

## Investigating Knowledge, Attitude and Perception Levels of Hepatitis B, Among Students: A Study in Presbyterian Senior High School, Tamale

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### Abstract

**Background:** Globally, there is a concern of a health problem posed by Hepatitis B infection. This health problem is on the ascendancy worldwide and in the country especially among the youth in our Senior High Schools. Since there is still no cure for the disease, the best way to control its high rate of infection and high incidence is by prevention. The method of prevention that can be employed will depend on the level of knowledge and awareness of the disease among all target groups. Victory over the prevention of this infection and its consequences largely can be associated to the knowledge, attitude and perception levels of the youth as well as their lifestyle behavior that can pose as risk to acquiring this infection.

**Aim:** The objective of this research was to investigate variables such as knowledge, attitude and perception levels of students in the Tamale Metropolis, the case of Presbyterian senior high. Questionnaires were asked to relate to the variables being investigated, that knowledge, attitude and perception on hepatitis B virus. The questionnaire was administered to 300 students of the school in focus. Questions were also asked on issues of risk behavior related to this disease.

**Results:** The study found that 94% of the respondents were aware that the infection was caused by a virus whiles the rest of the respondents thought the disease is caused by either by spiritual attack (2%) or swelling of the stomach (2%) infection and (2%) didn't know the cause. About 51% of the respondents thought that the disease was transmitted mainly by unprotected sex and 73.3%. While only 35% reported having been vaccinated against HBV.

**Conclusion:** Generally, knowledge of hepatitis B disease among the study group was not high enough and many had erroneous perceptions about the disease, therefore more education is needed to sensitize Senior High School students about the hepatitis B disease.

**Keywords:** Hepatitis, Infection, Liver disease, Viruses.

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## Introduction

### Background To the Study

The World Health Organization [WHO] (2018), asserted that globally, the commonest liver infection is hepatitis B, infection [1]. This infection is due to a DNA-virus known as the hepatitis B virus (HBV). This virus is found to be very contagious, estimated to be 50-100 times greater than the deadly HIV. The common routes of infection are through blood, semen, mucous membranes and vaginal fluids among others. Currently it is estimated globally that over 2 billion people are infected with 350 million chronic carriers. According to (Malik & Lee, 2019), about 6% of the total population, in south East Asian region, representing 80 million people are carriers [2].

Weinbaum, Mast & Ward, 2020, revealed that in 1964, it became evident that it was possible to isolate the hepatitis B surface antigen through human blood [3]. It was also noticed that all infections by the HBV, are asymptomatic and thus infected people do not usually know their status until a test is done. However, as time goes on some infected individuals may show signs and symptoms such as loss of appetite, jaundice, fatigue and abdominal pain. In adults mostly 90% of the infections heal and the victims become healthy. However, in infants and young children the case is different. An estimated 90% of infants infected can lead to chronic HB, while 30-50% may lead to chronic HB infection in young children. These infected persons stand the chance of suffering from liver complications in later years [4]. Further, this infection results in 0.6million deaths annually and its infection rate is like wildfire. In Asia pacific region for example, 10 to 15 million of its population is suffering from this disease [5]. In the context of Sub-Saharan Africa, the infection rate is estimated as 7 to 26%. Despite all these disturbing figures worldwide and in Ghana, not so much attention has been paid to this disease condition in Ghana by the major stakeholder even though its history can be dated back as far as shortly after the second world war [6]. This can be affirmed by a study by Morrow and et al., who found out that the infection rate of this disease is on the increase in Accra [7].

Another evidence to claim that the attention of policy makers in Ghana is yet to be caught by the devastating effect of this disease is the fact that not much has been done about it except the establishment of Ghana Hepatitis B, foundation recently in 2017, though the history of this infectious disease dates back to aftermath of the second world war. As a result of this lack of adequate attention and commitment to deal with this infectious disease like other infectious diseases, the disease is estimated to have about four million carriers in the country. To further illustrate this point, the 2018 Ghana Health Service report showed an increase in the prevalence rate from 8:1 in 2009 to 6:1. What this means is that in every 6 Ghanaians, one person is said to be infected with this condition. A study conducted by (Diederike et al, 2018), also shows that this condition plays an indirect role in the causes of maternal mortality [8]. In a hospital-based study in Brong Ahafo region of Ghana, over a period of 13 years, there were 229 maternal deaths recorded

and 15 deaths out of these were as a result of HBV infection.

Fortunately, when persons who are infected are diagnosed early enough it can lead to a break in transmission and also treatment with anti-viral medications [9]. Also, deteriorating leading to complications after infection can be slowed down with early diagnosis because it is proving that using alcohol while infected with HBV can lead to early hepatotoxicity (Tan, Cheah & Teo, 2021). In spite of the spread of this infection like wild fire and its high morbidity and mortality rate there is paucity of literature on this topic specifically in the northern region of Ghana. To mitigate the effects of this disease in Ghana, there is the urgent need to raise awareness about this disease and this can be done by increasing the knowledge levels of the citizenry about its causes, preventive measures, treatment and management about it. Literature on this shows that the knowledge and awareness level of this disease at best is average in Ghana. It is also evident that the studies done on students in Ghanaian Senior Secondary Schools and young adults are few meanwhile this group constitute the group that have lifestyles and sexual behaviors that can further aggravate this menace which is an albatross to the health sector. For these reasons among others the authors decided to investigate the knowledge, attitude and perceptions, of the students in Presbyterian Senior High school in the Northern region regarding Hepatitis B. The results of this study can help mitigate this condition through the dissemination of its findings.

## Material And Methods

### Introduction

This section discusses methods used in this research to unravel the knowledge, attitude and perception of students of Presbyterian Senior High School regarding HBV infection. Under this section the procedures to obtain the sample size, data collection, data analysis, research design and the instrument for data collection etc were discussed.

### Study Design

This research employed a quantitative study design, basically using cross-sectional survey. Survey research involved the gathering of relevant information from relatively large area within a relatively short period (Best & Kahn 1991).

### Study setting and population

The study was conducted in Presbyterian Senior High School, Tamale, which is located in Banvim a suburb of Tamale. The school was established in the year 2002 by the joint collaboration of the Presbyterian church of Ghana and the Oikonomos Foundation of the Netherland. Currently, the school runs the Day and Boarding Senior High School system with a campus in Banvim a suburb of Tamale and another campus in Kukou, another suburb of Tamale. The school started by mounting three programs; General Arts, Business and Home Economics but now runs six programs. The school has a population of 1200 students, a teaching staff of 48 and 14 non-teaching staff. The school has twelve (12) classroom

blocks, a computer lab, Library, science lab, a staff common room just in front of the classrooms. The school shares boarders with Yung to the north, Tuutingli to the south, Bulpiela to the East and Kakpagyili to the West, all of which are suburbs of Tamale, the capital town of the Northern region.

