NHSJ Nursing and Health Sciences Journal

Volume 4, Number 2 (June 2024)
e-ISSN: 2798-5067
p-ISSN: 2798-5059

Knowledge of Hepatitis B Infection and Practice Towards its Prevention among Pregnant Women

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Article Info:

Submitted:
05-09-2023
Revised:
21-02-2024
Accepted:
23-02-2024

DOI:
https://doi.org/10.53713/nhsj.v4i2.296

ABSTRACT

Infection with Hepatitis B remains a health challenge across the globe. This descriptive survey focused on the knowledge of hepatitis B infection (HBI) and prevention practices of pregnant women. Thus, this study assessed knowledge of HBI, HBI prevention practices, factors affecting the practice of HBI prevention among pregnant women, the association between the socio-demographic characteristics cum knowledge of HBI, as well as the relationship between the knowledge of HBI and the prevention practices. Balloting with replacement was employed in selecting 267 pregnant women attending an antenatal clinic in Delta State, Nigeria. The instrument for data collection was a Questionnaire developed by the researchers. The reliability of the instrument was conducted using Cronbach alpha which yielded coefficient of 0.738. Data collected were analyzed using frequencies, percentages, mean, Kruskal Walis test and Chi-Square statistic test. Majority of the study respondents (53.8%) had low level of knowledge about HBI but 60% had good level of prevention practice. 36.7% of the pregnant women believed that they had a low-risk status for HBI, 43.4% that prayer was more effective than vaccine and 60.7% that herbal medicine was available to prevent HBI. Significant association did not exist between pregnant women's socio-demographic characteristics and their knowledge of HBI (k=2.92, p-value=0.10). Significant relationship existed between knowledge of HBI and the prevention practices of pregnant women (X^2=36.71; p-value=0.001). Findings showed that the pregnant women had a low knowledge level for hepatitis B virus but a good level of prevention practice possibly due to high level of provider-initiated preventive services. Nurses should organize more detailed health education sessions on hepatitis B infection to pregnant women and keep up with their role of performing provider-initiated preventive services.

Keywords: hepatitis B; knowledge; prevention; practice; pregnant women

INTRODUCTION

Estimates within the past decade demonstrate that hepatitis is responsible for an annual death rate of almost 1.3 million, which places it globally as the seventh leading cause of death (Eni et al., 2019). Hepatitis B virus (HBV) infection is accountable for an enormous rate of mortality and morbidity, with as much as 90% of persons infected being clueless of their status, and so do not undertake treatment (Spearman et al., 2017). HBV infection is a transmissible ailment of the liver resulting from the partial double-stranded deoxyribonucleic acid (dsDNA) hepatitis B virus (Balegha et al., 2021). The virus is passed from a mother who is infected to her offspring at birth, through accidental punctures, contaminated stainless-steel instruments, bodily fluid exposure and, as well as unprotected sexual intercourse (Balegha et al., 2021). United Nations Development Programme (2015) and World Health Organization (2016) observed that viral hepatitis, which includes HBV, has been earmarked for eradication by the year 2030, as indicated by the ongoing Sustainable Development Goal (SDG) three and the Global Health Sector Strategy on viral hepatitis 2016–2021. One target of the SDG3 is to decrease the HBV prevalence in children who are below the age of 5 years to 0.1%. Being that transmission from mother-to-child is a major mode of transmission for HBV, stalling this channel is an important breakthrough towards eliminating

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e-ISSN: 2798-5067
p-ISSN: 2798-5059

HBV (Khan et al., 2017). The impact of Hepatitis B is still increasing despite the fact that vaccination to avert the disease condition has been in existence from the 1980s (Meireles et al., 2015). The sustained rise in the burden of Hepatitis B can be traced to either ineffective or nonexistent hepatitis prevention/management programs in the sub-Saharan region of Africa.

