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Knowledge And Practices Of Prevention Regarding Hepatitis B And C Virus Among The Students Of Tertiary Institutions In Sokoto State, Nigeria

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Abstract
Background:
Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections cause global health threats and challenges. People with chronic HBV and/or HCV infection remain infectious to others and are at risk of serious liver disease such as liver cirrhosis or hepatocellular carcinoma (HCC) later in life.
There are several known high-risk groups for acquiring HBV or HCV infection, these include people who require blood or blood products, people who inject drugs, people who have multiple sexual partners, and new-born from HBV or HCV infected mothers.
Aim of the study This study aimed to assess the knowledge and practices regarding prevention of HBV and HCV among the students of tertiary institutions in Sokoto state, Nigeria
Materials and Methods:
This cross-sectional study was conducted among 248 students of Umaru Aliyu Shinkafi, Polytechnic, Sokoto from 3rd to 25th January, 2020. The respondents were selected by multistage sampling technique. A set of pretested, semi-structured interviewer- administered questionnaire was used to collect data on the research variables. Data was analyzed using IBM® SPSS version 20 statistical package.
Results:
The mean age of the respondents was 28.2 □ 8.5 and majority118 (47.4 %) were aged 16-24 years. More than half 137(55.2%) of the respondents were males and single 156 (62.9%)
. The proportions of respondents with good knowledge of HBV was 142 (57.3%) and that of HCV was 44(17.7%). The good practice regarding prevention of HBV and HCV infections among the participants was 162 (65.0%). Significant proportion of the respondents reported unsafe practices such as; unsafe sex 118 (47.6%), use of unsterilized scissors and cutters at the manicure and pedicure centres 88(35.6%) and reused of syringes and needles 32 (13.0%) among others.
Conclusion and Recommendation:
Most of the respondents demonstrated good knowledge of HBV but the knowledge of HCV infection was abysmally low. Close to two-third of the respondents reported good practices regarding the prevention of both HBV and HCV infections. Unprotected sex and use of unsterilized scissors and nail cutters were the common unsafe practices among the respondents. Continuous awareness campaign in the tertiary institutions will go a long way in increasing knowledge about the disease and improving good preventive practices
Keywords: *Knowledge, Practice, HBV, HCV, Students, Tertiary institution.*

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I. Introduction

Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections are of global health threats and challenges. These infections can cause acute and chronic hepatitis and adversely affect the liver. People with chronic HBV and/or HCV infection remain infectious to others and are at risk of serious liver diseases such as liver cirrhosis and hepatocellular carcinoma (HCC) later in life.[1]

There are several known high-risk groups for acquiring HBV and HCV infections, including people who require blood or blood products, interns in prisons, people who inject drugs, people with multiple sexual partners, and new-borns from HBV or HCV chronically infected mothers (vertical transmission).[1] Both HBV and HCV infections have common routes of transmission such as through the unprotected sex, vertical transmission (mother to baby/foetus), percutaneous (tattooing, intravenous drug users amongst others).[2,3]

Hepatitis B virus is highly infectious, it is 100 % more infectious than Human immunodeficiency virus infection.[4] The World Health Organization (WHO) estimated that around 2 billion people are infected with Hepatitis B virus infection (HBV) globally, and up to 600, 000 people die annually from HBV or Hepatitis C virus (HCV) infection or related liver disease.[5] In 2019, the WHO reported that each year 1.5 million new HBV infections occur, 296 million people had chronic HBV infection and as high as 820 000 died of the disease.[6] European and Eastern Mediterranean Regions have the highest burden of HCV infection, however, about 9 million people were infected in African Region.[3] The African continent is one of the regions with the highest burden of HBV infection, with about 81 million people living with HBV infection.[6]

In Nigeria, about 17 and 2.2 million people were infected with HBV and HCV infections respectively.[7] The burden of HBV infection is highest in the north western geopolitical region compared to other regions of the country with about 12. 1 % prevalence rate.[8] Studies done in Sokoto. in 2017 and 2021 to determine the prevalence of HBV infection among HIV infected patients attending HIV clinics at Usmanu Danfodiyo University Teaching Hospital, Sokoto and HBV infection among health care workers in Specialist Hospital Sokoto revealed prevalence rates of 37 % and 12. 1 % respectively.[9, 10]

Hepatitis B and C virus infections can present asymptomatic or anicteric.[11] while there is availability of an effective vaccine for HBV infection, it is however yet to be discovered for HCV infection, but both infections are treatable in the majority of cases.[2,3].

