

Knowledge, Attitude and Practice Towards Hepatitis B Infection of People in Part of Jigawa State, Nigeria

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Abstract

This study analyzed Knowledge, Attitude/Perception and Practice of the people toward hepatitis B infection in four local governments of Ringim Emirate, Jigawa State. The data were obtained using questionnaire instrument and organized and processed in SPSS version 20 and analyzed using descriptive statistics and inferential statistics. The result shows that very few (4.9%) people showed good level of knowledge of the infection, and only very few (3.4%) show knowledge of good practice. The result also shows correlation coefficient of 0.917 indicated a positive correlation between knowledge scores. The findings also revealed that there is no statistically significant difference between educational level and knowledge of Hepatitis B ($p=0.336$). However, there is statistically significant difference, ($p=0.000$) among other items of socio-demographic characteristics. The study suggested that public health education is needed to improve knowledge, attitude and practice on hepatitis B. Implementation of community mass media health education programme to raise the awareness and the knowledge about hepatitis B using all forms of media especially radios. Health care providers who are involved in the hepatitis control programme need to set schedule to provide education, increase awareness of contact case screening, early identifying and treating hepatitis infection especially hepatitis B. This will help to in prevention and controlling of the infection.

Keywords: Hepatitis B cases, Knowledge, Attitude, Practice

INTRODUCTION

Hepatitis B virus (HBV) is one of the viruses that cause inflammation of liver. HBV is a potentially life-threatening infection and remains a major global public health concern due to its high morbidity and mortality. HBV infection is considered among the top five infectious diseases associated with high incidence rates. It is 50 to 100 times more infectious than HIV and 10 times more infectious than Hepatitis C virus, and regarded as the 10th leading cause of death worldwide. (Kumar *et al.* 2011; World Health Organization {WHO}, 2012 as cited in

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Sa'idu *et al.* 2015). Globally, it is estimated that 2 billion people have been contracted with the disease out of which about 350 million people are chronically infected, and between 500,000 to 700,000 deaths occur yearly (WHO, 2017). About 4.5 million new HBV cases occur each year in the world with 15 - 40% of those infected developing cirrhosis, liver failure or hepatocellular carcinoma (Weinbaum *et al.*, 2012). World Health Organization report revealed that in 2019, 296 million people were living with chronic hepatitis B infection with 1.5 million new cases, and the disease kills 820,000 people (WHO, 2021).

On the basis of sero-prevalence survey results, WHO grouped countries into three levels of endemicity. First, is the high endemicity region which represents areas where the prevalence of chronic HBV among general population is $\geq 8\%$. The second group represents the areas of intermediate endemicity where the prevalence of HBV in the general population is between 2 and 7%. The last class is the low endemicity region comprising areas that have less than 2% of chronic hepatitis B among the general population (WHO, 2010 as cited in Omatola *et al.* 2020).

Nigeria is among countries with greatest burden of HBV accounting for 8.3% of the global burden of chronic infections (Federal Ministry of Health {FMoH}, 2016). The above source further revealed that the average prevalence rate for HBV for country ranges between 11-13.7% with an estimated 20 million people who are chronically infected. However, the Federal Ministry of Health, (FMoH, 2018) further stated that an estimated 22.6 million Nigerians are infected with Hepatitis B, and one in every 12 persons is estimated to be living with the infection. This placed Nigeria in the hyper-endemic region of HBV infection.

Knowledge is highly essential towards prevention of many contagious diseases. Poor knowledge can place people to the danger of severe and fatal health complications. United State Centre for Disease Control (CDC) stressed that "many individuals who have been infected with HBV don't know that they are infected as the disease silently damage the liver function which takes time up to 30 years to develop without showing any sign or symptom (CDC, 2010 as cited in Khan *et al.* 2017). The knowledge of Viral Hepatitis B remains low in Nigeria, even though it is one of the leading illnesses causing death. As a result, most people who were infected long ago with the virus are unaware of their chronic infection and consequently failed to seek appropriate medical attention. They are at high risk of developing severe chronic liver disease and can unknowingly transmit the infection to other people ((FMoH, 2018; Weinbaum *et al.*, 2012).

Although a number studies (Adejimi *et al.* 2021; Igwilo, 2017; Okwonkwo *et al.* 2017; Samuel *et al.* 2009) have conducted in Nigeria to assess knowledge, attitude and behavior regarding hepatitis B. However, these studies focused on specific group of population (female sex workers, health workers and market traders). Therefore, there is dearth of information regarding the level of knowledge on HBV among the general population. In addition, the above studies were conducted outside Jigawa State. It is equally important to explore people's knowledge and attitude towards hepatitis B virus in the state. Therefore, the aim of this study is to explore knowledge, attitude and practice of people towards hepatitis B infection in Ringim Emirate, Jigawa state.