### Sample size and Sampling Procedure

The sample size was determined using Slovin's formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where n = Sample Size, N = Total Population and e = Margin of Error (Stephanie, 2020). Therefore, using the Slovin's formula and our total population of 1200 and margin of error of 0.05:

$$n = \frac{1200}{1 + 1200(0.05)^2}$$

$$n = \frac{1200}{1 + 1200\left(\frac{1}{400}\right)}$$

$$n = \frac{1200}{1 + 3}$$

$$n = \frac{1200}{4}$$

n = 300 students

Therefore, our sample size to work with shall be 300 students.

### Data collection instruments/tool

For the purpose of this study, questionnaires were used. In designing the instruments, the three (3) objectives guiding this study were used as indicators. This means that items in this instrument reflected the reality on the ground/objectives. Similarly, information gaps realized during the literature review in the content of study was served as a rich source of information.

The items were graded across the objectives of the research to ensure that each objective has enough items to address the study and these were written down in the form of statements. The items were subjected to intense scrutiny and items found to be inappropriate in the design were therefore excluded. Closed ended questions were used. Serial arrangements of content headings were done and final instruments neatly printed for field work. The objectives were revisited and critically analyzed for conformity with instrument items.

### Data Collection Procedure

Data collection was done by the respondents being identified at the appropriate time, and that was after classes' hours, where they were approached individually and the purpose of the study explained to them. After the explanation, the questionnaires were given out. Time was provided for them to go through the questions and items that raised doubts were clarified. A period of time was scheduled for them after which the questionnaires were taken back.

### Data Analysis

The data was analyzed taking into consideration the objectives of the study. Data collected using questionnaires was transferred into the Statistical Package for Social Sciences (SPSS) version 25.0. By the use of this software to do the analysis, results were illustrated in tables, pie charts and bar charts.

### Ethical Consideration

This study was for academic purpose only and was not used for any other purpose aside that. The researchers obtained an introductory letter that would introduce them to the school for permission to collect data. Permission was sought from the ethics review board of Tamale Teaching Hospital. Before the administration of the questionnaire to participants, their consent was obtained. The aim of the study was explained to all the respondents and their privacy and confidentiality assured. They were also allowed to voluntarily take part in the study and the right not to involve or not to answer any of the questions. They were also made to know that they have the right to opt out of the study at any stage on their own volition.

### Data Analysis and Results

#### Introduction

This section illustrates the findings of the study on the variables investigated on Hepatitis B. among students of Presbyterian Senior High School. The various subheadings presented include: socio – demographic characteristics of respondents, level of knowledge, attitude and their perception about Hepatitis B virus infection.

#### Socio – Demographic Characteristics of Respondents

These included: age, gender, level at school, program offered, religion, ethnicity, extra job aside schooling, area of residence, whom they live with, and relationship status distribution of the respondents are shown in Table-1. There were 51% males, making the majority and 49% were female respondents. Majority 56% of the respondents were between the ages of 16 – 20, 31% were between the ages of 21 – 25 and the least were between 10 – 15 having 13% of the respondents. Approximately 48% of the respondent population was in SHS 3, 34% were in SHS 2 and the rest were in SHS 1 making 13% of the respondent population. The respondents were largely offering General arts making 42%, 6% were offering Agric Science, 9% of the respondent offered Business, 16% were offering General Science, 26% of the respondent were offering Home Economics and only 1% of the respondent population offered Visual Arts. 51% of the respondent population was Muslims, while 47% were Christians and the rest of the 2% of the respondent population belonged to the traditional religion. When respondents were asked whether they were having extra job, 87% said Yes while 13% said No. Regarding their place of residence, majority of the respondents were from Kukuo community representing 28%, 27% were from vittin, 19% of the respondents were from changli and the respondent populations were from other residents representing 26%. With regards to whom they live with, majority of the respondents said they lived with their parents/family representing 99% while only 1% lived with friends. When respondents were asked whether they had boyfriend or girlfriend, 59% answered yes while the rest of the 41% said no.

**Table 1: Socio-biographic data (n=300)**

VARIABLES	FREQUENCY	PERCENTAGE
<b>SEX</b>		
Male	153	51.0%
Female	147	49.0%
<b>Age</b>		
10 - 15	39	13.0%
16 – 20	168	56.0%
21 – 25	93	31.0%
<b>Which level are you?</b>		
SHS 1	54	18.0%
SHS 2	102	34.0%
SHS 3	144	48.0%
<b>Which program are you offering?</b>		
Agric. Science	18	6.0%
Business	27	9.0%
Gen. Arts	126	41.0%
Gen. Arts	48	16.0%
Home. Econs	78	26.0%
Visual. Arts	3	1.0%
<b>Religion</b>		
Christianity	141	47%
Islam	153	51%
Traditional	6	2%
<b>Ethnicity</b>		
Dagomba	84	28.0%
Gonja	42	14.0%
Mampurisi	63	21.0%
Akan	72	24.0%
Others	39	13.0%
<b>Do you have an extra job</b>		
Yes	39	13.0%
No	261	87.0%
<b>Area of residence</b>		
Kukuo	84	28.0%
Vittin	81	27.0%
Changli	57	19.0%
Others	78	26.0%
<b>Family setting</b>		
Parents/Family	297	99.0%
Friends	3	1.0%
<b>Do you have boyfriend/girlfriend?</b>		
Yes	177	59.0%
No	123	41.0%
<b>Have you got the hepatitis B vaccine?</b>		
Yes	165	55.0%
No	135	45.0%
(Source: Field survey report, 2022)		

### Respondents Knowledge of Hepatitis B Virus Infection.

In respect of how respondents answered the question whether they have heard about Hepatitis B virus infection or not, 279 of the

respondents (93%) answered “Yes” while the remaining 7% answered “No”

**Table 2: Respondents view about whether they have heard of Hepatitis B**

RESPONSE	FREQUENCY	PERCENTAGE
YES	279	93.0%
NO	21	7.0%
TOTAL	300	100%

(Source: Field survey report, 2022)

When the respondents were asked of the sources, they heard about HBV infection, the findings indicated that, 13% of the respondents heard it from family members, 27% heard it from physician/nurse, 9% heard it from friends/neighbor, then 16% heard it from

television/radio, 13% heard it from social media, also 18% of the respondent’s population heard it at school and the rest of 4% also heard it at religious gatherings.

