KNOWLEDGE AND PREVENTION OF HEPATITIS AMONG SECONDARY SCHOOL STUDENTS IN PORT HARCOURT METROPOLIS OF RIVERS STATE

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ABSTRACT

This study examined the knowledge and attitude towards prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State. The study was guided by four research questions and three null hypotheses. Descriptive survey design was used and the population of the study consisted of 97,644 students. The sample of the study consisted of 400 students randomly selected using Taro Yamane Sampling Technique. The instrument for data collection was a 48 itemed questionnaire titled Knowledge and prevention of Hepatitis among Secondary School Students (KPHSSS). A reliability coefficient of .76 was obtained using Pearson Product Moment Correlation Coefficient which showed a positive correlation. Data collected was analysed using Statistical Products for Service Solution (SPSS) version 23.0. Descriptive statistical tool was used to answer questions on demographic information while regression models were used to determine the relationship between variables. The results showed that the secondary school students have high knowledge of prevention of hepatitis, the students with middle parents' socio-economic status have high knowledge of prevention of hepatitis, and the students with low parents' socio-economic status also have high knowledge of prevention of hepatitis. Both male and female students have high knowledge of prevention of hepatitis, The Christian students, Muslims, as well as Traditional religion students also have high knowledge of prevention of hepatitis.

Based on the findings of the study, it was recommended that government through the ministry of health should organize national campaign and enlightenment programme to promote awareness of hepatitis viral infections and other forms of infectious disease. Awareness should be made for compulsory immunization programme for students in secondary schools to be vaccinated against infectious diseases (hepatitis inclusive) in order to minimize the rate of spread in the population. The Ministry of Education should carryout routine immunization HBV screening among students to improve their knowledge towards prevention of hepatitis and also religious institutions should educate their members on the importance of prevention of infectious diseases.
Keywords: Hepatitis, Knowledge, Prevention, Infectious

Introduction

Hepatitis B has been seen as the world's most common liver infection that is caused by a DNA -virus, called the Hepatitis B virus (HBV). Hepatitis is acute when it lasts less than six months and chronic when it persists longer. A group of viruses known as the hepatitis viruses cause most cases of hepatitis worldwide but it can also be due to toxins (notably alcohol, certain medications and plants), other infections and autoimmune diseases. The virus is highly contagious, 50-100 times more infectious than HIV, and it is been proved to be transmitted between people through blood, semen, vaginal fluids and mucous membranes. There are more than 2 billion people World-wide having evidence of recent or past HBV infection and 350 million are chronic carriers (World Health Organization (WHO), 2018). It may occur with limited or no symptoms, but often leads to jaundice, anorexia (poor appetite) and malaise. The hepatitis virus is found in the blood and other body fluids and is transmitted from person to person. The most common routes of infection includes blood transfusions and blood products where there is no screening for blood-borne viruses, medical or dental interventions in countries where equipment is not adequately sterilized mother to infant during childbirth, sexual transmission (in the case of hepatitis B), sharing equipment for injecting drugs, sharing straws, notes etc. for snorting cocaine (cocaine is particularly

alkaline and corrosive), sharing razors, toothbrushes or other household articles, tattooing and body piercing if done using unsterilized equipment..(Ahmedinm, Taylor and Ram, 2004). The hepatitis B virus spreads from one person to another through contact with the blood or other body fluids (i.e. semen, vaginal fluid and saliva) of an infected person, while the hepatitis C virus is spread through direct contact with infected blood. Very rarely it can also be passed on through other body fluids (Redmond, 2007). Many people infected with hepatitis B or C rarely displays any symptom, although they can still transmit the virus to others.

Hepatitis B is a major disease of serious global public health proportion. It is preventable with safe and effective vaccines that have been available since 1982.Yearly, 20 million people are infected annually with this virus (Mohammed et al, 2003) of the 2 billion people who have been infected with the hepatitis B virus (HBV) globally, and more than 350 million have chronic (lifelong) infections. (World Health Organisation, 2000). Hepatitis C is a viral infection of the liver and is the most common blood-borne (direct contact with human blood) infection. The major causes of HCV infection worldwide are use of unscreened blood transfusions, and re-use of needles and syringes that have not been adequately sterilized. The world health organization (WHO) estimates that about 3% of the world populations (200 million people) have so far been infected with the Hepatitis C virus. Almost 50% of all cases become chronic carriers and are at risk of liver cirrhosis and liver cancer. High knowledge and good attitude towards disease prevention moderated by relevant socio-demographics, following health education have been demonstrated to be positively related to good practice of disease prevention, which is hypothesised to culminate in desirable disease prevention outcome (Rav-Marathe, et al 2016).