MATERIALS AND METHODS

Description of the Study Area

The study area (Ringim Emirate) consists of four local government areas comprising of Ringim, Taura, Garki, and Babura. The area is approximately between Latitude $8^{\circ} 48' 0''\text{N}$ to $9^{\circ} 36' 0''\text{N}$ and Longitude $12^{\circ} 0' 0''\text{E}$ to $12^{\circ} 48' 0''\text{E}$ respectively (Fig.1). The area is bounded in

the north by Niger Republic, in the northeast by Sule Tankarkar and Gagarawa LGAs, to the east by Kaugama, to the Southeast by Miga, to the south by Dutse and Jahun LGAs and to the south and southwest by Kano state. It has an approximate land area of 4106km² covering about 18.3% of Jigawa state. The climate of the area is the tropical dry-and-wet type, identified as Aw by Koppens climatic classification. The coolest season is normally experienced from mid-November to the end of February with the mean monthly temperature between 21 and 22°C. The hottest season on the hand occurred from March to May with the mean monthly temperature between 30 and 32°C. Wet season normally lasts for four months (June to September), mean annual rainfall in the area ranges between 600 and 800 mm (Olofin, 2008). The population figure for the area as at 2006 stood as 687,487 while projected population figure for the year 2018 was given as 932,311 (NPC, 2019). The area has both primary and secondary healthcare systems, with four general hospitals, nine primary health centres and 98 basic health clinics and dispensaries.

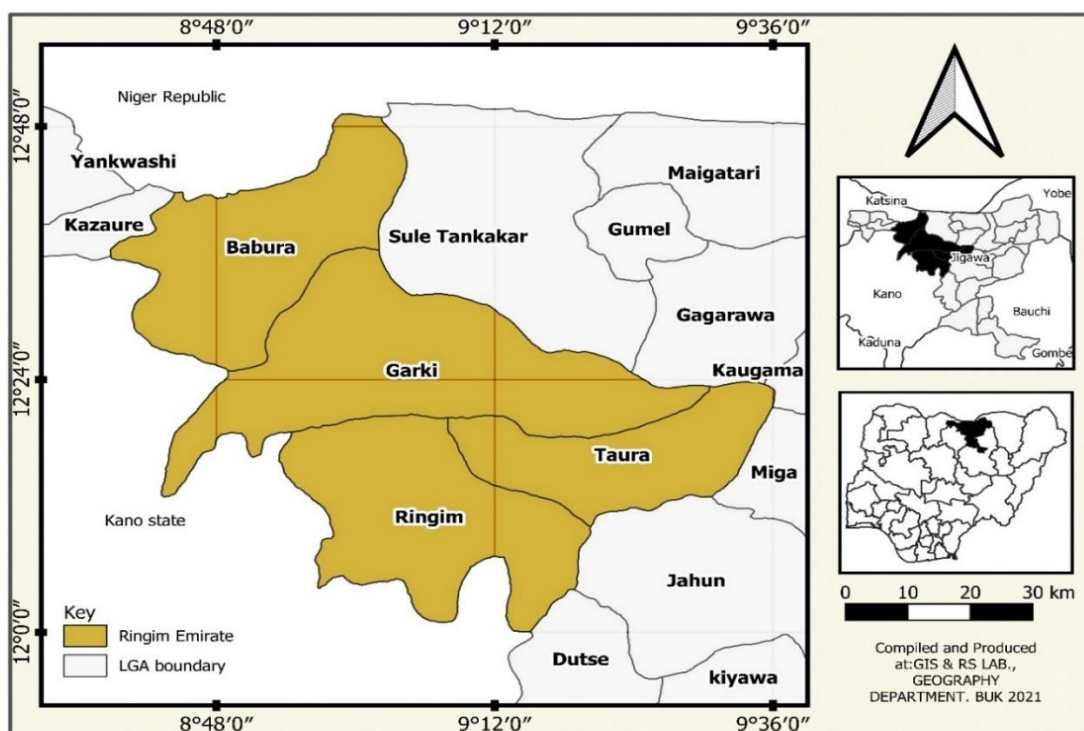


Figure 1: Ringim Emirate
Source: GIS and RS LAB, Geography Department, Bayero University, Kano 2021.

Data Sources

The primary data were sourced from the responses of the people on Hepatitis B knowledge, attitudes/perception and practice towards the infection through designed questionnaire. The questionnaire consists of three sections A, B and C. Section A invites responses on demographic characteristics of the respondents such as age, sex, marital status, educational level, occupation, family size and place of living. Section B presents information on knowledge regarding the disease. Issues asked in this section include: signs and symptoms of Hepatitis B Infection and mode of transmission. Section C, on the other hand, elicits information on the attitude/perception and practice of respondents towards Hepatitis B. Issues like sources of the information on the infection, whether agree or not that Hepatitis B is real, knowledge of self status on Hepatitis B virus, and preventive measures against infection were addressed in this section.

Purposive sampling technique was employed in selecting political wards for the questionnaire administration. Two political wards (20%) in each of the four local government areas were selected to represent the area. At this point, political wards with the highest and lowest incidence cases in each local government were identified and selected for questionnaire survey. The idea of taking 20% of the political wards was suggested by Arlosoroff *et al.* (1987) who opined that 20% of any population is sufficient to yield a meaningful statistical validity of results. Availability sampling techniques on the other hand was used to recruit respondents.

Using Ausvet online Calculator for proportion prevalence estimation at 0.5 level of significance and 95% confidence, 385 respondents formed the sample size for this study. To distribute the respondents across the selected political wards, Star (2012) formula was employed to calculate the sample size of each ward (Table 1).

