KNOWLEDGE OF THE EFFECT OF MALARIA ON PREGNANT WOMEN AMONG ANTENATAL WOMEN IN UNIVERSITY OF BENIN TEACHING HOSPITAL (UBTH)

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BENIN CITY

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF HEALTH SAFETY AND ENVIRONMENTAL EDUCATION, FACULTY OF EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF EDUCATION (B.ED.) DEGREE IN HEALTH EDUCATION OF THE UNIVERSITY OF BENIN, BENIN CITY

JANUARY, 2023

CERTIFICATION

We certify that this project work done by **APEPE AKPEVWE** with Matriculation Number **EDU1709305**, was carried out under our supervision in Health, Safety and Environmental Education, Faculty of Education, University of Benin, Benin City, in partial fulfilment of the award of Bachelor of Education (B.Ed.) degree in Health Education.

_____ _____

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Dean, Faculty of Education

Date_____

DEDICATION

This project work is dedicated to God Almighty, for His unending providence, grace, mercy, wisdom and protection in my life, and to my loving, kind and supportive Mother for her selfless and relentless support in making me who I am today, and to my siblings and family Mr. and Mrs Michael Apepe, Mrs. onoriode Akpososo and her husband Pastor Efe, Mr. Oghenero Apepe, Mr. Solomon Apepe and his wife, Mr. Ejiro Akpososo and his Wife Mrs. Queen Akpososo. May God bless you all.

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ABSTRACT

The effect of malaria in our present day society on pregnant women continue to have adverse effect on their health and that of the baby. The study investigated the Knowledge of the effect of malaria on pregnant women among antenatal women in University of Benin Teaching Hospital (UBTH). Benin City, Edo State.

A descriptive survey was employed in this study. Four (4) research questions were raised to guide the study. The population of the study comprises of all pregnant women in the University Of Benin Teaching Hospital (UBTH) with a total population of seventy- six (76), the entire population was used as a sample size. A structured questionnaire was used for data collection. The questionnaire was validated by the researcher's supervisor and one other expert in the Department of Health Safety and Environmental Education; while the test- re test reliability method was adopted to ascertain the reliability of the instrument. Data collected were analyzed using mean and standard deviation.

findings one revealed the level of knowledge of pregnant women about malaria prevention. Research question two revealed the level of effect of malaria on pregnant women. The knowledge of the effect of malaria helps provide awareness among pregnant, enhance pregnant women health, attitude towards malaria, promote health situations facilitate healthful relationship and enables pregnant women make responsible decisions and concerning the knowledge of the effects of malaria.

CHAPTER ONE

INTRODUCTION

Background to the Study

Malaria, a serious public health problem among pregnant women in most developing countries affects people living in tropical and sub-tropical areas Snow, (2019). A deadly parasitic disease caused by infection with Plasmodium. Malaria disease imposes serious effect on the blood by interfering with hemoglobin and destroying red blood cells WHO, (2013). Malaria poses tremendous public health problems across the globe with estimated 600,000 – 1,000,000 deaths attributed to it. Mortality is especially high in people not adequately protected by an acquired immunity, such as young children, pregnant women and migrants WHO, (2013). In Africa, an estimated 10,000 pregnant women and 200,000 infants die as a result of malaria in pregnancy, Studies have shown that malaria worsens certain pregnancy outcomes that include, increased incidence of anaemia, spontaneous abortions, inter uterine growth restrictions, still birth, low birth weight, fetal distress and congenital malaria Rogerson, (2017). Nigeria is known for high prevalence of malaria where at least 50 % of its population suffers from at least one episode of malaria each year accounting for over 45 % of all out patient visits Iriemenam, 2011). Regarding problems associated with malaria in pregnancy, the World Health Organization WHO, (2011) has adopted a three-pronged approach for reducing malaria burden among pregnant women.

These approaches include, effective case management of malaria infection, the use of insecticide treated nets and intermittent preventive treatment in areas of stable transmission. The knowledge of how these strategies work in the population together with the identification of main determinants that influence protective behaviours among pregnant women are required to monitor and evaluate the progress of the malaria control efforts. Insufficient knowledge on the contributory factors to malaria justifies the study and therefore serves to educate women of child bearing age of the effects on maternal and neo-natal health and possible prevention and control measures in curbing the menace

Malaria is common in tropical and subtropical regions because of rainfall, warm temperature, and stagnant water that provide an ideal environment for mosquito larvae. Commonly, the disease is transmitted by the bite of an infected female Anopheles mosquito into person's circulatory system where the parasites travel to the liver to mature and reproduce (WHO, 2015). Five species of Plasmodium can infect and be transmitted, and the vast majority of deaths are caused by *P. Falciparum* and *P. Vivax*, while *P. Ovale* and *P. Malariae* cause generally milder form of malaria. The zoonotic species *P. Knowlesi*, prevalent in Southeast Asia, causes malaria (WHO, 2015).

