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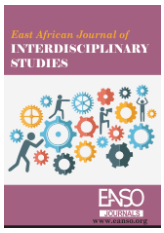

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Original Article

Is Hepatitis B the Case at Higher Learning Institutions? *Awareness and Response from Students at Sokoine University of Agriculture*

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Keywords: *Social Ecological Model, Hepatitis B, Awareness, Hepatitis B vaccine, Students' responsiveness.*

ABSTRACT

Employing a convergent parallel research design and the social ecological model, the study investigated students' awareness of Hepatitis B and the vaccine at Sokoine University of Agriculture. This is due to the high prevalence of the mentioned disease despite different efforts to contain it under the World Health Organization and health ministries of different countries, including Tanzania. A sample of 168 finalist students aged from 21 to 30 situated at the university hostels and the key informants from the SUA Health Department were involved in the study. A desk review method was used to collect data of the same from different studies conducted at higher learning institutions. The study found that 68.30% of the students were not aware of hepatitis B in terms of its transmission, prevention and cure. The study also found that most of the respondents had little understanding of the Hepatitis B vaccine in terms of dosage per person's age. Moreover, results from the desk review revealed that students from health institutions were also lacking knowledge on Hepatitis B, while some had the notion that providing the vaccine was among the ways of accelerating unsafe sexual activities. The study concludes that knowledge on Hepatitis B and vaccination compliance at higher learning institutions is minimal despite the huge interaction, which could facilitate learning as stipulated in the social ecological model. It is recommended that health departments within institutions should introduce awareness campaigns and other applicable strategies to raise awareness on health issues, including Hepatitis B and other communicable and non-communicable diseases.

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INTRODUCTION

Hepatitis B remains a global public health problem despite the presence of vaccines and antiviral drugs (Zhang et al., 2022). It is among the alarming diseases which affect and cause deaths to many people, including youths in the world. The study by Liu et al. (2021) reveal the high rate of transmission of Hepatitis B virus to children less than five years, 5 to 18 years old and the adults with the age ranging from 18 to 59 years old. This implies that hepatitis B does not exclude individuals because of their age; everyone is in the vulnerability state. The WHO has defined hepatitis as an inflammation of the liver that is caused by a variety of infectious viruses and noninfectious agents, leading to a range of health problems, some of which can be fatal (WHOa, 2023). According to WHO (2019), there are identified courses of hepatitis, including hepatitis viruses, infectious and toxic substances, including alcohol and drugs. The worldwide statistics show that around 284 million people aged 15-64 years used drugs worldwide in 2020 (UN, 2022), and 296 million people aged 15 – 64 years were using drugs in 2021 (UN, 2023). Moreover, the study by Mavura et al. (2022) indicates a high prevalence of drug and alcohol use among adolescents; these are among the risk factors for people to contract Hepatitis B. The provided facts portray that youths are at a high risk of being infected with hepatitis B. In the same, Geretti et al. (2023) reveal that the transmission of HBV is associated with poverty, which leads to failure of many people to realise the opportunities of diagnosis, treatment and care for hepatitis. This implies hepatitis B can also be transferred when people are at a high level of poverty, where they cannot afford to get the information and health treatment, including testing and paying for the vaccine.

In addition to the above, the WHO (2022) presents five types of hepatitis viruses which causes five types of hepatitis which are hepatitis A, B, C, D and E. Thus, hepatitis A and E are mostly spread through the contaminated water and food and is mostly witnessed in places where there is water scarcity and actually poor sanitation; hepatitis B is transmitted through contacting blood and anybody fluid including saliva, vaginal fluids, semen, tears and sweats and it is estimated that 296 million people are living with chronic infections (WHOb, 2023); Hepatitis C is transmitted through blood-to-blood contact including inadequate or unsterilized injection and medical equipment and about 58 million people are living with the disease; and Hepatitis D occurs when contact with infected blood and is only occurring to people who are already infected with hepatitis B (WHO, 2022). Looking at its transmission and the interaction of people in everyday life, particularly in African countries where the population is high, Hepatitis B becomes more alarming and dangerous to all ages, as it can easily be transmitted.

Different efforts have been undertaken to contain hepatitis whereby the WHO intends to eliminate hepatitis B and C by 2030 by ensuring that people are aware of it; controlling transmission from mother to child through birth dose vaccine; introducing three doses of HBV and HCV to infants; ensure blood, injection and surgical safety; reducing harm for people who use drugs; and introducing

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medicine for treating HBV and HCV (WHO, 2016). On the same note, the United Nations developed the action plan to eliminate new viral hepatitis infection where their focus was to educate people on hepatitis; increase hepatitis vaccine uptake and vaccine development; eliminating the perinatal hepatitis B and C transmission; and increasing capacities of public health, health care systems, and the health care providers for effective prevention and management of viral hepatitis (UN, 2020). Different countries have also made different efforts to join the world fight against hepatitis. For example, the government of Tanzania, through the Ministry of Health, Community Development, Gender, Elderly and Children have prepared the National Strategic Plan for the Control of Viral Hepatitis (URT, 2018). This plan aims at providing the strategies and tools to foster the prevention, screening, diagnosis, treatment and continuum of care. According to National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (2021), the ministry of Health Community Development, Gender, Elderly and Children supports Investigation on hepatitis, providing birth dose hepatitis B vaccination, testing all pregnant women; enabling testing and provision of hepatitis B vaccination for HCWs; facilitating Hepatitis B vaccination for key populations including public employees; ensuring that the WHO care and treatment guidelines is adhered to. The mentioned efforts show that hepatitis services are available to different health centres, including those which are available at higher learning institutions.