**Table 3: Respondent’s source of where they heard about Hepatitis B**

RESPONDENT	FREQUENCY	PERCENTAGE
Family members	39	13%
Physician/nurse	81	27%
Friend/neighbour	27	9%
Television/radio	48	16%
Social media	39	13%
School	54	18%
Religious gathering	12	4%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

In addition, regarding the question of what is hepatitis B, according to their source of information. 94% of the respondent population said it is a viral infection of the liver, 2% said it is the swelling

of the stomach, also 2% said it’s a spiritual attack and the rest of the 2% of the respondent population said they don’t know HBV

**Table 4: Respondents knowledge about Hepatitis B**

RESPONDENT	FREQUENCY	PERCENTAGE
Viral infection of the liver	282	94%
Swelling of the stomach	6	2%
Spiritual attacks	6	2%
Don’t know	6	2%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

Moreover, when respondents were asked about whether they know their Hepatitis B status, majority 54% of them said they do not know their Hepatitis B status whilst 46% making the minority said

they knew their Hepatitis B status. This is illustrated in table five below:

**Table 5: Respondents knowledge about their Hepatitis B status**

RESPONDENT	FREQUENCY	PERCENTAGE
YES	138	46%
NO	162	54%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

Moreover, when respondents were asked about whether they know their Hepatitis B status, majority 54% of them said they do not know their Hepatitis B status whilst 46% making the minority said

they knew their Hepatitis B status. This is illustrated in table five below:

**Table 6: Respondents knowledge about whether Hepatitis B is transmissible**

RESPONDENT	FREQUENCY	PERCENTAGE
YES	255	86%
NO	42	14%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

Also, when respondents were asked about how hepatitis B infection was transmitted. 51% said it can be transmitted through unprotected sex, 25% said through blood transfusion, 11% also said from mother to child during pregnancy, 6% said it can be transmitted through kissing and 7% said they don't know how it's transmitted. This is illustrated in table 7 below:

**Table 7: respondents view about how Hepatitis B is transmitted**

RESPONDENT	FREQUENCY	PERCENTAGE
Unprotected sex	153	51%
Blood transfusion	75	25%
Mother to baby during pregnancy	33	11%
Kissing	18	6%
Don't know	21	7%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

Furthermore, as shown in table eight, when they were asked how they got to know if he or she has hepatitis B infection, 96% of them said through laboratory investigations, while 1% said through spiritual revelation and 3% said they don't know.

**Table 8: Respondents view about to determine whether if someone has Hepatitis B**

RESPONDENT	FREQUENCY	PERCENTAGE
Laboratory investigations	288	96%
Spiritual Revelation	3	1%
Don't know	9	3%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

In addition, as shown in table nine, when respondents were asked what are the signs and symptoms of Hepatitis B infection 44% of the respondents said jaundice, 35% said swollen stomach, 15% said fever, 2% also said fatigue and 4% chose muscle or joint pain

**Table 9: Respondents knowledge about signs and symptoms of Hepatitis B**

RESPONDENT	FREQUENCY	PERCENTAGE
Jaundice	132	44%
Swollen Stomach	105	35%
Fever	45	15%
Fatigue	6	2%
Muscle or joint pain	12	4%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

Again, with regards to whether Hepatitis B infection could be treated at early stages majority of the respondent population representing 74% said YES it can be cured while 5% said NO it can't be cured at early stages and 21% said they don't know if it can be cured at early stages. This is illustrated in table ten below:

**Table 10: Respondents view about whether Hepatitis B can be treated at the early stages**

RESPONDENT	FREQUENCY	PERCENTAGE
Yes	222	74%
No	15	5%
Don't know	63	21%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

In addition, they were again asked how Hepatitis B infection could be treated then 66% said it can be treated by orthodox medicine, 24% said it can also be treated by herbal medicine, whereas 10% said they don't know how it can be treated. This is illustrated in table 11 below:

**Table 11: Respondents knowledge about how Hepatitis B infection can be treated**

RESPONDENT	FREQUENCY	PERCENTAGE
Orthodox Medicine	198	66%
Herbal Medicine	72	24%
Don't Know	30	10%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

They were again asked what complications could results from Hepatitis B infection. Then 85% said liver failure was a complication, 8% said liver cancer, also 4% said chronic hepatitis B and 3% said liver cirrhosis was also a complication of Hepatitis B. This is illustrated in table 12 below:

**Table 12: Respondents view about the complication of Hepatitis B**

RESPONDENT	FREQUENCY	PERCENTAGE
Liver failure	255	85%
Liver cancer	24	8%
Chronic Hepatitis	12	4%
Liver cirrhosis	9	3%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

On the issue about whether Hepatitis B infection has vaccine, majority (91%) of the respondents said YES, (3%) of the respondent population said NO whereas (6%) of the respondent population said they don't know.

**Table 13: Respondents view about whether Hepatitis B has vaccine**

RESPONDENT	FREQUENCY	PERCENTAGE
Yes	273	91%
No	9	3%
Don't know	18	6%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

As shown in table 14, those who answered yes to the question on whether Hepatitis B has vaccine, were further asked about how many doses they receive. Majority of them (73%) said three doses whilst 5% of the respondents said more than three doses making the minority.

**Table 14: Respondents view about the number of doses they received**

RESPONDENT	FREQUENCY	PERCENTAGE
1 Dose	21	2%
2 Doses	45	15%
3 Doses	219	73%
More than 3 doses	15	5%
TOTAL	300	100%

(Source: Field survey report, 2022)

As shown in table 14, those who answered yes to the question on whether Hepatitis B has vaccine, were further asked about how many doses they receive. Majority of them (73%) said three doses whilst 5% of the respondents said more than three doses making the minority.

**Table 15: Respondents view about how Hepatitis B can be prevented**

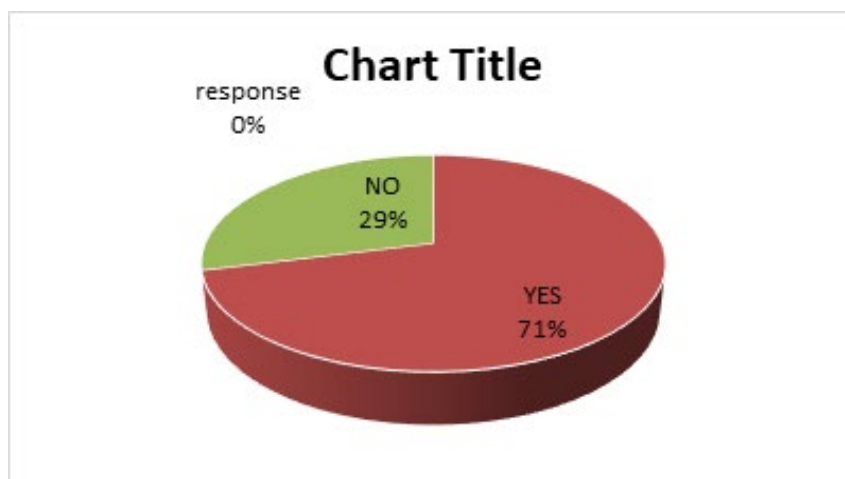
RESPONDENT	FREQUENCY	PERCENTAGE
Protected sex	165	55%
Avoid alcohol consumption	54	18%
Avoid sharing of personal objects	42	14%
Prayers	6	2%
Don't know	33	11%
<b>TOTAL</b>	<b>300</b>	<b>100%</b>