Table 1: Selected Political Wards, Projected Population in 2018 and Sample Size

| Local Government | Sample Wards | Population, 2018 | Sample Size | |
|------------------|----------------|------------------|-------------|-----|
| Ringim | Ringim | 51,597 | 70 | |
| | Yan duste | 25,902 | 33 | |
| Taura | Taura | 21,834 | 41 | |
| | Sabon-gariyaya | 13,854 | 24 | |
| Garki | Garki | 24,125 | 38 | |
| | Doko | 34,725 | 57 | |
| Babura | Babura | 48,105 | 68 | |
| | Jigawa | 32,645 | 54 | |
| Total | 4 | 8 | 252,787 | 385 |

Source: National Population Commission (2020).

DATA ANALYSIS

Descriptive statistics using tables and charts were used to summarise and describe the data. Mann-Whitney U Test and Kruskal-Wallis Test were the inferential statistics employed to describe the relationships between dependent variables (knowledge or practice score) and categorical independent variables (socio-demographic characteristics). According to the level of practice score on prevention measures from exposure to Hepatitis B infection, the range of practice scores ranged from 0 - 8. The cut-off point for the classification was based on Benjamin Bloom scale rate. Respondents who got 80% of total scores were classified as having good practices, while those who got 60% - 79% of the total scores were classified as fair and, those who got lower than 60% of total scores were classified as having poor practices levels.

The Mann-Whitney U Test was used to explore the differences between two independent groups on a continuous measure. This test is a non-parametric alternative to the t-test for independent samples. It converts the scores on the continuous variable to ranks across the two groups. It then evaluates whether the ranks for the two groups differ significantly. For this study, Mann Whitney U test was conducted to test the relationship between gender and level of knowledge and practice among respondents. The Kruskal-Wallis Test (sometimes referred to as the Kruskal-Wallis H Test) is also a non-parametric alternative to the one-way between-groups Analysis of Variance. It allows for comparison of scores on some continuous variable for three or more groups. Scores are converted to ranks and the mean rank for each group is compared. In this study, Kruskal-Wallis test was also used to test the relationship between other socio-demographic characteristics of the respondents and the level of knowledge and practice of Hepatitis B infection among respondents.

RESULTS AND DISCUSSION

Socio-demographic characteristics of respondents

Table 2, presents the socio-demographic characteristics information of the respondents, majority of the respondents were male (71.4%). The age distributions were positively skewed that means the frequencies of younger ages were greater than the frequencies older age.

Table 2: Socio-demographic Characteristics of the Respondents

| Socio-demographic characteristics | Frequency | Percentage |
|-----------------------------------|-----------|------------|
| Gender: | | |
| Male | 275 | 71.4 |
| Female | 110 | 28.6 |
| Age: | | |
| 18-28 | 81 | 21.0 |
| 29-39 | 140 | 36.4 |
| 40-50 | 103 | 26.8 |
| >50 | 61 | 15.8 |
| Marital status: | | |
| Single | 69 | 17.9 |
| Married | 240 | 62.3 |
| Divorce | 50 | 13.0 |
| Widow | 26 | 6.8 |
| Educational level: | | |
| Primary | 4 | 1.0 |
| Secondary | 123 | 31.9 |
| Tertiary | 193 | 50.1 |
| Islamic education | 65 | 16.9 |
| Occupation: | | |
| Unemployed | 23 | 6.0 |
| Labour | 35 | 9.1 |
| Farming | 83 | 21.6 |
| Civil servant | 146 | 37.9 |
| Business | 98 | 25.5 |
| Family size: | | |
| 1-10 | 196 | 50.9 |
| 11-20 | 125 | 32.5 |
| >20 | 64 | 16.6 |

Source: Data Analysis, 2019.

Majority of the respondents were in range of 29-30 years (36.4%) and 40-50 years (26.8%), respectively. Most of them were married (62.3%) and educated in tertiary or higher level of education (50.1%) followed by secondary level (31.9%), lower primary education (1.0%); 16.9% attained Islamic education. Most of them were employed. 37.9% were civil servants, farmers (21.6%); labourers (9.1%) and; merchants, (25.5%) while 6.0% were unemployed and 50.9% of them had 0-10 family members.

Responses on knowledge

The respondents' knowledge of Hepatitis B is revealed in Table 3. Majority (62.6%) of the respondents heard about the disease called Hepatitis B, but only 21.6% knew that Hepatitis B is contagious.

Table 3: General knowledge on HBV

| Items | Number | Percentage |
|---|--------|------------|
| Heard about Hepatitis B | 241 | 62.6 |
| Hepatitis B is contagious | 83 | 21.6 |
| Signs and symptoms of Hepatitis B: | | |
| High fever | 108 | 28.1 |

| | | |
|--|-----|------|
| Jaundice | 119 | 30.9 |
| Vomiting | 124 | 32.2 |
| Extreme fatigue | 104 | 27.0 |
| Dark urine | 102 | 26.5 |
| Nausea | 97 | 25.2 |
| Abdominal pain | 171 | 44.4 |
| Hepatitis B can be transmitted through: | | |
| Sharing sharp objects | 112 | 29.1 |
| Sexual contact | 115 | 29.9 |
| Contact with blood and other body fluids | 100 | 26.0 |
| Kissing | 94 | 24.4 |
| Sharing of injection needles | 152 | 39.5 |
| Sharing of cigarettes | 119 | 30.9 |
| Sharing eating utensils | 107 | 27.8 |
| Hepatitis B can be managed | 92 | 23.9 |

Source: Data Analysis, 2019.

