EFFECT OF HEALTH EDUCATION INTERVENTION ON ACCEPTABILITY OF IMMUNIZATION AS A STRATEGY FOR PREVENTION OF HEPATITIS B VIRUS SPREAD AMONG PREGNANT WOMEN IN YOLA, ADAMAWA STATE - NIGERIA.

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Abstract

Hepatitis B virus is a liver disease caused by the Deoxyribonucleic acid virus (DNA). It infects the liver cells and causes both acute and chronic liver diseases. This study examined the effect of health education on the acceptability of immunization as a strategy for the prevention of the Hepatitis B virus among pregnant women in Yola, Adamawa State, Nigeria. One (1) research questions and hypothesis was formulated for this study. The population for this study comprised one hundred and forty-three thousand six hundred and eighty-nine (143,689) pregnant women registered in Adamawa State, Nigeria. The sample size consists of sixty (60) pregnant women who were drawn from the target population of pregnant women. Thirty (30) women were in the experimental group, while thirty (30) were in the control group for generalisation. A multi-stage sampling technique was used for this study. The instrument used for data collection was researcher researcher-developed questionnaire and hepatitis B modules (manual). The questionnaire was rated using a 4-point modified Likert scale. A pilot study was conducted to ascertain the reliability of the instrument; a reliability index of 0.919 was obtained, which implied that the instrument is reliable. Data collected were analysed using frequencies and percentages, means and standard deviation. Inferential statistics of analysis of covariance (ANCOVA) was used in the test of the hypotheses at the fixed probability level of 0.05. Findings from the study revealed that a six-week health education programme has no effect on improved acceptability of HBV immunization, among pregnant women in Yola, Adamawa State, p- p-value is > 0.05. Based on the findings, the study recommended that pregnant women in Yola, Adamawa State, should continue to sustain the level of acceptability of immunization during prenatal and postnatal services as a preventive measure. Use of Posters, billboards, awareness campaigns and other communication channels could be beneficial to increase the knowledge of the public on measures against the hepatitis B virus.

Keywords: Acceptability, Strategy, Prevention, Hepatitis, Immunization and Pregnant Women.

Introduction

Nowadays, there is a massive increase in health facilities at different levels of the health care system in Nigeria. According to the Nigerian Health Facility Registry (2022). Nigeria had 39,439 registered hospitals and clinics in 2019, as of 2022, the number increased to 39,914, but still the number of HBV infection keep on increasing. Approximately 370,000 newborns are pre-natally infected with HBV in sub-Saharan Africa annually, and over 20 million people are estimated to be infected with the Hepatitis B virus around the world. Nigeria has the largest number of people living with HBV infection in sub-Saharan Africa and ranks third after China and India globally (Olakunde et al., 2021).

Hepatitis B virus (HBV) is a deoxyribonucleic acid (DNA) virus that causes hepatitis B infection (Gebrecherkos et al., 2020). Hepatitis B virus infects liver cells (hepatocytes) and causes both acute and chronic disease. When a person is first infected with the hepatitis B virus, it is called an “acute infection” (or a new infection). Mostly, healthy adults who are infected do not have any symptoms and can get rid of the virus without any problems.

Some adults are not able to get rid of the virus after six months it becomes chronic. It is believed that host factors, in particular immune responses, are responsible for determining whether the infection is cleared or becomes chronic (Ciupe et al., 2007).

Nigeria is still considered one of the highly endemic countries for Hepatitis B, mainly due to perinatal transmission of the Hepatitis B virus. Olakunde et al (2021) reflected a high risk of HB perinatal transmission and called for widespread immunization with the HB vaccine birth dose and subsequent treatment of mothers.

Nankya-Mutyoba et al. (2019) stated that Chronic HB infection results in high mortality from cirrhosis and liver cancer. HB affects all age groups globally, including pregnant women and the newly born infant vertically. Several ways of HB transmission are registered, including contaminated blood transfusion, unprotected sex, and contact with contaminated sharp objects. Mother-to-Child Transmission (MTCT), by which HB is transmitted from infected mothers to their infants, prenatal transmission (in utero), natal transmission (during delivery), or postnatal transmission (during childcare or through breast milk, is the main route of infection in infants (Gebrecherkos et al., 2020). Following HB infection, many people with HB may not show any symptoms and the clinical manifestations vary in acute and chronic cases from nonspecific symptoms to organ failure (Gebrecherkos et al., 2020).

Several efforts have been made by different agencies and organisations to reduce the rate of HB transmission. In 2016, the World Health Assembly adopted the first global health targets for the elimination of viral hepatitis as a public health threat and viral hepatitis was incorporated in Sustainable Development Goal 2 (Nayagam et al., 2020). The World Health Organization (WHO) Global Health Sector Strategy HB impact targets, included a 90% reduction in new infections and a 65% reduction in mortality by 2030, to reduce the prevalence of hepatitis B surface antigen (HBsAg) in children to 1% by 2020 and 60 <0.1% by 2030 (Nayagam et al., 2020). But unfortunately, in spite of all these efforts, the rate of HB spread appears to be expanding.

