



EFFECT OF HEALTH EDUCATION ON KNOWLEDGE AND PREVENTION OF HEPATITIS INFECTION AMONG SECONDARY SCHOOL STUDENTS IN IBADAN NORTH LOCAL GOVERNMENT AREA OF OYO STATE

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ABSTRACT

The study examined the effect of health education on knowledge and prevention of hepatitis infection among senior secondary school students in Ibadan North Local Government Area of Oyo State. The research design was pre-test, post test, control group, quasi-experimental design. A total of 180 students were selected from SS1 and SS2 through Multistage sampling techniques. A self-structured questionnaire and instructional guide on health education and hepatitis B were constructed and used for the research. Five research hypotheses were formulated and tested. Data were analyzed using Descriptive statistics and Analysis of Covariance (ANCOVA) at 0.05 level of significance. Finding showed that there was a significant difference in the pre test and post test score of secondary school students following health education intervention, on the knowledge of hepatitis B ($F(2,177) = 12.708, P < .05, \eta^2 = .067$), causes of Hepatitis B ($F(2,177) = 7.191, P < .05, \eta^2 = .039$), mode of transmission of Hepatitis B ($F(2,177) = 78.683, P < .05, \eta^2 = .308$), signs and symptoms of hepatitis B ($F(2,177) = 35.294, P < .05, \eta^2 = .166$), prevention of hepatitis B ($F(2,177) = 17.117, P < .05, \eta^2 = .088$), following a four weeks health education programme in Ibadan North Local Government Area of Oyo State. Based on these findings, the study recommended that health education/ health campaign should be directed to school students and Specific risk practices such as unsafe sexual intercourse, multiple sexual partners, sharing of sharp instruments for body piercing and unhealthy medical instrumentations should be discouraged. Governments should make screening free and there should be an adequate management plan for those who tested positive and vaccination of those who tested negative. Existing childhood immunization programs should be intensified to improve coverage.

Keywords: Hepatitis B, signs and symptoms,

INTRODUCTION

Hepatitis is a medical condition defined by the inflammation of the liver and characterized by the presence of inflammatory cells in the tissue of the organs the condition can be self limiting (healing on its own) or can progress to fibrosis (scarring) and cirrhosis, it is acute when it last less than six months and chronic when it persists longer (Olubode, 2009) he explained further that viral hepatitis has emerged as a major public health problem throughout the world affecting several millions of people thus leading to increase in morbidity and mortality rate. There are different types of hepatitis such as A, B,C, D and E, Types A, B and C are the most common and a concert, diagnosis can only be made by testing parents 'sera' for the presence of specific anti viral antibodies (Bell and Vogt, Wise M.E, and Finelli, 2008) (Ananthanarayan, Paniker, (2009),

Hepatitis B is one of the most common infectious diseases in the world and is a major public health problem. It has been estimated that 350 million people worldwide are chronic hepatitis B virus (HBV) Carriers (Maddrey 2001). The prevalence of chronic HBV infection shows wide regional variation; ranging from high rates of greater than 8% found in Africa, Asia and the western Pacific to intermediate rates of 2.7% in Southern and Eastern Europe to low rates of less