(Source: Field survey report, 2022)

**Respondents Perception of Hepatitis B Virus Infection among Students**

Figure 1 present the perception of hepatitis B virus infection among students. Nearly 71% were of the view that Hepatitis B virus in-

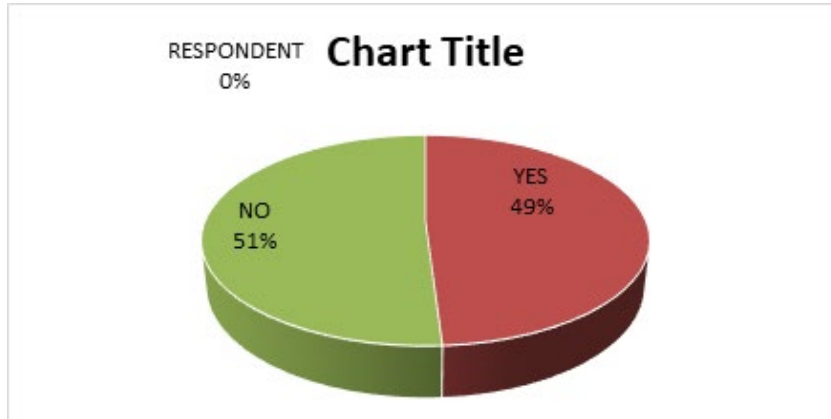
fection was a major problem in the region, while only 29% said hepatitis B infection was not a major health problem in the region.



**Figure 1: Respondents perception about Hepatitis B infection (Source: Field survey report, 2022)**

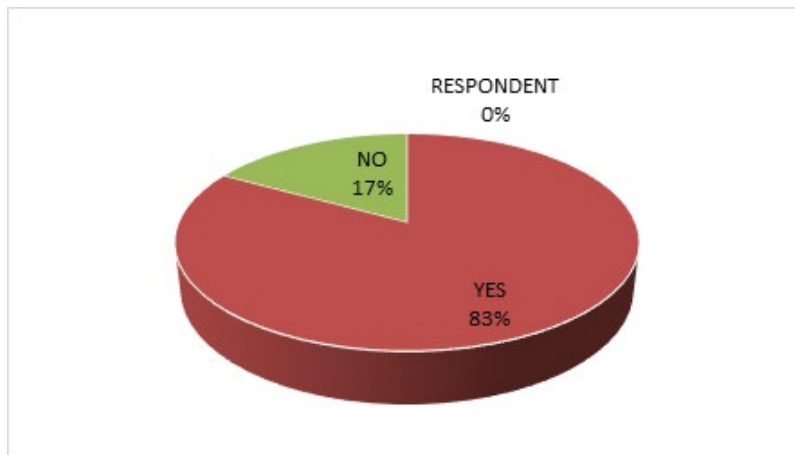
Figure 2 depicts that about 60% of the respondents answered yes to the question whether one can get Hepatitis B through hand shake with an infected person while 40% of the respondents knew that shaking hands with an infected person could not transmit HBV.





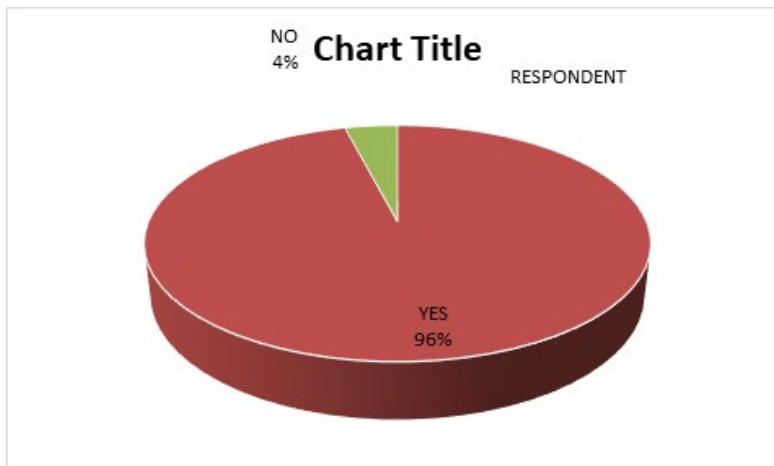
**Figure 3: Respondents view about whether one can get Hepatitis B through hugging (Source: Field survey report, 2022)**

Figure 4 shows that majority of the respondents representing 83% while only 17% were against the fact that HBV could be acquired through sexual intercourse knew Hepatitis B could be acquired through sexual intercourse.



**Figure 4: Respondents view about whether one can get Hepatitis B through sexual intercourse (Source: Field survey report, 2022)**

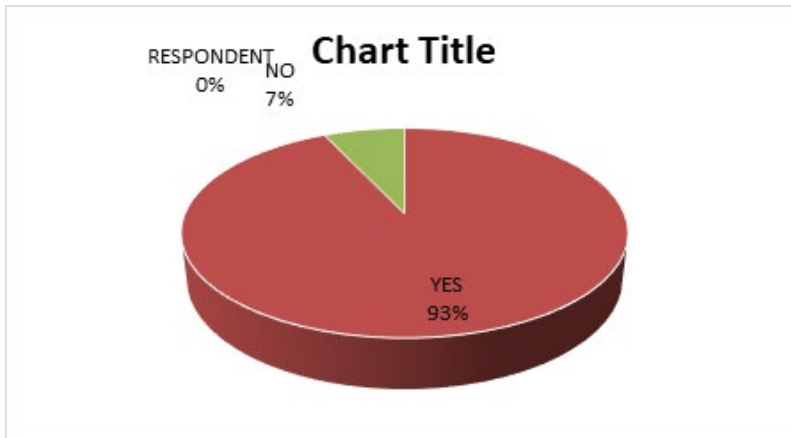
Figure 5 shows that 96% of the respondent population were of the view that Hepatitis B virus infection is considered the most dangerous and killing disease while a few of them did not consider HBV as a dangerous and killing disease representing only 4% of the respondent.