Balegha et al. (2021) identified that it is with a high level of knowledge and a good level of practice that hepatitis B infection can be effectively prevented. Knowledge regarding hepatitis B infection in this situation refers to having an understanding about the causes of hepatitis B infection, the mode of transmission, signs and symptoms, diagnostic procedures, treatment options, short- and long-term complications, availability of vaccines and after-exposure prophylaxis for managing people who are exposed accidentally (Abdela et al., 2016). On the other hand, a good prevention practice regarding hepatitis B virus refers to the habitual involvement in hepatitis B virus prevention activities like getting tested for and receiving vaccine against hepatitis B including administration of the first dose to newborns as soon as possible after birth, antibody testing after hepatitis B vaccination, safe delivery techniques (Balegha et al., 2021), prescribing and use of antiviral drugs (WHO, 2020), as well as changing of gloves after each client's care, non-practice of needle recapping after use, preventing needle stick injuries and blood/body fluid splashes on healthcare workers (Balegha et al., 2021). Socio-demographic factors and health education regarding the prevention of any disease are strongly connected to good practice on disease prevention, as well as assumed to bring about a possible disease prevention outcome (Rav-Marathe et al., 2016). The knowledge practice-outcome framework propounded by Wan in 2014 and expanded by Rav-Marathe et al. (2016) have greatly revealed the relationship that exists among these concepts. Exploring this relationship is expedient among pregnant women to eliminate the risk, burden and consequenses of mother to child transmission of hepatitis B.

An empirical review of literature showed that across the globe, a dearth of studies exist on knowledge and prevention practice of HB infection, especially in Nigeria (Eni et al., 2019) as well as, the factors influencing the practice of HBI prevention (Hajarizadeh et al., 2015). Nonetheless, majority of the available studies have often been conducted among healthcare professionals and not pregnant women (Afihene et al., 2013). Even though healthcare workers are four times at risk of hepatitis B infection when compared with the general population (Singhal et al., 2009), pregnant women need to know their hepatitis B status to enable them halt the infection transmission chain of the virus from mothers to their newborns (WHO, 2020). The current situation on knowledge and practice of HBV infection and prevention among Nigerian pregnant women is quite unclear. Hence, further studies are needed to help the designing of a health policy and future research to eliminate HBV. It is against this background that the researchers decided to undertake this study to determine the knowledge of hepatitis b infection (HBI), HBI prevention practices and factors affecting the practice of HBI prevention among pregnant women attending antenatal clinic in a Central Hospital in Delta State.

METHOD

Design

The study utilized a descriptive survey research design.

Population

The population of the study consisted of all pregnant women attending the antenatal clinic.

Sample

Simple random sampling technique (balloting with replacement) was used to select 267 out of 800 pregnant women for the study.

Instrument

The data collection was done using a Questionnaire on Knowledge of Hepatitis B Infection and Practice towards its Prevention (QKHBIPP). The questionnaire consisted of four (4) sections. Section A contains five (5) items which elicited information on socio-demographic data. Section B contains 13 items which elicited information on hepatitis B infection knowledge amongst pregnant women. Section C contains seven (7) items and was used to elicit information on the preventive practices of hepatitis B infection among pregnant women. Section D contains four (4) items and elicited information on factors influencing hepatitis B infection prevention practice. Sections B and C were examined using dichotomous reply of 'yes' or 'no'. correct answers were scored 1 while wrong answers were scored 0. The questionnaire was subjected to reliability test using the test-retest method to measure the reliability and internal consistency from 27 pregnant women who were selected from a health facility in Edo State which was not used for the actual study. The Cronbach alpha yielded a coefficient of 0.738.

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Method of Data Collection

Ethical approval was obtained for the study from Agbor Zonal Hospitals Management Committee, Cental Hospital, Agbor with reference number E.Comm/C/O/AMZ/205. Informed consent was obtained from the expectant mothers. Antepartum women who were unwilling to take part in the data collection aspect of the research were excluded from the study. The researchers requested the assistance of four (4) Nursing care providers in the health facility during data collection. The pregnant women were approached at the time of their visits to the antenatal clinics. The anonymity, privacy as well as the confidentiality of respondents was maintained during and after data collection. 267 copies of the questionnaire were administered to the respondents.

Method of Data Analysis

Standard descriptive statistics was used to summarize the variables. Frequencies and percentages were used to answer the research questions. Kruskal Walis test (to determine association) and Chi-Square statistic test (to determine relationship) were adopted in testing the null hypotheses at <0.05 level of significance. The levels of knowledge and prevention practice were classified as poor if the overall score was <25% and low if the overall score was between 26% and 50%. Scores between 51% and 74% were considered as good for knowledge and prevention practice. Scores >75% were regarded as very good for knowledge and prevention practice. Statistical Package for Social Sciences (SPSS) software Version 24 was used in the data analysis.