than 2% in Western Europe, North America and Australia (Zaki, Darnstadt, Saha and Baten, 2003). Viral hepatitis is a global health problem that affects hundreds of millions of children and adults. Although multiple viral pathogens have been associated with hepatitis, three in particular hepatitis A, B, and C are responsible for the majority of virally-linked hepatitis cases. Hepatitis D and E infections are also important, although not as commonly diagnosed. According to the World Health Organization (WHO2008), 2 billion people have been infected with the hepatitis B virus (HBV), and more than 350 million have a chronic HBV infection. In addition, it has been estimated that up to 3% of the world's population has been infected with hepatitis C virus (HCV) (WHO, 2002), of which 170 million people are chronically infected, and an additional 3 to 4 million people are infected each year. Infections of HBV and HCV are by far the most prevalent, and their consequences can be serious. Long-term chronic infection with one or both of these viruses is the most common cause of liver fibrosis and cirrhosis, leading to liver failure and hepatocellular carcinoma (HCC). Many young children who become infected with the hepatitis A virus (HAV) remain asymptomatic, older children and adults may develop jaundice and severe illness, be absent from school or work for weeks or even months, and be at risk of liver failure and death. Viral hepatitis is the most common cause of hepatitis worldwide, other common causes of non viral hepatitis include toxic and drug induced, alcoholic autonomous, fatty liver and metabolic disorders (Longo 2012) he stated further that less commonly causes are some bacterial, parasite, fungul, mycobacterial and protozoal infection. Barq (2011) reported that certain complications of pregnancy and decreased blood flow to the liver can induce hypatitis, cholestasis (obstruction of bile flow) due to hepatocellular dysfunction biliary tract obstruction, or biliary atresia can result in liver damage and hepatitis (Hov. J., Liu Z. And Gu F, (2005),. The most common risk factors for hepatitis A infection include unreliable access to safe drinking water and other indicators of low socioeconomic status. A growing economy and improved access to water often correspond with a decrease in hepatitis A incidence (Jacobsen and Koopman, 2005). Hepatitis D virus (HDV) is a sub viral satellite that requires the presence of another virus to replicate. Commonly, HDV infection will occur with HBV, either as a simultaneous co-infection or as a super infection in a previously HBV-infected individual. HDV co-infection with HBV can result in more serious complications, including a greater likelihood of liver failure and a mortality rate as high as 20%. Hepatitis can be manifested in acute form with jaundice, dark urine, anorexia, weakness, severe fatigue, pain and tender right upper quadrant (RUQ). Viral hepatitis is one of the five important infectious causes of premature death in the world. At least one million people die from hepatitis in the world yearly. About two billion patients are suffering from hepatitis B, and there are more than 350 million carriers in the world. Hepatitis is a preventable disease and the students of medical sciences and health educators have an effective role in its prevention.

WHO (2010) remarked that HBV is very infectious and is spread through infected blood and other body fluids (e.g. semen) and can live outside the body for more than 7 days. HBV is most frequently passed on through; unprotected sex with someone who is infected, sharing contaminated needles or drugs injecting equipment, through transfusion of unscreened blood, using non sterilized equipment for acupuncture/body piercing and from an infected mother to her baby, most commonly during delivery (Olabode, 2009) he stressed further that although various body fluids (blood saliva, menstrual and vaginal discharges, serious oxidates, seminal fluid and breast milk) have been implicated in the spread of infection, infectivity appears to be especially related to blood.

Initial features of hepatitis are of non-specific flu like symptoms, common to almost all acute viral infection and may include malaise, muscle and joint aches, fever, nausea or vomiting diarrhea and headache, more specific symptoms, which can be present in acute hepatitis from any cause are: profound loss of appetite, dark urine (among smokers) yellowing of the eyes and skin and abdominal discomfort. Physical findings are usually minimal, apart from jaundice, tender enlargement of the liver, enlarged lymph nodes in 5% and enlargement of spleen. Symptomatic individuals may present after a convalescent stage of 7 to 10 days with the total illness lasting



weeks. A small proportion of people with acute hepatitis progress to acute liver failure in which the liver is unable to remove harmful substances from the blood (leading to confusion and coma due to hepatic encephalopathy) and produce blood proteins (leading to peripheral edema and bleeding). The presence of jaundice indicates advanced liver damage which leads to weight loss, easy bruising and bleeding, peripheral edema (swelling of the legs) and accumulation of ascites (fluid in the abdomen) (Wasley, Fiore and Bell, 2006). They summarized the symptoms of hepatitis to include the following: Fatigue (tiredness) general feeling of being unwell (malaise), flu-like symptoms (e.g. headaches, muscle aches, low grade fever), lack of appetite, weight loss, nausea and vomiting, abdominal pain, jaundice (yellow tinge to skin and mucus membranes), diarrhea, itching of the skin, ten or dark-colored urine, pale bowel movements.