A leading cause in student mortality is also said to be the most familiar cause of jaundice. Evidently, Ugbebor, Aigbirior, Osazuwa, Enabudoso & Zabayo (2011), showed that the prevalence of the Hepatitis B virus (HBV) among students in this study area is of intermediate endemicity (12.5%). Recently, Ekouevi, Larrouy, & Gbeasor-Komlanvi, (2020), illustrated that among mothers with positive HBsAg, three infants also had positive HBsAg, a prevalence of 1.3, 95% CI [0.2–3.8%].

One out of 10 childbearing women were infected with HBV, but less than 2% of infant born to HBV positive mothers under 5 years' old who received immunization age of pregnant women may be another factor that determine the prevalence of hepatitis virus infection Ekouevi, *et al,* (2020). Students are sexually active and could likely to meet an infected partner that may lead to the contraction of the viral infection. Studies of Fomulu, Morfaw, Torimiro, *et al (*2013) revealed that the mean age for HBsAg positivity in the study setting was 26.9 ±4.7 years, and the most affected age group was the 15 – 20 years age group. There was no statistically significant association between age or other socio-demographic risk factors and HBsAg status (Fomulu *et al,* 2013). Previously, Al-Shamahy, (2000) reported that the total sero-prevalence among students was 13.2% and 4% for infants; there was a significant effect of older age on contracting hepatitis B virus, and a highly significant effect of the over 30 years age group, when compared with the younger age groups.

The socio-economic status indicates the standard of living, place of resident, income status, and occupation and belief system of the population. Most students who reside in the urban might expose or have contact infected partner because of rapid urban to rural migration. Studies of Mohebbi, Sanati, Cheraghipour, Rostami, Nejad, Shalmani, & Zali, (2011) depicted that those who were positive for anti-HBc were tested for HBsAg. Anti-HBc was found in 28 of 827 women (overall prevalence, 3.4%; 14 of 523 in urban areas, 2.7%; 14 of 304 in rural areas, 4.6%). That is students living in urban areas are about 4 times more likely to have high hepatitis virus infection as compared with the people staying in the rural place.

A review of empirical literature revealed that globally, there is a paucity of studies on KAP of hepatitis B infection prevention, particularly in Ghanaand of the factors associated with the practice of hepatitis B infection prevention (Zaeri, Zaihi, AbuDyab, Othman, Somily & Zalah (2018). Nonetheless, these few studies have largely been conducted among healthcare workers and not trainees of the healthcare profession including nursing students (Mursy & Mohamed, 2019). Although healthcare workers are known to be four times at risk of hepatitis B infection compared to the general population, their trainees including nursing students have been acknowledged to carry a greater risk of infection by HBV, due to inexperience, inadequate training and sheer

carelessness. This study, therefore, assessed the knowledge and attitude towards prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State.

Statement of the problem

The issue of unprotected sexual intercourse have used much infectious disease like hepatitis virus infections in developing countries like Nigeria. Viral hepatitis is associated with high risk of death and has become a leading cause of foetal death. Hepatitis is one of the major and common infectious diseases of the liver worldwide are caused by a small enveloped DNA virus, the hepatitis B virus (HBV). In spite of the introduction of hepatitis vaccines the cases of hepatitis virus infections continue to exist and cause high morbidity and mortality. Nigeria is classified among the group of countries endemic for HBV infection. Currently about 18 million Nigerians are infected (Malu, 2020), it could be clear that most women who experience early sexual debut had it unprotected and contribute to high contraction and prevalence of hepatitis. The existing case of hepatitis virus infection continues because of poor utilization of health services and late diagnosis. Many of these people may not be aware of the infection and hence fail to seek appropriate medical attention, thereby, progressing to chronic liver disease, cirrhosis and hepatocellular carcinoma. Similarly, when secondary school students are involved, they constitute a serious health risk not only to their family but also the society at large which calls for investigation. The researcher seeks to find out if secondary school students in Port Harcourt metropolis have knowledge of preventing hepatitis.

Purpose of the Study

The purpose of the study was to investigate the knowledge and attitude towards prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State.

Research Questions

The following research questions guided this study.

1. What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State?
2. What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion?
3. What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status?
4. What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on based on gender?

Hypotheses

The following null hypotheses were tested at 0.5level of significance.

1. There is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion.
2. There is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status
3. There is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender.