About the symptoms of the disease, majority of the respondents were not aware about the symptoms of the disease, only 28.1% knew that high fever is one of the symptoms of the infection. Jaundice had (30.9%); vomiting, (32.2%); extreme fatigue, (27.0%); dark urine, (26.5%); nausea, (25.2%) while 44.4% knew that abdominal pain is among the symptoms.

The general knowledge of Hepatitis B transmission, only few of the respondents (29.1%) knew that the disease can be transmitted through sharing sharp objects, sexual contact, contact with blood and other body fluids, kissing, sharing needle, sharing cigarette, sharing eating utensils, 29.9%, 26.0%, 24.4%, 39.5%, 30.9% and 27.8%, respectively. About the management of the disease, only 23.9% knew that the Hepatitis B can be managed.

The range of knowledge scores was from 0 - 17 and each correct response was assigned a score of 1 as compared to an incorrect response that was assigned a score of 0. The cut-off point for classification was based on Benjamin Bloom scale rate adopted from Suree, (2009). Respondents who got 80% (13.7-17 points) of total scores were classified as having good level of knowledge, while those who got 60% - 80% (10.1-13.6 points) of the total scores were classified as fair and those who got lower than 60% (0-10 points) of total scores were classified as having poor level of knowledge. The level of knowledge regarding Hepatitis B infection is shown in Table 4.

Table 4: Respondents' Level of Knowledge of Hepatitis B Virus Infection

From the analysis, it can be observe that majority of the respondents (64.9%) had low level of knowledge regarding the infection of Hepatitis B Virus as indicated in Table 4; 30.1% had moderate knowledge and 4.9% had high level of knowledge.

| Level of knowledge (based on 19 knowledge questions) | Number | Percentage |
|--|--------|------------|
| Good knowledge | 19 | 4.9 |
| Fair knowledge | 116 | 30.1 |
| Poor knowledge | 250 | 64.9 |
| Total | 385 | 100.0 |

Source: Data analysis 2019

The result of this study is similar to the previous studies (Adeyemi *et al.*, 2013; Gboeze, *et al.* 2015; Okonkwo *et al.*, 2017; Okonkwo *et al.*, 2018) conducted in other parts of Nigeria where the overall knowledge of the participants regarding hepatitis B was reported low. A similar result (poor knowledge on hepatitis B) is also reported from other parts of the world (Leung *et al.* 2010; Van der veen *et al.* 2010; Ahmad *et al* 2016; Rajamoorthy *et al.* 2019; Alotaibi *et al.*

2021). Though, our finding revealed that that half of our respondents had higher level of educational attainment, poor level of knowledge regarding the disease was obtained. This indicates that our public education system is not given due attention to health issues particularly infectious diseases.

Lack of knowledge can lead to increase in the infection rate of Hepatitis B which can also lead to more serious public health problems. This requires urgent attention because those infected could continue spreading the infection.

Responses on Attitudes and Practices

Attitudes/practices are different from knowledge which was evaluated by descriptive discussion. Responses of the respondents based on the most effective source of information on Hepatitis B are given in Figure 2. Each respondent selected the most effective source of information from where they heard about Hepatitis B. Most respondents (41.8%) heard about the infection from the media, others heard it from Doctor/other Medical Workers (26.5%); Friends/peer groups, (21.0%); School, (7.8%); while those that did not heard about the infection (no one) are 2.9% respectively.

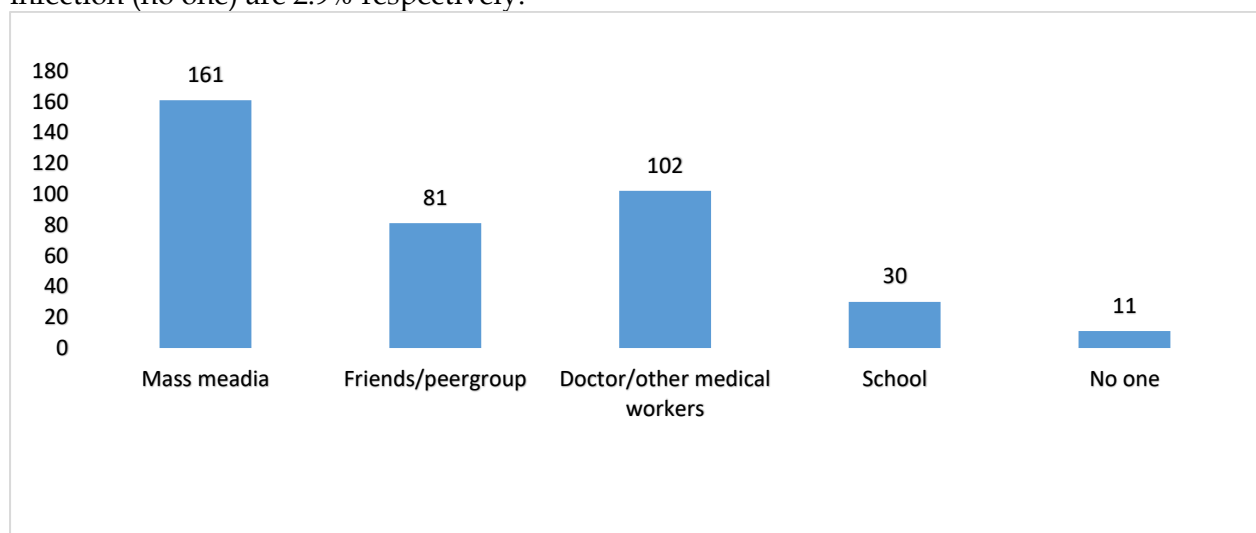


Fig.2: Respondents Sources of Knowledge of Hepatitis B Infection

Study participants expressed that mass media, doctors and other health workers remained the most highly trusted information source to patients and played an important role in spreading information. This corroborates other studies suggestion that the most common sources of knowledge about Hepatitis B were television/radio and hospitals 25% and 22% respectively (Okonkwo *et al.*, 2017).