Despite the efforts, different studies are providing different insights concerning hepatitis B. For instance, there are studies which shows that people are aware of hepatitis and they have responded to the vaccine (Ibrahim & Idris, 2014; Olalekan, 2015; Shehata et al., 2018). Meanwhile, other studies present that among the challenges facing the containment of hepatitis B is low awareness, specifically on the transmission and preventive measures (Carney et al., 2013; Euphemia & Oluwakemi, 2017; Quadri et al., 2021). Tappata et al. (2024) point out the lack of a surveillance program resulting from the slow rate of diagnosis, treatment and care. Additionally, the study by Faniyi et al. (2024) identified low testing rate, limited treatment coverage, stigma and discrimination, as well as limited awareness, as among the hindrances in containing hepatitis B in African countries. The shocking information is provided by (Ndunguru et al., 2023), who reveal low uptake of vaccine among health workers, implying that probably awareness may not always be the case. The mentioned success and failure in the process of containing Hepatitis B, which health workers are involved in despite being close to the services, raised concerns for this study. It is known that there are health departments within higher learning institutions with different services, including vaccination against different diseases like Hepatitis B. It is therefore expected that students at higher learning institutions are knowledgeable about any dangerous disease like Hepatitis B, and they are aware of the vaccine and other ways of containing it. Thus, it was necessary to conduct this study to know whether the mentioned expectation is confirmable. Specifically, the study explores students' awareness of hepatitis B and the HBV vaccine. The findings of this study contribute to a better understanding of gaps in terms of knowledge and practices in order to provide effective strategies to ensure that hepatitis B is contained as stipulated by the WHO. In addition, the results of this study reveal the progress of the efforts made to contain Hepatitis B by the WHO and different countries, including Tanzania.

THEORETICAL FRAMEWORK

The study was guided by the Social Ecological Model by Urie Bronfenbrenner in the 1970s. The model is presented in levels including individual or intrapersonal factors from which attitude, knowledge, personality and beliefs are influenced; interpersonal factors deals with the interaction of people which promote social support and improve health behavior; institutional and organizational

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factors are concerned with regulatory frameworks including policies, regulations, laws and rules which contribute in promoting healthy behavior; community factors including informal and formal norms which exist within groups, organization and individuals that can either limit or enhance social behavior; and public policy factors, policies and laws that regulate or support health actions and practices for disease prevention including early detection, control and management (Kincaid et al., 2009). The theory, specifically levels one and two, was used to find out students' knowledge on hepatitis B and HB vaccine, which can also be influenced by the interaction within the institution and awareness creation through health department(s). According to Nielsen et al. (2011), social interaction is among the best strategies to disseminate knowledge.

MATERIAL AND METHODS

The study was conducted at Sokoine University of Agriculture among the selected final year students, who were believed to be a good reflection of university students because they have spent more time at the university. The focus was on the final year students residing at the university hostels, as they ought to be well-informed and use the available health services provided at the university. This is also supported by the study by Mahesh et al. (2014), which shows that the final year Dental students demonstrated higher awareness of HBV than others. In this case, it is anticipated that the selected students might be aware of Hepatitis B, and they have probably received the available services at their health department, including information on Hepatitis B. The study employed a Convergent Parallel Design, in which both qualitative and quantitative data were collected concurrently for data validation. The qualitative approach was the dominant one, where much qualitative information was collected by allowing the respondents to explain more about the asked questions. A purposive sampling procedure was employed to select the third-year students residing within the university hostels and the key informants from the SUA Health Department.

Through a simple random sampling procedure, a total of 168 finalist students aged from 21 to 30 were selected for the study. In the same, desk review method was employed to find data of the same from different studies conducted by students undertaking health courses within different health institutions, which were thematically analysed and compared with the primary data for triangulation purposes. The review process is shown in Table 1.

Table 1: The Review Process

Identified studies	**Sources**	**Total**	**Exclusion criteria**	**Remained=**
	Web of Science = 102 Science Direct = 85 Tandfonline= 32 Springer= 35 Google Scholar=190	444	Duplicate = 104 Ineligible =198	142
Screening	Screened studies = 142 **Screening criteria** • Relevance to the topic and the study scope • Content type and scope • Methodological feet • Authority credibility		Excluded studies after screening=131	
Studies included in the study	11			

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Search words	• Meaning of Hepatitis B • Awareness of Hepatitis B • Symptoms of Hepatitis B • Hepatitis B infection rate • Vaccine compliance • Misconceptions of Hepatitis B vaccine

The qualitative data from the key informants were transcribed verbatim and thematically analysed, coded, and the themes were generated and compared accordingly. The quantitative data were analysed through the aid of the Statistical Package for Social Sciences (SPSS) software, where descriptive statistical analyses were computed to generate frequencies and percentages that were presented by figures in this paper. Having the information from the respondents and the key informants, which were compared to different studies, assisted in ensuring soundness and consistency in discussing and recommending based on the identified issues in this study.

RESULTS AND DISCUSSION

The results and discussion of this paper is based on the analysed data, and they are presented based on the objectives of the study. The discussed objectives in the subsections below are students' awareness of hepatitis and their understanding of the hepatitis vaccine.

Students' Awareness of Hepatitis

Being aware of any kind of disease in terms of its symptoms, the transmission, prevention and cure provides the best ways of fighting against it. The findings of this study show that most of the respondents are not aware of hepatitis B and other types, as presented by WHO (2022), specifically on the transmission, symptoms, prevention and treatment. Most of them were wondering what hepatitis B could be. For instance, one of the respondents said;

> *" .... I really don't have any idea about that kind of disease, nor how it is transmitted or treated"* Respondent 13, March, 2025

Another one added by saying,

"*Hepatitis! No! I have never heard about it,"* Respondent 19, March 2025

The quotes indicate that respondents in the study area are lacking knowledge on Hepatitis B, regardless of its seriousness and the rate of killing, as well as affecting people worldwide. It is expected that being at a higher learning institution where there is a high level of interaction among different people could be one of the ways of disseminating knowledge on Hepatitis B, as suggested by the social ecological model. On the same note, the health department could take charge in providing education on different health concerns, including dangerous diseases like Hepatitis B. Thus, having these kinds of responses from the students at higher learning institutions raises an alarm for the health departments to find ways of impacting health education within the institution and the surrounding communities. This level of awareness informs the need to have some awareness campaign that provides education to communities and within different institutions to prevent the transmission of hepatitis B and reduce deaths resulting from the mentioned diseases. The findings from the quotes are similar to the quantitative findings from the survey as presented in Figure 1.