More worrisome concerning the spread of HBV and HCV infections is the fact that students in tertiary institutions are at much higher risk of contracting HBV and/or HCV infection because of some common risky behaviours (such as intravenous drug usage, tattooing, unsafe sex and barber practice among others) which predisposes them to acquiring these infections.[12,13]

This study therefore assessed the knowledge and practices regarding prevention of HBV and HCV infection among students of tertiary Institutions in Sokoto, North-Western Nigeria.

II. Materials And Methods

Study area, design and population

This was a cross-sectional study conducted among students of Umaru Aliyu Shinkafi Poly technic, Sokoto state Nigeria from 3rd to 25th January, 2020. The Institution was established in July, 2002 and runs pre-national diploma, National Diploma (OND), and Higher National Diploma (HND) programmes. The OND programme runs for a period of two academic sessions while the HND programme also runs for a period of 2 academic sessions with OND as the entry requirement. The Institution has six Colleges and twenty-one departments.

All students undergoing full time National Diploma were included in the study, whereas students undergoing pre-National Diploma, part time OND and Higher National Diploma were excluded from the study

Sample Size determination

The minimum sample size was determined using the formula for calculating the sample size for cross-sectional studies.

$n = Z^2 pq / d^2$

n = Minimum sample size

Z = Confidence level, 95 % (1.96)

P= 14.0 % = 0.14, proportion of subjects with good knowledge of HBV infection as observed in a previous study among medical students in Iraq [3].

q=1-p = 1-0.14= 0.86

d = degree of accuracy (0.05)

$n = (1.96)^2 \times (0.14 \times 0.86)/0.05^2 = 0.46252864/0.0025 = 185.011456$ n = 185

Allowing for 80% response rate, the minimum sample size ($n\,s$) is given as:

$n\,s = 185/0.8 = 231.25 \cong 231$

A sample size of 231 was obtained. However, 250 study subjects were recruited into the study.

Sampling Technique

The eligible participants were selected by a multistage sampling technique. At the first stage, 3 out of 6 colleges in the school were selected by simple random sampling using balloting procedure (engineering, science and technology, administration and business studies). At the second stage 2 departments were selected from each of the 3 selected colleges by simple random sampling using balloting procedure making total 6 departments selected for the study. Stratification of each selected department by year of study (i.e. 1st and 2nd year was done. A list of the students was obtained from the class attendance list for all the 2levels (1 and 2) in the selected departments and then proportionate allocation was done based on the total number of students from each of the level selected. At the third stage selection of the study participants was done from the class attendance list of each

of the selected levels (which constituted the sampling frame) by systematic sampling technique

Data Collection

A semi-structured, interviewer-administered questionnaire was developed, built into an Open Data Kit (ODK) software and used to obtain information on respondents' socio-demographic characteristics, Knowledge of HBV and HCV infections and practices regarding prevention of HBV and HCV infections. The questionnaire was reviewed by senior researchers in the Department of Community Health of the hospital to ascertain content validity. It was then pretested on 25 purposively sampled students of Shehu Shagari College of Education, Sokoto, Sokoto State, Nigeria. Some questions were rephrased for clarity based on the observations made during the pretesting. Six fourth year level medical students and two medical records staff assisted in questionnaire administration after training on conduct of survey research, the study objectives, and questionnaire administration.

Data Management

Scoring and grading of participants' knowledge of HBV and HCV and practices regarding prevention of HBV and HCV infections was done. Each correct response was allocated 1 mark while wrong or no response was scored zero. Knowledge of HBV and HCV and practice regarding prevention of HBV and HCV infections were scored and converted into categorical variables (good and poor knowledge and practice respectively). Greater or equal to 50% of the scores were considered as good knowledge and practice while scores less than 50% were considered poor knowledge and practice. The total score was determined by calculating the total correct responses divided by the total number of expected correct responses multiplied by one hundred for both knowledge of HBV and HCV and practice regarding prevention of HBV and HCV infections.

Data analysis

Data were cleaned from ODK by checking for completeness and errors. This was then followed by data export to IBM® SPSS version 20. Descriptive statistics of all variables was done to provide general characteristics of data. Quantitative data was explored to check for outliers. This was done by running frequencies, means and cross tabulation. Continuous variables expressed as frequencies and percentage, means, and SD.