Materials and Method

A descriptive survey design was adopted for this study. The population of the study consisted of all secondary school students in Port Harcourt metropolis. Port Harcourt Metropolis has a population of 97,644 students (Rivers State Education Board, 2021).

The sample size is a total of 400 using Taro Yamane sampling technique. The multi-stage sampling technique was adopted for the study. The instrument used to elicit data for this study is structured questionnaire. The title of the questionnaire was knowledge of prevention of hepatitis among secondary school students (KPHSSS). The reliability index of 0.76 was obtained using Pearson Product Moment Correlation Coefficient which showed a positive correlation. Data collected was analysed using Statistical

Products for Service Solution (SPSS) version 23.0. Descriptive statistical tools were used to answer the research questionsand demographic information while regression models were used to determine the relationship between variables.

Presentation of Results

Research Question 1: What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State?

Table 1: Mean and standard deviation of the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State

N=400, Criterion Mean=1.50

S/N	Knowledge of Prevention of Hepatitis	Yes	No	Mean	SD	Remark
1	Have you heard about hepatitis?	393	7	1.98	0.13	High
2	Have you heard about hepatitis from either school, radio, internet, parents, friends or healthcare personnel?	393	7	1.98	0.13	High
3	HBV can be transmitted by sexual intercourse	391	9	1.98	0.15	High
4	HBV can be transmitted from mother to child	348	52	1.87	0.34	High
5	HBV can be transmitted by sharing needle or syringe	379	21	1.95	0.22	High
6	HBV can be transmitted by blood transfusion	380	20	1.95	0.22	High
7	HBV can be transmitted by shaking hands	32	368	1.08	0.27	Low
8	HBV can be transmitted by wearing the same clothes with an HBV-positive person	24	376	1.06	0.24	Low
9	HBV can be transmitted through a mosquito bite	70	330	1.18	0.38	Low
10	Does HBV have signs and symptoms	370	30	1.93	0.26	High
11	Does HBV cause liver cancer	380	20	1.95	0.22	High
12	Can healthy-looking HBV positive person spread HBV	360	40	1.90	0.30	High
	Grand Mean			1.73	0.24	High

Table 1 shows the mean and standard deviation on the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State. The table showed that the secondary school students in Port Harcourt metropolis of Rivers State have high knowledge of prevention of hepatitis (Mean=1.73, SD=0.24). The table also showed that the respondents had the highest knowledge that HBV can be transmitted by sexual intercourse (Mean=1.98, SD=0.15) and the least knowledge that

HBV can be transmitted by wearing the same clothes with an HBV-positive person (Mean=1.06, SD=0.24).

Research Question 2: What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion?

Table 2: Mean and standard deviation of the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion

S/N	Knowledge of Prevention of Hepatitis	Christianity N=315		Muslim N=70		Traditional N=15	
		Mean	SD	Mean	SD	Mean	SD
1	Have you heard about hepatitis?	1.98	0.14	1.99	0.12	2.00	0.00
2	Did you hear about hepatitis from either school, radio, internet, parents, friends or healthcare personnel?	1.98	0.14	1.99	0.12	2.00	0.00
3	HBV can be transmitted by sexual intercourse	1.97	0.16	1.99	0.12	2.00	0.00
4	HBV can be transmitted from mother to child	1.88	0.33	1.87	0.34	1.73	0.46
5	HBV can be transmitted by sharing needle or syringe	1.94	0.24	1.97	0.17	2.00	0.00
6	HBV can be transmitted by blood transfusion	1.96	0.21	1.91	0.28	2.00	0.00
7	HBV can be transmitted by shaking hands	1.07	0.26	1.13	0.34	1.00	0.00
8	HBV can be transmitted by wearing the same clothes with an HBV-positive person	1.05	0.22	1.10	0.30	1.07	0.26
9	HBV can be transmitted through a mosquito bite	1.17	0.37	1.26	0.44	1.00	0.00
10	Does HBV have signs and symptoms	1.92	0.27	1.93	0.26	1.93	0.26
11	Does HBV cause liver cancer	1.95	0.23	1.96	0.20	2.00	0.00
12	Can healthy-looking HBV positive person spread HBV	1.89	0.32	1.96	0.20	1.93	0.26
	Grand Mean	1.73	0.24	1.75	0.24	1.72	0.10

Table 2 shows the mean and standard deviation on the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion. The table showed that the Christian students have high knowledge of prevention of hepatitis (Mean=1.73, SD=0.24), the Muslim students have high knowledge of prevention of hepatitis (Mean=1.75, SD=0.24), and the Traditional

Religion students also have high knowledge of prevention of hepatitis (Mean=1.72, SD=0.10).