Statement of the Problem

In Nigeria, the effect of malaria has caused great damage to pregnant women because of the lack of adequate knowledge on how to reduce the burden of malaria during pregnancy. It has become a normal phenomenal for pregnant women to be affected with malaria and as such it has caused many pregnant women Heath to deteriorate during pregnancy or at child delivery. The knowledge of malaria among pregnant women Especially among antenatal women in UBTH is aimed at helping pregnant women understand the knowledge of symptom about malaria and prevention when they experienced it. To develop a healthy life and make wise, informed and responsible decisions during their pregnancy period. It is known that malaria intervention programme aims at preventing mortality and reducing morbidity in areas of high endemicity and as well as alleviating socio-economic losses arising from malaria especially among the high risk group Amaechi and Ukpai, (2013). For this to be realizable, frequent sustained effort at assessing local malaria situations for the implementation of adequate control measure is advocated.

Therefore, this study intends to investigate the knowledge of the effect of malaria on pregnancy women among antenatal women in UBTH.

Research questions

The following research questions was raised. To guide the study;

1. What is the level of knowledge of the effects of malaria on pregnant women?
2. Does age influence the knowledge of the effects of malaria on pregnant women?
3. Does religious affiliation influence the knowledge of the effects of malaria on pregnant women?
4. Does the level of education influence the knowledge of the effects of malaria on pregnant women?

Purpose of the Study

The main purpose of this study is to investigate the knowledge of the effect of malaria on pregnant women among antenatal women in UBTH. This study will specifically seek:

- Assess the level of knowledge of the effects of malaria on pregnant women.
- To determine whether age affect the knowledge of the effect of malaria on pregnant women.
- To investigate whether religious affiliation affect the knowledge of the effect of malaria on pregnant women.

Significant of the Study

This study was therefore carried out to assess the knowledge of the effect of malaria on pregnant women among antenatal women in University of Benin Teaching Hospital (UBTH).

Scope of the Study

The study is to find the knowledge of the effect of malaria on pregnant women among antenatal women in University of Benin Teaching Hospital. It will investigate the effect of malaria on pregnant women, Knowledge about malaria and how to prevent it too. Meanwhile the study will be delimited to antenatal pregnant women in University of Benin Teaching Hospital.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

In this chapter, the literature is on the Knowledge of the effect of malaria on pregnant women Among antenatal women in UBTH were expressly reviewed. Shedding light from different perspectives, It examined issues arising from the topic of interest for the purpose of giving a theoretical and conceptual foundation to the study. They are discussed under the following sub headings:

- Concept of Malaria
- The Antenatal Care Service In Nigeria And Malaria In Pregnancy
- Age Influence Knowledge of the effects of malaria on pregnant women
- Knowledge About Symptoms of Malaria
- Educational Influence the Knowledge of the Effects of Malaria on Pregnant Women
- Effects on Malaria During Pregnancy
- Summary of Literature Reviewed

Concept of Malaria

Malaria is a mosquito born infectious disease of humans and other animals caused by parasitic protozoan of genus Plasmodium WHO, (2015) WHO, (2019) It is one of the most devastating infectious diseases, killing more than 1 million people annually where pregnant women, children,

and immune-compromised individuals have the highest morbidity and mortality, and Africa bears the heaviest burden. Pregnant women infected with malaria usually have more severe symptoms and outcomes, with higher rates of miscarriage, intrauterine demise, premature delivery, low-birthweight neonates, neonatal death, higher risk for severe anemia and maternal death Baron , James , Crutcher, Hoffman (2006). The disease is widespread in tropical and subtropical regions around the equator, Asia, America and SubSaharan Africa having10000 maternal deaths and 200,000 neonatal deaths per year Baron ,James , Crutcher, Hoffman (2006). In 2010 there were 219 million documented cases of malaria. That year, the disease killed between 660,000 and 1.2 million people, many of whom were children in Africa. Malaria is commonly associated with poverty and caused by poverty WHO, (2010). Malaria is common in tropical and subtropical regions because of rainfall, warm temperature, and stagnant water that provide an ideal environment for mosquito larvae. Commonly, the disease is transmitted by the bite of an infected female Anopheles mosquito into person's circulatory system where the parasites travel to the liver to mature and reproduce WHO, (2015). Five species of Plasmodium can infect and be transmitted, and the vast majority of deaths are caused by P Falciparum and P Vivax, while P Ovale and P Malariae cause generally milder form of malaria.

