

RISK ASSESSMENT AND AWARENESS OF PREVENTIVE MEASURES AGAINST HEPATITIS B AMONG YOUNG GRADUATES IN BAYELSA STATE NYSC ORIENTATION CAMP IN KAIAMA, BAYELSA STATE:

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Abstract

Introduction: Despite the fact that the Hepatitis B virus is so virulent and with a high rate of infectivity, many young people are still exposed to risk factors simply because they are not aware of possible modes of transmission. Young graduates are exposed to various habits and risks of contracting Hepatitis B Virus infection during their stay in the tertiary institutions. This study aimed to assess exposure to risk factors of HBV infection and determine awareness of preventive measures against Hepatitis B infection among young university graduates at the NYSC Orientation Camp in Kaiama, Bayelsa State.

Materials and Methods: A descriptive cross-sectional study design was used. Sample size was 148. An online self-administered structured questionnaire administered using a google online form was utilised. It contained both open and closed questions. Data was analysed using the Statistical Package for Social Science (SPSS) version 23.0. The data was summarized using descriptive statistics of mean, standard deviations and percentages for socio-demographic characteristics.

Results: Mean age was 25.39 years and ranged from 20 to 31 years, Males (79, 53.4%) female (69, 46.6%). About 74(50%) of respondents were not aware about any form of preventive measures while about 74(50%) knew of abstinence, use of PPEs, regular screening, vaccination, avoiding use of contaminated sharps and body fluids. 72.4% of the respondents were exposed to one form of risk factor or the other, and only 27.6% of the respondents reported not being obviously exposed to any of the assessed risk factors. There was no association between having a health science professional background and awareness of preventive measures.

Keywords: Risk assessment, NYSC Orientation camp, Hepatitis B, prevention.

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INTRODUCTION

Hepatitis B is a contagious and life-threatening infection that attacks the liver and can cause both acute and chronic diseases. Hepatitis B is transmitted via the parenteral route, percutaneous or per mucosal exposure to infected blood or body fluids.¹ In low endemic regions, most cases of

Hepatitis B are related to unprotected sexual exposure and in high endemic regions; it is transmitted from mother to child in addition to other sources². About 5% of the world's population are asymptomatic carriers and 350 million people worldwide are chronic carriers of Hepatitis B virus (HBV)³.

It is estimated that 5 – 15% of adults in sub-Saharan Africa are chronically infected with HBV⁴. At present, there seems to be no cure but the disease is highly preventable with the introduction of Hepatitis B vaccines since 1982⁵. Despite the fact that the Hepatitis B virus is so virulent and rate of infectivity is high, many young people are still exposed to risk factors simply because they are not aware about possible modes of transmission. In addition, there could be infected and infectious persons who are unaware of their status because the symptoms in chronic carriers may not be apparent or recognized.

Young graduates are exposed to various habits and risks for contracting Hepatitis B Virus infection during their stay in the tertiary institutions through unprotected sexual intercourse, sharing of sharps, tattoos, use of skin piercing weapons, etc. Furthermore, their risk of chronic hepatitis is further heightened by alcohol intake which further injures the liver. Young graduates who are assumed to be literate may yet be deficient in knowledge of simple facts about preventing the disease probably because of their professional training background or because of gender, religion or any other factor. Sadly, some get diagnosed only when they have advanced liver disease.

Furthermore, the symptoms for Hepatitis A, B, C, D and E are all similar though they are caused by different viruses and modes of transmission. If more Nigerian young graduates become chronic carriers or remain acutely infected, a huge proportion of the nation's workforce may be lost, bed-ridden or struggling to manage the condition with the already expensive treatment resulting in a great pressure on the already scarce and lean health resources.

The National Youth Service corps scheme (NYSC) is a compulsory exercise for all Nigerians after completing their tertiary education home and abroad with some exemptions due to age above 30 years at graduation. There is usually an orientation camp in each state of the Federation and Federal

Capital Territory. Graduates from various institutions are batched and live a regimented life in the three week-long orientation camp. There are usually three batches a year sometimes with double streams per batch and each camp having over 1000 young graduates. The scheme provides an excellent opportunity to engage fresh graduates and to impart live-saving knowledge and skills and carry out interventions that may help them live a healthier life.