Effects of hepatitis were highlighted by Olabode (2009) as follows: Liver cirrhosis, characterized by replacement of liver tissue by fibrosis (scar tissue, hepatomegaly a conclusion of having an enlarged liver resulting into infection, direct toxicity, hepatic tumours as metabolic disorder, splenomegaly an enlargement of spleen, constipation, nausea vomiting and stomach pain, fast or pounding heart beats, swelling of face lips tongue or throat, headache with severe blistering peeling and red skin rash, joint and body ache.

Health Education according to Donatelle (2009) is the principle by which individuals and groups of people learn to behave in a manner conducive to the promotion, maintenance or restoration of health. In some years back many cases of hepatitis go undiagnosed because the disease was mistaken for flu until recent years when the prevalence of the liver destroying disease became much more alarming as a result of this deadly disease called hepatitis, besides many people do not know they have the disease until they get tested, which shows that majority of people don't have the knowledge of hepatitis. Hepatitis is a preventable disease if people have the knowledge of its causes, symptoms and how it can be prevented, hence there is need to educate the public about the nature, causes, symptom and prevention of the disease to reduce its mortality and morbidity rate. Shankargouda, Roopa, Rao and Anveeta (2013) stated that adequate awareness, precaution and protection should be advocated in order to prevent the nosocomia/spread of Hepatitis B infection, Bruss (2007) explained that adequate awareness of the danger associated with chronic stage of hepatitis will reduce the spread of the disease. Young (2008) emphasized the name of virus that cause HBV as hepatitis B virus and its virulence, thereby compared and contrast HIV and HBV as the leading cause of sexually related viral infections.

Busari and Danesey (2014) reported that HBV is transmitted the exact way HIV/AIDS is transmitted and the knowledge of route of transmission of the infection has provided an escape route to avoid being infected by the adolescents. Kaplan (2003) observed that adolescents who were exposed to information on the sign and symptoms of hepatitis B were able to differentiate hepatitis B infection from mere flu, he explained further that adolescent who were exposed to information prevention of STI e.g. Hepatitis B is likely to live a life that is free of sexually transmitted disease.

HBV and HEV infections are important, yet largely neglected causes of maternal and infant morbidity and mortality in resource-constrained settings. There was a report describing the investigation of a Hepatitis B and E outbreak among refugees in South Sudan, where a significant proportion of affected pregnant women died from HEV infection (Teshade, Grytdal, Howard and Barry, 2010). They also reported that the first such outbreak documented in Africa occurred among Angolan refugees in Namibia in 1983. Outbreak in South Sudan shares similar epidemiologic characteristics with other HBV and HEV outbreaks. Similar to 2007 outbreak in northern Uganda, this outbreak started during the rainy season and had high attack rates among young adults and high mortality among pregnant.

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many causes of hepatitis go undiagnosed because the disease was mistaken for Flu until recent years when the prevalence of the liver destroying became more alarming as a result of this deadly disease called hepatitis (Monitoring and Evaluation Report, 2012) of Oyo state Blood Transfusion Center in Ibadan. However, Many people are ignorance about the causes, sign and symptom of this diseases and some infected patients did not know that they have the disease until it get to advanced stage and they were tested positive hence they find it difficult to tell friends and relatives so that it will not break their relationship. The infection rate of cases of HBV in the University College Hospital Blood Banks was 15% and Oyo state Blood Transfusion Centre in Ibadan was 13.8% showing a high prevalence rate among the target population (Monitoring and Evaluation Report, 2012). Hepatitis B is a preventable disease and the generality of people need to be educated so that they will have the knowledge of the disease hence health care providers and health educators has an effective role to play in creating awareness to facilitate the prevention and early diagnosis of the disease which is the bases of this research work. Bruss (2007) explained that adequate awareness of the dangers associated with chronic stage of hepatitis will reduce the spread of the disease.

Five hypotheses were formulated as follows:

1. There will be no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on knowledge of hepatitis B following a 8-week health education programme.
2. There will be no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on knowledge of causes of hepatitis B following a 8-week health education programme.
3. There will be no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on knowledge of mode of transmission of hepatitis B following a 8-week health education programme.
4. There will be no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on knowledge of signs and symptoms of hepatitis B following a 8-week health education programme.
5. There will be no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on knowledge of prevention of hepatitis B following a 8-week health education programme.