The other attitudes questions are presented in Table 5. Regarding the attitude of the respondents on whether they agree that the infection is real, 11.7% of them strongly agreed, and 75.3% agreed that the infection is real, while 7.5% neither agreed nor disagreed (4.4%) disagreed and 1.0% strongly disagreed. Majority of the respondents (86.8%) did not know their status about the infection. But when asked whether they would go to hospital for test to know their status, 54.5% said yes, while 45.5% said they would not.

Most of the respondents (74.8%) were not well informed about Hepatitis B. This indicates that there is the need to intensify efforts in feeding people with information regarding the infection.

Table 5: Attitudes on HBV

| Attitudes/practice questions | Frequency | Percentage |
|--|-----------|------------|
| Do you agree that Hepatitis B is real? | | |
| Strongly Disagree | 4 | 1.0 |
| Disagree | 17 | 4.4 |
| Neither agree or disagree | 29 | 7.5 |
| Agree | 290 | 75.3 |
| Strongly agree | 45 | 11.7 |
| Do you know your status on hepatitis B? | | |
| Yes | 51 | 13.2 |
| No | 334 | 86.8 |
| If don't know your status, will you go to Hospital to know your status? | | |
| Yes | 210 | 54.5 |
| No | 175 | 45.5 |
| Do you receive well information about hepatitis B? | | |
| Yes | 97 | 25.2 |
| No | 288 | 74.8 |

Source: Data Analysis, 2019.

Regarding practice of preventing themselves from the infection, respondents answered 8 questions. Each correct answer was considered and presented in Table 6. The results revealed that from the 385 respondents, only few knew about the preventive measures of Hepatitis B. Avoiding sex with multiple partners and the use of condom seem to be general practice of the respondents, (64.2%) followed by avoiding sharing injections, (45.5%). Use of protective cover when in contact with blood and other body fluids, (34.3%) and avoiding sharing cigarettes, (33.5%). The other ways of preventions were avoiding sharing eating utensils, (32.7%), washing hands after touching items in public places, (30.6%) and avoiding sharing sharp objects (27.8%).

Table 6: Practices of Preventing Hepatitis B Infection

| Items | Number | Percentage |
|--|--------|------------|
| Avoidance of sharing sharp objects | 107 | 27.8 |
| Avoidance of sex with multiple partners and use of condom | 247 | 64.2 |
| Use of protective cover when in contact with blood and other body fluids | 132 | 34.3 |
| Avoidance of sharing eating utensils | 126 | 32.7 |
| Avoidance sharing cigarettes | 129 | 33.5 |
| Washing hands after touching items in public places | 118 | 30.6 |
| Avoidance of sharing injection | 175 | 45.5 |

Source: Data Analysis, 2019.

The levels of practice regarding Hepatitis B infection as shown in Table 7, indicated a high proportion of the poor practices (< 60 percent of total score) compared to fair practices (60-79 percent of total score) and good practice (>80 percent of total score). It should be noted that from the 385 questionnaires, only 13 respondents demonstrate good practices.

Table 7: Respondents' Levels of Practice to Avoid Hepatitis B Infections

| Level of practice | Number | Percentage |
|-------------------|--------|------------|
| Good practice | 13 | 3.4 |
| Fair practice | 120 | 31.2 |
| Poor practice | 252 | 65.5 |
| Total | 385 | 100.0 |

Source: Data Analysis, 2019.

In our study it was observed that majority (65.5%) of the respondent's show poor or negative attitudes towards prevention of the disease. This is similar to the findings of Emeka *et al.*, (2011), Huq *et al.* 2016, El-Fetoh *et al.* (2017) and Wedhaya *et al.* (2017) who also found most of their participants had low levels of practice toward the prevention of Hepatitis B in Nigeria.

The poor practice observed in this study could be attributed to low level of knowledge regarding the disease.

Relationship between knowledge and practice by using Spearman rho correlation analysis

The relationship between knowledge practice scores was tested using Spearman rho correlation analysis. Table 8 presents the result of the Spearman’s rho analysis of association between knowledge and practice scores of the respondents. Knowledge and practices scores regarding to Hepatitis B were treated as continuous variables and Correlation Coefficients were computed. The correlation coefficient of 0.917 indicated a positive correlation between knowledge scores. In addition, knowledge scores were regarded as very strong significant correlation with practice scores (p=0.01).