RESULTS

Table 1. Socio-Demographic Data of the Respondents (n=267)

Variable	Variable	Frequency	Percentage (%)	
Age distribution in years	15-24	79	29.6	Mean age =31.45+
	25-34	89	33.3	0.31years
	35-44	67	25.1	
	45-54	32	12.0	Range=20-54 years
Religion	Christianity	120	44.9	
	Islam	48	18.0	
	Trad. Afr. Religion	99	37.1	
Number of previous Deliveries	1-3	146	54.7	
	4-6	114	42.7	
	7 and above	7	2.6	
Level of Education	Non formal	21	7.9	
	Primary	29	10.9	
	Secondary	123	46.1	
	Tertiary	94	35.2	
Occupation	Housewife	14	5.2	
	Farming	58	21.7	
	Artisan	25	9.4	
	Business/Trading	76	28.5	
	Public servant	94	35.2	

Table 1 shows that majority 89 (33.3%) of respondents were aged 25 - 34 years, whereas minority 32 (12.0%) were 45 years and above. Mean age of the respondents was 31.45±0.31 with a range of 20.0 – 54.0 years. 120 (44.9%) of the pregnant women practiced Christianity while 48 (18.0%) practiced Islam. 146 (54.7%) of the respondents had 1-3 previous deliveries while the least 7 (2.6%) had 7 previous deliveries and over. 173 (64.9) had a maximum of secondary level of education while 94 (35.2%) had tertiary level of education. The occupation of 94 (35.2%) was employed while 14 (5.2%) were housewives.

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Table 2. Pregnant Women's Level of Knowledge of Hepatitis B Virus (n=267)

Variables	Variable Classification	Frequency	Percentage (%)
Hepatitis B is an infection caused by hepatitis B virus	Yes	70	26.2
	No	197	73.8
Hepatitis B can be transmitted from mother to child.	Yes	65	24.3
	No	202	75.7
Hepatitis B can be transmitted by contact with infected blood and body fluid	Yes	72	27.0
	No	195	73.0
Hepatitis B can be transmitted by handshaking	Yes	187	70.0
	No	80	30.0
Hepatitis B can be transmitted by sharing drinking cups, spoons, and plates with an infected person	Yes	72	27.0
	No	195	73.0
Hepatitis B can be transmitted by hugging?	Yes	65	24.3
	No	202	75.7
Hepatitis B Virus is more easily transmissible by infected siblings, playmates, and family members than HIV.	Yes	87	32.6
	No	180	67.4
Is there a laboratory test to detect HBV?	Yes	183	68.5
	No	84	31.5
Is HBV treatable?	Yes	116	43.4
	No	151	56.6
Can HBV cause liver cancer?	Yes	82	30.7
	No	185	69.3
Can vaccine prevent HBV?	Yes	167	62.5
	No	100	37.5
Can hepatitis B affect all age groups?	Yes	202	75.7
	No	65	24.3
Do all infected patients show symptoms?	Yes	165	61.8
	No	102	38.2

Table 2 shows pregnant women's knowledge level on HBV. Majority of the respondents 197 (73.8%) did not know that hepatitis b is an infection caused by hepatitis B virus and, 202 (75.7%) did not know that hepatitis B could be transmitted from a mother to her child, nor through contact with infected blood and body fluid 195 (73%). 187 (70%) said hepatitis B could be transmitted by handshaking, cannot be transmitted by sharing drinking cups, spoons, and plates with an infected person 195 (73%), is not transmitted by hugging 202 (75.7%) and, less easily transmitted than HIV from infected siblings, playmates and family members 180 (67.4%). 183 (68.5%) knew that a laboratory test could detect HBV, that HBV is treatable, cannot cause liver cancer 185 (69.3%), is preventable with vaccination 167 (62.5%), could affect all age groups 202 (75.7%) and, that all infected patients show symptoms 165 (61.8%).