METHODOLOGY

Research Design

The research design for this study was pre test-post test control group, quasi-experimental design. This design was chosen because, with the use of control group, any change in the pre-test will be attributed to the effects of the intervention given to the experimental group. The sample were randomly assigned to two groups of experimental and control, both groups were subjected to pre-test observation, The experimental group (E1) was exposed to a treatment (X) (in this case, Hepatitis health education), while the control group (C1) was exposed to malaria education. Post treatment observations were made on both groups at the end of the intervention programme using the same intervention hepatitis instrument.

Population, Sample and Sample Techniques

The population of the study comprised all senior secondary schools students in Ibadan North Local Government area of Oyo state.. Sample used for the study is one hundred and eighty (180)



drawn from the entire senior secondary school students in Ibadan North Local Government Area of Oyo State. Multistage sampling techniques was used, in first stage simple random sampling technique was used to select six (6) out of (30) public secondary schools. Second stage Systematic sampling technique based on class register was used to select 15 students in S.S.1

and 15 students in S.S.2 classes making 30 students in each of the six selected senior secondary schools.

Research Instrument

The instrument used for this study was a self-developed structured questionnaire. It was divided into two sections A and B Section A was on demographic characteristic of the respondents while section B collect information on the variables selected for the study.

Validity and reliability of the research instrument

To ensure the validity of this instrument, draft of the questionnaire was presented to experts in the department of human kinetics and Health education, University of Ibadan and the department of preventive medicine, University College Hospital Ibadan. The correction and suggestion made by these experts was used to improve the quality of the instrument. The corrected version of the questionnaire was administered to 15 students in S.S.1 and 15 students in S.S.2 of Ajibode Grammar School in Akinyele Local Government Area of Oyo State who are not part of the research sample, to estimate the reliability of the instrument, Cronbach's-alpha method was used to test the internal consistency of the questionnaire and a reliability coefficient of 0.68 was obtained.

Procedure for data collection and analysis

The researcher visited the selected schools to sought the approval and permission of the school principals, and prior to the administration of the research instrument, the consent of the participants was sought and the proposed-use of the questionnaire was mentioned. The researcher then administered the research instrument both the pre-test before the commencements of the intervention and the post test at the end of the intervention personally on the participants and this enable the researcher to completely retrieve all the questionnaire.

The questionnaire were coded and analyzed using descriptive statistics of frequency counts, percentages, for the demographic data of the participants while inferential statistics of analysis of variance (ANOVA) was used to test section B which are hypotheses at 0.05 alpha level.

RESULTS AND DISCUSSION OF FINDINGS

Hypothesis 1: There is no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on Knowledge of Hepatitis B following a 8-week health education programme



Table 1a: ANOVA showing the significant main effects of Treatment group on Knowledge of Hepatitis B following a 8-week health education programme

Source	Sum Squares	DF	Mean Square	F	Sig.	Eta ² / Effect Size
Corrected Model	1034.376	2	517.188	274.387	.000	.756
Pre knowledge	779.953	1	779.953	413.794	.000	.700
Treatment	23.954	1	23.954	12.708	.000	.067
Error	333.624	177	1.885			
Total	1368.000	179				

(R-squared = .756, Adjusted R-Squared = .753)

The above results shows that there is a significant main effect of the Treatment on knowledge of Hepatitis B following a 8-week health education programme ($F(2,177) = 12.708, P < .05, \eta^2 = .067$). This denotes a significant difference in the groups on Students' knowledge of

Hepatitis B. Hence, the null hypothesis was rejected; the table also shows the contributing effect size of 6.7%.