Research Question 3: What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status?

Table 3: Mean and standard deviation of the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status

S/N	Knowledge of Prevention of Hepatitis	High N=87		Middle N=156		Low N=157	
		Mean	SD	Mean	SD	Mean	SD
1	Have you heard about hepatitis?	1.98	0.15	1.97	0.18	2.00	0.00
2	Did you hear about hepatitis from either school, radio, internet, parents, friends or healthcare personnel?	1.98	0.15	1.97	0.18	2.00	0.00
3	HBV can be transmitted by sexual intercourse	1.98	0.15	1.97	0.16	1.98	0.14
4	HBV can be transmitted from mother to child	1.87	0.33	1.86	0.35	1.88	0.33
5	HBV can be transmitted by sharing needle or syringe	1.99	0.11	1.92	0.28	1.96	0.21
6	HBV can be transmitted by blood transfusion	1.92	0.27	1.95	0.22	1.97	0.18
7	HBV can be transmitted by shaking hands	1.10	0.31	1.09	0.29	1.06	0.23
8	HBV can be transmitted by wearing the same clothes with an HBV-positive person	1.08	0.27	1.04	0.19	1.07	0.26
9	HBV can be transmitted through a mosquito bite	1.21	0.41	1.19	0.39	1.15	0.35
10	Does HBV have signs and symptoms	1.95	0.21	1.95	0.22	1.89	0.32
11	Does HBV cause liver cancer	1.87	0.33	1.96	0.19	1.98	0.14
12	Can healthy-looking HBV positive person spread HBV	1.78	0.42	1.89	0.31	1.97	0.16
	Grand Mean	1.73	0.26	1.73	0.25	1.74	0.19

Table 3 shows the mean and standard deviation on the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status. The table showed that the students with high parents' socio-economic status have high knowledge of prevention of hepatitis (Mean=1.73, SD=0.26), the students with middle parents' socio-economic status have high knowledge of prevention of hepatitis (Mean=1.73, SD=0.25), and the students

with low parents' socio-economic status also have high knowledge of prevention of hepatitis (Mean=1.74, SD=0.19).

Research Question 4: What is the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender?

Table 4: Mean and standard deviation of the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender

S/N	Knowledge of Prevention of Hepatitis	Male N=212		Female N=188	
		Mean	SD	Mean	SD
1	Have you heard about hepatitis?	1.99	0.10	1.97	0.16
2	Did you hear about hepatitis from either school, radio, internet, parents, friends or healthcare personnel?	1.99	0.10	1.97	0.16
3	HBV can be transmitted by sexual intercourse	1.99	0.12	1.97	0.18
4	HBV can be transmitted from mother to child	1.86	0.35	1.88	0.32
5	HBV can be transmitted by sharing needle or syringe	1.96	0.20	1.94	0.25
6	HBV can be transmitted by blood transfusion	1.94	0.24	1.96	0.19
7	HBV can be transmitted by shaking hands	1.09	0.29	1.06	0.25
8	HBV can be transmitted by wearing the same clothes with an HBV-positive person	1.07	0.26	1.05	0.21
9	HBV can be transmitted through a mosquito bite	1.18	0.39	1.16	0.37
10	Does HBV have signs and symptoms	1.93	0.26	1.92	0.27
11	Does HBV cause liver cancer	1.97	0.18	1.93	0.25
12	Can healthy-looking HBV positive person spread HBV	1.91	0.29	1.89	0.32
	Grand Mean	1.74	0.23	1.73	0.24

Table 4 shows the mean and standard deviation on the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender. The table showed that the male students have high knowledge of prevention of hepatitis (Mean=1.74, SD=0.23), and the female students also have high knowledge of prevention of hepatitis (Mean=1.73, SD=0.24).

Hypotheses

H_{01}: There is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion.

Table 5: Summary of One-Way ANOVA on the difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion

ANOVA
Knowledge

	Sum of Squares	Df	Mean Square	F	*p-value*
Between Groups	5.110	2	2.555	2.191	.113
Within Groups	462.890	397	1.166		
Total	468.000	399			

The data in Table 5 above showed the difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion. The result of the F-statistic shows that there is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion($F_{=}2.191$, df=2.191, p>.05). Therefore, the null hypothesis 1 was retained at 0.05 alpha level.

H_{02}: There is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status.

