



Assessment of Knowledge, Awareness and Vaccination Compliance of Hepatitis B

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ABSTRACT: *Background:* Viral hepatitis refers to a liver infection transmitted through blood, specifically caused by the Hepatitis B virus (HBV). Immunization serves as an effective preventive measure against this particular disease. Medical students face an increased susceptibility to contracting the Hepatitis B virus (HBV) as a result of work exposure. *Objective:* The objective of this study is to evaluate the level of knowledge and awareness regarding Hepatitis B (Hep B) vaccination, as well as the extent to which students enrolled in health colleges at university adhere to vaccination guidelines. *Methods:* A cross-sectional quantitative study was conducted, involving the administration of a close-ended survey to 394 medical students at university. The data acquired from the survey was subjected to statistical analysis using the SPSS program. *Results:* The findings from the descriptive analysis indicate that a higher proportion of participants identified as males (73%) compared to females (26.9%). The majority of the subjects (92%) did not exhibit HBV infection. Approximately half of the participants said that they did not receive the hepatitis B virus (HBV) vaccination. Of the level of awareness among the participants, it was found that 43.60% of respondents were uninformed about the specific duration required to attain complete immunity through vaccination doses. Conversely, 57.11% of the participants shown awareness of the protective efficacy of the vaccine against HBV infection. Approximately 71.07% of the participants had the understanding that Hepatitis B is a disease that mostly affects the liver, and they are knowledgeable about the availability of vaccine as a means of prevention. Nevertheless, a notable proportion of participants (44%) exhibited a lack of awareness regarding the presence of asymptomatic hepatitis B virus (HBV) infection. *Conclusion:* Hepatitis B virus (HBV) is a multifaceted viral illness. The level of vaccine knowledge among students was found to be insufficient. Consequently, it is advisable to enhance the awareness and understanding of medical students, given their elevated susceptibility to HBV infection.

Keywords: HBV, awareness, knowledge, hepatitis, vaccination.

I. INTRODUCTION

Background

Hepatitis B is a viral infection that mostly affects the liver and is caused by the Hepatitis B virus (HBV). It is transmitted through various bodily fluids, including semen, blood, and other fluid secretions. Both acute and chronic illnesses can be a result of this condition (CDC, 2021). Moreover, the prevalence of hepatitis B virus (HBV) infection is a significant public health concern, affecting approximately one-third of the worldwide

population (Rathi et al., 2018). Medical students at health schools who are engaged in the handling of HBV are particularly vulnerable to contracting HBV infections, so placing them at a heightened risk of infection. Hence, it is crucial for individuals to possess knowledge and awareness regarding Hepatitis B (Hep B) as emphasized by Sannathimmappa et al. (2019). Furthermore, the prevention of Hepatitis B can be achieved with the use of commercially accessible vaccines (CDC, 2021). Therefore, it is imperative for healthcare students to possess knowledge and awareness regarding the modes of transmission, infectious symptoms, and preventive measures associated with Hepatitis B. Consequently, it is crucial for these students to get Hepatitis B vaccines in order to safeguard their own well-being.

Aims and Objectives

The objective of our study is to evaluate the level of knowledge, awareness, and adherence to Hepatitis B vaccination among medical students enrolled at university. Based on the aforementioned rationale, the further objectives of the present investigation are delineated:

The purpose of this study is to assess the extent of knowledge regarding Hepatitis B infections among healthcare students enrolled at university.

The objective of this study is to evaluate the level of knowledge among healthcare students at university on the transmission and prevention of Hepatitis B infection.

In order to assess the level of adherence to Hepatitis B vaccination among healthcare students at University, a comprehensive evaluation is being conducted.

In order to assess the influence of knowledge, awareness, and adherence to vaccination protocols on Hepatitis B among healthcare students at university, a comprehensive evaluation will be conducted.

The study conducted by Altamimi et al. (2021) emphasized the significance of evaluating the knowledge, awareness, and vaccination adherence pertaining to Hepatitis B among students enrolled in health colleges. Based on the study conducted by Altamimi et al. (2021), the current research study aims to investigate the impact of assessing knowledge, awareness, and vaccine compliance of hepatitis B among students at health colleges of university on mitigating the transmission of HBV within this population. The current research hypothesis (H) is formulated based on the research topic presented.

Hypothesis 1: The implementation of knowledge and awareness evaluation criteria has a transformative effect on the prevalence of Hepatitis B Virus (HBV) infections among medical students.