Table 1b: Estimated Marginal means of the Treatment group on Students knowledge of Hepatitis B

Treatment groups	Mean	Std. Error
Control group	9.609	.150
Experimental group	10.391	.150

From the above table, Experimental group had a higher mean score followed by Control group respectively

Hypothesis 2: There is no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on Knowledge of causes of Hepatitis B following a 8-week health education programme

Table 2a: ANOVA showing the significant main effects of Treatment group on Knowledge of causes of Hepatitis B following a 8-week health education programme

Source	Sum of Squares	DF	Mean Square	F	Sig.	Eta ² / Effect Size
Corrected Model	848.514	2	424.257	123.061	.000	.582
Pre causes	557.176	1	557.176	161.616	.000	.477
Treatment	24.790	1	24.790	7.191	.008	.039
Error	610.213	177	3.448			
Total	1458.728	179				

(R-squared = .582, Adjusted R-Squared = .577)

The above results shows that there is a significant main effect of the Treatment on knowledge of causes of Hepatitis B following a 8-week health education programme ($F(2,177) = 7.191, P < .05, = .039$). This denotes a significant difference in the groups on Students' knowledge of causes of Hepatitis B. Hence, the null hypothesis was rejected; the table also shows the contributing effect size of 3.9%. Young (2008) emphasized the name of virus that cause HBV as hepatitis B virus and its virulence, thereby compared and contrast HIV and HBV as the leading cause of sexually related viral infections.

Table 2: Estimated Marginal means of the Treatment group on Students knowledge of causes of Hepatitis B

Treatment groups	Mean	Std. Error
Control group	10.048	.207
Experimental group	10.874	.207



From the above table, Experimental group had a higher mean score followed by Control group respectively.

Hypothesis 3: There is no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on Knowledge of mode of transmission of Hepatitis B following a 8-week health education programme

Table 3a: ANOVA showing the significant main effects of Treatment group on Knowledge of mode of transmission of Hepatitis B following a 8-week health education programme

Source	Sum of Squares	DF	Mean Square	F	Sig.	Eta ² / Effect Size
Corrected Model	503.180	2	251.590	43.735	.000	.331
Pre transmission	6.508	1	6.508	1.131	.289	.006
Treatment	452.632	1	452.632	78.683	.000	.308
Error	1018.214	177	5.753			
Total	1521.394	179				

(R-squared = .331, Adjusted R-Squared = .323)

The above results shows that there is a significant main effect of the Treatment on knowledge of mode of transmission of Hepatitis B following a 8-week health education programme ($F(2,177) = 78.683, P < .05, \eta^2 = .308$). This denotes a significant difference in the groups on Students' knowledge of Hepatitis B. Hence, the null hypothesis was rejected; the table also shows the contributing effect size of 30.8%.

Table 3: Estimated Marginal means of the Treatment group on Students knowledge of transmission of Hepatitis B

Treatment groups	Mean	Std. Error
Control group	8.845	.266
Experimental group	12.344	.266

From the above table, Experimental group had a higher mean score followed by Control group respectively.

Hypothesis 4: There is no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on Knowledge of signs and symptoms of Hepatitis B following a 8-week health education programme

Table 4a: ANOVA showing the significant main effects of Treatment group on Knowledge of signs and symptoms of Hepatitis B following a 8-week health education programme

Source	Sum of Squares	DF	Mean Square	F	Sig.	Eta ² / Effect Size
Corrected Model	737.307	2	368.654	134.349	.000	.603
Pre sign	220.502	1	220.502	80.358	.000	.312s
Treatment	96.846	1	96.846	35.294	.000	.166
Error	485.687	177	2.744			
Total	1222.994	179				

(R-squared = .603, Adjusted R-Squared = .598)

The above results shows that there is a significant main effect of the Treatment on knowledge of signs and symptoms of Hepatitis B following a 8-week health education programme ($F(2,177) = 35.294, P < .05, \eta^2 = .166$). This denotes a significant difference in the groups on Students' knowledge of signs and symptoms of Hepatitis B. Hence, the null hypothesis was rejected; the table also shows the contributing effect size of 16.7%.



Table 4: Estimated Marginal means of the Treatment group on Students knowledge of signs and symptoms of Hepatitis B

Treatment groups	Mean	Std. Error
Control group	10.103	.196
Experimental group	11.908	.196

From the above table, Experimental group had a higher mean score followed by Control group respectively.