**Figure 5: Respondents view about whether Hepatitis B is considered a dangerous and killing disease (Source: Field survey report, 2022)**

Figure 6 indicates that majority of the respondent considered Hepatitis B vaccination a good practice representing 93% of the re-

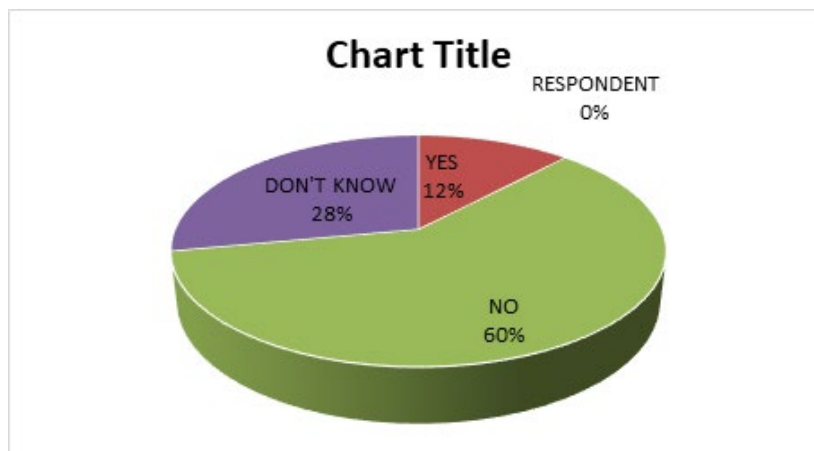
spondent population whereas the rest of the 7% did not consider HBV vaccination a good practice.



**Figure 6: Respondents view about considering Hepatitis B vaccination a good practice (Source: Field survey report, 2022)**

When the respondents were asked whether Hepatitis B could be cured by a spiritualist, 60% of them said “No”, 12% of the respondents answered “Yes” while the remaining 28% said they did not

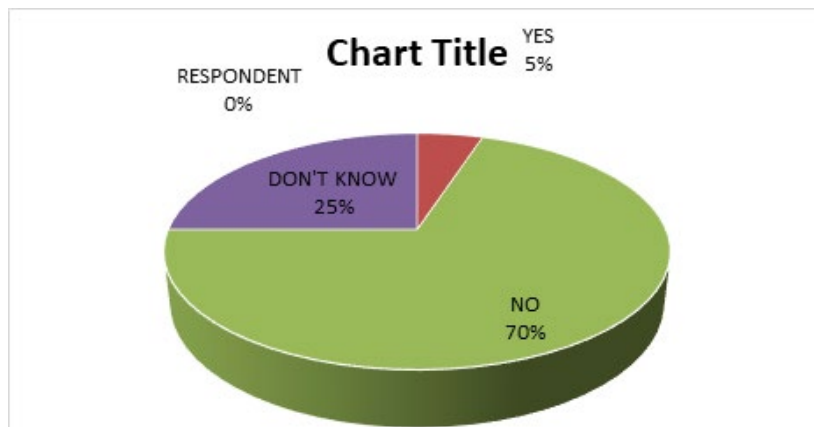
know whether HBV could be cured by a spiritualist. It’s presented in figure 7.



**Figure 7: Respondents view about whether Hepatitis B can be cured by a spiritualist (Source: Field survey report, 2022)**

Again, when the respondents were asked whether Hepatitis B was caused by witchcraft, Majority of them answered “No” represent-

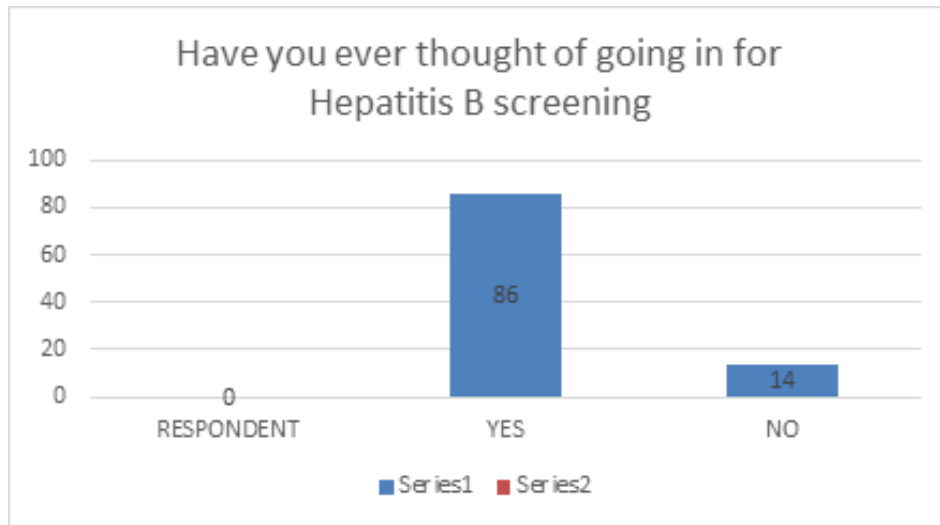
ing 70%, 25% of them said they don’t know while the rest of the 5% said “Yes” HBV could be caused by witchcraft.



**Figure 8: Respondents view about whether Hepatitis B can be cause by witchcraft (Source: Field survey report, 2022)**

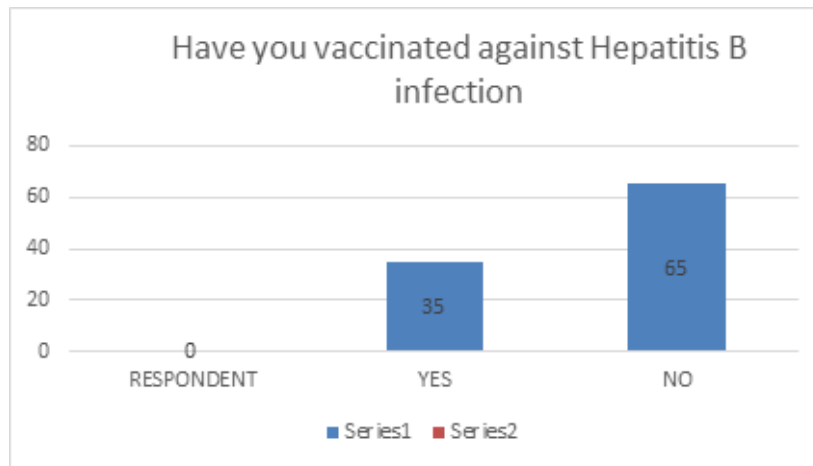
### Respondents Attitude and Practices of Students towards Hepatitis B Virus Infection

On the issue whether they have ever thought of going in for hepatitis B screening, 86% of the respondents answered “YES” while 14% answered “NO” and it’s shown in **figure 9 below**.