Hypothesis 2: The implementation of a vaccination compliance strategy has an impact on the incidence rate of Hepatitis B Virus (HBV) cases among healthcare students who are exposed to HBV.

Research Significance

Contemporary research has a crucial role in conducting a comprehensive evaluation of the knowledge, awareness, and vaccination compliance pertaining to Hepatitis B among students enrolled in health colleges at university. It delivers essential insights to managerial and medical personnel working at the health colleges of university to control HBV cases among the medical students who are at high-risk environment for transmission of HBV. Our research will conduct a comprehensive examination of the extent of knowledge and awareness, as well as adherence to vaccination protocols.

Furthermore, this study provides valuable insights for medical students regarding the importance of handling HBV with caution and implementing effective measures to avoid both acute and chronic HBV infections. This study provides a critical analysis of the amount of knowledge among healthcare students, particularly those who are inexperienced in hepatitis B virus (HBV) research laboratories. By implementing this approach, the prevalence of HBV infections can be effectively mitigated. The evaluation of the level of awareness among senior medical students on Hepatitis B infections plays a crucial role in facilitating the understanding of the transmission, symptoms, and preventive measures associated with Hepatitis B infections for incoming students. This research study serves as a valuable tool in supporting health care students in achieving vaccination compliance and fostering their motivation to complete the Hepatitis B immunization.

II. METHODS

Study setting and population

One enduring public health concern that afflicts individuals over an extended period is a liver infection resulting from the Hepatitis B virus. The transmission of the virus occurs by bodily fluids such as semen, blood, or other

biological fluids (Revill et al., 2019). Medical students who are involved in the care of patients infected with the Hepatitis B virus have a significant risk of contracting the disease themselves. Hence, it is imperative that individuals possess adequate information, awareness, and adherence to vaccination protocols in order to mitigate the prevalence of hepatitis B among them (Shrestha et al., 2020).

Study design, period and setting

The present study, which was conducted between June 2022 and November 2022, had a prospective, cross-sectional design and focused on a community-based sample. Its objective was to assess the extent of awareness and adherence to HBV and Hep B vaccination, the principal city of the region situated in the southwestern part of Saudi Arabia.

Analytical methods

The current investigation focuses on the analysis of quantitative data using the Statistical Package for the Social Sciences (SPSS) in order to derive quantitative findings and facilitate subsequent debate. The current study utilizes a quantitative research approach to effectively address the relationship between research variables and draw meaningful conclusions.

Data collection

In order to evaluate the extent of knowledge, awareness, and adherence to vaccination protocols pertaining to Hepatitis B infection, a survey was conducted among 394 medical students enrolled at University. The major data collection method employed in this study allowed the researcher to obtain unbiased perspectives from the medical students. The aforementioned approach was employed to get impartial and prompt data from the specific demographic of medical students, with the aim of establishing a correlation between the dependent and independent variables inside the research investigation. Additionally, the utilization of primary data gathering methods facilitated the researcher in maintaining a clear focus on the study problem. This approach was deemed perfect for comprehending the influence of knowledge, awareness, and vaccination compliance pertaining to Hepatitis B among healthcare students at university. According to Paradis et al. (2016), the examination of data has significant importance in a research investigation, wherein many researchers utilize methodologies to assess data and formulate findings. The primary approach employed for data collecting in this study was through the administration of surveys. The acquired data was subsequently analyzed using SPSS software to get the results.

III. RESULTS

Demographic Characteristics

The demographic characteristics of the participants are provided in Table 1. The study revealed that a majority of the participants were male (73.10%), with an age range of 18 to 20 years (44.42%). Additionally, the majority of participants reported being single (91.12%) and were enrolled in the college of medicine (67.01%).

Table 1 Demographics information

Variable	N	Percentage
Gender		
Female	106	26.90
Male	288	73.10
Age		
18-20	175	44.42
>20– 23	143	36.29
> 23–26	71	18.02
> 26	5	1.27
Nationality		
Saudi	394	100.00
Marital Status		
Married	28	7.11
Other	7	1.78

Single	359	91.12
HousingCondition		
LiveAlone	42	10.66
Livewith hisFamily	298	75.63
Livewith hisFriends	54	13.71
TheCollege		
CollegeofAppliedMedicalSciences	81	20.56
CollegeofClinicalPharmacy	23	5.84
Faculty of Dentistry	26	6.60
Faculty of Medicine	264	67.01