Table 6: Summary of One-Way ANOVA on the difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status

ANOVA
Knowledge

	Sum of Squares	Df	Mean Square	F	*p-value*
Between Groups	2.564	2	1.282	1.094	.336
Within Groups	465.436	397	1.172		
Total	468.000	399			

The data in Table 6 above showed the difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status. The F-statistic shows that there is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status (F=1.094, df=2 p>.05). Therefore, the null hypothesis 2 was retained at 0.05 alpha levels.

H_{03}: There is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender.

Table 7: Summary of one-way ANOVA on the difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender

ANOVA					
Knowledge					
	Sum of Squares	Df	Mean Square	F	p-value
Between Groups	2.699	1	2.699	2.309	.129
Within Groups	465.301	398	1.169		
Total	468.000	399			

The data in Table 7 showed the summary of one way ANOVA on the difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender. The result showed that there is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender (F=.129, df=1, p>0.05). Hence, the null hypothesis 3 was retained at 0.05 alpha level.

Discussion of Findings

Knowledge of prevention of hepatitis

The results showed that the secondary school students in Port Harcourt metropolis of Rivers State have high knowledge of prevention of hepatitis (Mean=1.73, SD=0.24). The results also showed that the respondents had the highest knowledge that HBV can be transmitted by sexual intercourse (Mean=1.98, SD=0.15) and the least knowledge that HBV can be transmitted by wearing the same clothes with an HBV-positive person (Mean=1.06, SD=0.24). This implies that secondary school students have high knowledge of prevention of hepatitis in the study. The result of this study is in credence with that of Amedonu, Aniaku and Fusheini, (2020),which reported moderate knowledge, especially of the modes of transmission and prevention among the majority of the respondents (89.2%) in Ghana.Studies of Balegha, et al (2021) also reported that the students had moderate median scores for knowledge (12.00; IQR = 10–13) in Ghana. Similarly, Kumah, et al (2021) recorded (262) respondents had knowledge on Hep-B infection and the availability of a vaccine for preventing Hepatitis infection in Ghana. Studies of Shedain, et al (2017) also recorded high knowledge of prevention of hepatitis among students in Dolpa. However, the findings of this study contradict with

that of Cho, et al, (2017) which was reported low level of knowledge of prevention of hepatitis among respondents in Korea. However, studies of Mac, et al, (2010) also reported low knowledge of hepatitis among respondents in Nigeria. Studies of Gebrecherkos et al (2020) recorded 73.4% were within the poor knowledge of hepatitis prevention among respondents in Northwest Ethiopia.Scheibe-Trevisol, Custodio, Silva, Oliveira, Wolfart, & Trevisol (2013) also reported limitations in knowledge among respondents in Brazil. The difference in the result of this study with the previous findings was due to duration of the study, location and sample selections for the study.

Religion and knowledge of prevention of hepatitis

The result shows that there is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on religion ($F_{=}2.191$, df=2.191, p>.05). This implies that students' knowledge of prevention of hepatitis is not influenced by their religion. The findings are in consonance with that of Balegha, et al (2021) also reported no significant difference in the knowledge of prevention of hepatitis (12.00; IQR = 10–13) in Ghana based on religion. Similarly, Kumah, Ankomah, Fusheini, Sarpong, Anyimadu, Quist, & Koomson, (2020), recorded no significant influence of religion on the knowledge of prevention of hepatitis in Ghana. However, studies of Mac, et al, (2010) also reported significant influence of religion on the knowledge of prevention of hepatitis in Nigeria. Studies of Gebrecherkos et al (2020) recorded significant influence of religion on the knowledge of prevention of hepatitis in Northwest Ethiopia. Ethiopia.Scheibe-Trevisol, Custodio, Silva, Oliveira, Wolfart, & Trevisol (2013) added that students who were of Christian families demonstrated rate of 14.1% higher knowledge of hepatitis prevention in Brazil. The difference in the result of this study with the previous findings was due to duration of the study, location and sample selections for the study.

Parents' socio-economic status and knowledge of prevention of hepatitis

The results show that there is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on parents' socio-economic status (F=1.094, df=2 p>.05). This implies that parents' socio-economic status does not influence students' knowledge of prevention of hepatitis. The findings of this study are in consonance with the findings of Aba and Aminu, (2016) knowledge of prevention of hepatitis among secondary school students

(P = 0.972) were not significantly influenced by parents' socio-economic status. Studies of (Ugbebor, Aigbirior, Osazuwa., Enabudoso, & Zabayo, 2011). They also indicated that knowledge of prevention of hepatitis among secondary school students was not influenced by parents' socio-economic status. The result of this study is in contrary with studies of Mac, et al, (2010) that there was statistically significant difference in the knowledge of prevention of hepatitis among secondary school students (p = 0.350) and parents wealth index in Malaysia. Bigna, et al, (2017) affirmed that student from lower wealth index homes were (13.3%) less than those in the from higher wealth index (9.0%) in knowledge of prevention of hepatitis among secondary school students. The differences in the result of this study with the previous findings were due to duration of the study, location and sample selections for the study.