The study aimed to assess exposure to risk factors of HBV infection and determine awareness of preventive measures against Hepatitis B infection among young graduates of tertiary institutions domiciled in NYSC Orientation Camp at Kaiama, Bayelsa State. To the best of our knowledge, no such study has been done before and we believe the findings will be useful to the NYSC as it may prompt a nation-wide survey that will involve all other camps and lead to appropriate interventions to reduce the incidence of HBV in the country.

MATERIALS AND METHODS

Study area

Bayelsa State NYSC orientation camp is located in Kaiama – a town which is about half an hour drive from Yenagoa, the capital city of Bayelsa State. Kaiama is the headquarters of Kolokuma/Opokuma LGA, one of the eight LGAs that make up the state. The camp is headed officially and administratively by the State Coordinator of the NYSC. Functionally, the camp is headed by the Camp director who directly oversees the activities of the various departments. These departments include the Kitchen, Security, Clinic, Lectures, Skill Acquisition and Entrepreneurial Development (SAED), Sanitation, Sports, Socials, Registration, Public Relations to mention a few. Each department is headed by an official who reports to the Camp director.

Activities in the camp include Man O War drills, parades, lectures on skills acquisition, sports and social events like carnivals, dance and drama amongst others. Hostels served as accommodation for corps members and officials. Life in the camp is

regimented with each major activity heralded by the sound of a bagel. Campers wake up as early as 4 am and go to bed as late as 10 pm daily. For effective coordination of the 1,625 corps members during this orientation, they were divided into 10 platoons, each having about 160 corps members. Each platoon was headed by a platoon leader (a corps member) and executives who reported to the Platoon Officer (an NYSC official). Each platoon had a representative of the military, referred to as a platoon inspector and a Man O War inspector.

Food was served free to campers from a common source organized by the Scheme, however, there were over 20 other food sales outlets to buy from. Water supply was by borehole situated close to the makeshift kitchen used in the camp and distribution was by tankers. Drinking water was sold in sachets. There was a camp clinic which catered for the health needs of the campers. There was no particularly scheduled time for health talks or health promotional activities.

Study population

Respondents were drawn from the Batch C-1 2018 NYSC orientation camp for corps members comprising 813 males and 812 females.

Study design

This was a cross-sectional study.

Sample Size determination

The Cochran's sample size formula for cross-sectional study design was used⁶.

$$n = \frac{Z_{\alpha}^2 pq}{d^2}$$

where n is minimum sample size required, Z_{α} is standard normal deviate at 95% confidence level (1.96), **d** is desired precision (5%), **p** is prevalence of HBV infection 12.2%⁷ and q is 1-p. $n = \frac{(1.96)^2 \times 0.12 \times 0.88}{(0.05)^2}$

n=162, Applying correction formula for a population less than 10,000

$$N_1 = \frac{N_0}{1 + \frac{N_0}{P}}$$

Where N1 is final minimum population size, P is target population size, 1625. Final sample size is 148.

Data Collection

Sampling technique and Data Collection

An online questionnaire, designed using Google Online forms was utilized. Each platoon has a *WhatsApp* platform and from the list on the platform, an average of 16 corps members were selected from each of the 10 platoons and the link to the questionnaire was sent to them. Instruction was given and they were encouraged to click on the link, fill and submit the questionnaire. The structured questionnaire contained open and closed questions.

The questions included socio-demographic characteristics such as age, sex and religion. There were questions to assess exposure to risk factors as common among young graduates. Risk factors assessed included sexual activity, use of nose rings, use of contaminated sharps, alcohol intake and living with infected persons. Risk was graded in domains in ascending order as domain A to F, with domain A as no/least risk and domain F as Highest risk.

Data Analysis

Data was analysed using the Statistical Package for Social Science (SPSS) version 23.0 (SPSS Inc., Chicago, Illinois, USA). The data was summarized using descriptive statistics of mean, standard deviations and percentages for socio-demographic characteristics. In addition, the socio-demographic characteristics were presented in frequency tables and appropriate charts.

Ethical Considerations

Approval to carry out the study was obtained from the state NYSC coordinator and each participant consented to participating in the research by ticking a consent note.

RESULTS

Socio-demographic data

A total of 148 corps members completed the online questionnaire. The mean age was 25.39 +/- 2.830 years and ranged from 20 to 31 years. There were more males (79, 53.4%) than females (69, 46.6%), and more Christians (134, 90.5%) than Muslims (14, 9.5%). Table 1 shows the ages of the respondents and the frequency while Table 2 shows the gender distribution. Respondents from social sciences seemed the largest while that of Law the least from Table 4.