The Antenatal Care Service in Nigeria and Malaria in Pregnancy

Each year, thirty million pregnancies are threatened by malaria in endemic countries throughout Africa Balogun, (2017). In Nigeria, the disease accounts for about 25% infant and 11% maternal mortality WHO, (2010). Despite the tragedy and economic loss reflected by these percentages, majority of pregnant women in Nigeria do not have access to antenatal services Idowu , (2007). Antenatal care refers to the professional services given to pregnant women to promote and maintain the good health of the expectant mother and the unborn child till safe delivery of a mature and healthy baby. The duration of pregnancy from the moment of the egg is fertilized till labour is about 266 days. Since it is not easy to pinpoint the exact day of fertilization and since most women will not know that they are pregnant till the next menstrual cycle is missed, the first day of the last cycle is used in calculating the expected date of delivery Kuti , (2006). For most part of the pregnancy, the woman is monitored to:

a) Detect previously undiagnosed diseases like heart disease, hypertension, diabetes mellitus and renal problems.
b) .Detect, and if possible, prevent complications of pregnancy like anaemia, cephalopelvic disproportion and retardation of foetal growth.
c) Manage the discomfort and disorders of pregnancy like vomiting and heartburn.

d) Prepare the woman for labour, lactation and appropriate care of the child

a) In the developed world, 97% of women receive prenatal care. This contrast sharply with the experience in many developing countries where less than 30% of the women receive antenatal care Nwogu, (2009). Antenatal care may be grouped into two phases: initial and subsequent visits to the health centre. Initial visit is also called booking visit. Ideally, booking should occur not less than 18 weeks of gestation so that appropriate interventions can be implemented where risk factors are indicated Nwogu, (2009). Activities during the booking visit include obtaining the mother's medical history, physical examination and carrying out further investigations. After booking visit, the frequency of subsequent visits depends on the history of the pregnancy. In the absence of specific risk factors, the expectant mother is recommended to come for prenatal visit:

a) Every four weeks till 28 weeks

b) Every two weeks till 36 weeks

c) Every week till the commencement of labour.

At each visit, the weight, blood pressure and urine test are measured or done. For most women, about 10kg is gained during pregnancy. From the 24th week of pregnancy, mothers should be asked of foetal movement. The haemoglobin is repeated at 30 and 36 weeks of pregnancy. Also at 36 weeks and thereafter, the engagement of the foetal head should be checked Niganda ,

Romero, (2013). Antenatal care service if well implemented should provide the simple technologies that exist to prevent and control malaria in pregnancy. These technologies include long lasting insecticide-treated nets (LLINs), which form protective barriers between mosquitoes and women while they sleep; intermittent preventive treatment in pregnancy (IPTp), the drug regimen recommended for protecting women and their unborn babies from the effect of malaria Jhpiego, (2015). Antenatal care services increase mother's chances to stay alive and give birth to a healthy baby. This is achieved by providing special care and monitoring to pregnant women before birth. Pregnancy if not cared for is always a risk to the mother especially in complicated cases (Ogbonnaya ,(2005). Maternal mortality occurs because of complications during pregnancy and delivery. But some of these can be noticed in antenatal care before they become life threatening. Unfortunately, there is low overall utilization of antenatal care services among Nigeria women compared to women in other African countries Sule-Odu, (2010). According to Dairo (2010), three main factors affecting the utilization of antenatal care services include inability to afford cost of antenatal care; the long time that will be spent in obtaining antenatal care; and ignorance to importance of antenatal. The antenatal care services in Nigeria, Malaria Action Coalition (MAC) in collaboration with National Malaria Control Program of the Federal Ministry of Health, Roll Back Malaria (RBM) partners and other key stakeholders have develop policies and guidelines that aim at improving the overall health status of both mother and child. The following are the ideal antenatal services provided for pregnant mother:

i. Education activities aimed at developing orientation package, producing complete curriculum and training package; conducting workshops and trainings.

a) Measuring the size of the belly by tape measure.
b) Examining the belly with hands or fingertips (theultrasound system is used in some hospitals).
c) Checking the blood pressure, blood group and genotype.
d) test to determine percentage of blood in the body.
e) test to detect the level of blood sugar and protein.
f) of iron tablets and folic acids.
g) for Sexual Transmitted Infections (STIs), Tuberculosis (TB) and Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS).
h) Tetanus toxoid vaccination.
i) .Malaria prophylaxis (IPTp).
j) Counselling on the signs of danger in pregnancy, safer sex and contraceptive.
k) education on nutrition, body fitness and breast feeding FHI, (2014).

All the antenatal clinics use antenatal care cards. This helps in controlling the amount of visits. Also, information on the progress of pregnancy is marked on these cards. The card also contains the possible next antenatal date visit depending on the age of pregnancy. HIV positive mothers are given special birth planning during antenatal CDC, (2012)

Age Influence Knowledge of the effects of malaria on pregnant women

Malaria is a major public health problem in ninety-one countries world-wide with sub-Sahara Africa bearing 80% of the disease burden WHO , (2017) Malaria remains endemic in Nigeria where the parasitic disease disproportionately afects children aged under 5 years and pregnant women compared to the rest of the population groups National Malaria Elimination Programme 2016). In pregnancy, malaria increases the risk of maternal anaemia, spontaneous abortions, stillbirths, premature deliveries, intra-uterine growth retardation and low birth weight babies, and these are all important causes of infant mortality WHO, (2018). Also, more than 70% of all malaria deaths occur in children aged under 5 years Farid, (2016). The scope of malaria control is changing worldwide with more emphasis community and individual participation.