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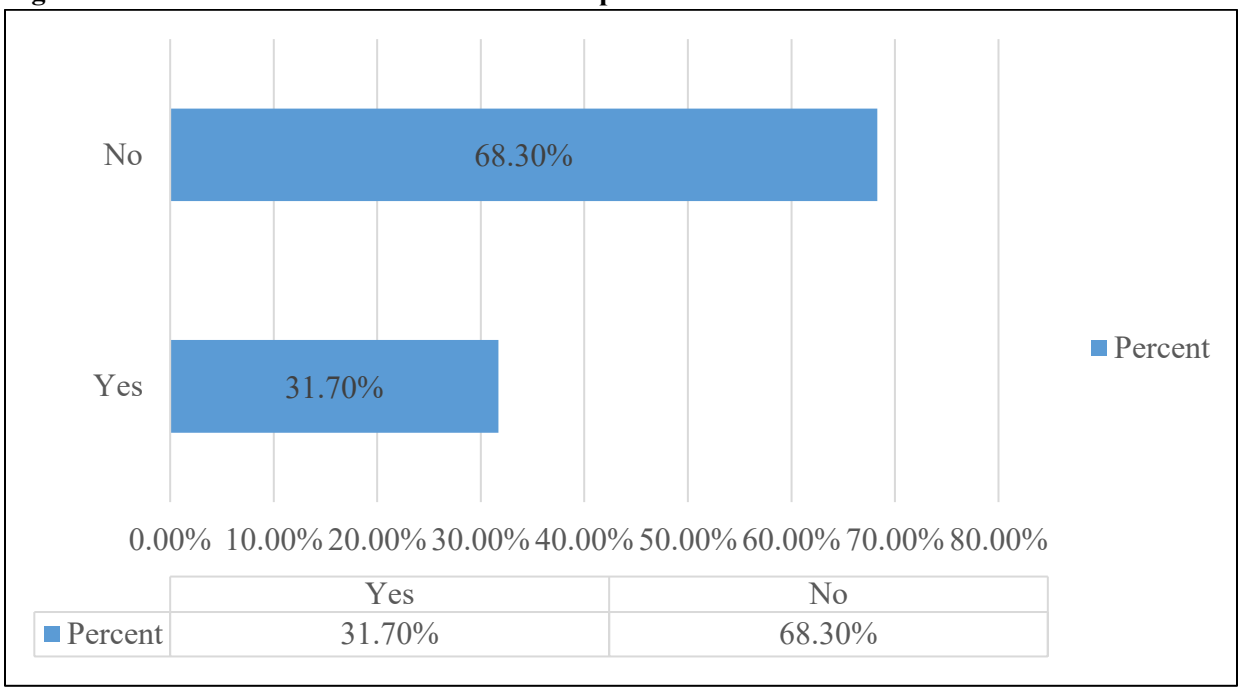
Figure 1: Results on Students' Awareness of Hepatitis B



As found in the qualitative data, most of the respondents (68.30%) in Figure 1 did not know what hepatitis B is. Only a few (31.70%) claimed to be aware of Hepatitis B. However, most of them knew only the name, but they failed to mention the symptoms, transmission, prevention and cure. Looking at how they responded, it shows that they were not sure what hepatitis B means. For example, one of the respondents said that,

> *"From what I know, hepatitis is a liver disease, but I am not sure how it is transmitted from one person to another."* Respondent 43, March, 2023.

The quote reveals the fact that the students' knowledge of hepatitis is inadequate, which may accelerate its transmission. According to WHO (2002), hepatitis B is an inflammation of the liver which is caused by the hepatitis B virus (HBV). Thus, the definition provided was not satisfactory compared to the one provided by the WHO because the respondents could not mention the virus that transmits Hepatitis B, the transmission and the symptoms. Some of them were even guessing the answers, such as increasing food appetite, when they were asked about the symptoms of Hepatitis B. These findings add to the evidence about the caveat in knowledge as well as the misconception about Hepatitis B, as presented in Figure 2. Most of the respondents (68.3%) in Figure 2 failed to mention the symptoms of hepatitis B, while others provided wrong answers. Thus, results from Figures 1 and 2 resemble those presented in the quotation, implying low awareness of hepatitis B in the study area.

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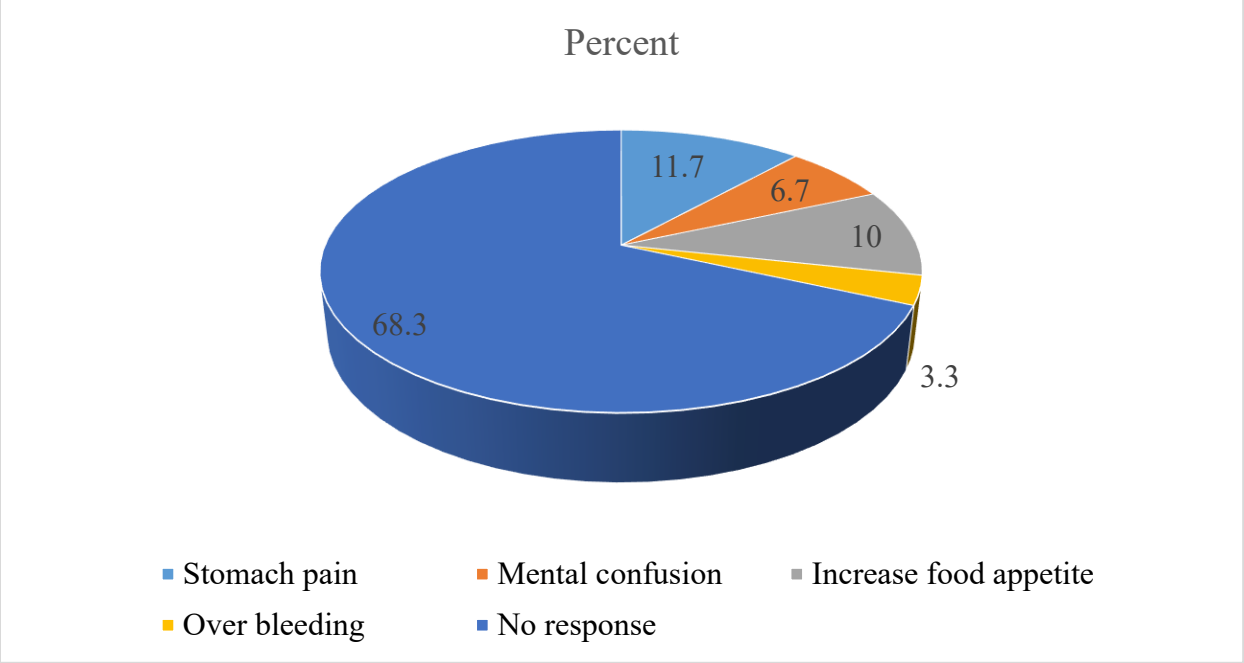
Figure 2: Results on Symptoms of Hepatitis B