Table2 Academicyearand residence

Variable	N	Percentage
Residence		
Alaqiq	36	9.14
Albaha	215	54.57
Aldamam	1	0.25
Algara	9	2.28
Almakwah	23	5.84
Almandaq	22	5.58
Baljurashi	70	17.77
Bani-Hasan	2	0.51
Eastern	1	0.25
Kara-Alhait	1	0.25
Qelwah	11	2.79
Algonfodah	1	0.25
Khairah	1	0.25
Ghamd-Alznad	1	0.25
Academicyear		
First-year	83	21.07
Secondyear	49	12.44
Third Year	58	14.72
Fourthyear	55	13.96
Fifthyear	42	10.66
Sixthyear	58	14.72
Internship	49	12.44

Furthermore, a significant majority of participants (54.57%) hailed from and were in their inaugural year of academic study (21.07%). The subsequent section provides an explanation of the risk and knowledge factors pertaining to these participants.

IV. RiskandKnowledge

RiskFactors

The results of the study indicate that a majority of the participants (92.13%) did not have a prior infection of hepatitis B, and similarly, their family members (76.68%) were also not infected. When queried regarding the occurrence of needle stick injuries during their hospitalization, a majority of respondents (75.89%) refuted the assertion. Likewise, the statistical data indicates that approximately 49.75% of individuals had not been administered the Hepatitis B vaccine. A total of 10.15% of individuals express concerns regarding the potential

adverse effects associated with the vaccine. Additionally, 11.17% report a lack of availability due to time constraints, while 18.53% indicate a lack of knowledge regarding the process of obtaining the vaccine. Furthermore, a significant proportion of 28.17% admit to being unaware of the significance and benefits of receiving the vaccine.

Taking into consideration the level of awareness among the participants, the study revealed that a majority of the research respondents (43.60%) lacked knowledge on the appropriate duration of doses required to attain complete immunity. However, a significant majority of participants (57.11%) demonstrated awareness regarding the efficacy of the Hepatitis B vaccine in providing protection against infection. Ultimately, a significant proportion of the participants, specifically 34.52%, expressed the belief that the optimal timing for receiving a vaccine is before embarking on clinical professions. Figure 1 illustrates the distribution of accurate responses pertaining to each of the inquiries on vaccine awareness.

Knowledge

The findings of the study reveal that a majority of the participants, specifically 71.07%, hold the belief that Hepatitis B is a liver disease that is caused by the hepatitis B virus. Furthermore, it is understood that this virus disrupts the normal functioning of the liver and leads to various forms of pathological harm. It is noteworthy that a significant proportion of individuals, specifically 59.39%, have the belief that Hepatitis B is prone to complications, notably cirrhosis. Furthermore, a significant proportion of individuals (44.67%) has knowledge on the management of Hepatitis B. Figure 2 illustrates the distribution of accurate responses pertaining to each question assessing knowledge of the hepatitis B virus.

Table3 Hepatitis B and vaccination acceptability

	n	Percentage
Have you been infected with hepatitis B before?		
Idon't know	16	4.06
No	363	92.13
Yes	15	3.81
Have any of your family members had a hepatitis B infection?		
Idon't know	43	10.91
No	310	78.68
Yes	41	10.41
Have you had a needle stick injury while you were in the hospital?		
Idon't know	29	7.36
No	299	75.89
Yes	66	16.75
Have you received the hepatitis B vaccine?		
Idon't know	61	15.48
No	196	49.75
Yes	137	34.77
If your answer to the previous question was (no or I don't know), why did not you receive the vaccine?		
Fear of the side effects of the vaccine	40	10.15
Idon't have time to take the vaccine	44	11.17
Idon't know how to get it	73	18.53
Idon't know what the importance of the vaccines is	111	28.17

Table4 Vaccine awareness

	N	Percentage
How many doses of the vaccine to reach complete immunity from hepatitis B?		
2 doses	42	10.66
Idon't know	171	43.40
Noneed for a vaccine	29	7.36
Single dose	38	9.64
Three doses	114	28.93
How long does it take to reach full immunity?		
Idon't know	228	57.87
One month	20	5.08
Six months	93	23.60
Three months	53	13.45
Does the vaccine protect against the hepatitis B infection?		
Idon't know	132	33.50
No	37	9.39
Yes	225	57.11
What is the best time to get the vaccine?		
After graduation	80	20.30
Before entering the university	84	21.32