Health education can improve participation in malaria control, when such education is designed to address gaps in the knowledge, attitudes and practice of individuals in the communities Farid, (2016). Nigeria has implemented three national malaria strategic plans (NMSP) till date and is presently implementing a fourth NMSP (2014–2020). Tis fourth NMSP aims to achieve pre-elimination status and reduce malaria-related deaths to zero by 2020. Federal Ministry of Health, (2014). Evidence from malaria knowledge, attitudes, and practices (KAP) studies reported that misconceptions on malaria transmission and risk factors still exist with adverse impact on malaria control programmes. Obol , David Lagoro, Christopher and Garimoi, (2011) Findings

from a study conducted by Singh in rural areas of Northern Nigeria revealed that although knowledge about malaria prevention measures was high (90%), it was poorly refected in their practices (16%) Singh , Musa , Singh and Ebere, (2014). Considering the vulnerability of both children aged under 5 years and pregnant women to malaria Federal Ministry of Health, (2014). This study aimed to determine the Knowledge of the effect of malaria on pregnant women Among antenatal women in UBTH. Only few studies have assessed knowledge of the effects of malarial among pregnant women in hospital-based setting. This study sought to fll this gap and provide new insights on the depth of knowledge gaps. The findings will help to improve implementation of effects of malaria. It will also be essential in establishing epidemiological and behavioural baseline indicators to evaluate and improve progress by knowledge on malaria.

Knowledge About Symptoms of Malaria

Federal Ministry of Health (FMOH) survey assumed that the households had good knowledge of the symptoms of malaria if they mentioned at least fever, headache, chill and joint pain but poor knowledge if they mentioned fever plus general weaknesses or dizziness. In Ogun (urban Ado-Odo), 78% of households were considered to have good knowledge of the symptoms of malaria as compared with 49% in the rural area of Ado-Odo Oreagba, (2014). According to studies by Adedotun, (2010), Oreagba, (2014), knowledge about signs and symptoms of malaria is relatively high with most respondents indicating awareness of key symptoms including raise in

temperature/hot body followed by other symptoms like vomiting, loss of appetite and restlessness. A study done by Adedotun, (2010) in Oyo indicated that caregivers had a good understanding of how to recognize malaria, with 91% reporting high body temperature, 50% headache, 25% body pain, 23% chills, 45% vomiting and 74% poor appetite. However, in the same study, the understanding and recognition of severe malaria was very low among the caretakers, with only 11% mentioning convulsions as a sign of severe malaria, 25% lethargy/weakness, and 26% anorexia. While general knowledge of malaria symptoms is relatively high, reviewed research indicates that symptoms of severe malaria are not well known among community members Fapohunda, (2014), Njama, (2013). The less common symptoms, which require close observation and medical interpretation like jaundice, anaemia and splenomegally, were also not well known Njama, (2013). Convulsions as a sign of severe malaria were not widely mentioned by the respondents in most studies reviewed. Onyeneho (2006) makes similar observations based on a study in Imo state that mothers (as caretakers) appeared not to easily recognise anaemia unless told by health workers. In the same study, it is indicated that although altered consciousness and convulsions were recognized signs (by some caretakers) that the child was unwell, they were often thought to be traditional diseases best managed by traditional means. Onyeneho (2006) also reports that although splenomegaly was fairly recognized by elderly women, most mothers did not think splenomegaly was due to malaria, instead they thought that splenomegaly caused malaria. The limited knowledge of signs

of severe malaria, including convulsions, indicates an area that requires strengthening largely through health education and communication Fapohunda, (2004).

Educational Influence the Knowledge of the Effects of Malaria on Pregnant Women

Education is used to instill knowledge, change attitude and develop skills to transform communities in management of resources including the effects of malaria on pregnant women. Salequzzaman (2001) argued that education is critical for promoting sustainable development and improving the capacity of people to address health issues. The education program builds on the knowledge, values, skills, experiences and determination of human capacity needed to work on solving health issues at an individual and community level. The World Bank (1999) argued that education equips people with knowledge, skills and attitudes to tackle any crisis. Jatau (2013) stressed that sufficient knowledge of the impact on health may help people to protect themselves from malaria and other infections. Adequate education of the effects of malaria on pregnant women will reduce the effects on pregnant women.

According to Hogan (2002), Education activities provide a platform on which a community begins to exercise the knowledge needed to improve on their health, Political and social changes across the continent, including the rise of NGOs, have fostered an increased awareness of health issues among the public. Urban populations have become more involved in the issue of malaria.

Education and change of attitude are interwoven. People are always adopting, modifying and relinquishing attitudes to fit the ever-changing needs and interests. Attitude may not be changed by simple education. Research in sciences has shown that knowledge on a topic may increase; people may even change attitudes (values), but that the step to improved behaviors and practices depends on a complex set of social and psychological factors Asmawati, (2012). Millerl, (1999) also reported that it is far from truth that providing information to groups and individuals lead them to appropriate personal and organizational actions and performance. This was supported by Pfeffer, (2000, P.30.) who observed that while information and knowledge are crucial to performance, knowledge of an issue is often not sufficient to cause action: "there is only a loose and imperfect relationship between knowing what to do and the ability to act on that knowledge."