Gender and knowledge of prevention of hepatitis

The result showed that there is no significant difference in the knowledge of prevention of hepatitis among secondary school students in Port Harcourt metropolis of Rivers State based on gender (F=.129, df=1, p>0.05). This means that gender do not influence knowledge of prevention of hepatitis. The result of this study concord the study of Kinfe, et al (2021) that gender of the students do not influence knowledge of prevention of hepatitis in Ethiopia. The result of this study is in corroboration with studies of Fomuluet al, (2013) that there was no statistically significant association between gender and knowledge of prevention of hepatitis ($P < 0.009$). In the contrary, studies of Alrowaily, et al, (2008) revealed that gender was significantly related with knowledge of prevention of hepatitis ($P < 0.001$). Also, Mac, et al, (2010) in their studies disclosed that gender was significantly related to knowledge of prevention of hepatitis among respondents (P value = 0.542). The difference between the result of the current study and the previous findings was location of the study, duration of the study, and sample size elected for the study, among others.

Conclusion

The study concluded that the secondary school students in Port Harcourt metropolis of Rivers State have high knowledge of prevention of hepatitis. There was no significant difference in the knowledge of prevention of hepatitis among secondary school students

in Port Harcourt metropolis of Rivers State based on religion, parents' socio-economic status and gender

Recommendations

In regards to these findings, the following recommendations were made.

1. Government through the ministry of health should organize national campaign and enlightenment programme to promote awareness of hepatitis viral infections and other forms of infectious disease.
2. Government should organize compulsory immunization programme for students in secondary schools to be vaccinated against infectious diseases (hepatitis inclusive) in order to minimize the rate of spread in the population.
3. The Ministry of Education should carryout routine immunization HBV screening among students to improve their knowledge and attitude towards prevention of hepatitis.
4. Religious institutions should educate their members on the importance of prevention of infectious diseases.

REFERENCES

Aba, H. O., and Aminu, M. (2016). Sero-prevalence of hepatitis B virus serological markers among pregnant Nigerian women. *Annals of African Medicine*, *15*(1), 20-27.

Adegbesan-Omilabu, M. A., Okunade, K. S., Gbadegesin, A., Olowoselu, O. F., Oluwole, A. A., and Omilabu, S. A. (2015). Sero-prevalence of hepatitis B virus infection among pregnant women at the antenatal booking clinic of a tertiary hospital in Lagos Nigeria. *Nigeria Journal of Clinical Practice,18*(6), 819-823.

Ahmad, K. (1998). Hepatitis *B in viral hepatitis*: An overview: Proceedings of seminar. AFIP Rawalpindi, *Pakistan,* 16–19.

Ahmedin, J., Taylor, M., and Ram, C. T. (2004). A new section in cancer offering timely and targeted information. *Canadian Journal of Clinical practice,* 54, 23–25.

Ajzen, I. (1988). *Attitudes, Personality, and Behavior.* Chicago: IL: Dorsey.

Alrowaily, M.A., Abolfotouh, M.A., & Ferwanah, M.S. (2008). Hepatitis B virus sero-prevalence among pregnant females in Saudi Arabia. *Saudi Journal of Gastroenterology: Official Journal of the Saudi Gastroenterology Association*, *14*(2), 70–72

Al-Shamahy, H. (2000). Prevalence of Hepatitis B surface antigen and risk factors of HBV infection in a sample of healthy mothers and their infants in Sana'a,Yemen. *Annals of Saudi medicine,* 20, 5-6.

Amedonu, E.K., Aniaku, J.K., & Fusheini,A. M (2020). Assessment of high school students' knowledge, attitudes and vaccination status of hepatitis B virus in Hohoe, Ghana: A cross-sectional study. Open Public Health Journal, 13, 298- 305. doi: 10.2174/1874944502013010298

Ayres, A., Yuen, L., Jackson, K. M., Manoharan, S., Glass, A., Maley, M., Yoo, W., Hong, S. P., Kim, S. O., Luciani, F., Bowden, D. S., Bayliss ,J., Levy, M. T., & Locarnini, S. A.(2014). Short duration of lamivudine for the prevention of hepatitis B virus transmission in pregnancy: Lack of potency and selection of resistance mutations. *Journal of Viral Herpetology,* *21*(11), 809-817.