Hypothesis 5: There is no significant difference in the pre-test and post-test scores of secondary school students in Ibadan North Local Government on Knowledge of prevention of Hepatitis B following a 8-week health education programme

Table 5a: ANOVA showing the significant main effects of Treatment group on Knowledge of prevention of Hepatitis B following a 8-week health education programme

Source	Sum of Squares	DF	Mean Square	F	Sig.	Eta ² / Effect Size
Corrected Model	948.596	2	474.298	176.962	.000	.667
Pre prevention	397.346	1	397.346	148.251	.000	.456
Treatment	45.878	1	45.878	17.117	.000	.088
Error	474.399	177	2.680			
Total	1422.994	179				

(R-squared = .667, Adjusted R-Squared = .663)

The above results shows that there is a significant main effect of the Treatment on knowledge of prevention of Hepatitis B following a 8-week health education programme ($F(2,177) = 17.117, P < .05, \eta^2 = .088$). This denotes a significant difference in the groups on Students' knowledge of prevention of Hepatitis B. Hence, the null hypothesis was rejected; the table also shows the contributing effect size of 8.8%.

Table 5: Estimated Marginal means of the Treatment group on Students knowledge of prevention of Hepatitis B

Treatment groups	Mean	Std. Error
Control group	10.863	.195
Experimental group	12.126	.195

From the above table, Experimental group had a higher mean score followed by Control group respectively.

DISCUSSION

Hepatitis B infection remains one of the greatest public health problems. It was found out that health education has significant effects on the knowledge of students on Hepatitis B and



this was in line with Bruss (2007) who explained that adequate awareness of the dangers associated with chronic stage of hepatitis will reduce the spread of the disease.

Shankargouda, Roopa, Rao and Anveeta (2013) also stated that adequate awareness, precaution and protection should be advocated in order to prevent the nosocomial spread of HBI. It was also found out that health education has significant effect on the knowledge of students on causes, mode of transmission, sign/symptoms and prevention of Hepatitis B infection this was supported by Young (2008) emphasized the name of virus that cause HBV as hepatitis B virus and its virulence thereby compared and contrast HIV and HBV as the leading cause of sexually related viral infections, Busari and Danesy (2014) reported that HBV is transmitted the exact way HIV/AIDS is transmitted and the knowledge of route of transmission of the infection has provided an escape route to avoid being infected by the adolescents. Kaplan (2003) explained that adolescents who were exposed to information on the sign and symptoms of hepatitis B were able to differentiate hepatitis B infection from mere flu, he explained further that adolescents who were exposed to information on prevention of STI e.g. Hepatitis B is likely to live a life that is free of sexually transmitted infection

CONCLUSION

The study established the following:

1. That there was significant difference in the pre-test and post test score of senior secondary students on knowledge of hepatitis B.
2. That there was significant difference in the pre-test and post test score of senior secondary students on knowledge of causes of hepatitis B.
3. That there was significant difference in the pre-test and post test score of senior secondary students on knowledge of mode of transmission of hepatitis B.
4. That there was significant difference in the pre-test and post test score of senior secondary students on knowledge of sign and symptoms of hepatitis B.
5. That there was significant difference in the pre-test and post test score of senior secondary students on knowledge of prevention of hepatitis B

It is therefore necessary to provide awareness campaigns, health education, proper screening of blood and blood products for transfusion, active screening, intensification of existing childhood immunization, technical and implementation of the recommendations outlined in the Global Hepatitis Policy to check the spread of the disease.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are suggested:

1. Health education on risk factors and prevention of hepatitis B infections through awareness programs for all should be carried out at regular interval in our school in order to improve awareness of this disease among students.
2. Community religious leaders should be involved in health education programmes; they should also use their platform to educate the people on the importance of screening and immunization.
3. Effective referral systems for the care of hepatitis B infected patients should be established since most of the laboratory tests and treatment require experts.
4. There should be proper monitoring and evaluation of health and disease related cases at the governmental and non-governmental agencies.

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