Effects on Malaria During Pregnancy

Falciparum malaria during pregnancy has long been recognized as an important determinant of low birth weight of newborns Brabin, (2010) Menendez, (2010). Low birth weight (LBW) which is defined as the birth weight of less than 2.5 kg is usually more marked in primigravidae Brabin, (2010) but can extend to second and third gravidae in areas of low malaria transmission Nosten, (2011). In most studies designed to investigate the relation between malaria during pregnancy and birth weight, potential confounding factors, such as socioeconomic status, maternal nutrition,

and smoking, have not been taken into account Menendezet, (2010). However, a number of randomized controlled trials of preventive anti-malarial measures during pregnancy have confirmed this causal effect by showing that preventing malaria increases birth weight Aribodor ,(2009), Menendez, (2010). The major adverse effect of malaria in pregnancy on the mother is anaemia. Anaemia during pregnancy is a global problem, and in malaria endemic areas it is usually most severe in the second trimester of gestation, following a period of acute malaria infection in the first trimester Brabin, (2010). Severe anaemia in pregnancy is an important contributor to maternal and pre-natal morbidity and mortality Dicko, (2013), low-birth weight, iron and foliate deficiency, especially in first pregnancies Mockenhaupt, (2010). Malaria during pregnancy has not been associated directly with an increase in infant mortality, whereas severe maternal anaemia has been associated with an increased risk of infant death in the prenatal Kagu, (2007) and post neonatal periods Dolan, (2003) Nosten ,(2011). However, as low birth weight is a major determinant of infant mortality Ashworth, (2008), it has been assumed that malaria and anaemia during pregnancy would increase infant mortality indirectly by lowering birth weight. In malarious areas, though malaria and anaemia are likely to act together to reduce birth weight, their independent effects are difficult to distinguish. In a study conducted in a highly malarious area of Papua New Guinea, severe maternal anaemia was associated with low birth weight in primigravidae, whereas there was no obvious consistent association between parasite positivity and low birth weight Brabin, (2010). However, a more recent study conducted in Nigeria, which

attempted to quantitate the separate effects of anaemia- and malaria-attributable low birth weight, concluded that in malarious areas, malaria was a more important risk factor for low birth weight than was anaemia Aribodor, (2009). Until recently, the distinction between full-term and preterm low birth weight was difficult in the tropics. As a consequence, the relative contributions of malaria-associated intrauterine growth retardation and preterm delivery were not clearly established. Since the introduction of accurate methods for the estimation of gestational age, it has been suggested that the relative importance of these causes of low birth weight may depend on the level of malaria transmission and the timing of malaria infection during pregnancy Luxembourger, (2001). Premature birth results commonly from symptomatic malaria and is usual in severe malaria. It is therefore common in low transmission areas, where acquired premunition is poor, and in epidemics Menon, (2002). However, in prospective studies conducted in a low-malaria-transmission setting in Thailand, infection with malaria (which was most often asymptomatic) was associated with low birth weight, resulting mainly from intrauterine growth retardation rather than preterm delivery Dolan, (2003). In sub-Saharan Africa where malarial transmission is generally much higher and maternal malaria is rarely associated with symptoms, some studies have demonstrated that there were different consequences on the newborn infant, depending on the timing of infection Brabin, (2010). Parasitemia in the antenatal period was associated with intrauterine growth retardation, whereas cord blood parasitemia, probably reflecting a recent active infection, was associated with premature birth Sullivan,

(2009). In an area of much higher rates of transmission, chronic placental infection was associated with both mechanisms, and low birth weight resulting from premature birth was more common than usually thought Menendez, (2010).

Summary of Literature Reviewed

As a Researcher, this research work was proposed to investigate the Knowledge of the effect of malaria on pregnant women Among antenatal women in UBTH. Analysis of the attitude of concept of Malaria, The Antenatal Care Service In Nigeria And Malaria In Pregnancy, Age Influence Knowledge of the effects of malaria on pregnant women, Knowledge About Symptoms of Malaria, Educational Influence the Knowledge of the Effects of Malaria on Pregnant Women and Effect of malaria during pregnancy which this study did is very important due to the it's impact on the pregnant women and their health well-being. This research work would pay an essential role in the standard of Effects and Knowledge of malaria towards pregnant women and in the task of health growth and development, the result from this research work will also provide awareness of what role they must play in order to maintain good health status during pregnancy.

CHAPTER THREE

RESEARCH METHOD OF STUDY

This chapter describes the procedure employed in carrying out the research. It was done under the following sub-headings:

- Design Design
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliable of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

This study adopted a descriptive survey research design. Descriptive survey design is the process of collecting data or obtaining information about people's attitude and opinion in order to make judgment about conditions that exist (Salami & Aluta, 2015).

Population of the Study

The Population of the study consists of 76 antenatal pregnant women in University of Benin Teaching Hospital (UBTH), Benin City, Edo State.

Sample and Sampling Technique

There was no sampling technique since the entire population was used. The sample size was the whole population since the population is not too large. The sample size is seventy-six (76) of the antenatal pregnant women in the University of Benin Teaching Hospital (UBTH), Benin City, Edo State.