Table 1: Age of respondents

Age in years	Frequency	Valid Percent	Cumulative Percent
20	5	3.4	3.4
21	15	10.1	13.5
22	10	6.8	20.3
23	10	6.8	27.0
24	15	10.1	37.2
25	17	11.5	48.6
26	17	11.5	60.1
27	17	11.5	71.6
28	19	12.8	84.5
29	17	11.5	95.9
30	5	3.4	99.3
31	1	0.7	100.0
Total	148	100.0	

Table 2: Sex of respondents

Sex	Frequency	Valid Percent	Cumulative Percent
Male	79	53.4	53.4
Female	69	46.6	100.0
Total	148	100.0	

Table 3: Religion of respondents

Religion	Frequency	Valid Percent	Cumulative Percent
Christianity	134	90.5	90.5
Islam	14	9.5	100.0
Total	148	100.0	

Professional background of the respondents was spread across Health Sciences (9.5%), Social Sciences (22.3%), Management and business studies (17.6%), Agricultural sciences (1.4%), Arts

(6.8%), Law (2.0%), Engineering (12.2%), Natural Applied sciences (6.8%) and others (21.6%) as presented in table 4.4.

Table 4: Professional background of respondents

Professional background	Frequency	Valid Percent	Cumulative Percent
Health sciences	14	9.5	9.5
Social sciences	33	22.3	31.8
Business management sciences	26	17.6	49.3
Arts	10	6.8	56.1
Engineering	18	12.2	68.2
Natural and Applied Sciences	10	6.8	75.0
Law	3	2.0	77.0
Agricultural sciences	2	1.4	78.4
Others	32	21.6	100.0
Total	148	100.0	

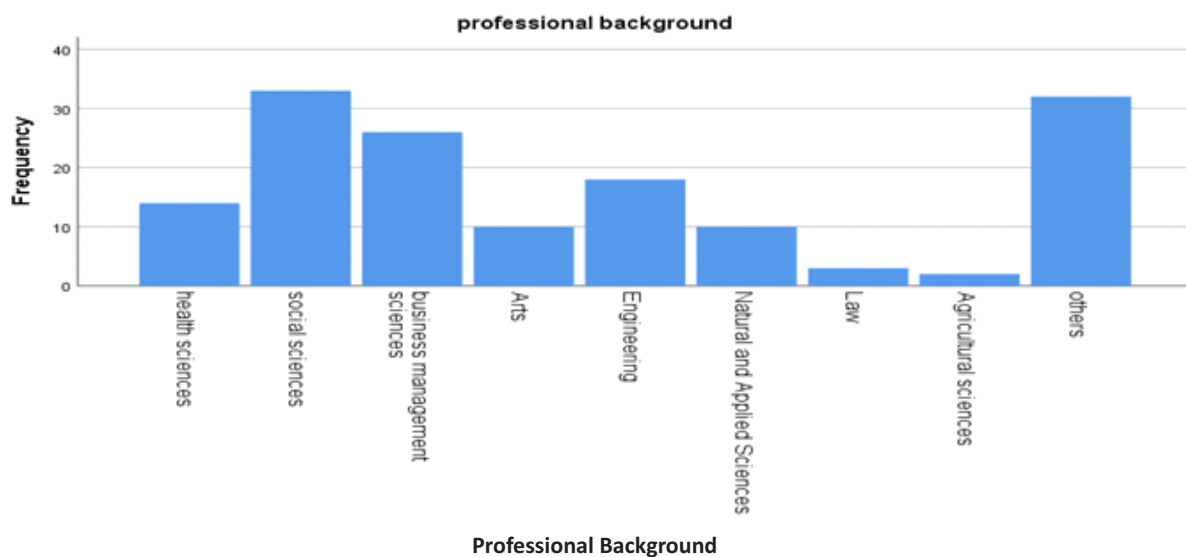


Figure 1: Professional background of respondents

Awareness of preventive measures against Hepatitis B

Concerning preventive measures, Table 5 shows awareness of preventive measures against Hepatitis. About 74 (50%) respondents had no idea while a total of about 74 (50%) knew of Abstinence,

use of PPEs, Regular screening, Vaccination, avoiding use of contaminated sharps and body fluids.