The global prevalence of HB among pregnant women and the rate of vertical transmission greatly vary from continent to continent (Gebrecherkos et al., 2020). Prevalence data on hepatitis B in Arab countries among pregnant women range from 1% to 7.1%, which is considered a low to intermediate range in worldwide terms (Gasim, Murad, & Adam, 2013). Similarly, western region of Africa, the prevalence among pregnant women is high in the region and varies between 6.2% and 16% (Gasim et al., 2013). Moreover, Nigeria is classified among the group of countries suffering from endemic HB infection. Currently, about 18 million Nigerians are infected, and a prevalence rate of 4.3 % was reported from Port Harcourt, 5.7% from Ilorin, 11.6% from Maiduguri and 8.3% from Zaria. A sero prevalence of 23.3% was reported among patients attending all clinics at the Aminu Kano Teaching Hospital (AKTH) (Yakasai et al., 2012). Yakasai et al. (2012) also stated that, when a pregnant woman is infected with HB, there is a chance she may infect her fetus. About 10 - 20% of women seropositive for HBsAg transmit the virus to their neonates.

Adejimi et al. (2021) stated that Prevention of HB infection can be achieved through safe practices and immunization. Similarly, when pregnant women are infected, they constitute a serious health risk not only to their unborn child, as stated above, but also the society at large. To tame the tides of infection and to identify possible ways of conveying the preventive strategies to the community in general and women in particular, this study was therefore assessed the effect of health education on the acceptability of immunization as a strategy for prevention of hepatitis B virus spread among pregnant women in Yola, Adamawa State, Nigeria.

The main researcher is a Certified Community Health Extension Worker, who consulted patients while working in his home town of Ngurore, a suburb of Yola-South Local Government Area of Adamawa State, during the COVID-19 pandemic lockdown in March 2020. While the co-researchers have had hard experiences as health educators in the field. It has been observed by the researchers that, among patients consulted at home between March and May 2020, eighteen (18) patients were sent for laboratory investigation, of which six (6) patients (33.3%) tested positive for the hepatitis B Virus. Also, three (3) people were reported dead as a result of HBV from the same community. Although there is immunization for preventing the spread of the disease, there is still an increase in HBV spread. These are reasons that prompt the attention of the researchers to embark on this study, which examines the effect of health education intervention programme on the acceptability of immunization as a preventive measure of HBV among pregnant women in Yola, Adamawa State, Nigeria.

Research Question

What is the effect of six-week health education intervention programme on improving the acceptability of immunization as a preventive measure of HBV among pregnant women attending antenatal clinics in Yola, Adamawa State, Nigeria?

Hypothesis

There is no significant effect of six-week health education intervention programme on improving the acceptability of HBV immunization among pregnant women attending the antenatal clinic in Yola, Adamawa State, Nigeria.

Methodology

A pre-test post-test experimental research design was used for this study. This is because it is a research design in which the same assessment measures are given to participants both before and after they have received a treatment or been exposed to a condition, with such measures used to determine if there are any changes that could be attributed to the treatment or condition. This research involves two groups of participants: Group A (experimental group) and Group B (control group). All participants were subjected to a pre-test before the intervention and a post-test after the intervention; only participants in group A (experimental group) were subjected to the intervention. The group was exposed to health education programme on the prevention of hepatitis B spread among pregnant women in Yola, Adamawa State, Nigeria, for six weeks.

Result

The ranked effect of the six-week health education intervention programme on acceptability of HBV immunization as a preventive measure against HBV spread among pregnant women in the experimental and control groups was computed and compared in Table 1.

Table 1: Comparison of responses between experimental and control groups on acceptability of immunization as a preventive measure against HBV.

			Experimental		Control		
S/N	Acceptability of HBV immunization	Status	Mean	Std. Dev.	Mean	Std. Dev.	Mean diff
1	I accepted the hepatitis B vaccine before pregnancy	Pre-test	3.69	0.712	3.88	0.431	-0.19
		Post-test	3.80	0.407	3.97	0.186	-0.17
2	I believe that HBV vaccination is beneficial among pregnant women	Pre-test	3.55	0.827	3.88	0.431	-0.33
		Post-test	3.80	0.407	3.76	0.636	0.04
3	I received hepatitis B immunization during the most recent pregnancy	Pre-test	3.10	1.047	3.88	0.431	-0.78
		Post-test	3.63	0.556	3.76	0.636	-0.13
4	I received the first dose of the hepatitis B vaccine during pregnancy	Pre-test	3.34	0.857	3.88	0.431	-0.54
		Post-test	3.67	0.479	3.48	0.949	0.18
5	I accept that vaccination of pregnant women with HBV during pregnancy is necessary	Pre-test	3.48	0.911	2.85	0.543	0.64
		Post-test	3.93	0.254	3.38	1.115	0.55
	Aggregate	Pre-test	3.43	0.551	3.68	0.315	-0.24
		Post-test	3.77	0.197	3.67	0.429	0.10