Instrument of Data collection

The instrument used for the study was a structure Questionnaire. This was divided into two sections. Sections A address the demographic Information of the respondents. Section B was made up of sixteen (16) structured items based on the research question earlier stated to elicit information from the respondents. The questionnaire consist of a multiple choice items that requires YES or NO response.

Validity of the Study

The items of the instrument were validated by three (3) lecturers; my supervisor, and two other lecturer in the Department of Health Safety and Environmental Education, University of Benin, Benin City, and Edo State. Corrections made were effected.

Reliability of the Instrument

Reliability is the consistency with which a test measures what it is set out to measure consistently. The questionnaire was examined reliable using the internal consistency method, by employing Cronbach Alpha statistics.

Method of Data Collection

Data was collected by the use of the instrument 76 pieces were administered. The researcher administered the questionnaires to the respondents and collect them.

Method of Data Analysis

The completed questionnaire was collected and analyzed sequentially according to the research questions. Data will be analyzed using mean (X) and standard deviation (SD) for the research questions. The mean response greater than 2.50 was considered as Agreed while the mean response less than 2.50 was regarded as Disagreed also standard deviation will be used for the analysis.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter present the analysis of data collected, interpretation and discussion of results, according to the research Questions.

Analysis of Research Questions

This decision is that any items with a percentage above 50% and above is regarded as agreed while items with 50% below are regarded as disagreed.

Gender Distribution of the Respondents

Table 4.1: Gender Distribution of the Respondents

Gender	Frequency	Percentage
Male	Yes 15(19.7%)	No 18(23.7%)
Female	Yes 23(30.3)	No 20(26.3)
Total	76	100

Table 4.1 shows that there are more female respondents than their male counterparts. This implies that female students participated more in this study than their male counterpart.

Religious of the Respondents

Table 4.2: Distribution of the Respondents by Religious

Religious	**Frequency**	**Percentage**
Christian	**Yes**	**No**
	38(50%)	**23(30.3)**
Muslim	**Yes**	**No**
	11(14.5)	**7(9.2)**
Traditional	**Yes**	**No**
	0(0%)	**0(0%)**
Total	**76**	**100**

Table 4.2 shows the age distribution of the respondents. The table reveals that 38(50%), 23(30.3%) of the respondents are Christian, 11(4.5%), 7(9.2%) Muslim, and 0(0%) are traditional. This implies that majority of the respondents are Christian.

Educational level of the Respondents

Table 4.3: Distribution of the Respondents by Educational level

Educational level	Frequency	Percentage
Primary school	**Yes** **22(28.9%)**	**No** **11(14.5)**
Secondary school	**Yes** **28(36.8)**	**No** **8(10.5%)**
Tertiary institution	**Yes** **5(6.6%)**	**No** **2(2.6%)**
Total	**76**	**100**

Table 4.3 shows the Educational level of the respondents. The table reveals that 22(28.9%), 11(14.5%) of the respondents are attend up to primary School, while 28(36.8%), 8(10.5%) of respondents attend secondary School and 5(6.6%), 2(2.6%) attend tertiary education. This implies that majority of the respondents attend secondary School.

Research Questions one

What is the level of knowledge of pregnant women about malaria prevention (n = 76)

Table 4:4 mean respond to the level of knowledge of pregnant women about malaria prevention.

S/N	ITEMS STATEMENTS	Yes	No	Yes	No
1	Malaria disease is transmitted by the bite of an infected female Anopheles mosquito into person's circulatory system	23(30.3%)	11(14.5%)	18(23.7%)	24(31.6)
2	Malaria is common in tropical and subtropical regions because of rainfall	33(43.4%)	9(11.8%)	28(36.8)	6(7.9%)
3	The use of insecticide treated nets and intermittent preventive treatment can prevent the cause of malaria.	18(36.8%)	34(44.7%	16(21.1%)	8(10.5%)
4	Stagnant water around the house can lead to Malaria in pregnant women	58(76.3%)	10(13.2%)	4(5.3%)	4(5.3%)

5	Sweat, vomiting, headache and muscle aches are symptom of malaria	48(63.2%)	7(9.2%)	16(21.1%)	5(6.6%)
6	Regular check-up can support the avoidance of malaria in pregnant women	52(68.4%)	6(7.9)	12(15.8%)	6(7.9%)

Source Field: 2022

Table 4:4 above shows that 60 respondents representing 40% who doesn't affirm about the level of knowledge of malaria among pregnant women in UBTH. While 90 respondents representing 60% who affirmed that pregnant women agree with the level of knowledge of malaria.

Research Questions two

What are the level of the effects of malaria on pregnant women (n = 76)

Table 4.5 mean respond to the level of the effects of malaria on pregnant women.