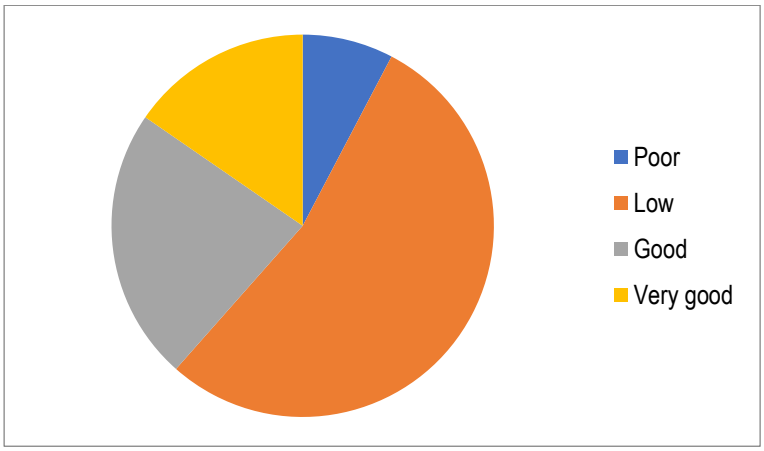

Figure 1. Overall Level of Knowledge for Hepatitis B Virus

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e-ISSN: 2798-5067
p-ISSN: 2798-5059

Figure 1 shows that not up to half (35.7%) of the participants were in the category adjudged to have very good knowledge level, less than quarter (23.1%) were in the category adjudged to have good knowledge level, more than half (53.8%) had low knowledge level and few participants (8%) had poor knowledge level. An overall 46.3% level of knowledge (lower than the acceptable cut-off of 50%) indicated a low knowledge level for hepatitis B virus.

Table 3. Preventive Practices of Hepatitis B Virus among Pregnant Women (n=267)

Variables	Variable Classification	Frequency	Percentage (%)
Have you been screened for hepatitis B?	Yes	147	55.1
	No	120	44.9
If diagnosed with hepatitis B will you go for further investigations and treatment?	Yes	174	65.2
	No	93	34.8
If diagnosed with hepatitis B will you inform your spouse?	Yes	141	52.8
	No	126	47.2
Did you ensure that your older children were vaccinated with Hepatitis B vaccine after birth	Yes	169	63.3
	No	98	36.7
Have you received vaccination against Hepatitis B Virus?	Yes	74	27.7
	No	193	72.3
Do you ask for new syringe to be used whenever you have to be injected?	Yes	225	84.3
	No	42	15.7
Do you ask for the screening of blood before transfusion?	Yes	192	71.9
	No	75	28.1

Table 3 shows the preventive practices of hepatitis B virus among pregnant women. 147 (55.1%) have screened for hepatitis B, 174 (65.2%) would go for further investigations and treatment if diagnosed with hepatitis B, 141 (52.8%) would inform their spouse if diagnosed with hepatitis B, ensured that their older children were vaccinated with Hepatitis B vaccine after birth, 193 (72.3%) have not received vaccination against Hepatitis B Virus, 225 (84.3%) asked for new syringe to be used whenever they had to be injected and 192 (71.9%) asked for the screening of blood before transfusion.

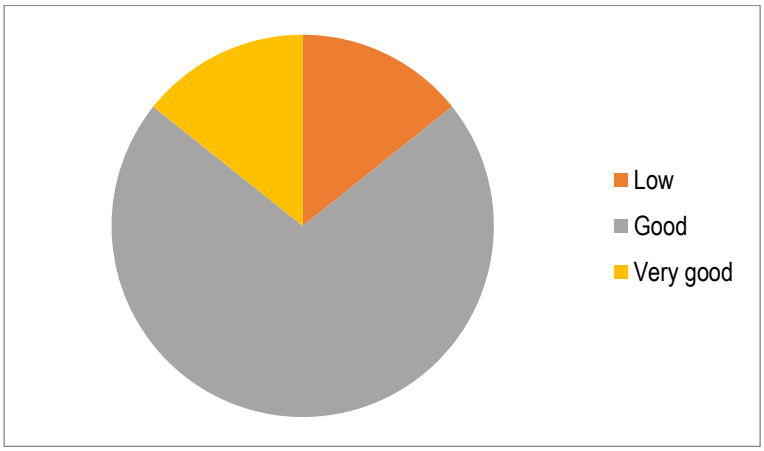

Figure 2. Overall Level of Prevention Practice for Hepatitis B Virus Infection

Figure 2 shows 14.3% of the participants had very good prevention practice level, nearly three- quarter (71.4%) had good level of prevention practice and, about one-seventh (14.3%) had low level of prevention practice. An overall 60.0% level of prevention practice (higher than the acceptable cut off of 50%) indicated a good level of prevention practice.