Pearson's Chi-square and Fisher's exact tests were performed to determine association between categorical variables. Level of significance was set at α=0.05 (i.e., 95% confidence interval).

Ethical Approval

Ethical approval for the study was obtained from the Health Research Ethics Committee of Usmanu Danfodiyo University, Sokoto. Permission to carry out the study was sought from the management of Umaru Aliyu Shinkafi Polytechnic, Sokoto. Written informed consent was also obtained from the study participants.

III. Results

Socio-demographic characteristics of the respondents

Two hundred and forty-eight questionnaires were administered, retrieved and found suitable for analysis. The majority of the respondents were within the age group 16-24 years 118 (47.4 %), more than half of them were males 137 (55.2 %) and a greater proportion of them were single 156 (62.9 %) (Table 1).

Knowledge of causes of hepatitis B virus among the respondents

Less than one-third 78 (31.5 %) knew that the HBV infection is caused by a virus, whereas 37 (14.9 %) and 4 (1.6 %) stated that it is caused by bacteria and fungus respectively (Table 2a).

Knowledge of transmission of hepatitis B virus infection among the respondents

Most of the respondents 231 (93.2 %) mentioned that HBV infection can be transmitted through unprotected sex and up to 228 (92.0 %) and 168 (67.8 %) stated that HBV infection can be transmitted via sharing of needles/sharp objects and perinatal respectively. About half of the respondents 128 (51.7 %) also stated that HBV infection can be transmitted through tattooing while 116 (46.6 %) and 80 (33.2 %) mentioned that it can be transmitted through handshaking and eating contaminated food respectively (Table 2b).

Knowledge of signs and symptoms of hepatitis B virus infection among the study

A greater proportion of the respondents 51.6 % knew that HBV infection can be asymptomatic, 59 (23.7 %) stated that HBV infection can cause abdominal discomfort/pain. While only 101 (40.7 %) and 15 (5.9 %) mentioned that dark coloured urine and yellowish of eyes can be signs and symptoms of HBV infection (Table 2c).

Knowledge of vaccine availability and treatment for HBV infection among the respondents

Only half of the respondents 124 (50.0 %) knew that there is a vaccine for HBV infection, while close to two- thirds 152 (61.0 %) reported that there is a treatment for HBV infection (Table 2d).

Overall level of knowledge of hepatitis B among respondents

More than half, (57.3 %) of the respondents had good knowledge of HBV infection, while 42.7 % had poor knowledge of HBV infection (Figure 1).

Knowledge of causes of hepatitis C virus infection among the respondents

More than two-thirds 171 (69.0 %) knew that the HCV infection is caused by a virus, while 60 (24.1 %) and 17 (6.9 %) mentioned that it is caused by bacteria and fungi respectively (Table 3a).

Knowledge of transmission of hepatitis C virus infection among the respondents

Most of the respondents 228 (92.0 %) stated that HCV infection can be transmitted VIA unprotected sex and majority 154 (62.1 %) and 162 (65.5 %) mentioned that HCV infection can be transmitted via sharing of needles/sharp objects and perinatal respectively. More than half of the respondents 145 (58.6 %) stated that HCV infection can be transmitted through tattooing whereas 60 (24.1 %) and 137 (55.2 %) stated that it can be transmitted through handshaking and eating contaminated food respectively (Table 3b).

Knowledge of signs and symptoms of hepatitis C virus among the respondents

A greater proportion of the respondents 51.6 % knew that HCV infection can be asymptomatic, seventy-seven (31.0 %) mentioned that HBV infection can cause abdominal discomfort/pain. Whereas 102 (41.0 %) and greater than two-thirds 188 (75.9 %) stated that dark coloured urine and yellowish of eyes respectively can be signs and symptoms of HCV infection (Table 3c).

Knowledge of vaccine availability and treatment for HCV infection among the respondents

Close to one-fourth 60 (24.1 %) of the respondents stated that there is a vaccine for HCV infection, and only 26 (10.3 5) reported that there is a treatment for HCV infection (Table 3d).

Overall level of knowledge of hepatitis C among respondents

Less than one-fourth (17.7 %) of the respondents had good knowledge of HCV infection, whereas 82.3 % demonstrated poor knowledge of HCV infection (**Figure 2)**.