Before the clinical career	136	34.52
Idon't know	94	23.86

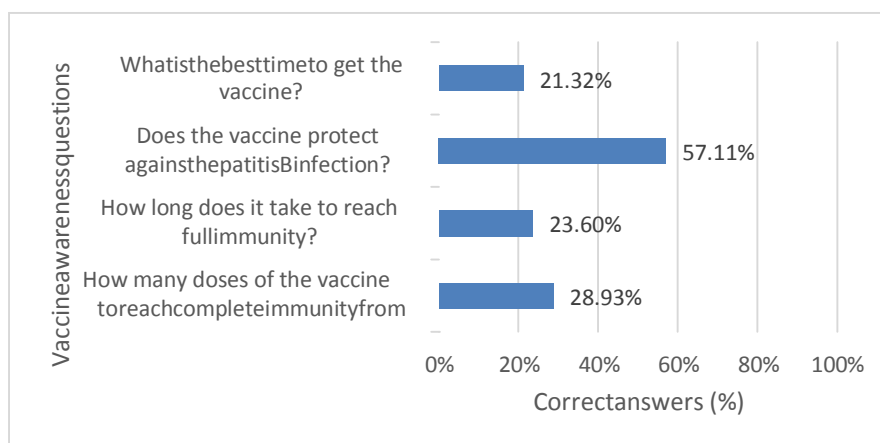


Figure 1 Percentage of correct answers to vaccine awareness questions

Table 5 Knowledge

	n	Percentage
Hepatitis B is a liver disease caused by the hepatitis B virus. The virus interferes with liver function and causes other pathological damage.		
Idon't know	87	22.08
No	27	6.85
Yes	280	71.07
Is it possible for a person to be infected and not show the above symptoms?		
Idon't know	174	44.16
No	39	9.90
Yes	181	45.94
What are the complications of hepatitis B (liver cancer)?		
Idon't know	176	44.67
No	37	9.39
Yes	181	45.94
Complications of hepatitis B (cirrhosis)?		
Idon't know	131	33.25
No	29	7.36
Yes	234	59.39
Can the hepatitis B vaccine cause disease?		
Idon't know	147	37.31
No	157	39.85
Yes	90	22.84
In case of infection, can hepatitis B be treated?		
Idon't know	162	41.12
No	56	14.21
Yes	176	44.67
After exposure to any form of infection, what is the next step to be taken?		
Contact the infection control department	231	58.63

Do nothing	27	6.85
Idon'tknow	99	25.13
Watchfor symptomsofhepatitisB	37	9.39

Canpregnantorbreast-feedingwomen get thevaccine?		
Idon'tknow	219	55.58
No	74	18.78
Yes	101	25.63
Canthetransmission ofhepatitisbepreventedwhentakingthevaccine?		
Idon'tknow	152	38.58
No	41	10.41
Yes	201	51.02