Bancha,B., Kinfe A. A., Chanko, K. P., Workie, S. B., and Tadese, T. (2020). *Prevalence of hepatitis B viruses and associated factors among pregnant women attending antenatalclinics in public hospitals of Wolaita Zone, South Ethiopia.PLOS ONE,15*(5), e0232653.

Bigna, J. J., Amougou, M. A., Asangbeh, S. L., Kenne, A. M., Noumegni, S. R. N., Ngo-Malabo, E. T.,& Noubiap, J. J.(2017). Sero-prevalence of hepatitis B virus infection in Cameroon: a systematic review and meta-analysis. *British Medical Journal Open*, *7*(6), e015298.

Cho, E. J., Kim, S. E., Suk, K. T., An, J., Jeong, S. W., Chung, W. J., & Kim, Y. J. (2017). Current status and strategies for hepatitis B control in Korea. *Clinical and Molecular Herpetology*, *23*(3), 205–211.

Donato, F., Tagger, A., Gelatti, U., Parrinello, G., Boffetta, P., A. Albertini, A., Decarli, A., Trevisi, P., Ribero,M. L., Martelli, C., Porru, P.,& Nardi,G. (2002). Alcohol and hepatocellular carcinoma: the effect of lifetime intake and hepatitis

virus infections in men and women, *American Journal of Epidemiology*, *155*(4), 323–331.

Dongdem, J.T., Kampo, S., & Soyiri, I.N. (2012). *Prevalence of hepatitis B virus infection among blood donors at the Tamale teaching hospital, Ghana*. *BMC Research Notes,* 5, 115

Ekouevi, D.K., Larrouy, L., & Gbeasor-Komlanvi, F.A. (2020). *Prevalence of hepatitis B among childbearing women and infant born to HBV-positive mothers in Togo*. *BMC Infectious Disease,* 20, 839.

Elendu, I.C. (2010). *Fundamentals of research and statistics for students in Human Kinetics and other educational disciplines*. Port Harcourt. The Glory of the Latter House.

Fishbein, M. (1980) Understanding Attitudes and Predicting Social Behavior. Prentice-Hall, Englewood Cliffs.

Fomulu, N.J., Morfaw, F.L., & Torimiro, J.N. (2013). *Prevalence, correlates and pattern of Hepatitis B among antenatal clinic attenders in Yaounde-Cameroon*. Is perinatal transmission of HBV neglected in Cameroon? *BMC Pregnancy Childbirth* 13, 158.

Hu, Y., Xu, C., Xu, B., Hu, L., Liu, Q., Chen, J., Liu, J., Liu, L., Yang, J., Chen, T., Wen, J., Jiang, N., Zhang, Y., Cao, M., Feng, J., Lin, X., Wang, Z., Xu, B., & Zhou, Y. H. (2018). Safety and efficacy of telbivudine in late pregnancy to prevent mother-to-child transmission of hepatitis B virus: A multi-centre prospective cohort study. *Journal of Viral Herpetology*, *25*(4), 429-437.

Jourdain, G., Ngo-Giang-Huong, N., Harrison, L., Decker, L., Khamduang, W., Tierney, C., Salvadori, N., Cressey, T. R., Sirirungsi, W., Achalapong, J., Yuthavisuthi, P., & Kanjanavikai, P. (2018). Tenofovir versus placebo to prevent perinatal transmission of hepatitis B. *North England Journal of Medicine, 378*(10), 911-923.

Kinfe, H., Sendo, E. G., & Gebremedhin, K. B. (2021). Prevalence of hepatitis B Virus infection and factors associated with hepatitis b virus infection among

pregnant women presented to antenatal care clinics at Adigrat General Hospital in Northern Ethiopia. *International Journal of Women's Health*, 7, 119-127.

Kothari, C. R., & Garg, G. (2016). *Research methodology: methods and techniques*.(3rded). New Delhi, New Age international publishers.

Kumah, E., Ankomah, S. E., Fusheini, A., Sarpong, E. K., Anyimadu, E., Quist, A., & Koomson, B. (2020). Frameworks for health systems performance assessment: How comprehensive is Ghana's Holistic Assessment Tool? Global Health Research & Policy, 5, 10. doi: 10.1186/s41256-020-00139-2

Mac, P. A., Suleiman, A. C., & Airiohuodion, P. E., (2010). *High prevalence of Hepatitis B virus infection among pregnant women attending antenatal care in central Nigeria*. *Journal of infectious Diseases and Epidemiology*, 6, 78-85.