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Table 4. Factors Associated with Hepatitis B Infection among Pregnant Women (n=267)

Variables	Variable Classification	Frequency	Percentage (%)
Reasons for not been screened	Lack of knowledge	39	14.6
	Low risk status	98	36.7
	Lack of access to screening facility	37	13.9
	Lack of money to pay for screening	93	34.8
Reasons for not been vaccinated	Lack of knowledge	19	7.1
	Low risk status	55	20.6
	Lack of access to vaccine	30	11.2
	Non-availability of vaccine	52	19.5
	Busy schedule	43	16.1
	Lack of trust in vaccine efficacy	45	16.9
	Lack of money to pay for vaccine	23	8.6
Religious factors	My religion forbids me from taking vaccines	85	31.8
	I believe that prayer is more effective that vaccine	116	43.4
	Vaccine defiles a child of God	66	24.7
Cultural factors	There is a herbal medicine to prevent hepatitis B virus infection in my culture	162	60.7
	Hepatitis B virus does not infect people in my culture	105	39.3

Table 4 shows the factors closely linked with hepatitis B virus infection among pre-natal women. Reasons given for not been screened were lack of knowledge 39 (14.6%), low risk status 98 (36.7%), lack of access to screening facility 37 (13.9%) and, lack of money to pay for screening 93 (34.8%). Reasons given for not been vaccinated include lack of knowledge 19 (7.1%), low risk status 55 (20.6%), lack of access to vaccine 30 (11.2%), non-availability of vaccine 52 (19.5%), busy schedule 43 (16.1%), lack of trust in vaccine efficacy 45 (16.9%) and, lack of money to pay for vaccine 23 (8.6%). Religious factors include religion forbidding vaccination 85 (31.8%), prayer being more effective that vaccine 116 (43.4%), vaccine defiles a child of God 66 (24.7%). For cultural factors, 162 (60.7%) believed that herbal medicine to prevent hepatitis B virus infection was available and, 105 (39.3%) believed that hepatitis B virus does not infect people in their culture.

Table 5. Hypotheses Testing

Hypothesis 1: Kruskal Wallis Test of Association between Socio-demographic characteristics and knowledge of Hepatitis B virus infection		
Variables	K	P
Knowledge and Age (in years)	1.19	0.17
Knowledge and Religion	3.73	0.07
Knowledge and Number of Deliveries	4.78	0.14
Knowledge and Level of Education	3.55	0.06
Knowledge and Occupation	1.35	0.06

Hypothesis 2: Chi-square test of relationship between knowledge of Hepatitis B virus infection and the prevention practices			
Variables	X^2	DF	P
Knowledge and prevention practices	36.71	1	0.001*

H_0: There is no significant association between the socio-demographic characteristics and knowledge of Hepatitis B virus infection among pregnant women attending antenatal clinic in a Central Hospital in Delta State.

Pregnant women's socio-demographic characteristics have no significant association with their knowledge of Hepatitis B virus infection in a Central Hospital in Delta State (k = 2.92, p-value = 0.10). Table 5 shows that there was no significant associations between the pregnant women's knowledge of Hepatitis B virus infection and their age (k = 1.19, p-value = 0.17); religion (k = 3.73, p-value = 0.07); number of deliveries (k = 4.78, p-value = 0.14); level of education (k = 3.55, p-value = 0.06) and; occupation (k = 1.35, p-value = 0.06). These indicate that the null hypothesis was accepted.

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H_0: There is no significant relationship between the knowledge of Hepatitis B virus infection and the prevention practices among pregnant women attending antenatal clinic in a Central Hospital in Delta State.

Table 5 shows that X2 = 36.71 and p-value 0.001. The null hypothesis was rejected. Pregnant women's knowledge of Hepatitis B virus infection had significant relationship with their prevention practices in a Central Hospital in Delta State.

DISCUSSION

Knowledge of Hepatitis B virus infection among pre-natal women

Findings of the study showed that pregnant women had low knowledge level concerning hepatitis B virus infection. The women did not know that hepatitis B is an infection caused by hepatitis B virus, could be transmitted from mother to child, or via infected blood and body fluid. This finding is in line with the finding of (Dagnew et al., 2020) in Ethiopia who reported that most pregnant women had knowledge categorized as poor on hepatitis B infection. In their study only a few study participants agreed to know that the cause of hepatitis B is a virus, but most of them declined to know that hepatitis B virus could be passed on from mother to child. Another study by (Nguyen et al., 2021) in Vietnam reported that most of the pregnant women correctly responded that HBV could be passed on from mother to child at delivery, through casual sex and transfusion of blood. A related study by Pham et al. (2019) in Northern Vietnam revealed that around one-tenth correctly answered all questions on the route of HBV transmission.