However, when they were asked whether they have vaccinated against hepatitis B infection, 35% of the respondents said that they have vaccinated against hepatitis B infection while the rest of the 65% said they have not yet vaccinated against hepatitis B. This is

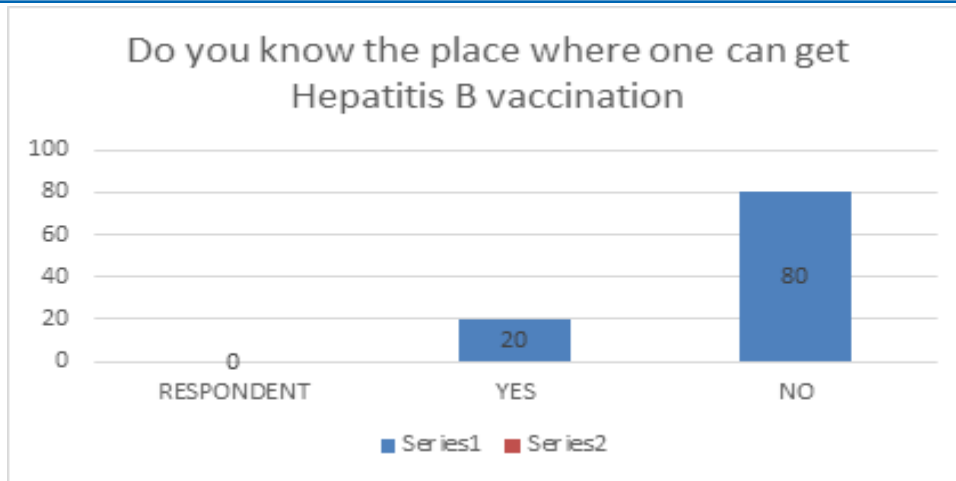
displayed in figure 10. This is not good enough. This shows that they have considerable knowledge about HBV, infection but their attitude towards it is very bad.



**Figure 10: Respondents view about whether they have vaccinated against Hepatitis B infection (Source: Field survey report, 2022)**

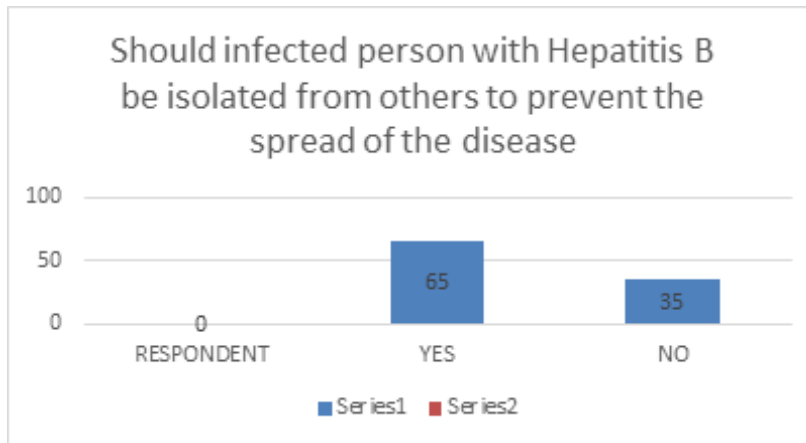
Again, when respondents were asked about the place where one can get Hepatitis B vaccination. Minority (20%) of the respondents said that they know where one can get Hepatitis B vaccination while the rest of the respondents (80%) said they do not know

where one can get the vaccine. This is demonstrated in Figure 11. Again, this finding shows how the participants knowledge on HBV, is not reflecting in their interest to be vaccinated and hence once again reflect their bad attitude towards the condition.



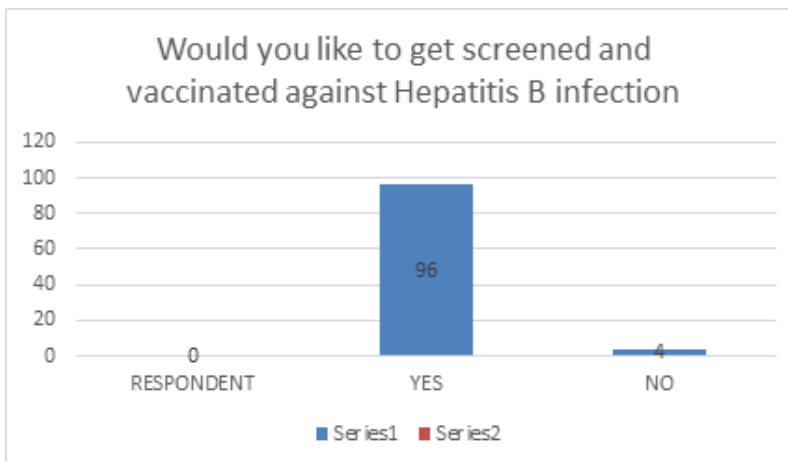
**Figure 11: Respondents knowledge about the place where one can get Hepatitis B vaccination (Source: Field survey report, 2022)**

As to whether infected persons with hepatitis B be isolated from others to prevent the spread of the disease, 65% indicated that persons with HBV infection should be isolated away from others to prevent spread, where as 35% said otherwise. This is demonstrated in figure 12.



**Figure 12: Respondents view on whether infected person with Hepatitis B be isolated from others to prevent the spread of the disease (Source: Field survey report, 2022)**

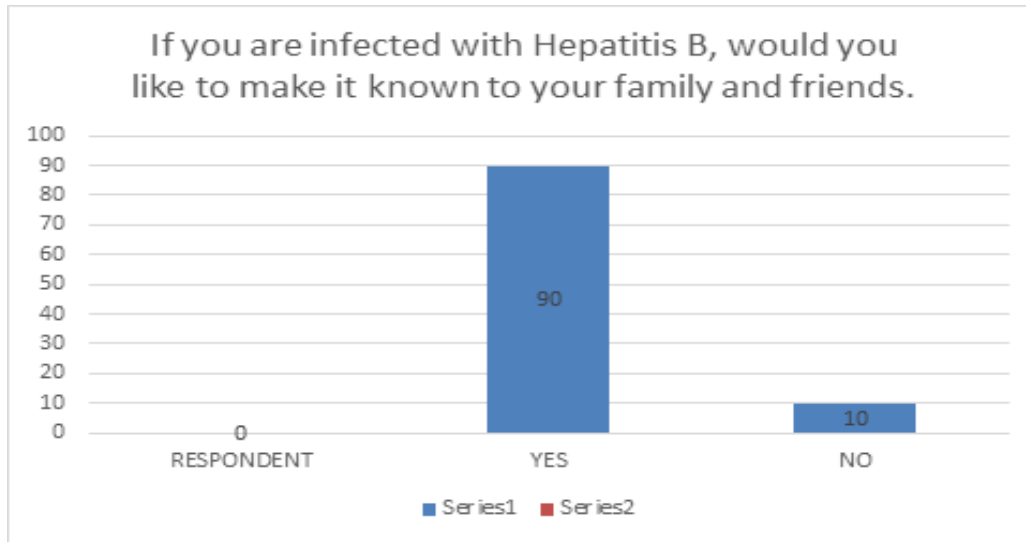
Also, when respondents were asked whether they would like to get screened and vaccinated against Hepatitis B infection. More than half of them answered YES representing 96% of the respondent population while 4% said NO they don't want to get screened and vaccinated. This is illustrated in figure 13.