Preventive practices against hepatitis B and C among respondents

Only 32 (13.0 %) of the respondents reported re-using needles and syringes, and 6 (2.4 %) and 118 (47. 6 %) mentioned that they were involved in intravenous drug usage and extramarital unprotected sex respectively. Only 21 (8.5 %) stated that they always ensured **the** clipper is sterilized before use at the public barbing saloon, and 88 (35.6 %) mentioned that they always ensure that scissors and cutters are sterilized before they are used on them at the manicure and pedicure centres (Table 4).

Overall level of hepatitis B and C preventive practice among respondents

More than one-third of the respondents 86 (34.7%) had poor practices regarding the prevention of hepatitis B and 162 (65.3%) had good preventive practices (Figure 3).

Factors associated with the practice of HBV and HCV infection preventive measures

Whereas there was no statistically significant association between sex, marital status, tribe, and knowledge of HCV infection with the practice of HBV and HCV infection prevention (P= 0.347, 0.208, 0.577, and 0;137 respectively), it was however, found to be statistically significant with age group and knowledge of HBV infection among the respondents (P= 0.027 and 0.006 respectively) (Table 5)

Figures And Tables

Table 1: Sociodemographic characteristics of the respondents

Variables	Frequency (*n* = 248)	Percent (%)
Age (years)		
16-24	118	47.4
25-29	104	42.1
≥ 30	26	10.5
Sex		
Female	111	44.8
Male	137	55.2

Marital status		
Married	86	34.7
Single	156	62.9
Divorced	6	2.4
Tribe		
Hausa	129	52.0
Fulani	40	16.1
Yoruba	43	17.3
Igbo	27	10.9
Others*	9	3.7
Religion		
Islam	226	98.3
Christianity	22	1.7
Mean age of the respondents = 28.2 □ 8.5		
*Others = Zabarma, Igala, etc.		

Table 2a: Knowledge of causes of hepatitis B virus infection among the study participants

Variable	Frequency (*n* = 248)	Percent (%)
Bacteria		
Yes	37	14.9
No	81	32.7
I don't know	130	52.4
Fungus		
Yes	4	1.6
No	114	46.0
I don't know	130	52.4
Virus		
Yes	78	31.5
No	40	16.1
I don't know	130	52.4

Table 2b: Knowledge of transmission of hepatitis B virus infection among the study participants

Variable	Frequency (*n* = 248)	Percent (%)
Sharing of needles or sharp objects		
Yes	228	92.0
No	10	4.0
I don't know	10	4.0
Infected mother-to-child		
Yes	168	67.8
No	34	13.6
I don't know	46	18.6
Unprotected sex		
Yes	231	93.2
No	13	5.1
I don't know	4	1.7
Tattooing		
Yes	128	51.7
No	65	26.3
I do not know	55	22.0
Handshaking		
Yes	116	46.6
No	88	35.6
I do not know	44	17.8
Eating contaminated food		
Yes	80	32.2
No	105	42.2
I do not know	63	25.4

Table 2c: Knowledge of signs and symptoms of hepatitis B virus infection among the study participants

Variable	Frequency (*n* = 248)	Percent (%)
Asymptomatic	128	51.6
Yes	34	13.7
No		
I do not know	86	34.7
Fever		
Yes	189	72.3
No	23	9.3
I don't know	36	14.4

Loss of appetite		
Yes	128	51.7
No	53	21.2
I don't know	67	27.1
Weakness and fatigue		
Yes	61	24.6
No	30	11.9
I don't know	157	63.5
Abdominal pain and/or discomfort		
Yes	59	23.7
No	21	8.5
I do not know	168	67.8
Dark color urine		
Yes	101	40.7
No	57	22.9
I do not know	90	36.4
Yellowness of the eyes		
Yes	15	5.9
No	4	1.7
I do not know	229	92.4
Nausea and/or vomiting		
Yes	63	25.4
No	27	11.0
I do not know	158	63.6
Can HBV infection cause hepatocellular carcinoma?		
Yes	99	40.0
No	52	21.0
I do not know	97	39.0

Table 2d: Knowledge of vaccine availability and treatment for HBV infection

Variable	Frequency (*n* = 248)	Percent (%)
Availability of HBV vaccine		
Yes No		
I do not know	124	50
	30	11.9
	94	38.1
Is the HBV infection treatable?		
Yes No	152	61.0
I do not know	27	11.0
	69	28.0

