., 2017)

Materials and Methods

Study Design, Location, and Duration

This cross-sectional study was conducted in governmental tertiary care hospitals, secondary centers, and primary care clinics. These locations were randomly selected from a list of available governmental healthcare institutions. The research protocol was reviewed and approved by the Medication Safety Research Chair at King Saud University, and ethical approval was obtained before data collection. Surveys were distributed to healthcare professionals (HCPs) working in five tertiary hospitals, four secondary care centers, and seven primary care centers across the selected cities.

Study Population

The study included HCPs from various healthcare facilities in the selected cities. The questionnaire was administered in English, and official permission was obtained from each

health-care center's Administrative Chief before enrolling participants. Lists of HCPs at different hospitals were provided by the Administrative Chiefs, and a simple random sampling technique was used to select participants from each hospital.

Instrument and Instrumentation

The questionnaire consisted of four sections: demographic variables, knowledge of HBV infection, awareness about hepatitis B infection and vaccination, and attitudes toward the HBV vaccine. Demographic variables included age, gender, profession, education level, and years of experience. The survey was piloted and pre-tested with 10 HCPs for validation and minor language adjustments. The survey did not collect any identifying information to ensure confidentiality.

Two pharmacists from the research team distributed the questionnaires to HCPs in randomly selected healthcare institutions. The sample included medical doctors, nurses, laboratory personnel, health officers, and pharmacists. Cluster random sampling divided each region into clusters, and at least one clinic or hospital from each cluster was selected for participation.

Sample Size Calculation

The sample size calculation aimed for an absolute error of 5%, a 95% confidence level, and an estimated vaccination rate of 60% based on a previous study. The calculated sample size was 368 participants, considering a 20% attrition rate. Therefore, the required number of participants was set at 442.

Statistical Analyses

Descriptive statistics were used to present the results, and chi-square tests or Fisher exact tests analyzed categorical data. A multivariate logistic regression model assessed predictors for vaccination status, with the dependent variable as vaccination status (vaccinated or unvaccinated). Significant independent variables from bivariate analysis were included in the final model. Statistical significance was set at $p < 0.05$, and SAS version 9.2 was used for data analysis.

Results

Five hundred questionnaires were randomly distributed among healthcare professionals (HCPs), with 476 questionnaires returned, resulting in a response rate of 95.2%. The majority of respondents were below the age of 30 (45.9%), female (65.3%), and nurses (62.7%). Approximately 65% of the participants held at least a bachelor's degree, and 47% had less than five years of professional experience.

A significant proportion (16.5%) of HCPs had not received the hepatitis B vaccine, with variations in vaccination rates among different professions. Vaccination rates were highest among nurses (86.5%) compared to physicians (79%), pharmacists (67.5%), and other HCPs (71.4%). Factors such as standard procedures and protocols for vaccination in healthcare centers (84%), standing orders for hepatitis B vaccine (67%), and belief in vaccine safety (87%) influenced vaccination rates. However, 13% of vaccinated HCPs did not believe in the vaccine's efficacy in preventing infection.

The knowledge assessment regarding hepatitis B and its vaccine revealed that a majority of HCPs understood the importance of vaccination in preventing hepatitis B infection (73.7%). However, misconceptions existed, such as the belief that hepatitis B infection is not common

(73.2%) or temporary (81.3%). Most HCPs correctly identified the routes of HBV transmission (blood 93.7%, needle sharing 76%, mother to child 60.9%) and agreed on the need for vaccination among healthcare professionals (85.7%) and children (68.5%).

Awareness of vaccination guidelines was limited, with only 42.7% of HCPs familiar with CDC/ACIP guidelines. However, many healthcare facilities had protocols for new staff vaccination (78.8%) and required hepatitis B vaccination as a condition for employment (71.3%). Barriers to vaccination included concerns about vaccine availability (48.7%) and safety (37%) for the public.

Regarding attitudes, a significant portion of HCPs perceived a high risk of HBV infection among hospital personnel (55.9%) due to frequent patient contact (34%) and needle stick injuries (33.6%). Most participants (53.6%) considered hepatitis B infection for themselves as very serious. Training related to hepatitis B vaccination in the past 12 months was reported by 26.5% of HCPs.

Multivariate logistic regression analysis identified predictors for HCPs' acceptance of hepatitis B vaccination, including female gender, awareness of vaccination guidelines, availability of vaccination protocols, and standing orders in healthcare centers.

These results highlight the need for targeted interventions to improve vaccination rates, enhance knowledge, and address barriers to vaccination among healthcare professionals

Discussion

Chronic hepatitis B virus (HBV) infections do not have a cure, and they can lead to serious complications such as cirrhotic liver failure and an increased risk of hepatocellular carcinoma. Healthcare professionals (HCPs) are at high risk of exposure to HBV-infected patients or samples, emphasizing the importance of vaccination to protect them from infection. This study aimed to assess the knowledge and attitudes of HCPs toward hepatitis B vaccination in different regions, providing valuable insights into vaccination coverage and associated factors. (Lewis et al., 2015)

The findings revealed that 83.5% of HCPs were vaccinated against HBV, indicating a reasonably good coverage but falling short of the CDC's target of over 90%. Comparisons with studies from other countries and regions highlight variations in vaccination rates among HCPs, suggesting the need for continuous efforts to improve coverage globally. The study also identified differences in vaccination rates based on professional titles, with nurses showing the highest vaccination percentage. (Chang and Chen, 2015)

Despite the relatively high vaccination coverage, there were notable gaps in knowledge and attitudes among HCPs. A significant proportion of HCPs believed that the HBV vaccine may cause disease or were unsure about its safety and effectiveness. This misconception could contribute to vaccine hesitancy and impact vaccination rates. Training programs related to HBV were attended by only 26.5% of HCPs in the past year, indicating a need for more educational initiatives to enhance understanding and awareness of the vaccine and the disease. (Bruce et al., 2016)

Factors contributing to non-vaccination included concerns about vaccine safety and effectiveness, misconceptions about the prevalence of HBV infection, and financial barriers, especially among foreign HCPs. Improving knowledge about HBV and addressing misconceptions through targeted education could help increase vaccination acceptance and coverage. (Aljumah et al., 2019)

The study's limitations include its focus on general vaccination rates and knowledge across different regions, without detailed analysis of differences between areas or between local and foreign workers. Future research could delve deeper into these aspects to understand regional variations and specific barriers to vaccination among different HCP groups. (Adekanle et al., 2015)

In conclusion, while vaccination coverage among HCPs is relatively good, there are opportunities to improve knowledge, address misconceptions, and enhance training programs to increase vaccine acceptance and coverage. Collaborative efforts between healthcare institutions, government agencies, and professional organizations are crucial in promoting HBV vaccination and protecting the health of both HCPs and patients. (Abeje and Azage, 2015)

Conclusion: Despite its limitations, the study provides valuable insights into HBV vaccination practices among HCPs. The findings highlight the need for ongoing training sessions, addressing misconceptions, and implementing policies to improve vaccine coverage and adherence to international standards. Policymakers can use these findings to develop targeted interventions aimed at increasing vaccination rates and ultimately reducing the burden of vaccine-preventable infections among HCPs and patients.

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