S/N	ITEMS	Yes	No	Yes	No
1	Malaria can lead to anemia among pregnant women	2836.8%)	11(14.5%)	32(42.1%)	5(6.6%)
2	Malaria can affect child birth during delivering	23(30.3%)	15(19.7%)	29(38.2%)	9(11.8%)
3	Malaria can lead to death in pregnant women if treatment is not regularly taken	31(40.8%)	4(5.3%)	27(35.5%)	14(18.4%)
4	Malaria disease imposes serious effect on the blood by interfering with hemoglobin and destroying red blood cells	18(26.7%)	7(9.2%)	33(43.4%)	18(23.7%)
5	Malaria can cause maternal anemia during pregnancy period	27(35.5%)	12(15.8%)	25(32.9%)	12(15.8%)
6	Malaria can lead to fetal loss during the early stage of pregnancy	39(51.3%)	13(17.1%)	22 28.9%)	2(2.6%)

7	Malaria can lead to delivery of low birth-weight infant	22(28.9%)	10(13.2%)	32(42.1%)	12(15.8%)
8	jaundice is an effect of Malaria on pregnant women	33(43.4%)	9(5.3%)	2735.5%)	7(9.2%)
9	Malaria can lead to premature delivery on pregnant women	45(59.2%)	11(14.5%)	12(15.8%)	8(10.5%)
10	Pregnant women suffering from malaria are at increased risk of miscarriage	47(61.8%)	6(7.9%)	21(27.6%)	2(2.6%)

Source Field: 2022

From table 4:5 above shows that 60 respondents representing 40% who doesn't affirmed to the level of effects of malaria among pregnant women in UBTH. While 90 respondents representing 60% who affirmed to the level of effects of malaria among pregnant women in UBTH.

Discussion of Findings

This section discusses the findings of the study. The findings are discussed drawing inferences from author's views in the literature review and relating them to the researcher's point of view based on the result of the study.

Research question one revealed the level of knowledge of pregnant women about malaria prevention. According to studies by Adedotun, (2010), Oreagba, (2014), knowledge about signs and symptoms of malaria is relatively high with most respondents indicating awareness of key symptoms including raise in temperature/hot body followed by other symptoms like vomiting, loss of appetite and restlessness. The limited knowledge of signs of severe malaria, including convulsions, indicates an area that requires strengthening largely through health education and communication Fapohunda, (2004).

Research question two the revealed the level of the effects of malaria on pregnant women. The major adverse effect of malaria in pregnancy on the mother is anaemia. Anaemia during pregnancy is a global problem, and in malaria endemic areas it is usually most severe in the second trimester of gestation, following a period of acute malaria infection in the first trimester Brabin, (2010). Severe anaemia in pregnancy is an important contributor to maternal and pre-natal morbidity and mortality Dicko, (2013), low-birth weight, iron and foliate deficiency, especially in first pregnancies Mockenhaupt, (2010).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of the Study

The study explore the knowledge of the effect of malaria on pregnant women Among antenatal women in UBTH. The objectives of the study was to determine the level of knowledge of pregnant women about malaria prevention, the level of the effects of malaria on pregnant women and the level of education influence the knowledge of the effects of Malaria on pregnant women. A total of 76 copies of the questionnaires were distributed to the respondents and 65 were retrieved and found usable, resulting to 85% response rate. The summary of the research findings are as follows:

The knowledge of the effects of malaria helps provide awareness among malaria among pregnant women, enhance pregnant women health, attitude towards malaria, promote health situations, facilitate healthful relationship and enables pregnant women make responsible decisions and concerning the knowledge of the effects of malaria.

Conclusion

Based on the findings of the study, it has been confirmed that the knowledge of the effects of malaria has beneficial influence among pregnant women. it has the ability to influence the

attitude and awareness as a whole. From the study, it can be deduced that the level of knowledge of pregnant women about malaria prevention, the level of the effects of malaria on pregnant women and the level of education influence the knowledge of the effects of Malaria on pregnant women. Is a major factor that can influence pregnant women concerning the effects of malaria. However, several recommendations for the study have been presented. This necessitates careful consideration the tactics to be used on the knowledge of the effects of malaria among pregnant women.

Recommendations

In the light of the findings of this study, the following recommendations are made:

Hence, campaign of the knowledge of the effects of malaria among pregnant women should be made compulsory and effective without further delay.

More community involvement and the creation of dialogue around the knowledge of the effects of malaria among pregnant women should be encouraged. It is also found necessary to change the mindset of pregnant women. Pregnant women should be open to discussion about the symptom and prevention of malaria and also help the pregnant women to understand what are the effects of malaria is. So, for that more education on malaria has to be taught to everyone. It is also important to form a policy on effects of the knowledge of malaria.

Passage of this act would help increase awareness of the potential risks of the effects of malaria among pregnant women. All pregnant women would be better equipped to make informed decisions about the knowledge of the effects of malaria.

REFERENCES

Adedotun, (2010), Oreagba, (2014), The national health insurance scheme in ghana: prospects and challenges: *a cross-sectional evidence. Global Journal of Health Science.* 2011; 3(2): 90–101

Ado-Odo Oreagba, (2014). Prevention of malaria in pregnancy. The Lancet Infectious Diseases. 2018; 18(4): e119–e132.