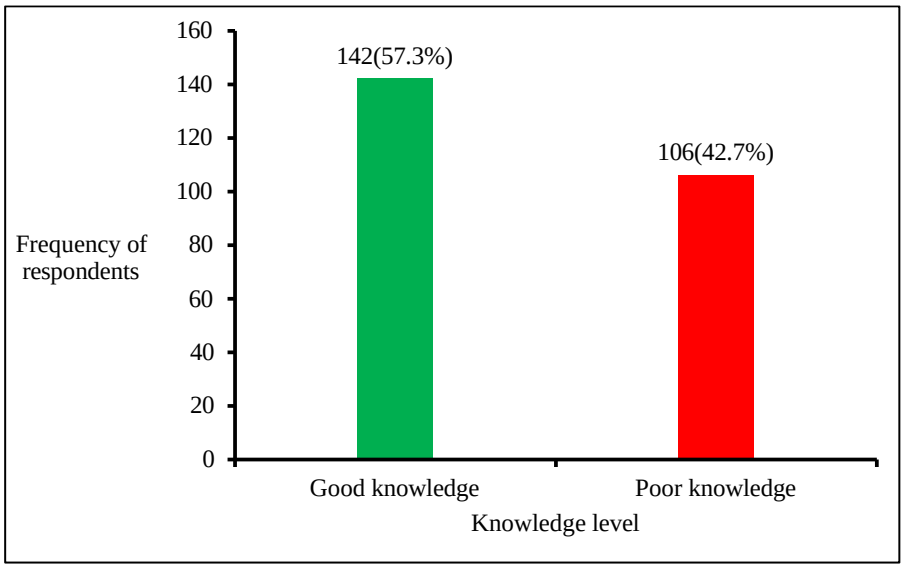

Table 3a: Knowledge of causes of hepatitis C virus infection among the study participants

Variable	Frequency (*n* = 248)	Percent (%)
Bacteria		
Yes	60	24.1
No	114	45.9

I don't know	74	30.0
Fungus		
Yes	17	6.9
No	132	53.1
I don't know	99	40.0
Virus		
Yes	171	69.0
No	52	21.0
I don't know	25	10.0

Table 3b: Knowledge of transmission of hepatitis C virus infection among the study participants

Variable	Frequency (*n* = 248)	Percent (%)
Sharing of needles or sharp objects		
Yes	154	62.1
No	69	27.9
I don't know	25	10.0
Infected mother-to-child		
Yes	162	65.5
No	50	20.0
I don't know	36	14.5
Unprotected sex		
Yes	228	92.0
No	10	4.0
I don't know	10	4.0
Tattooing		
Yes	145	58.6
No	78	31.4
I do not know	25	10.0
Hand shaking		
Yes	60	24.1
No	114	45.9
I do not know	74	30.0
Eating contaminated food		
Yes	137	55.2
No	74	30.0
I do not know	37	14.8

Table 3c: Knowledge of signs and symptoms of hepatitis C virus infection among the study participants

Variable	Frequency (*n* = 248)	Percent (%)
Fever		
Yes	237	95.5
No	9	3.5
I don't know	2	1.0
Loss of appetite		
Yes	86	34.5
No	99	40.0
I don't know	63	25.5
Weakness and fatigue		
Yes	77	31.0
No	146	59.0
I don't know	25	10.0
Abdominal pain and/or discomfort		
Yes	77	31.0
No	145	58.5
I do not know	26	10.5
Dark coloured urine		
Yes	102	41.0
No	94	38.0
I do not know	52	21.0
Yellowness of the eyes		
Yes	188	75.9
No	25	10.0
I do not know	35	14.1
Nausea and/or vomiting		
Yes	86	34.5
No	109	44.0
I do not know	53	21.5
Hepatocellular carcinoma?		
Yes	104	42.0

No	94	38.0
I do not know	50	20.0

Table 3d; Knowledge of availability of vaccine and treatment for HCV infection

Variable	Frequency (*n* = 248)	Percent (%)
Availability of HBV vaccine		
Yes No	60	24.1
I do not know	173	70.0
	15	5.9
Is the HBV infection treatable?		
Yes No	26	10.3
I do not know	151	60.7
	71	29.0