Table 5: Responses on Awareness of preventive measures for HBV

Respondents responses		Frequency
	Abstinence	12
	Use of PPEs	2
	Regular screening	3
	Vaccination	29
	Avoid contaminated sharps and body fluids	28
	I don't know	74
	Total	148

Assessing exposure to risk factors was in 6 domains A to F from least risk to Highest risk as shown in table 6. Domain A had 42 (27.6%) persons not exposed to any of the stated risk factors. Domain B had respondents who were only sexually active which had about 36 (23.7%) persons. Domain C had respondents who were sexually active and also having haircut without personal clipper which had 28 (18.4%) persons. Domain D had respondents who were sexually active, not using personal clippers and also using nose rings which had 23 (15.1%) persons. The Domain E had respondents

who apart from being sexually active, not using personal clippers, using nose rings also were living with a known infected person and it had 15 (9.9%) persons. Domain F had persons who were sexually active, not using personal clippers, using nose rings, living with infected persons and also using alcohol which had 4 (2.6%) persons. Summarily, while 72.4% of the respondents were exposed to one form of risk factor or the other, only 27.6% of the respondents were not obviously exposed to any of the risk factors.

Table 6: Responses on risk exposure to HBV Domains of Risk exposure

	Frequency	Percent	Valid Percent	Cumulative Percent
Domain A: none	42	27.6	27.6	30.3
Domain B: sexually active	36	23.7	23.7	53.9
Domain C: sexually active+haircut without personal clipper	28	18.4	18.4	72.4
Domain D: sexually active+haircut without personal clipper+use of nose ring	23	15.1	15.1	87.5
Domain E: sexually active+haircut without personal clipper+use of nose ring+living with infected person	15	9.9	9.9	97.4
Domain F: sexually active+haircut without personal clipper+use of nose ring+living with infected person+take alcohol	4	2.6	2.6	100.0
Total	148	100.0	100.0	

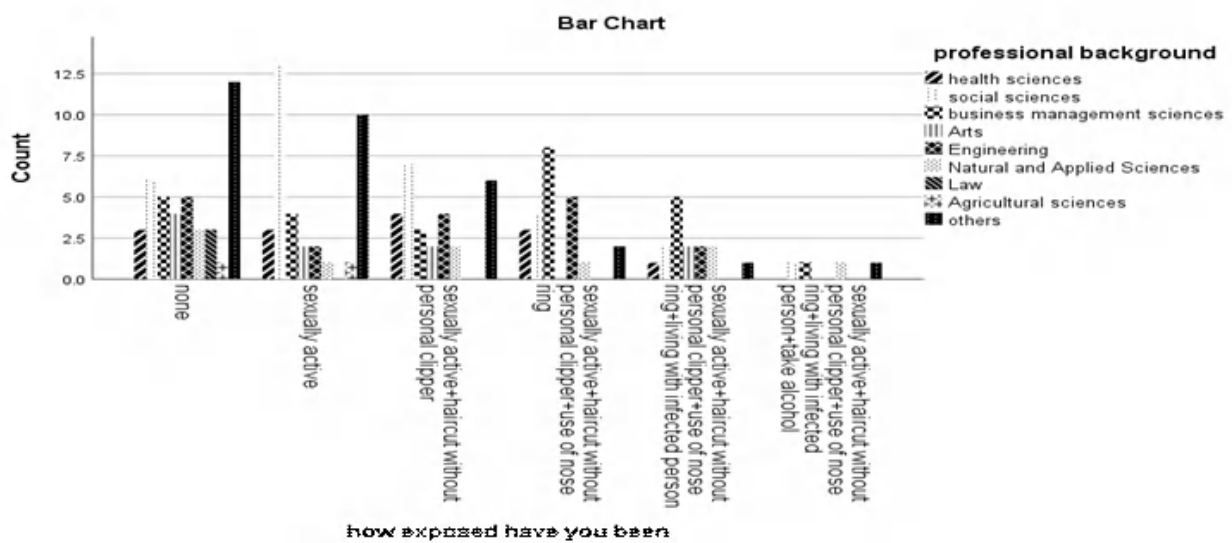


Figure 2: Comparison of Professional Background with exposure to risk

The relationship between the exposure to risk factors and professional background among the respondents was shown in fig 2. It was discovered that respondents among the Health Sciences profession were equally exposed to risk factors as those in other professions. None of the respondents in the Law profession was exposed to any risk factor above.