**Figure 13: Respondents view about whether they will like to be screened and vaccinated against Hepatitis B infection (Source: Field survey report, 2022)**

However, when they were asked whether if they are infected with hepatitis B he or she would like to make it known to their family and friends. Majority of the respondent said YES representing

90% while 10% of them said NO, they won't make it known to others. This is illustrated in figure 14.



**Figure 14: Respondents view about making their Hepatitis B status known to family and friends when infected (Source: Field survey report, 2022)**

Those who answered no to the question on whether if they are infected with hepatitis B he or she would like to make it known to their family and friends, went further to give various reasons such as 'I will be stigmatized', 'because of the fear of being rejected', 'I will be discriminated', 'I will be avoided', 'people will talk about me' and so on.

## Discussion, Conclusions and Recommendations

### Introduction

In this section, the results of the study have been discussed following which key conclusions have been clearly presented and recommendations outlined appropriately.

### Discussion Of Findings

The outcome of the study had been discussed by relating the major findings to the literature that was reviewed. Pertinent among the issues were the extent to which the findings of this study agreed with or was at variance with available literature on this subject matter.

This study was limited to students in Tamale Presbyterian Senior High School. As students represent the enlightened future of the country, their knowledge, attitude and perception on Hepatitis B Virus (HBV) infection could go a long way in making primary prevention of the condition more effective on the long run.

### Socio-Demographic Characteristics of Respondents

The results of the survey reveal that majority of the respondents were between the ages of 16 – 20years representing 56.0% of respondents followed by 21 – 25years; 31.0% and then 10 – 15; 13.0%. This implies that majority were at risk of contracting the disease since post adolescent individuals and early adults are

known to be sexually active and adventurous, a statement consistent with the findings of Andre, which revealed high prevalence of HBsAg among 803 children at school growing age was 15.5% [6]. Also, this is the age where individuals freely intermix with the opposite sex and wishes to take partners. The study also stated that the HBV marker was 61.2% and increased steadily with increasing age. In this study it was realized that the population of females was lower than that of males. Males recorded 51% whilst females represented 49% of the population of respondents. Males are generally perceived to be adventurous especially when it comes to taking risks.

### Respondents' Knowledge on Hepatitis B Virus (HBV)

Findings from the study revealed that majority of the students (93%) were aware of HBV infection. The major source of information about Hepatitis B Virus (HBV) infection was the physician/nurse (27%). There was also a high level of knowledge among students on HBV infection. Majority of the students answered nearly 11 out of 14 questions on knowledge correctly. However, only 35.0% knew HBV could cause liver cancer. About 51.0% also stated that people could get HBV through unprotected sex. Only 6% said that HBV could be transmitted from kissing. These findings correlate with the following studies regarding respondents' knowledge on HBV; the study done by Andre, for instance investigated knowledge about HBV and predictors of HBV vaccination among 251 Vietnamese American college students [6]. His results showed that the participants had general knowledge of HBV, more than half of the participants were aware that HBV could be transmitted via unprotected sex and contaminated blood. Many of his respondents did not know that HBV could cause liver cancer. Similarly, Malik & lee found that about 87% of respondents had heard about

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HBV before and had significantly greater knowledge compared to those who had not heard about the disease just like the findings in this research [2]. Again, Morrow et al. found that about half of respondents knew that HBV could spread by unprotected sex [7].

In this current study, respondents were also asked to identify some symptoms of hepatitis B. The options given to the respondents were, jaundice, swollen stomach, fever, fatigue, and muscle/joint pain. The responses given by the respondents as shown in Table 9 and 12, which indicates that respondents' knowledge on the signs and symptoms as well as complications of hepatitis B is strong.

### Respondents' Perception Towards Hepatitis B Infection

A study conducted by Tan et al. (2015) in Singapore, on perception showed that there is a widespread perception that there is no efficient treatment to the disease. On the contrary, key findings in this study showed that most of the students perceived that there is efficient treatment of Hepatitis B Virus infection (68%). However, this research has also revealed that Some respondents also perceive wrongly that hand shaking (60%) and hugging (51%) can also be the causes of Hepatitis B Virus infection. This study further discovered weird ignorance of some few students who perceived that hepatitis B infection is caused by witchcraft (25%) and can be cured by a spiritualist (12%). Yet another wrong perception that can lead to stigma on people with the HBV, infection is that, many perceived that infected persons should be isolated away from the people to prevent spread (65%). On the contrary, a study by Weinbaum et al., (2020) depicted that more than half of the participants felt that hepatitis B cannot be cause by witchcraft [3]. Again, others do not belief that hepatitis B cannot be cured by a spiritualist. However, they reported that more than half of the participants felt worried about the diagnosis and felt anxious about spreading the HBV infection to family and friends. Again, majority of participants had changed their life-style habits such as smoking, drinking and taking healthier food and daily exercise after receiving the HBV diagnosis.

### Respondents' Attitude and Practices Towards Hepatitis B Infection

Results from this study showed that the students had a good attitude towards Hepatitis B Virus infection on a few variables such as their willingness to vaccinate and that healthy people need to be vaccinated. They indicated that healthy people need vaccination against HBV (65%). Most of the students (86%) were also willing to be tested for Hepatitis B Virus infection. These findings disagree with results from a study conducted by Diederike et al, (2018) in the United States of America (USA), which showed that respondents were reluctant to be vaccinated as they fear plasma-derived vaccine as it contains attenuated HBV virus [8].

Despite the good attitude of the students towards HBV infection, only few of them (35%) had ever been vaccinated against the disease, which was disappointingly low. The main reasons stated for the non-patronize of HBV vaccination was that they do not know the place where one can get hepatitis B vaccination (80%) and

also students believe that they are not at risk for getting Hepatitis B Virus. Similarly, a study carried out in the U.S.A. among Vietnamese-Americans by Nguyen et al. found that only 26.5% reported that they had been vaccinated against HBV [9]. In Sweden despite the availability of free vaccine, seventy six percent HCWs were not vaccinated, they either forgot or never made appointment for vaccination [8]. Another study that was conducted in Saudi Arabia showed a low immunization uptake among dental staff despite their knowledge and availability of the vaccine [7]. However, many studies have found a high practice of HBV vaccination uptake. Studies conducted in Iran and Egypt found high uptake of free vaccine among young surgeons [9].