Table 8: Association Between Knowledge and Practice Score Using Spearman’s rho Correlation

| | | Knowledge | Practice |
|----------------|-----------|-------------------------|----------|
| Spearman's rho | Knowledge | Correlation Coefficient | 1.000 |
| | | Sig. (2-tailed) | .917** |
| | | N | 385 |
| | Practice | Correlation Coefficient | .917** |
| | | Sig. (2-tailed) | 1.000 |
| | | N | 385 |

** . Correlation is significant at the 0.01 level (2-tailed).

This study revealed a strong positive correlation between knowledge and practice regarding hepatitis B which corroborates findings from other studies in Egypt, India and Pakistan (Shalaby *et al.* 2010; Singh *et al.* 2011 & ul Haq *et al.* 2012). This suggests that adequate knowledge can lead to good practices.

Differences between Socio-demographic Characteristics, Knowledge, and Practice Scores using Mann Whitney U and Kruskal-Wallis tests.

Mann Whitney U test was conducted on gender to test whether there is significance difference on knowledge scores. The result revealed (male=166.77, female=258.57, P=0.000) significant differences in the knowledge of Hepatitis B, across the gender (Table 9). This result contradicts findings by ul Haq *et al.* (2012), Okonkwo *et al.* (2018) and Rajamoorthy *et al.* (2019) who found absence of the association in the knowledge across the gender. This variation could be linked differences in the culture between different communities. In our study more male were recruited as female are traditionally not interact with male unnecessarily. This could also affect change our result.

Table 9: Difference between Gender on Knowledge Scores

| Gender | Knowledge score Mean Rank | P value |
|--------|------------------------------|---------|
| Male | 166.77 | .000 |
| Female | 258.57 | |

Source: Data Analysis, 2019.

The result of Kruskal-Wallis test is shown in Table 10. The result of the test revealed that there is no statistically significant difference between educational level and knowledge of Hepatitis B among the respondents (p=.336) and an analysis of the Mean ranks for the educational levels suggests that tertiary level of education had the highest knowledge scores, while primary level has the lowest. Among other items of socio- demographic characteristics such as marital

status, occupation and size of family, the result shows that there is statistically significant difference, (p=.000).

Table 10: Bivariate Analysis of Hepatitis B Knowledge Score by Socio-demographic Characteristics among Respondents.

| Socio-demographic Characteristics | Knowledge score Mean Rank | p Value |
|-----------------------------------|------------------------------|---------|
| Age (years) | | |
| 18-28 | 42.15 | .000 |
| 29-39 | 153.15 | |
| 40-50 | 291.19 | |
| >50 | 318.98 | |
| Marital status | | |
| Single | 85.42 | .000 |
| Married | 206.70 | |
| Divorce | 271.21 | |
| Widow | 201.62 | |
| Educational level | | |
| Primary | 163.63 | .336 |
| Secondary | 187.55 | |
| Tertiary | 202.54 | |
| Islamic education | 176.78 | |
| Occupation | | |
| Unemployed | 207.22 | .000 |
| Labor | 101.83 | |
| Farming | 159.90 | |
| Civil servant | 215.99 | |
| Business | 216.00 | |
| Family size | | |
| 1-10 | 101.41 | .000 |
| 11-20 | 273.01 | |
| >20 | 317.23 | |

Source: Data Analysis, 2019.

Our finding is in agreement with that of ul Haq *et al.* (2012) and Rajamoorthy *et al.* (2019) were statistical significant difference was not established between educational level and knowledge score mean rank. However, our study disagree with that of Okonkwo *et al.* (2018) and Rajamoorthy *et al.* (2019) who reported significance difference between the knowledge score mean rank and marital status.

Relationship between hepatitis B practice score and socio-demographic characteristics of the respondents using Mann Whitney U and Kruskal-Wallis Tests.

Mann Whitney U and Kruskal-Wallis tests were considered appropriately to measure the association between Hepatitis B practices scores and socio-demographic characteristics of the respondents.

Mann Whitney U test was conducted on gender to measure the practice level. The result revealed, (167.00, 258.00, P=0.0001) indicating significant differences in the practices of Hepatitis B across the gender (Table 11). Similar to this finding, are studies in Quetta, Pakistan (ul Haq *et al.* 2012) and Cross River State, Nigeria (Okonkwo, *et al.* 2018) that reported that gender had no association with practice scores of their study participants.

Table 11: Relationship Between Gender and Practices Scores Using Mann Whitney U Test

| Gender | Knowledge Scores Mean Rank | P Value |
|--------|-------------------------------|---------|
| Male | 167.00 | 0.0001 |
| Female | 258.00 | |

Source: Data Analysis, 2019.

Table 12 presents Kruskal-Wallis test of relationship between socio-demographic characteristics and practices scores. Like the relationship between socio-demographic characteristics and knowledge, the result of the test shows that educational level of the respondents was the only variable not associated with practice score mean rank ($p=.129$). However, all other items of the socio-demographic characteristics were statistically significantly different ($p=0.0001$). This finding is in agreement with the result of similar study conducted by ul Haq *et al.* (2012) in Quetta Pakistan. Contrary to our finding, other studies (ul Haq *et al.* 2012 & Okonkwo, *et al.* 2018) reported no statistical significance difference between age group, marital status and occupation with practice scores mean rank. The possible reasons for this variation are locational differences, culture as well as instrument of data collection.