Findings of the current study showed that the pregnant women attending antenatal clinic in a Central Hospital in Delta State wrongly said hepatitis B virus infection could be transmitted by handshaking, sharing drinking cups, spoons and plates with an infected person. Majority of the respondents knew that hepatitis B virus infection is not transmitted by hugging and, less easily transmitted than HIV from infected siblings, playmates, and family members. Most pregnant women in the study by (Nguyen et al., 2021) in Vietnam correctly answered that HBV cannot be spread through sneezing, coughing and handshake. Although, a few which were wrong opined that HBV could be contracted via sharing utensils or food with people living with HBV infection and, that washing and cooking food items thoroughly was able to prevent HBV transmission. In another study by (Pham et al., 2019) in Northern Vietnam up to half of the respondents incorrectly thought that HBV was transmissible via sneezing, contaminated water or sharing food items with HBV chronic patients.

The respondents in the present study rightly knew that a laboratory test could detect HBV, that HBV is treatable, is preventable with vaccination, could affect all age groups, that all infected patients show symptoms but wrongly answered that HBV cannot lead to liver cancer. This finding is related to the finding of (Dagnew et al., 2020) in Ethiopia who observed that a few pregnant women had knowledge that vaccine against hepatitis B virus exists. In a similar study, (Nguyen et al., 2021) found out that majority of the participants in the study were aware that hepatitis B infection possibly led to liver cirrhosis, liver failure, liver cancer or premature death, but only less than one-fifth responded that the risk for premature death was higher in the absence of monitoring and treatment.

Prevention practices of Hepatitis B virus infection among pregnant women

A striking finding of this study was that pregnant women had a level of prevention practice that was good for hepatitis B infection. A related study by (Pham et al., 2019) in Northern Vietnam observed that around one-tenth correctly answered to all questions concerning preventive measures for HBV. In the opinion of the researchers, having good prevention practice despite low level of knowledge was probably because some prevention practices for hepatitis B infection were provider-initiated and also because skilled health care providers' adherence to standard precautions were beneficial to providers as much as patients, because it was better to err on the side of caution. Majority of the respondents in the present study had screened for hepatitis B, were willing to go for further investigations and treatment if diagnosed with hepatitis B and, also willing to inform their spouse if diagnosed with hepatitis B. In a study by (Abdela et al., 2016) showed that in Northwest Ethiopia a few students of Medicine and Health Sciences had screened for HBV, out of which less than three-quarters had vaccinated against HBV, and less than half of them had completed the recommended three doses. In a study by Bittaye et al. (2019) in Gambia, a sero-prevalence rate of 9.2% hepatitis B infection (higher than 8% which is considered high endemicity) was observed. However, willingness to do further investigations and take treatment if diagnosed of hepatitis B and, willingness to inform spouse if diagnosed with hepatitis B was not previously described. Centre for Disease Control and Prevention (2018) recommended that every woman needs to get tested for HBsAg in an early antenatal visit (first trimester) of every pregnancy, even when they have previously been screened or vaccinated.

Furthermore, most pregnant women attending the antenatal clinic used for present study ensured that their older children were vaccinated with Hepatitis B vaccine after birth, asked for new syringe to be used whenever they had to be injected and asked for the screening of blood before transfusion. However, nearly three-quarters had not received

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e-ISSN: 2798-5067
p-ISSN: 2798-5059

vaccination against Hepatitis B Virus. Another study by Pham et al. (2019) in Northern Vietnam found out that although majority of the study respondents acknowledged that HBV vaccine was important for infants, less than three-quarters were willing to have their children vaccinated within 24 hours. In a related study by Mursy and Mohamed (2019) in Sudan, majority of Nurses and Midwives were deemed to have a practice regarded as safe for HBV infection which would invariable rob off on their patients. According to the study findings, most participants frequently utilized sterile instruments and hand gloves. In the opinion of the researcher, the patients of such Nurses and Midwives would not even need to request for a new syringe as it is a norm.

Factors affecting the practice of Hepatitis B virus prevention among pregnant women

The findings of the study showed that a frequent excuse given for being unscreened and unvaccinated was the pregnant women's belief in having a low-risk status. In a similar study by Shrestha, et al. (2020) in Nepal it was reported that the major excuse for being unvaccinated was the lack of programmes encouraging vaccination. In another research in Ethiopia, it was observed that the suboptimal vaccination status was due to the unavailability of the vaccines and the associated cost issues (Abeje & Azage, 2015).