DISCUSSION

This study assessed the awareness of preventive measures against Hepatitis B infection by young graduates domiciled in an orientation camp of Bayelsa State and it revealed that 50 percent of the respondents were not knowledgeable about those measures to prevent. Comparing findings in this study with a similar study carried out in Irepodun LGA of Kwara State among graduate teachers in a secondary school, knowledge of prevention of HBV was found 58.8%⁸. The reason for similar result could be due to the similar characteristics and exposures of respondents who could be also serving corps members. Hence knowledge of preventive measures is not higher in any part of the country as young graduates who teach in secondary schools in various state are mostly corps members. In our study, about 74 (50%) respondents had no idea while about 74 (50%) knew some preventive measures. This is quite alarming especially when

the virus is highly infectious noting that there is a risk of contracting the disease without knowing since young graduates on camp are exposed to risk factors by virtue of their adventurous nature and environments in which they find themselves and also because the virus has a very low infective dose and is stable and infectious on environmental surfaces and other objects. There is therefore the need to step up Hepatitis B health education campaign especially in orientation camps across the country. This is however lesser than findings from a study carried out among university students across several departments in the University of Jos which revealed about awareness in 88.4% of respondents⁹. The study also recorded a high-risk perception among respondents. This could probably be due to the influence of the tertiary health institution in enlightening such students also emphasizing the need for a planned and coordinated integration of health talks into the orientation program from representatives of the tertiary health institutions within the catchment area. This will go a long way to enlighten our young graduates on hepatitis B prevention.

Another finding from our study was that about only 27.6% of respondents were not exposed to any risk factor which included sexual activity, use of unsterilized clippers, use of nose rings and living

with an infected person. The remaining 72.4% were exposed to either one, both, or all of the above factors. This heightens their risk for contracting the disease and emphasizes the need for screening in order to identify positive cases and early vaccination for those negative cases. A similar study carried out in India to assess attitude of medical students in a high risk setting¹⁰ revealed more than 73.3% exposed to risk factors.

Determining if professional background would be significant for risk factor among those of the health sciences, our study reveals significant associations with the various assessed risk factors. This is comparable to a study carried out to assess the knowledge of clinical students of the Obafemi Awolowo University (OAU), Ile-Ife about hepatitis B virus infection and its modes of prevention. The study concluded that clinical students had poor knowledge of safe sexual practices and post-exposure prophylaxis as preventive measures¹¹.

Although this virus is virulent, vaccination is presently the best-known preventive measure.¹¹ Our study did not explore the vaccination status of corps members against Hepatitis B infection. However, a deductive assessment revealed only 29 respondents (19%) who knew about vaccination with probably much less having ever received or completed Hepatitis B vaccination. This is a wake-up call for the institutionalization of compulsory vaccination before mobilization for orientation camp as it is the only guarantee for protection against Hepatitis B among young graduates' risky behaviours on camp.

RECOMMENDATIONS

To NYSC, Bayelsa State

The National Youth Service Corps should integrate health talks on prevention and compulsory screening into its orientation course to enlighten young graduates on Hepatitis B infection and other preventable diseases.

To NYSC, Headquarters

The present medical report required before entering Orientation camp should include a possible vaccination record against Hepatitis B as it is the

safeguard against the disease during and beyond the service year.

Any free screening done on camp should be followed with commencement of first dose of the vaccine which can be completed within the service year at a subsidized cost in any tertiary or secondary government facility. State Governments could partner with NYSC on this.

This study should be replicated in other camps across the 36 states of Nigeria.

To Federal Ministry of Health

The Federal Ministry of Health should cascade health education enlightenment and awareness campaigns to NYSC Orientation Camps

CONCLUSION

From the study, about half of the respondents were unaware of preventive measures against Hepatitis B infection and only about 72.6% of respondents were exposed to the risk factors assessed in this study. Health Science professional background was not associated with awareness of preventive measures.

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Authors' contributions

Author 1 designed the study, performed the statistical analysis, wrote the protocol, managed literature searches and wrote the first draft of the manuscript. Authors 2 and 3 reviewed and managed the analyses of the study. All authors read and approved the final manuscript.

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