Literature shows many symptoms of hepatitis, for instance, the Centers for Disease Control and Prevention (2023) reveals fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay-colored bowel movements, joint pain and yellow colour in the skin or the eyes are among the symptoms of Hepatitis B. Hence, the answers presented in Figure 2 were meant to ascertain the level of knowledge and awareness about Hepatitis B. It is clear that there were very few respondents who could mention some of the hepatitis B symptoms when comparing the results from the respondents and those from the literature. It could be expected that having a health department within the organisation could be a catalyst for raising awareness on Hepatitis B within it, which is not observed in the presented results. This provides a high chance of increasing the number of patients with hepatitis B within and outside the organisation.

Although the respondents of the study were not conversant with hepatitis B, the health department staff were well aware of the mentioned disease. For example, the key informant from the SUA health department reported that:

> *"Hepatitis B is a serious liver infection which is transmitted when blood, semen, or other body fluids from a person infected with the HBV enter the body of someone who is not infected"* Key informant 1, SUA health department, 2025.

This portrays that health workers from the SUA health department have knowledge about the disease, but probably the initiatives to disseminate the information to other members within the institution, specifically students, are insufficient. The discussion with SUA health personnel revealed that health information is provided to the SUA community through the SUA website by including the necessary content of the disease. One of them reported;

> *"We normally use the SUA website to report when there is any health issue. There was a movement to provide Hepatitis B service, including testing and vaccination, to SUA and the surrounding community, but there is a budget issue which hinders the process…. For a while, we have had the Hepatitis B service for the children…* key informant 3, SUA health department, 2025

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The quotation provides another insight that probably students within the university are hardly visiting the university website, which lead in lacking different information, including that concerning their health. This calls for the formulation of strategies to ensure that all members within the institution and other users of the health facilities understand different kinds of diseases, including Hepatitis B, and the available health services for utilisation.

The mentioned findings from the quotes and those from Figures 1 & 2 were compared with results from other studies which investigated the same in other higher learning health institutions, and the results are presented in Table 2

Table 2: Comparability Findings on Students' Awareness of Hepatitis

AUTHOR(S) AND TITLE	FINDINGS COMPARABILITY
Knowledge, awareness, and vaccination compliance of hepatitis B among medical students in Riyadh's governmental universities (Altamimi et al., 2021)	• The overall awareness of HBV and HBV vaccine compliance was low.
Public Awareness Campaign and Knowledge of Iranian (Bio)Medical Students Regarding Hepatitis B and C Infections (Karimi-Sari et al., 2017)	• There was insufficient results on the awareness of HBV and HCV infections among the 91 investigated Iranian (Bio)Medical Students.
Hepatitis C infection awareness among fourth-year medical students at the University of Dammam (Almansour et al., 2017)	• The knowledge on hepatitis C among the medical students at the University of Dammam was fair, and there was a variation in their explanation of the transmission of HCV.
Awareness and Vaccine Coverage of Hepatitis B among Cameroonian Medical Students (Kadia et al., 2018)	• Students had adequate knowledge of HBV and the HBV vaccine, but they were worried about the side effects of the vaccine.
Medical students' awareness of and compliance with the hepatitis B vaccine in a tertiary care academic hospital: An epidemiological study (Ghomraoui et al., 2016)	• The students were aware of Hepatitis, but had a low level of compliance with the vaccine.
Hepatitis B Awareness among Medical Students and Their Vaccination Status at Syrian Private University (Ibrahim1 & Idris, 2014).	• Less awareness among medical students, and they are not certain about their vaccination status.

Results in Table 2 compare well with the findings from the primary data source for this study, as presented in Figures 1 and 2 and the quotations, where most studies conducted among students from health institutions demonstrated low awareness of hepatitis B (Ibrahim & Idris, 2014; Almansour et al., 2017; Karimi-Sari et al., 2017; Altamimi et al., 2021). It was anticipated that students who are involved in health issues could demonstrate higher awareness of hepatitis than others who are studying other courses; however, that was not the case for most of the findings in Table 2. These findings indicate that the presence of Hepatitis B services or medical-related courses is not sufficient by itself to translate into improved knowledge and awareness of Hepatitis B. Hence, the governments through their health ministries should help through awareness creation strategies to ensure the guidelines from the WHO on the prevention of Hepatitis B are implemented in different