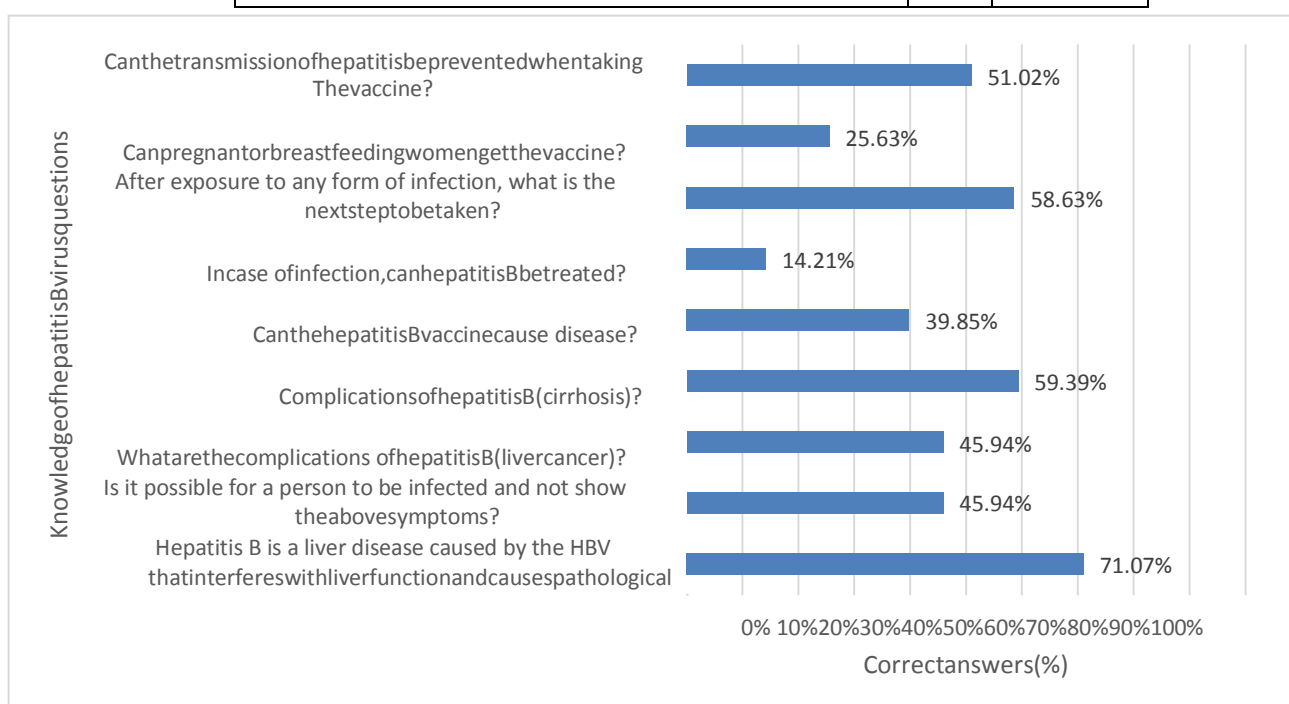


Figure 2 Percentage of correct answersto hepatitis B virus knowledge questions

V. DISCUSSION

There exists a significant rationale for conducting research on the awareness and practices surrounding Hepatitis B. The research has extensively examined the chronicity, inequities in infection rates, and mortality associated with Hepatitis B since its increased prevalence starting in 1990 (Sheena et al., 2022). The transmission of blood-borne pathogens occurs through the use of contaminated needles and syringes, leading to an increased incidence of seroprevalence of infectious diseases among healthcare workers. Similarly, medical students often encounter contaminated devices and unintentional inoculation, rendering them susceptible to developing Hepatitis B Virus (HBV) infection (Singh & Jain, 2011). In this context, it was imperative to possess knowledge regarding students' awareness and practices in order to facilitate the attainment of desired results. The present study has thus evaluated many aspects of hepatitis B virus (HBV) knowledge, awareness of vaccination, and adherence to vaccination protocols among healthcare students hailing from diverse districts within Albaha city. The research was conducted among a sample of 394 students from various academic levels within the field of medicine. The majority of individuals belonged to the first-year cohort, with a smaller proportion distributed over the second, third, fourth, and fifth years. Additionally, a subset of participants had commenced their internships. The evaluation of their expertise has yielded varied results. The variation in academic years among individuals may

influence their level of knowledge on HBV (Alhowaish et al., 2017; Sannathimmappa et al., 2019). A majority of the student population, comprising 394 individuals, demonstrated knowledge on the definition and symptoms of Hepatitis B Virus (HBV). The participants have also expressed a notable consensus that hepatitis B virus (HBV) has the ability to remain in a dormant state, exhibiting no discernible symptoms. The research has also addressed the role of latent HBV in the development of occult viral infection, which can potentially lead to the transmission of harboring virus and chronic aggravation of liver conditions (Van-Hemert et al., 2008).

However, a notable proportion of participants (44%) exhibited a lack of awareness regarding the presence of asymptomatic HBV. Furthermore, a subset of the individuals expressed uncertainty regarding the potential problems associated with Hepatitis B Virus (HBV), namely liver cancer and cirrhosis. However, a significant proportion of students, specifically 59%, identified cirrhosis as a serious issue, while 45% recognized liver cancer as a potential consequence. Conversely, the remaining 55% of students shown a lack of awareness of these health risks.