Mohammed, J., Hussain, M, & Khan, M. A. (2003). Frequency of Hepatitis-B and Hepatitis C infection in thalassaemic children. *Pakistan Paediatric Journal*,, 27, 161–164.

Mohebbi, S. R., Sanati, A., Cheraghipour, K., RostamiNejad, M., Shalmani, H. M., & Zali, M. R. (2011). Hepatitis C and hepatitis B virus infection: epidemiology and risk factors in a large cohort of pregnant women in Lorestan, West of Iran. *Hepatitis monthly*, *11*(9), 736–739.

Mursy, S. M. M. & Mohamed, S. O. O. (2019). Knowledge, attitude, and practice towards Hepatitis B infection among nurses and midwives in two maternity hospitals in Khartoum, Sudan. *BMC Public Health*, 19: 1597. doi: 10.1186/s12889-019-7982-8. pmid:31783744

Musa, B. M., Bussell, S., Borodo, M. M., Samaila, A. A., & Femi, O. L. (2015). *Prevalence of hepatitis B virus infection in Nigeria*, 2000-2013: A systematic review and meta-analysis. *Nigeria Journal of Clinical Practice,18*(2), 163-172.

Scheibe-Trevisol, F., Custodio, G., Silva, A., Oliveira, M., Wolfart, A. & Trevisol, D. T. (2013)

Polaris Observatory Collaborators, (2018). *Global prevalence, treatment, and prevention of hepatitis B virus infection in 2016*: A modelling study. *Lancet Gastroenterology and Herpetology, 3*(6), 383-403.

Redmond WA.Liver Microsoft Student [DVD] Microsoft Corporation.2007[Google Scholar]

Ryder, S, & Beckingham I. (2001). ABC of diseases of liver, pancreas, and biliary system: Acute hepatitis. *British Medical Journal,* 322, 151–153.

Saffar, H., Ajami, A., Saffar, M. J., Shojaei, J., Sotudeh-Anvari, M., Shams-Esfandabad, K., &Khalilian, A. R. (2014). Prevalence of hepatitis B virus sero-markers in young adults vaccinated at birth; impact on the epidemiology of hepatitis B infection in Iran. *Hepatitis Monthly, 14*(5), e17263.

Shedain, P. R., Devkota, M. D., & Banjara, M. R. (2017). Prevalence and risk factors of hepatitis B infection among mothers and children with hepatitis B infected mother in upper Dolpa, Nepal. *BMC Infectious Disease,* 17**,** 667.

Sibia, P., Mohi, M. K., & Kumar, A. (2016). Seroprevalence of hepatitis B infection among Pregnant Women in One of the Institute of Northern India. *Journal of Clinical and Diagnostic Research, 10*(8), QC08–QC9.

Ugbebor, O., Aigbirior, M., Osazuwa, F., Enabudoso, E., & Zabayo, O. (2011). The prevalence of hepatitis B and C viral infections among pregnant women. *North American Journal of Medical Sciences*, *3*(5), 238–241.

Voyles, B.A.A (2002).*The Biology of Viruses,* 2nd ed., Chicago: McGraw Hill. 40 – 43.

Yazie, T. D., & Tebeje, M. G. (2019). An updated systematic review and meta-analysis of the prevalence of hepatitis B virus in Ethiopia. *British Medical Centre Infectious Diseases, 19*(1), 9-17.

Yong-Ping, Y., Hai-Xia, S., Zhao-Hua, J., Zhong-Jun, S., & Zhong-Shu, P. (2014). Epidemiology of hepatitis B virus infection in china: Current status and challenges. .*Journal of Clinical Translational Herpetolo*gy,*2*(1), 15–22.

Zaeri A., Zaihi .Z, AbuDyab .F, Othman.E, Somily, E, Zalah. A ,(2018) Knowledge, Attitude and Practice among Jazan University Students in Health

Sciences Colleges Regarding Hepatitis B Virus and its Vaccine. The Egyptian Journal of Hospital Medicine. 2018;73: 6959–6966. Available: https://ejhm.journals.ekb.eg/article_17211_5968abcbdf395e402dcd0ed61b60b 4b4

World Health Organization (2018).Hepatitis B fact sheet.WHO, Geneva. http:www.who.int/mediacentre/factsheetsfs204/en/[Google Scholar]