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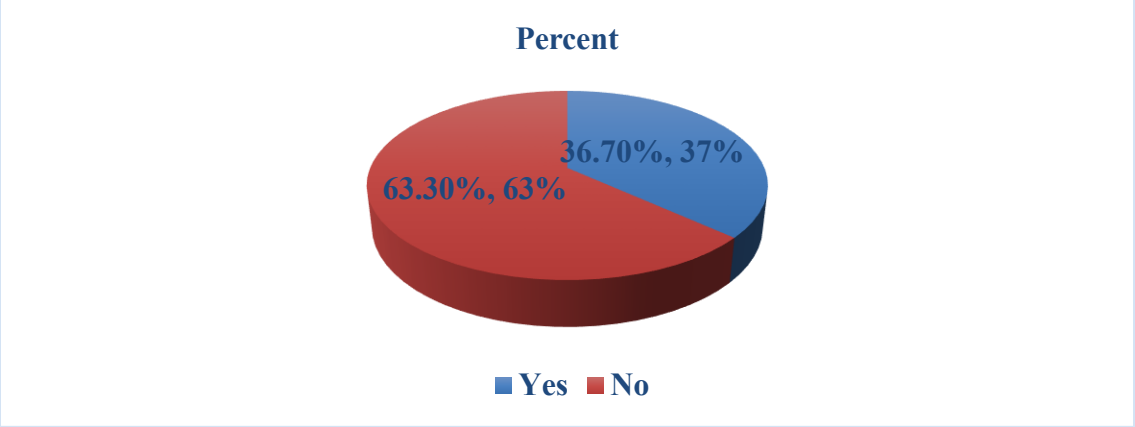
institutions. It has to be noted that a university is a place where many people, especially youth, interact specifically in classes and/or lecture theatres, dormitories and hostels, thus, not being aware of Hepatitis, specifically HBV and HCV, pose a serious health risk. It is worth noting that the more students from different levels are infected with hepatitis, the more the transmission to communities. This is because at the end of the day, the students return to their families and communities, where their interaction with other individuals increases. Thus, in the interaction process, hepatitis, particularly B, can be transmitted through sexual intercourse and use of illegal and unsterilized equipment for body piercing, tattooing, acupuncture, and even nailing at saloons; and sharing sharp instruments such as razors, toothbrushes, nail clippers, earrings and body jewellery, as explained by Hepatitis B Foundation (2023). Komatsu et al. (2012) add that tears, saliva, urine and sweat are among the ways of HBV transmission. Looking at ways in which HBV is transmitted, the infected students can easily transmit it in public transport, clubs, gym, markets, saloons, and other places where the population is high. Thus, it is important to raise awareness among students both at the university and other levels, not only to prevent the transmission but also to enable them to educate their families and the community on HBV and other types of hepatitis.

The information from literature in Table 2 shows that some of the students in health institutions had knowledge of hepatitis, but they had low compliance with the HB vaccine, as well as were frightened of the side effects (Ghomraoui et al., 2016; Kadia et al., 2018). This implies that even students who are in health institutions are not well informed about the HB vaccine, which is said to be the most effective way to contain hepatitis B. This is even more dangerous because most communities trust the information that emanates from people involved in health issues, regardless of their levels. Thus, if they are releasing the negatives about any health service, including vaccines, then it is obvious that the community will not accept it. Therefore, it is necessary for the health workers to be well-informed about any kind of disease. Doing so will make them the ambassadors, specifically by clearing the existing doubts in the minds of many people regarding the vaccine, specifically for HB.

Students' Understanding of HBV Vaccine

Based on the results presented in this paper, there is generally a low understanding of the HB vaccine. Approximately 37% of the respondents had the information on the HB vaccine, but the recipient qualities were ambiguous. The results are presented in Figure 3.

Figure 3: Results on Students' Understanding of HBV Vaccine



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According to the Centers for Disease Control and Prevention (2023), the Hepatitis vaccine is provided to infants for two (2), three (3) or four (4) short considering their health status and three times to the elderly. In addition to that, a person who is to receive the vaccination is the one who has not been infected based on the results from the screening process (Immunize organization, 2023). Based on the results, a few respondents who had clues about the HB vaccine could not mention the number of doses or who is supposed to be vaccinated. Most of them thought that the HB vaccine is for those who are already infected with the disease, which is not the case. One of the respondents reported that;

> *"Yes, I have the idea that there is a Hepatitis B vaccine, but according to my understanding, you only get it when you are infected",* Respondent 27, March, 2023.

Another one said,

> *"I heard about the Hepatitis B vaccine, but I cannot explain the required doses. I was also told that a person needs to pay for the vaccine. In short, I have no clear information about it…"* Respondent 32, March 2023

The quotations reveal that students are less informed on the hepatitis B vaccine in terms of what it is, how it works and who is supposed to be vaccinated. The results are supported by Altamimi et al. (2020), who reveal low awareness of Hepatitis B and vaccine compliance among medical students in Riyadh's governmental universities. On the other hand, the key informant from the SUA health department reported clear information concerning the HB vaccine, where he said,

> *"…… the vaccine is for those who are not affected by HBV because it prevents them from contracting the virus. The recommended schedules for receiving the hepatitis B vaccine for adults is three intramuscular injections. The possible side effects of Hepatitis B vaccine are usually mild and last from 1-2 days, including loss of appetite, tiredness and swelling of the face for some people"* Key informant 2, June 2023.

The quotes reveal that the key informants from the health department are well informed about the vaccine, but the respondents are not as informed, although they are all in the same institution. This creates the necessity for the health departments within organisations to ensure that they share the health knowledge with other people within the institution. This has to be within their plan as one of the activities to be performed to ensure the safety of the institution. This is because sharing health information can possibly rescue a huge population within and outside the institutions from being infected with not only Hepatitis but also other dangerous diseases. The findings were also compared with different studies which reported on understanding and responding to the HB vaccine from students at higher learning institutions, as presented in Table 3.

Table 3: Comparability Findings on Student Understanding of HBV Vaccine

AUTHOR(S) AND TITLE	FINDINGS COMPARABILITY
HPV Misconceptions Among College Students: The Role of Health Literacy (Albright & Allen, 2018)	• College students had high and serious misconceptions about HPV.
Medical students' awareness of and compliance with the hepatitis B vaccine in a tertiary care academic hospital: An epidemiological study (Ghomraoui et al., 2016)	• Medical students demonstrated very low compliance with HBV vaccination regardless of their awareness of hepatitis B. they provide reasons such as forgetfulness and a busy schedule.
Dispelling the myth: Exploring associations between the HPV vaccine and inconsistent	• The understanding that the vaccinated youths are more likely to engage in sexual activities.

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AUTHOR(S) AND TITLE	FINDINGS COMPARABILITY
condom use among college students (Vázquez-Otero et al., 2016)	
Hepatitis B Awareness among Medical Students and Their Vaccination Status at Syrian Private University (Ibrahim & Idris, 2014)	• A high number of students were not vaccinated, and others were not sure of their vaccination status.
Risk Perception of Hepatitis B Infection and Uptake of Hepatitis B Vaccine among Students of Tertiary Institution in Jos, Chingle et al. (2017)	• Awareness of health students on HBV infection is high, while low to non-health students. • The HB vaccine uptake is low.