I am experiencing internal conflict on the potential for adverse outcomes. This aligns with the corroborating evidence. In a study conducted by Sannathimmappa et al. (2019) in the United Arab Emirates, it was observed that a significant proportion of medical students enrolled at CMHS University exhibit deficiencies in their understanding of the risks and problems associated with hepatitis B. However, the findings from Jazan University in the Kingdom of Saudi Arabia (KSA) present a contrasting perspective. The study conducted at Jazan University revealed that the student participants exhibited a commendable level of knowledge of the dangers associated with Hepatitis B Virus (HBV) and displayed positive attitudes towards HBV vaccination (Zaeri et al., 2018). Furthermore, the research results have also demonstrated the extent of students' understanding regarding the prompt actions to be taken in response to a suspected HBV infection, as well as their awareness of the potential risks associated with this viral illness. Approximately 58% of the student population expressed their inclination to promptly notify the infection control department in the event of suspected infection. The World Health Organization (WHO, 2015) emphasizes the importance of utilizing appropriate clinical assessment techniques for the detection and management of HBV infection. Additionally, implementing contact precautions is crucial in order to effectively mitigate the transmission of the illness. This demonstrates their comprehension of the requisite interventions that need to be implemented during the initial phase of hepatitis B virus (HBV) infection. However, there was still a proportion that was uninformed of the appropriate procedures against infection which creates a difficulty of still spreading infection of HBV.

Concurrently with the comprehension of infection control protocols, students exhibited favorable and optimistic views towards HBV vaccination, perceiving it as an efficacious measure for mitigating the risk of viral infection. According to Zaeri et al. (2018), a review of the literature revealed that clinical students who possess knowledge about the occupational risk and potential complications, such as cirrhosis and hepatocellular carcinoma, are more likely to develop positive beliefs and expectations regarding the vaccine as an effective preventive measure against HBV. Despite the generally positive attitudes exhibited by participants towards vaccination, a significant proportion of respondents demonstrated a lack of awareness of potential disease complications associated with the HBV vaccine. However, it is worth noting that a subset of respondents did acknowledge the possibility of such complications. Given that the current study incorporates an exploratory research approach, it is possible to examine these beliefs in order to ascertain their explanations. Previous scholarly research has examined the disruptions in immunological systems caused by the Hepatitis B Virus (HBV) and the resulting occurrence of skin responses and dermatomyositis (Altman et al., 2008). Sestili et al. (2021) established a correlation between the HBV vaccine and neurological adverse effects, including multiple sclerosis.

In addition, our research findings revealed that a majority of the students (55%) expressed uncertainty regarding the administration of the HBV vaccine to pregnant and breastfeeding women. Given that the HBV vaccination does not rely on the utilization of a live attenuated virus, the potential risks associated with its administration in pregnant and nursing women are not deemed to be of significant severity. The administration of the HBV vaccine is crucial for women who are at risk of contracting the virus (Gabutti et al., 2017). The question of administering the HBV vaccine to pregnant women has sparked a substantial academic debate within the field of literature. This dispute centers around the need for a thorough evaluation of a woman's pregnancy status in

order to mitigate the potential hazards associated with antiviral intervention. Given that mother-to-child transmission is a significant contributor to HIV incidence among infants, the administration of the HBV vaccination would undoubtedly serve as a prophylactic intervention. Nevertheless, it is recommended to administer the vaccination during the third trimester of pregnancy due to the increased levels of viremia (He and Jia, 2016). The current discourse pertains to the proper conclusions. Furthermore, it is recommended that pregnant and lactating women receive HBV immunization as a preventive measure that has proven to be useful for both the mother and the newborn. One of the primary advantages lies in the prevention of infection in a newborn, whereby the injection of vaccines during pregnancy in the mother can elicit active immunity in the infant (Giles et al., 2011). The efficacy of the hepatitis B vaccination in preventing viral infection is linked to its ability to induce immunogenicity in the individual receiving the vaccine. In their study, Ho et al. (2020) examined the utilization of HBV sub-particles, namely surface viral proteins, in the context of vaccine development. These epitopes serve as markers of viral presence on the host's cell surface, triggering the activation of immune responses. The vaccine's potential resides in its ability to only expose chimeric particulates to immune cells, while refraining from secreting particles. This mechanism effectively safeguards the host from infection (Ho et al., 2020). Nevertheless, despite the extensive global attention given to HBV vaccine, there remains a dearth of information regarding its possible effectiveness in preventing the infection (Ximenes et al., 2015; Flores et al., 2022). However, the examination of putative processes underlying viral vaccinations is instilling optimism regarding the future prospects of disease prevention using vaccine-mediated approaches (Ho et al., 2020). A significant proportion of respondents (55%) in the current survey expressed a favorable view of the efficacy of the HBV vaccine in preventing hepatitis B.