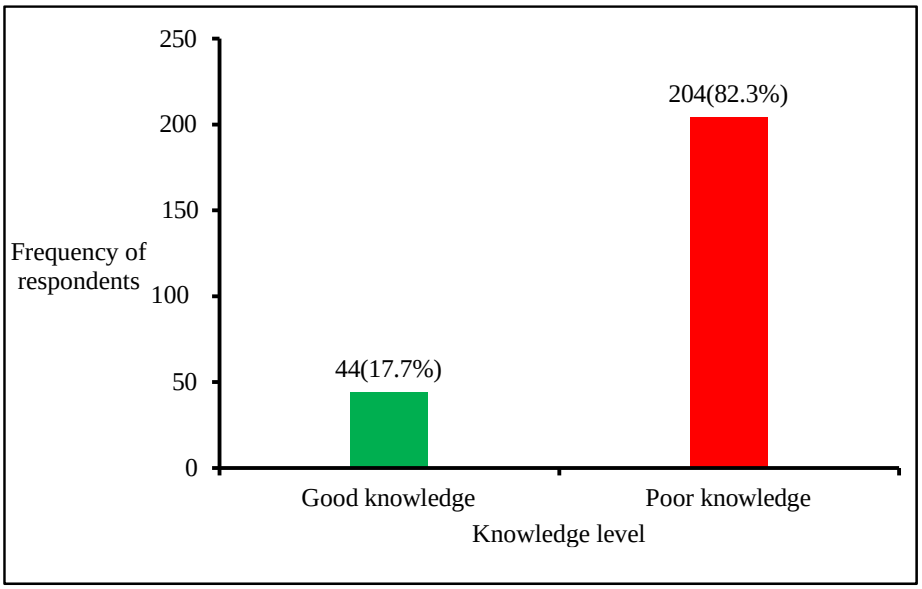

Table 4: hepatitis B and C preventive practices among respondents

Variable	Frequency (*n* = 248)	Percent (%)
Reuse of needles and syringes		
Yes	32	13.0
No	216	87.0
Involved in intravenous drugs usage		
Yes	6	2.4
No	242	97.6
Do you always ensure that clipper is sterilized before they use it on you at the public barbing saloon		
Yes	21	8.5
No	227	91.5
Extra marital un-protective sex		
Yes	118	47.6
No	130	52.4
Do you always ensure that scissors and cutters are sterilized before they use it on you at the manicure and pedicure centers		
Yes	88	35.6
No	160	64.4

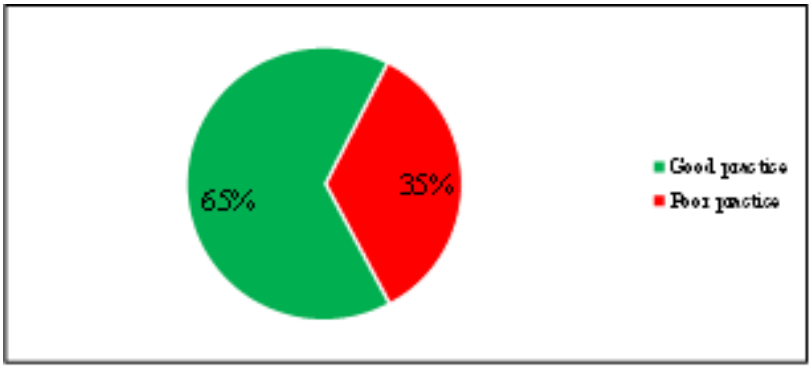

Table 5: Factors associated with the practice of HBV and HCV infection preventive practices

	Practice category (n=248)		
Variables			**Test statistic p-value**
	Good n (%)	**Poor n (%)**	
Age group (Years)			
16-24	78 (66.1)	40 (33.9)	$\chi^2 = 7.200$
25-29	73 (70.2)	31 (29.8)	**p = 0.027**
≥ 30	11 (42.3)	15 (57.7)	
Sex			
Female	69 (62.2)	42 (37.8)	$\chi^2 = 0.886$
Male	93 (67.9)	44 (32.1)	p = 0.347
Marital status			
Married	59 (68.6)	27 (31.4)	Fisher's Exact
Single	101 (64.7)	55 (35.3)	p = 0.208
Divorced	2 (33.3)	4 (66.7)	
Tribe			
Hausa- Fulani	113 (66.9)	56 (33.1)	
Yoruba	28 (65.1)	15 (34.9)	$\chi^2 = 1.976$
Igbo	17 (63.0)	10 (37.0)	p = 0.577
Others	4 (44.4)	5 (55.6)	
HBV infection knowledge level			
Good knowledge	103 (72.5)	39 (27.5)	$\chi^2 = 7.630$
Poor knowledge	59 (55.7)	47 (44.3)	**p = 0.006**
HCV infection knowledge level			
Good knowledge	33 (75.0)	11 (25.0)	$\chi^2 = 2.211$
Poor knowledge	129 (63.2)	75 (36.8)	p = 0.137