Unlike the primary data, the secondary data presented in Table 3 shows that most health students are aware of HB vaccine, but there are some issues which hinder their compliance, including different misconceptions, forgetfulness and busy schedule, as well as the thinking that the vaccinated youths are likely to engage in unsafe sexual activities (Ghomraoui et al., 2016; Vázquez-Otero et al., 2016; Chingle et al., 2017; Albright & Allen, 2018). Having knowledge of health issues without complying with the requirements, including vaccines, may contribute to accelerating its prevalence. This is because when it happens that a person who has knowledge of a certain disease, including hepatitis and does not comply with the proposed health requirement can easily spread it. It is therefore important for those who are knowledgeable to comply with the directives and disseminate the information on the HB vaccine and its importance to human life. Thinking that vaccinating the youth is among the ways of making them engage in unsafe sexual activities (Vázquez-Otero et al., 2016) is a sign that other ways of HBV transmission are not well known. It is also portraying that unsafe sex is the only way of transferring HBV, which is not the case. These arguments provide a reason for the community to be educated on different diseases which can be transmitted through sex, including hepatitis B.

Results in Table 3 also show that the non-health students had low knowledge of the HB vaccine, which also affected the uptake of the same (Ibrahim & Idris, 2014; Chingle et al., 2017). The results from Table 3 match the results in Figure 3 because the investigated students were non-health students who portrayed similar results. Among the provided reasons for not being vaccinated by the respondents is that they lacked information about the HB vaccine and its availability at the Health department within the institution. The contention is supported by studies which reveal factors that hinder the HB vaccination, such as financial difficulties, institutional support, lack of information, geographical differences, etc. (Hirth, 2019; Machmud et al., 2021). Based on this study, the hindering factors may include a lack of information and probably the institutional support, because the HB vaccine services are available within the institution. This implies that reasons which hinder the HB vaccine uptake vary from place to place, which creates the importance of conducting research and working on the hindering factors accordingly.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study concludes that knowledge on Hepatitis B and vaccination compliance at higher learning institutions is minimal despite the huge interaction, which could facilitate learning as stipulated in the social ecological model. Moreover, the study is also concluding that there are some gaps, including different strategies like seminars, leaflets and the like in communicating on health issues, including the dangerous diseases like Hepatitis B.

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Recommendations

The study recommends that health departments within institutions should play the role of ensuring that the health knowledge, including diseases like hepatitis B and other types are disseminated within and outside the organisation. This can be done through creating awareness campaigns on health issues, including different diseases like Hepatitis, and their operations to prevent the spread of the Hepatitis B virus. The same can be done on preventing other alarming diseases, including communicable and non-communicable diseases, within different institutions. The awareness creation can also be done through mass media, including television and radio, brochures, seminars, workshops and through games and sports.

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REFERENCES

Albright, A.E. & Allen, R.S. (2018). HPV Misconceptions Among College Students: The Role of Health Literacy. *Journal of Community Health* 43, 1192– 1200 https://link.springer.com/article/10.1007/s10900-018-0539-4

Altamimi, A.R., Alqahtani, T.M., Ahmed, J.A., Aldosari, L.H., Alzahrani, M.M. and Alotaibi, G.S. (2020). Knowledge, awareness, and vaccination compliance of hepatitis B among medical students in Riyadh's governmental universities. *Journal of Family Medicine and Primary Care* 10(1), 485-490 DOI:10.4103/jfmpc.jfmpc_1419_20 https://journals.lww.com/jfmpc/fulltext/2021/10010/Knowledge,_awareness,_and_vaccination_compliance.83.aspx

Almansour, A.H., Darwish, M.A. & Abdel, M.M. (2017). Hepatitis C infection awareness among fourth year medical students at University of Dammam. *Journal of Family Community Medicine* 24(1), 49–54 doi: 10.4103/2230-8229.197182 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5248434/

Altamimi, A.R., Alqahtani, T.M., Ahmed, J.A., Aldosari, L.H., Alzahrani, M.M., Alotaibi, G.S. & Moukaddem, A.K. (2021). Knowledge, awareness, and vaccination compliance of hepatitis B among medical students in Riyadh's governmental universities. *Journal Family Medicine Primary Care* 10(1), 485–490 doi: 10.4103/jfmpc.jfmpc_1419_20 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8132782/

Carney, K., Dhalla, S., Aytaman, A., Tenner, C.T. & Francois, F. (2013). Association of tattooing and hepatitis C virus infection: A multicenter case-control study. *Journal of Hepatology* 57(6), 2117- 2123 https://doi.org/10.1002/hep.26245 https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.26245

Centers for Disease Control and Prevention (2023). Hepatitis B Vaccine: What You Need to Know. https://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-b.pdf

Chingle, M.P., Osagie, I.A., Adams, H., Gwomson, D., Emeribe, N. & Zoakah, A.I. (2017). Risk Perception of Hepatitis B Infection and Uptake of Hepatitis B Vaccine among Students of Tertiary Institution in Jos. *Annuals of African Medicine* 16(2), 59– 64 doi: 10.4103/aam.aam_49_16 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5452710/

Euphemia, A.C. & Oluwakemi, S. (2017). Media Public Enlightenment Campaign and Awareness of Hepatitis B in Lokoja Metropolis of Kogi State, Nigeria. *Ebonyi State University Journal of Mass Communication* 4(1), 45-62

Article DOI: https://doi.org/10.37284/eajis.9.1.4848

http://www.ebsujmc.com/uploads/840225_1527707976.pdf

Faniyi, A.A., Okesanya, O.J., Manirambona, E., Oso, T.A., Olaleke, N.O., Ruth R.N., Ilesanmi, A.O. and Lucero-Prisno, D.E. (2024). Advancing public health policies to combat Hepatitis B in Africa: Challenges, advances, and recommendations for meeting 2030 targets. *Journal of Medicine, Surgery, and Public Health* 2, https://doi.org/10.1016/j.glmedi.2024.100058 https://www.sciencedirect.com/science/article/pii/S2949916X24000112