In addition to examining students' perceptions of HBV and its vaccination, it is imperative to evaluate their overall awareness of vaccines in order to gain insight into the extent of the vaccine's possible impact and the students' susceptibility to HBV hazards. This outcome was also attained in the current study. The understanding of the vaccine is commonly linked to awareness regarding its recommended dosage, timing, efficacy in providing protection, and suitability for receiving the HBV vaccine. Initially, a larger proportion of participants lacked knowledge regarding the optimal dosage of the vaccine necessary to achieve complete immunization within the body. In their study, Sande et al. (2007) examined the recommendation by the World Health Organization (WHO) about the administration of three doses of HBV vaccine for achieving best protection against infection and carriers. Additionally, the efficacy of the HBV vaccination was evaluated in infants who received either two or three doses. The results indicated that there was no significant difference in vaccine efficacy between the two dosage patterns. However, it is important to note that further investigation is required due to the limited size of the sample analyzed (Sande et al., 2007). This phenomenon was observed in subsequent studies that demonstrated improvements in immunization outcomes. According to a study conducted by Walayat et al. (2015), it was found that the vaccine is often provided in three doses. This administration method has been shown to reach a 95% effectiveness rate and provide recipients with long-term serological immunity. Currently, the World Health Organization (WHO) advises administering the initial dose of the hepatitis B virus (HBV) vaccine to newborns within 24 hours of delivery, followed by a further 2 or 3 recommended doses approximately one month later (WHO, 2022). The World Health Organization (WHO) does not endorse the administration of a fourth vaccine dose to patients who have already received three doses. According to the World Health Organization (WHO, 2022), the administration is considered to be optimal. Previous research has examined the necessity of further doses and the effectiveness of a fourth dose in individuals who did not respond to previous vaccinations, yielding expected results (Walayat et al., 2015). In contrast to the preceding discourse, current research findings have yielded divergent results about the level of vaccine awareness among medical students. The majority of individuals lack knowledge on the optimal dosage of vaccines that ensures maximum effectiveness. Nevertheless, a substantial majority of individuals have also indicated that the attainment of complete immunity necessitates the administration of three doses. On the other hand, a few students even remarked that there is no need for the HBV vaccine. It may be asserted that the current study conducted in the Kingdom of Saudi Arabia indicates a lack of sufficient understanding regarding the appropriate dosage among medical students. In addition to this, various results may be attributed to factors such as variations in students' academic year and the extent of their knowledge. It is imperative to thoroughly

examine these aspects.

According to Puvačić et al. (2005), existing literature has examined the duration required to attain complete immunity, revealing that it typically takes approximately six months to develop sufficient protection following the completion of the whole HBV vaccination series. In the current investigation, a total of 93 students consented to a six-month timeframe, whereas the majority of participants lacked knowledge on the duration required for the acquisition of HBV antibodies. Nevertheless, the individuals have optimistic opinions regarding the efficacy of HBV immunization in safeguarding against viral infection. The aforementioned observation is in direct opposition to the conclusions drawn in prior scholarly works. In a study conducted by Darwish and Al-Khaldi (2013), the researchers examined the level of knowledge among medical students at Damman University in Saudi Arabia regarding vaccination and its efficacy in preventing Hepatitis B Virus (HBV). The findings indicated a significant lack of knowledge among the students, particularly in relation to the World Health Organization's recommendation of administering the vaccine during infancy, especially for individuals at risk of acquiring HBV through maternal transmission. The majority of medical students have reached a consensus regarding the importance of acquiring vaccinations before embarking on their clinical careers, as these students are particularly susceptible to infections throughout their practical training. Previous research has indicated that it is advisable for students to get vaccinated before entering the clinical setting, since this can provide them with protection against the virus (Vinodhkumaradithyaa et al., 2008). However, it is worth noting that according to Acikgoz et al. (2021), prevailing protocols also recommend that students undergo an assessment to determine their HBV markers and receive vaccination before commencing their clinical practices. In general, it is imperative for students to possess a comprehensive understanding of the appropriate timing for receiving the HBV vaccination.