(Decision mean = 2.50)

The mean responses of the two groups, as indicated in Table 1, revealed that the subjects agreed that improving the acceptability of HBV immunization is a major factor in reducing the spread of the virus among pregnant women. The emphasis tended to be more after the health educational intervention among subjects in the experimental group. In the table, the subjects in both groups agreed that they usually accept the hepatitis B vaccine before pregnancy and that HBV vaccination is beneficial, along with ensuring that the routine number is attained. Though the control group shared the same positive position as subjects in the experiment but after the health education intervention, the responses of subjects in the experiment group rose significantly higher than when they were not exposed to the intervention. The mean differences were -0.24 and 0.10 for the pre- and post-test scores for the two groups, respectively. In the overall aggregate, both groups were positive in their

acceptability of immunization as a major preventive measure against hepatitis B virus spread which clearly indicated that intervention with the health educational programme had a major impact.

Hypothesis: There is no significant effect of six-week health education intervention programme on improving the acceptability of HBV immunization among pregnant women attending the antenatal clinic in Yola, Adamawa State, Nigeria.

Table 2: Analysis of covariance on the effect of six-week health education intervention on the acceptability of HBV immunization by the experimental and control groups

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	0.130	2	0.065	0.580	0.563
Intercept	12.914	1	12.914	115.164	0.000
Pre-test	0.011	1	0.011	0.100	0.753
Groups	0.093	1	0.093	0.827	0.367
Error	6.279	56	0.112		
Total	822.280	59			
Corrected Total	6.409	58			

(F-critical = 4.00, p > 0.05)

The result of the test in Table 2 revealed that the experimental group, who were exposed to the health education intervention, did not differ in their score from subjects in the control group who were not exposed to the health education programme. The F-value observed was 0.827 with a p-value of 0.367 ($p > 0.05$). The covariate factor (pre-test) did not significantly influence the outcome of the experiment. The observed F-value was 0.100 with a p-value of 0.753 ($p > 0.05$). These observations did not provide sufficient evidence for rejecting the null hypothesis. The null hypothesis that there is no significant effect of six-week health education intervention programme on improving the acceptability of HBV immunization among pregnant women attending the antenatal clinic in Yola, Adamawa State, Nigeria, is therefore retained.

Discussion

This study assessed the effect of health education intervention on the acceptability of immunization as a preventive measure of Hepatitis B spread among pregnant women in Yola, Adamawa state, Nigeria, through an experimental procedure. From the analysis of the data, the study found that the use of health education intervention has not effectively improved the acceptability of immunization among pregnant women attending antenatal clinics, as revealed by the comparison of their responses in both control and experimental groups in Table 1. The six-week health education enlightens them on the importance of accepting immunization, which helps in preventing HBV spread among pregnant women.

The findings here support findings from a previous study by Schillie et al. (2018), who researched the prevention of hepatitis B virus infection in the United States, and reported that preventing perinatal transmission relies upon testing all pregnant women for HBsAg and administering timely prophylaxis, Hep B vaccine and hepatitis B immune globulin [HBIG] to infants born to infected mothers. This study revealed that a six-week health education intervention programme had less effect on the subjects' improved acceptability of HB immunization, with the impact being not significant. A possible reason for the less effect could be their familiarity with HBV immunization, having been attending post-natal clinics. However, Subjects in both groups agreed that they usually accept the hepatitis B vaccine before pregnancy and that HB vaccination is beneficial, along with ensuring that the routine number is attained. Though the control group shared the same positive position as subjects in the experiment but after the health education intervention, the position of subjects in the experiment group rose significantly higher than when they were not exposed to the intervention. This observed difference was not found to differ significantly from their counterparts who were not exposed to the health education programme. Both groups were found to be encouraged with their participation in the programme, as it was found to have improved their acceptance of immunization against HB. The finding here is in line with Owens et al., (2019), who conducted research on screening for hepatitis B virus infection in pregnant women:

reported that interventions to prevent perinatal transmission of HB infection include screening all pregnant women for HB, vaccinating infants born to HB-negative mothers within 24 hours of birth, and completing the HB vaccination series in infants by age 18 months.

Conclusion

From the findings of this study on the effect of health education intervention on acceptability of immunization as a strategy for prevention of hepatitis B virus spread among pregnant women in Yola, Adamawa State, Nigeria. It was concluded that the six-week health education intervention programme did not improve the acceptability of HB immunization among the pregnant women in Yola, Adamawa State.

Recommendations

Based on the findings from the analysed data and test of the research hypothesis, the researchers recommended that Pregnant women in Yola, Adamawa State, should continue to sustain their level of participation in the acceptability of immunization as a preventive measure for hepatitis B.

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