Geretti, A. M., Austin, H., Villa, G., Smith, C., Sabin, C., Tsang, R., Sherlock, J., Ferreira, F., Byford, R., Meza-Torres, B., Whyte, M & de Lusignan, S. (2023). Hepatitis B virus infection in general practice across England: An analysis of the Royal College of General Practitioners Research and Surveillance Centre real-world database. *Journal of Infection* 86(5), 76-485 https://doi.org/10.1016/j.jinf.2023.03.001 https://www.sciencedirect.com/science/article/pii/S0163445323001305

Ghomraoui, F.A., Alfaqeeh, F.A., Algadhee, A.S., Al-alsheikh, A.S., Al-Hamoudi, W.K. & Alswat, K.A. (2016). Medical students' awareness of and compliance with the hepatitis B vaccine in a tertiary care academic hospital: An epidemiological study. *Journal of Infection and Public Health* 9(2), 203-204 https://doi.org/10.1016/j.jiph.2015.06.008 https://www.sciencedirect.com/science/article/pii/S1876034115001331

Ghomraoui, F.A., Alfaqeeh, F.A., Algadheeb, A.S., Al-alsheikh, A.S., Al-Hamoudi, W.K. & Alswat, K.A. (2016). Medical students' awareness of and compliance with the hepatitis B vaccine in a tertiary care academic hospital: An epidemiological study. *Journal of Infection and Public Health* 9(1), 60-65 https://doi.org/10.1016/j.jiph.2015.06.008

Hepatitis B Foundation (2023). Transmission of Hepatitis B. https://www.hepb.org/prevention-and-diagnosis/transmission/

Hirth, J. (2019). Disparities in HPV vaccination rates and HPV prevalence in the United States: a review of the literature. *Human Vaccines & Immunotherapeutics* 15(1), 146- 155 https://doi.org/10.1080/21645515.2018.1512453 https://www.tandfonline.com/doi/full/10.1080/21645515.2018.1512453

Ibrahim, N & Idris, A. (2014). Hepatitis B Awareness among Medical Students and Their Vaccination Status at Syrian Private University. Hindawi Publishing Corporation Hepatitis Research and Treatment (2014), 1 - 7 http://dx.doi.org/10.1155/2014/131920 https://downloads.hindawi.com/archive/2014/131920.pdf

Ibrahim, N & Idris, A. (2014). Hepatitis B Awareness among Medical Students and Their Vaccination Status at Syrian Private University. *Hindawi Publishing Corporation Hepatitis Research and Treatment (*2014), 1 - 7 http://dx.doi.org/10.1155/2014/131920 https://downloads.hindawi.com/archive/2014/131920.pdf

Ibrahim, N & Idris, A. (2014). Hepatitis B Awareness among Medical Students and Their Vaccination Status at Syrian Private University. *Hindawi Publishing Corporation Hepatitis Research and Treatment* 2014, 1-7 http://dx.doi.org/10.1155/2014/131920 https://downloads.hindawi.com/archive/2014/131920.pdf

Immunize organization (2023). Hepatitis B Facts: Testing and Vaccination. https://immunize.org/wp-content/uploads/catg.d/p2110.pdf

Kadia, B.M., Anutebeh, N.E., Belanquale, C.A., Misori, G.M., Awa, A., Mbanga, C.M. & Ngek, L.T. (2018). Awareness and Vaccine Coverage of Hepatitis B among Cameroonian Medical

Article DOI: https://doi.org/10.37284/eajis.9.1.4848

Students. https://www.hindawi.com/journals/bmri/2018/3673289/

Karimi-Sari, H., Tajik, M., Bayatpoor, M.E., Sharafi, H., Alavian, S.M. (2017). Public Awareness Campaign and Knowledge of Iranian (Bio)Medical Students Regarding Hepatitis B and C Infections. *Hepat Mon*.17(5), e45929. https://doi.org/10.5812/hepatmon.45929; https://brieflands.com/articles/hepatmon-13512.html

Kincaid, D.A., Figueroa, M.A., Storey, D & Underwood, C. (2009). A Socio-Ecological Model of Communication for Social and Behavioral Change. Retrieved from https://breakthroughactionandresearch.org/wp-content/uploads/2020/12/socio-ecological-model-of-communication-for-sbc.pdf

Komatsu, H., Inui, A., Sogo, T., Tateno, A., Shimokawa, R & Fujisawa, T. (2012). Tears From Children With Chronic Hepatitis B Virus (HBV) Infection Are Infectious Vehicles of HBV Transmission: Experimental Transmission of HBV by Tears, Using Mice With Chimeric Human Livers. *The Journal of Infectious Diseases* 206(4), 478– 485 https://doi.org/10.1093/infdis/jis293; https://academic.oup.com/jid/article/206/4/478/864014

Liu, Z., Lin, C., Mao, X., Guo, C., Suo, C., Zhu, D.,Jiang, W., Li, Y., Fan, J., Song, C., Zhang, T., Jin, L., De Martel, C., Clifford, G.M. & Chen, X. (2021). Changing prevalence of chronic hepatitis B virus infection in China between 1973 and 2021: a systematic literature review and meta- analysis of 3740 studies and 231 million people. *Gut* 72(12):2354–2363. doi:10.1136/gutjnl- 2023- 330691 https://gut.bmj.com/content/gutjnl/72/12/2354.full.pdf

Machmud, P.B., Glasauer, S., Gottschick, C & Mikolajczyk, R. (2021). Knowledge, Vaccination Status, and Reasons for Avoiding Vaccinations against Hepatitis B in Developing Countries: A Systematic Review. *Vaccines* 9(6), https://doi.org/10.3390/vaccines9060625 https://www.mdpi.com/2076-393X/9/6/625

Mahesh, R., Arthi, C., Victor, S. & Ashokkumar, S. (2014). Hepatitis B Infection Awareness among Dental Graduate Students: A Cross Sectional Study. *Hindawi Publishing Corporation International Scholarly Research Notices* 2014, 1- 6 http://dx.doi.org/10.1155/2014/389274 https://downloads.hindawi.com/archive/2014/389274.pdf