Table 12: Bivariate Analysis of Relationship Between Hepatitis B Practices Scores and Socio-Demographic Characteristics of Respondents Using Kruskal-Wallis Test.

| Socio-Demographic Characteristics | Practices scores Mean Rank | p Value |
|-----------------------------------|-------------------------------|---------|
| Age (years) | | |
| 18-28 | 47.88 | .000 |
| 29-39 | 149.86 | |
| 40-50 | 277.35 | |
| >50 | 342.28 | |
| Marital status | | |
| Single | 80.46 | .000 |
| Married | 210.15 | |
| Divorce | 265.79 | |
| Widow | 193.40 | |
| Educational level | | |
| Primary | 139.50 | .129 |
| Secondary | 181.85 | |
| Tertiary | 205.75 | |
| Islamic education | 179.53 | |
| Occupation | | |
| Unemployed | 181.65 | .000 |
| Labourer | 104.56 | |
| Farming | 160.40 | |
| Civil servant | 222.49 | |
| Business | 210.93 | |
| Family size | | |
| 1-10 | 101.98 | .000 |
| 11-20 | 261.34 | |
| >20 | 338.28 | |

Source: Data Analysis, 2019.

Conclusion

HB infection has become a significant health problem in developing countries including Nigeria. The knowledge of disease is very important as it helps in taking preventive measures against it. The knowledge of HBV in the study area is however low and this could make people vulnerable to the infection. The practice of prevention is also poor in the study area as educational attainment has no any effect on their knowledge and practice of preventive measures implying that the people in the study area are vulnerable to the infection. The study recommends mass public enlightenment and sensitization by state, local government, religious organisations and NGOs on the causes, symptoms and preventive measures. In this regard, this study suggests radio as a tool to advocate community health education to increase knowledge, promote awareness, and ensure early detection of Hepatitis B. The state should

also provide vaccines in all health care facilities and make vaccination mandatory on people in the study area.

REFERENCES

- Adejimi, A.A., Bakare, A.A., Ogunyemi, A.O. & Adewole, A.M. (2021) Hepatitis B virus infection-related knowledge, attitude and preventive practices among market traders in Lagos, Nigeria – A cross sectional study. *Journal of Clinical Sciences*, **18**: 32-42
- Adeyemi A. B., Enabor O. O., Ugwo I.A., Bello F. A., & Olayemi O.O. (2013) Knowledge of Hepatitis B. Virus Infection, access to screening and vaccination among pregnant women in Ibadan, Nigeria. *Journal of Obstetrics and Gynaecology* . **33**(2):155-9
- Ahmad, A., Munn Sann, L., & Abdul Rahman, H. (2016). Factors associated with knowledge, attitude and practice related to hepatitis B and C among international students of Universiti Putra Malaysia. *BMC public health*, *16*(1), 1-8.
- Alotaibi, B. S., Althobaiti, M. A., Hazazi, A. Y., Hazazi, S. Y., Nassir, R. A., Alhaddad, M. S., & Abdelwahab, S. F. (2021). Exploration of Knowledge, Attitude, and Practice Among Residents of Saudi Arabia Toward Hepatitis Viruses. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *58*, 00469580211059965.
- Arlosoroff, S., Gerhard, T., Devid, G., Wiliam, K., Otto, L. & Robert, R. (1987) *Community water supply: The hand pump option*, the World Bank Washington DC 1987
- Ausvet online calculator. Available at epitools.ausvet.com.au/samplesize
- El-Fetoh, N., Alenzi, R. T. R., Ghabban, K. M., Alanzi, H. S., & Ghabban, A. M. (2017). A cross sectional assessment of knowledge, attitude and practice towards hepatitis B among healthy population of Arar, Saudi Arabia. *Merit Res J Med Med Sci*, *5*, 156-64.
- Emeka B.K., Kenechi U., Eshiobo I., Andrew D., Kefas J. B., & Bamidele J. A. (2011) Knowledge of Hepatitis B Vaccination among Operating Room Personnel in Nigeria. *Hepatitis Research and Treatment* Volume 2011, Article ID 157089, 5 pages
<http://dx.doi.org/10.1155/2011/157089>
- Federal Ministry of Health (2016) *National guidelines for the prevention, treatment and care of viral hepatitis B and C in Nigeria*. Federal Ministry of Health Abuja, Nigeria
- Federal Ministry of Health, (2018). *Federal Government commits to elimination viral hepatitis in Nigeria*. Retrieved from www.health.gov.ng/.../571-fg-commits-to-elimination-of-viral-hepatitis
- Gboeze, A. J., Ezeonu, P. O., Onoh, R. C., Ukaegbe, C. I., & Nwali, M. I. (2015). Knowledge and awareness of hepatitis B virus infection among pregnant women in Abakaliki Nigeria. *Journal of Hepatitis Research*, *2*(3), 1029.
- Huq, S., Hossain, S. M., Haque, S. M. T., & Akter, S. (2016). Knowledge, attitude and practice on hepatitis-B infection among infected patients in a Homoeopathy Medical Center in Dhaka City, Bangladesh. *South East Asia Journal of Public Health*, *6*(1), 27-31.
- Igwilo, U.A. (2017) A comparative assessment of the knowledge, attitude, vaccination status and prevalence of hepatitis B virus infection among Brothel-based female sex workers in rural and urban areas of Lagos State. Fellowship thesis submitted to the faculty of Public Health, National Postgraduate Medical College of Nigeria
- Khan, A.; Ali. M. and Rafiullah (2017) Knowledge and attitude regarding hepatitis- B prevention among people of Lahore Community, Pakistan. *International Journal of Social Sciences and Management*, **4**(1): 68-76
- Kumar, R.; Singh, J. and Mokharia, R. (2011) Genetic diversity of HBV genotypes/subgenotypes and their correlation with disease progression. *Eurasian Journal of Hepato-Gastro enterology*, **1**(2):53-67