Furthermore, this study has also examined the acceptability of hepatitis B virus (HBV) vaccine as well as the risk factors associated with acquiring the illness. The majority of the subjects did not exhibit HBV infection, but a small proportion had prior contact to the virus and a few were unaware of their infection status. These concerns have been derived from previous scholarly works that have examined the persistent occurrence of HBV infection among healthcare students in Saudi Arabia. According to Al-Ajlan (2011), there was a higher incidence of viral infection among male students compared to their female counterparts. Furthermore, approximately 41 pupils have reported that a member of their immediate family has contracted the Hepatitis B Virus (HBV). A larger proportion of individuals in the study resided with their families, potentially increasing their susceptibility to viral transmission. A total of 61 students have reported incidents of needle-stick injuries while carrying out their duties within the hospital setting. There are potential issues regarding needle injury and blood-mediated transmission of HBV, as evidenced by a study conducted in Saudi Arabia which found that medical students at Al-Jouf University highly agreed on these hazards (Al-Hazmi, 2015). Nevertheless, the number of individuals who did not receive the HBV vaccine exceeded the number of participants who had received the vaccination. In contrast, it is shown that 86% of healthcare students in Turkey had a favorable vaccination status. Upon conducting more research, it was discovered that the pupils exhibited elevated levels of protective behaviors and knowledge scores (Acikgoz et al., 2021). In contrast to expectations, the current study yielded limited findings about vaccination habits and acceptance among students, despite their heightened susceptibility to illness. Nevertheless, it is important to acknowledge the presence of potential risk factors that may hinder students' adherence to protective activities. Based on the findings, it was determined that the student lacks a comprehensive understanding of the importance of the HBV vaccine. The student's apprehension about the vaccine stems from concerns about potential ill effects, limited availability of time, and a lack of awareness regarding vaccination locations. The aforementioned factors were also documented in the extant scholarly literature. Singh and Jain (2011) documented that the factors contributing to the non-receipt of vaccinations among medical students were linked to insufficient knowledge and a phobia of needles. Regarding the side effects of the vaccination, it has been observed that the majority of individuals do not experience any adverse effects. In cases where side effects do occur, they are often of a minor nature and have been documented to subside within a duration of one to two days. Nevertheless, it is recommended that individuals refrain from receiving a further vaccination if they have already experienced an allergic reaction to the initial dose, in accordance with vaccine guidelines outlined by the Centers for Disease Control and Prevention (CDC, 2021). In

general, there is a need for greater adherence and awareness among medical students regarding vaccination procedures and acceptability in order to demonstrate protective behavior.

The current study extensively examines the knowledge, awareness, attitudes, and practices of medical students in the Kingdom of Saudi Arabia (KSA) with regards to Hepatitis B Virus (HBV) infection and vaccination. The study yielded four notable findings. Firstly, it was observed that students possessed a satisfactory level of information regarding HIV infection. However, their understanding of the associated risks and problems was found to be negligible. This lack of knowledge may potentially diminish their motivation towards engaging in preventative measures and seeking appropriate treatment. Furthermore, it is noteworthy to mention that the students' attitudes towards obtaining vaccine are generally deemed satisfactory. However, it is important to acknowledge the existence of inconsistencies in this regard. Subsequent research has revealed that the students harbor fear and apprehension towards receiving vaccinations, which therefore leads to a decrease in their adoption of protective behaviors. Furthermore, in accordance with the second finding, the current study reveals that the practice and acceptability of HBV vaccination among medical students were inadequate. This highlights the need for a comprehensive approach to address this issue, involving strategic measures to educate and raise awareness among students regarding the disease. The fourth primary observation is to the correlation between the danger and prevalence of Hepatitis B virus (HBV), particularly the heightened occurrences among individuals studying medicine.

VI. CONCLUSION

The present study exhibits many strengths and limitations with respect to its methodological rigor and the outcomes obtained. The study's merits are rooted in its inclusion of healthcare students from diverse regions of , which enhances the potential applicability of the findings. The extent to which the sample results may be applied to a larger population demonstrates the robustness and effectiveness of the methodological methodology. Furthermore, the study incorporated an assessment of the generalizability of the findings through the utilization of a quantitative descriptive analysis of the results. The quantitative investigation possesses a higher degree of generalizability and applicability in progressive research for the purpose of providing reasons. However, it is important to note that certain limitations were observed in the study. Specifically, the assessment of students' responses was limited, and the critique of these responses relied solely on supportive data. Nevertheless, the discussion did not adequately consider the demographic aspects of the students. The educational background and professional experiences of medical students play a significant role in evaluating their competence in knowledge and application of the HBV vaccine (Maudsley and Strivens, 2000; Schei et al., 2018). Nonetheless, this is a valuable opportunity for scholarly investigation to evaluate the correlation between students' demographic variables and their levels of knowledge and efficacy in practical application. The enrichment of knowledge and experiences is crucial in shaping the clinical practices of medical students. The global prevalence of HBV is a growing worry, particularly for students pursuing careers in the healthcare industry. Consequently, it is imperative for healthcare researchers to approach this area of study with a high level of seriousness and responsibility.

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