IV. Discussion

The study assessed knowledge and practices regarding prevention of Hepatitis B and C infections among students of a tertiary Institution in Sokoto, North-Western Nigeria. The mean age of the respondents was 28.2 ± 8.5, and majority of them 118 (47.4 %) were within the age group of 16-24 years. This is similar to studies conducted among medical students in Ethiopia and Pakistan where the majority of the respondents were within the age group of 20-24 and 18-21 years respectively.[16,17] However, this study contrasts studies conducted in Malaysia and Macedonia where age groups of the respondents were higher.[18, 19] The larger proportion (55.2 %) of the respondents in this study were males. This is in consonance with studies done in Pakistan, Malaysia, Ethiopia and in Eastern Nigeria,[16, 18, 20, 21] but contrary to studies carried out in Egypt, Macedonia, and Pakistan in which majority of their study respondents were females.[17, 19, 22] Nearly two-thirds of the respondents were single and this finding is similar to a study conducted in Ethiopia (91%) and Eastern Nigeria (80.2 %).[16, 21] this finding is not surprising as most students would rather remain single so as not to be distracted by family life. However, our findings are in contrast to studies in Malaysia and Macedonia which recorded 51.2 % and 72.2 % of married respondents respectively.[18, 19]

Less than one-third 78 (31.5%) of our study participants knew that HBV infection is caused by a virus, this finding is in synergy to what was recorded by jalina et al (28.2%).[26] However, this value is higher than the results obtained in Anambara.[27] Similarly, our finding is in contrast with studies in Macedonia[9] and Pakistan [20] .

which recorded higher values.[20] In the current study, 93.2%, and 92% of the study participants respectively knew that HBV and HCV infections could be transmitted via unprotected sex. This finding is consistent with the findings of the studies by Jalina et al. and Teshome et al. who reported that 86. 3 %, and 89.5 % of their respondents knew that HBV infection could be transmitted by unprotected sex respectively.[16,26] However, our value is higher than the results obtained by Neleska et al. and Dagnew et al.[19, 27]

About 23.7% and 40.7 % of the study participants knew that HBV infection can present with abdominal pain, dark colour urine and yellowish of the eyes respectively. These findings are lower compared to studies done in Gambia and Abuja, Nigeria in which 46.1 % and 70.2 % respectively knew that abdominal pain could be a symptom of HBV infection.[28, 34] Additionally, regarding dark colour urine in HBV infection, higher values; 69.0

% and 73.4 % were reported by Orji et al., and Mairo et al., respectively.[28, 35] A low proportion of study participants knew that HBV infection could present with jaundice. This finding is lower compared to what was observed in several other studies.[18, 34, 35] Forty percent of the study participants in the current study reported that HBV infection could cause HCC. This finding is higher than what was obtained in a study conducted in Egypt (10.3%)[22] but lower compared to findings from studies[33,34, 35]

More than two- third and 61.0 % knew that there is vaccine and treatment availability for HBV infection.
Our finding regarding vaccine availability was similar to what was reported in Egypt[22] and Pakistan[20]

The overall good knowledge of HBV infection (57.3 %) as documented in this study is lower than what was recorded in studies among medical students by Singh and Jain (86.7%) and Alan et at., (70.3% .[23, 24] The

difference between our finding and these studies may not be unrelated to the fact that these studies in India were done among medical students who are expected to have the background knowledge of these viral infections from lectures and seminars. However, our finding is comparable with what was documented by Nwangwu et al. and Teshome et al.[16, 21] Additionally, our finding is similar to what was recorded in Ethiopia (56.2 %)[25] but higher than the 14% and 44.9% observed in similar studies in Iraq.[15, 29]