- Leung, C. M., Wong, W. H., Chan, K. H., Lai, L. S., Luk, Y. W., Lai, J. Y., ... & Hui, W. H. (2010). Public awareness of hepatitis B infection: a population-based telephone survey in Hong Kong. *Hong Kong Med J*, 16(6), 463-9.
- National Population Commission (2020) *Nigeria population projection and demographic indicators – state and national*. Abuja, Nigeria. ISBN: 978-978-983-000-18
- Okonkwo, U., Otu, A., Ameh, S., & Okpara, H. (2018). Public awareness of hepatitis B virus infection in cross river State, Nigeria: A population-based survey. *West Afr J Med [Internet]*, 35(2), 79-84.
- Okonkwo, U.C., Ngim, O.E., Osim, H., Inyama, M.A., Esu, M.K., Ndoma-Egba, R. and Ezedinachi, E. (2017) Knowledge of hepatitis B virus infection among traders. *Niger J. Clin Pract*, 20: 415-20
- Olofin, E.A. (2008). The Physical Setting. In Olofin, E.O., Nabegu, A.B., Dambazau, A.M. (eds). *Wudil within Kano region: a geographical synthesis*. Adamu Joji Publishers Kano City pp 5 - 34
- Omatola, O.A.; Onoja, B.A. and Agama, J. (2020) Detection of hepatitis B surface antigen among febrile patients in Ankpa, Kogi State, Nigeria. *Journal of Tropical Medicine*, volume 2020, article ID 5136785, 6 pages
- Rajamoorthy, Y., Taib, N. M., Munusamy, S., Anwar, S., Wagner, A. L., Mudatsir, M., ... & Khin, A. A. (2019). Knowledge and awareness of hepatitis B among households in Malaysia: a community-based cross-sectional survey. *BMC public health*, 19(1), 1-11.
- Saidu, A.Y.; Salihu, Y.; Umar, A.A.; Muhammad, B.S. and Abdullahi, I. (2015) Seroprevalence of hepatitis B surface antigen among pregnant women attending ante-natal clinic in Sokoto Metropolis. *Journal of Nursing and Health Sciences*, 4(4): 46-56
- Samuel, S.O., Aderigbe, S.A., Salami, T.A.T. and Babatunde, O.A. (2009) Health worker's knowledge, attitude and behavior towards hepatitis B infection in Southern Nigeria. *International Journal of Medicine and Medical Sciences*, 1(10): 418-424
- Shalaby, S., Kabbash, I. A., El Saleet, G., Mansour, N., Omar, A., & El Nawawy, A. (2010). Hepatitis B and C viral infection: prevalence, knowledge, attitude and practice among barbers and clients in Gharbia governorate, Egypt. *EMHJ-Eastern Mediterranean Health Journal*, 16 (1), 10-17, 2010.
- Singh, A., Purohit, B. M., Bhambal, A., Saxena, S., Singh, A., & Gupta, A. (2011). Knowledge, attitudes, and practice regarding infection control measures among dental students in Central India. *Journal of dental education*, 75(3), 421-427.
- Star T. (2012) *sample size calculations*. Accessed from [http://www.statrek.com/samplesize/stratified sample.aspx](http://www.statrek.com/samplesize/stratified%20sample.aspx) on 20/10/2019
- Suree Jirapaiboonsuk (2009) *Knowledge, Attitude and Practice towards Childhood tuberculosis in Guardians of Patients visiting Sirindhorn Hospital, Bangkok*. A thesis submitted to the University of Chulalongkorn.
- Ul Haq, N., Hassali, M. A., Shafie, A. A., Saleem, F., Farooqui, M., & Aljadhey, H. (2012). A cross sectional assessment of knowledge, attitude and practice towards Hepatitis B among healthy population of Quetta, Pakistan. *BMC Public Health*, 12(1), 1-8.
- van der Veen, Y. J., Voeten, H. A., de Zwart, O., & Richardus, J. H. (2010). Awareness, knowledge and self-reported test rates regarding Hepatitis B in Turkish-Dutch: a survey. *BMC public health*, 10(1), 1-7.
- Wedhaya, M. A., Abyadh, D. A., Alhabbi, H. A., Alrehaily, S. S., Kurban, M. A., Alzahrani, G. S., ... & Mofareh, A. S. (2017). Assessment of knowledge, attitude and practice towards hepatitis B among healthy population in Saudi Arabia, 2017. *The Egyptian Journal of Hospital Medicine*, 69(2), 1973-1977.
- Weinbaum, C.M, William, I., Mast, E.E., Wang, S.A., Finelli, L., Wesley, A., Neitzel, S.M., & Ward, J.W. (2012) *Recommendations for identification and public health management of*

persons with chronic hepatitis B virus Infection. Morbidity and Mortality Weekly Report 57:1-20.

World Health Organisation (2021) Hepatitis B Virus. Fact sheet

World Health Organization (2017). *Hepatitis B Fact sheet No. 204. Available at* <http://www.who.int/mediacentre/factsheets/fs204/en/> Accessed 15 April 2018