Mavura, R.A., Nyaki, A.Y., Leyaro, B.A., Mamseri, R., George, J., Ngocho, J.S & Mboya, I.B. (2022). Prevalence of substance use and associated factors among secondary school adolescents in Kilimanjaro region, northern Tanzania. *PLoS One* 17(9), e0274102. doi: 10.1371/journal.pone.0274102

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (2021). Linkage to Care and Treatment for Persons with Chronic Hepatitis B Infection in Dar es-Salaam and Zanzibar, Tanzania. https://www.hepb.org/assets/Uploads/Tanzania-HBV-CHIPO-Webinar-15March2021-1.pdf

Nielsen P, Rasmussen P, Hsiao Y, Chen C, Chang S (2011), "Knowledge management capacity and organizational performance: the social interaction view". *International Journal of Manpower* 32(5-6) 645–660, doi: https://doi.org/10.1108/01437721111158242; https://www.emerald.com/ijm/article/32/5-6/645/141525

Ndunguru B, Wilfred D, Kapesa A, Kilonzo SD, Mirambo M, Hyera F and Massaga F (2023). Low uptake of hepatitis B vaccination among healthcare workers in primary health facilities in Mwanza region, North-Western Tanzania. *Front. Public Health* 11:1152193. doi: 10.3389/fpubh.2023.1152193 https://www.frontiersin.org/journals/publicheal

Article DOI: https://doi.org/10.37284/eajis.9.1.4848

th/articles/10.3389/fpubh.2023.1152193/full#cite

Olalekan, A.W. (2015). Prevalence and risk factors for hepatitis B and C among sexually active undergraduates in southwestern Nigeria. *Annals of Tropical Medicine and Public Health* 8(6), 235- 239 https://oer.unimed.edu.ng/JOURNALS/1/1/Dr-ADEBIMPE-Annals-of-Tropical-Medicine-and-Public-Health.pdf

Tappata M, Ford J, Kayandabila J, Morrison J, Seth S, Lyimo B, May L, Debes JD. (2024). Community-Based Point-of-Care Screening for Hepatitis B Virus and Hepatocellular Carcinoma in Rural Tanzania. *Am J Trop Med Hyg.*12(1),167-172. doi: 10.4269/ajtmh.24-034 https://pmc.ncbi.nlm.nih.gov/articles/PMC11720760/

Robert A. Bednarczyk, R.A. (2019). Addressing HPV vaccine myths: practical information for healthcare providers. *Human Vaccines & Immunotherapeutics* 15, 7-8 DOI: 10.1080/21645515.2019.1565267 https://www.tandfonline.com/action/showCitFormats?doi=10.1080%2F21645515.2019.1565267

Quadri NS, Shah SM, Rodin H, Debes JD. (2021). Promoting Hepatitis B Awareness: Evaluating an Educational Approach through Health Care Workers in Tanzania. *Ann Glob Health* 87(1),22. doi: 10.5334/aogh.3045; https://pmc.ncbi.nlm.nih.gov/articles/PMC7908926/

Shehata, N., Austin, T., Ha, S & Timmerman, K. (2018). Barriers to and facilitators of hepatitis C virus screening and testing: A scoping review. *Can Commun Dis Rep* 44(7-8), 166–172. doi: 10.14745/ccdr.v44i78a03; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6449117/

UN (2020). Viral Hepatitis National Strategic Plan: 2021– 2025. https://www.hhs.gov/sites/default/files/Viral-Hepatitis-National-Strategic-Plan-2021-2025.pdf

UN (2022). UNODC World Drug Report 2022: UNODC World Drug Report 2022 highlights trends on cannabis post-legalization, environmental impacts of illicit drugs, and drug use among women and youth. https://reliefweb.int/report/world/unodc-world-drug-report-2022

UN (2023). UNODC, World Drug Report 2023. https://www.unodc.org/res/WDR-2023/WDR23_Exsum_fin_DP.pdf

URT (2018). National Strategic Plan for The Control of Viral Hepatitis 2018/19-2022/23. https://www.globalhep.org/sites/default/files/content/resource/files/2020- 02/Tanzania%20National%20Strategic%20Plan%20for%20the%20Control%20of%20Viral%20Hepatitis%202018-19-2022-23.pdf

Vázquez-Otero, C., Thompson, E.L., Daley, E.M., Griner, S.B., Logan, R & Vamos, C.A. (2016). Dispelling the myth: Exploring associations between the HPV vaccine and inconsistent condom use among college students. *Preventive Medicine* 93, 147- 150 https://doi.org/10.1016/j.ypmed.2016.10.007 https://www.sciencedirect.com/science/article/abs/pii/S0091743516303097

WHO (2002). Hepatitis B. https://apps.who.int/iris/bitstream/handle/10665/67746/WHO_CDS_CSR_LYO_2002.2_HEPATITIS_B.pdf;sequence=1

WHO (2016). Combating Hepatitis B and C To Reach Elimination by 2030. https://apps.who.int/iris/bitstream/handle/10665/206453/WHO_HIV_2016.04_eng.pdf

WHO (2019). Hepatitis. https://www.who.int/news-room/questions-and-answers/item/hepatitis

WHO (2022). World Hepatitis Summit 2022 urges action to eliminate viral hepatitis as unexplained hepatitis cases in children rise globally. https://www.who.int/news/item/07-

Article DOI: https://doi.org/10.37284/eajis.9.1.4848

06-2022-world-hepatitis-summit-2022-urges-action-to-eliminate-viral-hepatitis-as-unexplained-hepatitis-cases-in-children-rise-globally

WHOa (2023). Hepatitis. https://www.who.int/health-topics/hepatitis#tab=tab_1

WHOb (2023) Hepatitis B. https://www.who.int/news-room/fact-sheets/detail/hepatitis-b

Zhang, C., Liu, Y., Zhao, H., & Wang, G. (2022). Global Patterns and Trends in Total Burden of Hepatitis B from 1990 to 2019 and Predictions to 2030. *Clinical Epidemiology*, 14, 1519–1533. https://doi.org/10.2147/CLEP.S389853 https://www.tandfonline.com/doi/full/10.2147/CLEP.S389853