More than two-third (69.0 %) of the study participants knew that HCV infection is a virus disease. This finding is in disagreement with studies in Pakistan, Egypt, and Taibah University, Saudi in where much higher values were recorded (92.7 %), (97.3 %) and (84.8 %) respectively.[20, ,22, ,38] However, studies in India and Eastern Nigeria reported lower values than what was obtained in the current study; 28.2 % and 44.8 % respectively.[26, 39] In this study, up to 62.1 %, and 58.6 %, 92.0 %, 65.5 %, and 24.1 % of the study participants reported that HCV infection can be transmitted via sharing of needles and syringes Tattooing, unprotected sex, mother-to-child, and handshaking respectively. Studies by Razi et al., Warssamo and Belay and Demsiss et al. reported higher values regarding the transmission of HCV infection via the sharing of needles and syringes.[20, ,40, ,41] However, our value is higher compared to studies by Pham et al, and by Egbe et al.[32, 39] Study by Pham et al, observed a higher value (92.5 %) regarding knowledge of transmission of HCV infection via tattooing.[32] However, our finding is higher than some studies conducted in Pakistan and in Eastern Nigeria.[20,,39] Our results about the mode of HCV transmission by un-protected sex was higher compared to several studies across the globe.[17,, 22, 40, 41] However, our finding is similar with a study; (86. 4 %) in Eastern Nigeria by Nwangwu et al.[21] Similarly regarding the knowledge on vertical transmission of HCV infection our value is in agreement to what was reported by Warsammo et al.[40], but much higher value was obtained by Demsiss et al.[41] furthermore, our finding is higher than what was obtained in Eastern Nigeria by Egbe et al.[39]

About 42.0% of the study participants in the current study stated that HCV infection can cause Hepatocellular carcinoma, this finding is contrary to studies by Najim, Warsammo et al. and Pham et al. who reported higher values compared to our study, (79.1 %), (70.6 %), and 89.6 % respectively.[32, 38, 40,] However, our value is higher (10.3 %) than the value reported by Gamal et al.[22]

Close to a quarter (24.1%) and 10.3 % of our study participants stated that there is vaccine and treatment availability of HCV infection. Regarding the knowledge on the availability of HCV vaccine, study by Tazeem et al., and Najim et al. recorded higher values 89.3%, 76.4% respectively compared to what we observed in the current study.[17,38] However, a study by Razi et al. recorded lower value compared to that of the current study (13.7 %).[20] The knowledge on the availability of HCV treatment in our study is lower compared several studies done across the globe.[20, 21, 22, 38]

The overall knowledge of HCV infection among our study participants is 57.3 %. This finding is closely similar to studies in Pakistan among non-biological students, and Malaysia, Iran among Nurses, Ethiopia among Staff of a university, and in Eastern Nigeria among HBV seronegative and positive participants which reported 62. 5 % and 52. 7 %, 52.9 %, 60.9 % and 56.3 % respectively.[18, 20, 21, 36] However, a study conducted in Egypt reported a higher value than ours, in which 97. 3 % was documented as the overall knowledge on HCV infection among university students.[22] Similarly, study conducted by Hussain et al, 2016 in Pakistan observed a lower value than what we reported.[37]

About 32 (13.0%) of the respondents reuse syringes/needles and 2.4 % engage in Intravenous drugs use (IVD). Regarding reuse of syringes/needles, Higher values were reported from several studies across the globe.[20, 21, 22, 39] Also regarding the IV drugs use, Egbe et al. and Niriella et al. reported higher values compared to finding in the current Studies.[39,44] Close to half of the respondents in this study reported un-protective sex practices. This similar to a study by Bitty-Anderson et al.[45], but in contrast the studies by Egbe et al. and Nwangwu et al. who reported 32.2% and 32.6% respectively.[21, 39] Most of the respondents in this study (91.5%) do not use new or sterilized blade in the barbing saloon and more than half (52. 4%) of them do not ensure that scissors or cutters are not sterilized before use in manicure or pedicure centres. This is closely similar to Studies by Gamal et al. and Razi et al. who reported 50%, and 49.6 % respectively concerning the use of new or sterilized blades in barbing saloons.[20, 22]

In the current study, age group 25-29 was significantly associated with good practices of the prevention of HBV and HCV infection. This finding is similar to studies conducted by Chonka et al. and Kabamba et al.[46, 47] Good knowledge of HBV infection was also found to be significantly associated with the practice of HBV/HCV infection prevention. This observation is similar to what was reported in studies among undergraduate students in Ethiopia and Malaysia by Aynalem et al. and Ahmad et al.[48, 49]

V. Conclusion And Recommendations

On the average, the knowledge HBV was good, but the knowledge of HCV was abysmally low among the respondents. The good practices regarding prevention of both HBV and HCV was reported among the two-third of the respondents. Unsafe sex and use of unsterilized scissors and cutters were the common unsafe practices reported by the respondents. The age and knowledge of HBV was found to be statistically significantly associated

with practice.

Continuous awareness campaign in the tertiary institutions by the health team of the schools' management will go a long way in increasing knowledge about the disease and improvement of good preventive practices