Furthermore, majority of the pregnant women had a religious belief that prayer was more effective than vaccine. In a related study by Freeland et al. (2020) in the United States interviewees stated that community members avoided getting tested because they believed that all things which included health is God's will and it felt better not probing it. Furthermore, the discussants mentioned that a lot of Africans see ailment as an affliction from God for wrongdoing or immorality and that prayer from a spiritual healer when sick was a common practice before engaging in health care.

Moreso, findings of the present study in Delta State showed that majority of the pregnant women culturally believed that herbal medicine was available to prevent HBV. In a related study by Freeland et al. (2020) in the United States interviewees stated that the use of indigenous and local medicine was frequent among Africans and that a lot of African immigrants in the United States requested for local remedies before visiting a Western practitioner. Furthermore, some participants said that a culture of being secretive about health is normal and discussing disease is considered a taboo. Hence, even when people die of cancers and other diseases, it is kept a secret.

Association between the socio-demographic characteristics and knowledge of Hepatitis B virus infection among pregnant women

Findings of the study revealed that pregnant women's socio-demographic characteristics (age, religion, number of deliveries, level of education and occupation) had no significant association with their knowledge of Hepatitis B virus infection. In a related study by Dagnew et al. (2020) in Northwest Ethiopia, educational status was the sole factor significantly associated with pregnant women's knowledge. Similarly, primigravid study participants were nearly three times far more expected to have good knowledge compared to their multigravida counterparts. Another study by Maqsood et al. (2021) in Pakistan reported revealed that knowledge about HBV was found to be higher among participants in age group 35 years and older, having over ten years of schooling experience, engaged in professional, clerical sales or service jobs and being in the richest wealth quintile.

Relationship between Hepatitis B virus infection knowledge and the prevention practices of pregnant women

Results of the present study showed that pregnant women's knowledge of Hepatitis B virus infection had significant relationship with their prevention practices. In a similar study by (Dagnew et al., 2020) in Northwest Ethiopia, a relationship existed between the Hepatitis B virus infection knowledge and the prevention practices of pregnant women. Gravid women who were vaccinated with HBV vaccine were eighteen times more likely to have knowledge level categorized as good compared to those who were not immunized with HBV vaccine. High level of knowledge about prevention of hepatitis B infection had a nexus with higher possibility of demonstrating good practice of hepatitis B infection prevention but only at the 10% significance level. This link was previously confirmed by (Osei et al., 2019; Rathi et al., 2018; Zaeri et al., 2018) in Ghana, India and the Kingdom of Saudi Arabia, respectively. In the opinion of the researchers acceptable knowledge about HBV will positively result in adoption of HBV prevention practices, thereby empowering the individual to be responsible for their health.

CONCLUSION

The investigation revealed that gravid women had low level of knowledge about hepatitis B virus but good level of prevention practice. The pregnant women believed that they had a low risk status for HBI, prayer was more effective than vaccine and herbal medicine was available to prevent HBI. Significant association did not exist between pregnant

Volume 4, Number 2 (June 2024)
e-ISSN: 2798-5067
p-ISSN: 2798-5059

women's socio-demographic characteristics and their knowledge of HBI. Significant relationship existed between the knowledge of Hepatitis B virus infection and the prevention practices of gravid women.

Nurses should organize more detailed health education sessions on hepatitis B infection for pregnant women and keep up with their role of performing provider-initiated preventive services. The Nigerian government should employ more nurses in antenatal clinics and government-owned health care facilities to improve the nurse-patient ratio. This will improve the personnel available to attend to pregnant women and give them more opportunities to interact with Nurses as much as needed regarding health prevention measures because understaffing negatively affects this interaction. Non-governmental organizations and philanthropists should support the funding of human and material resources needed to improve the knowledge of pregnant women on HBV and sustain a good prevention practice among pregnant women. Also, governmental and non-governmental organizations should contribute to subsidizing the cost of performing laboratory investigations to detect hepatitis B virus. This will enable pregnant women to accede to diagnostic requests aimed at detecting the hepatitis B virus.

ACKNOWLEDGEMENTS

The researchers express gratitude to the study respondents and research assistants.

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Volume 4, Number 2 (June 2024)
e-ISSN: 2798-5067
p-ISSN: 2798-5059

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