### Conclusion

Theoretically, this study has provided some empirical evidence on knowledge level, attitude and perception on Hepatitis B Virus (HBV) infection among Senior High School (SHS) students in Tamale Presbyterian School. And thus, the aim of the research has been achieved. The findings showed that majority of the students were aware of HBV infection. There were also high levels of knowledge among students on HBV infection. Most of the students perceived that there is efficient treatment of Hepatitis B Virus infection.

The study also showed that most of the students had a good attitude towards Hepatitis B Virus infection on at least two variables; they indicated that healthy people need vaccination against HBV and were also willing to be tested for Hepatitis B Virus infection. Despite the good attitude of the students towards HBV infection, only few of them had ever been vaccinated against the disease, which was disappointingly low. The main reasons stated for the non-patronize of HBV vaccination was that they do not know the place where one can get hepatitis B vaccination and also students believe that they are not at risk for getting Hepatitis B Virus. Much efforts and resources therefore, need to be channeled in this direction for more education and sensitization.

### Statement of Authors' contribution

Study conception and design:

NYD and VA

Data collection:

All authors

Data analysis and interpretation:

"All authors"

Drafting of the article:

NYD, HM and VA

Critical revision of the article:

"All authors"

### Declarations by authors

(1) Conflict of Interest---None declared

(2) Ethical Approval-- Ethical approval was granted by the hospital where the study was done

(3) Funding Sources----- Not applicable, authors took care of the expenses

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## Recommendation

### Recommendations drawn from this study includes:

There is the need to increase the knowledge and awareness about the seriousness of HBV and the proportion of students and the general public's alarming rate of getting infected and also encourage people to test and get vaccinated. Studies should be conducted to discover reasons that push students at this level to go into sexually active intimate relationships, which was high in this study that 177 representing (59%), who are staying with their boyfriends, whilst 80% of the total respondents believe they are not at risk of getting infected, which is a major lifestyle behavior that put these students at risk of getting infected. Since health care workers have influence on people's decision making of getting HBV vaccination, it is important that they reach out to the SHS to educated students about the disease, ways of transmission and risk with the disease. It is also recommended that a policy be implemented for complete vaccination and health education of all SHS students in the Region and the whole country at large.

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## Appendix

### Data Collection Tool (Questionnaire)

#### Assessing The Knowledge, Attitude and Perception on Hepatitis B Among Students in Presbyterian Senior High School, Tamale

### Introduction

The aim of this survey is to examine SHS students' knowledge, attitude and perception on hepatitis B infection. Your participation is voluntary to answer the following questionnaire. Your answer will be confidential. The result will be used to improve method of education and communication to young adults about health information.

Please answer the following questions and choose one answer that best expresses your opinion by placing a tick in the relevant box

### Section A: Demographic Details

Gender

Male  Female

Age

10-15  16-20  21-25  26-30

Which level are you

SHS 1  SHS 2  SHS 3

Which program are you offering?

.....

Religion

Christianity  Islamic  Traditional

Ethnicity

Dagomba  Gonja  Mamprusi  Akan  Others

Do you have an extra job

Yes  No

Area of residence

Urban  Rural

With whom do you live?

Parent/family  Friends  By myself  Others

Do you have a boyfriend/girlfriend?

Yes  No

Have you got the hepatitis B vaccine?

Yes  No

### Section B: Knowledge of Hepatitis B Virus Infection among Students

Have you heard about hepatitis B virus (HBV) infection?

Yes  No

If yes, from which source

Family members  physician/Nurse  Friend/Neighbour

Television/Radio  Social media  School  Religious

gathering [ ]

According to your source of information, what is hepatitis B?

A viral infection of the liver [ ] swelling of the stomach [ ]

Spiritual attacks [ ] Don't know [ ]

Do you know your hepatitis B status?

Yes [ ] No [ ]

Do you know hepatitis B is transmissible?

Yes [ ] No [ ]

If yes, how is hepatitis B transmitted?

Unprotected sex [ ] Blood transfusion [ ] Mother to baby during pregnancy [ ] kissing [ ] Alcohol consumption [ ] Don't know [ ]

How does one know if he/she has hepatitis B?

Laboratory investigation [ ] Spiritual revelation [ ] Don't know [ ]

Which of these are signs and symptoms of hepatitis B infection?

Jaundice [ ] Swollen stomach [ ] Fever [ ] Fatigue [ ] Muscle/Joint pain [ ]

Hepatitis B infection can be treated at early stages?

Yes [ ] No [ ] Don't know [ ]

If YES, how can it be treated?

Orthodox medicine [ ] Herbal medicine [ ] prayers [ ] Don't know [ ]

Which of these complications can result from hepatitis B infection?

Liver failure [ ] Liver cancer [ ] Chronic hepatitis [ ] Liver cirrhosis [ ]

Does hepatitis B have vaccine?

Yes [ ] NO [ ] Don't know [ ]

If YES, how many dose?

One dose [ ] Two dose [ ] Three dose [ ] More than three dose [ ]

How can hepatitis B infection be prevented?

Protected sex [ ] Avoid alcohol consumption [ ] avoid sharing of personal objects [ ] prayers [ ] Don't know [ ]

### Perception of Hepatitis B Virus Infection among Students

Do you think hepatitis B is a major health problem in the Region?

Yes [ ] No [ ]

Can you get hepatitis B through hand shake?

Yes [ ] No [ ]

Can one get hepatitis B through hugging?

Yes [ ] No [ ]

Can hepatitis B be acquire through sexual intercourse?

Yes [ ] No [ ]

Do you consider hepatitis B a most dangerous and killing disease?

Yes [ ] No [ ]

Do you really consider hepatitis B vaccination a good practice?

Yes [ ] No [ ] Don't know [ ]

Can hepatitis B be cured by a spiritualist?

Yes [ ] No [ ] Don't know [ ]

Is hepatitis B infection caused by witchcraft?

Yes [ ] No [ ] Don't know [ ]

### Attitude and Practices of Students towards Hepatitis B Virus Infection

Have you ever thought of going in for hepatitis B screening?

Yes [ ] No [ ]

Have you got vaccinated against hepatitis B infection?

Yes [ ] No [ ]

Do you know the place where one can get hepatitis B vaccination?

Yes [ ] No [ ]

Should infected person with hepatitis B be isolated from others to prevent the spread of the disease?

Yes [ ] No [ ]

Would you like to get screen and vaccinated against hepatitis B infection?

Yes [ ] No [ ]

If you are infected with hepatitis B, would you like to make it known to your family and friends?

Yes [ ] No [ ]

If 'NO' to the above, why?

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