Amaechi and Ukpai, (2013). Prevalence of malaria parasite infection among pregnant women in Osogbo,Southwest, Nigeria, American – Eurasian Journal of Scientific Research, 6(2),pp. 43-45.

Aribodor ,(2009)Knowledge and perception of malaria in Lagos State, Nigeria. Nigerian Quarterly Journal of Hospital Medicine, 10(1): 73 – 77.

Brabin, (2010) Knowledge, attitude, perception of malaria and evaluation of malaria parasitaemia among pregnant women attending antenatal care clinic in metropolitan Lagos, Nigeria. Journal oVector Borne Diseases; 48: 12 – 17.

Balogun, (2017) Knowledge,attitude and practices regarding malaria prevention and treatment among pregnantwomen in Eastern India, The American Journal of Tropical Medicine and Hygiene,82(6), pp. 1010-1016.

Dairo (2010), A. Data collection in a flat world: The strengths and weaknesses of Mechanical Turk samples. Journal of Behavioral Decision Making. 2013; 26(3): 213–224.

Dicko, (2013)Malaria in pregnancy: Pathogenesis and immunity. Lancet Infectious Diseases, 7(2): 105 –117.

Christopher and Garimoi, (2011)Exploring health providers' and community perceptions and experiences with malaria tests in South-East

Farid, (2016).Malaria in the United Republic of Tanzania: cultural considerations and health-seeking behaviour. Bull World Health Organ. 2011; 78: 1352-1357.

Fapohunda, (2014), Njama, (2013).People's perception of malaria in Mbarara, Uganda. Tropical Medicine & International Health. 2012;7(5): 462-470

Jatau (2013) Knowledge and home management of malaria fever by mothers and caregivers of under-five children. West African Journals of Medicine, 20(2): 152 157

James , Crutcher, Hoffman (2006).Knowledge and utlizationof intermittent, preventive treatment for malaria among pregnant women attendingantenatal clinics in primary health centres in rural Southwest, Nigeria, Biomed.Central Pregnancy and Childbirth, 9(28), pp. 1186-1191.

Jhpiego, (2015)Feasibility of home management using ACT for childhood malaria episodes in an urban setting. Drug, healthcare and patient safety. 2012; 1(4).

Hogan (2002),Malaria in pregnancy: Knowledge, attitude and practices of pregnant women in Abeokuta, Nigeria. Nigerian Journal of Parasitology, 28(2): 61 – 64.

Idowu , (2007). A survey of knowledge,attitude and practice of malaria management

among pregnant women from twohealth facilities in Nigeria, Acta Obsterica et. Gynecologica, 84, pp. 33-36.

Kagu, (2007) Knowledge and practices on malaria treatment measures among pregnant women in Abeokuta, Nigeria. Tanzania Journal of Health Research, 10(4):

Kuti , (2006).Malaria prevention duringpregnancy: Awareness and factors contributing to disease occurrence amongpregnant women on Gboko metropolis, Benue State, Nigeria, Journal of Medicineand Biomedical Sciences, 25(2), pp. 144-146.

Romero, (2013). Awareness andpractice of malaria preventive strategies among pregnant women in Uyo southsouth Nigeria, The Internal Journal of Gynecology and Obstetrics, 11, pp. 1-6.

Iriemenam, 2011)Preventing malaria in women. Retrieved March 10, 2012,http/www.nedc.gov/trend.

Rogerson, (2017)Knowledge,attitude and practices regarding malaria prevention and mosquito net use amongwomen seeking antenatal care in Iringa Southwestern Tanzania, Tanzania Journal of Health Research

Salequzzaman (2001) Knowledge, attitude and practices about malaria among mothers and care-givers in Aba south Local Government Area, Abia State, Nigeria Animal Research International, 10(3): 1786 – 1791

Singh , Musa , Singh and Ebere, (2014). Complete avian malaria parasite genomes reveal features associated with lineage-specific evolution in birds and

mammals. Genome Research. 2018; 28(4): 547–560.

Snow, (2019).The burden ofmalaria in pregnancy in endemic areas, American Journal of Medical Hygiene,64(2), pp. 28-35. Retrieved Marc

Sule-Odu, (2010). Efficacy and safety of azithromycinchloroquine versus sulfadoxine-pyrimethamine for intermittent preventive treatment of Plasmodium falciparum malaria infection in pregnant women in Africa: an open-label, randomized trial. PloS One. 2016; 11(6): e0157045.

Menendez, (2010). Treatment seeking for malaria: A review of recent research. Social Science and Medicine, 43(6): 933 –945.OGUONU, T., OKAFOR, H. U. and OBU, H. A. (2005). Caregivers's knowledge, attitude and practice on childhood malaria and treatment in urban and rural communities in Enugu, south-east Nigeria. Public

Nwogu, (2009). Knowledge, beliefs and practice ofmalaria preventive measures among pregnancy women is Enugu. Journal ofcollege of medicine retrieved from http:IIojo.in/index.php./tec/article/view10417.

Njama, (2013 Knowledge, attitudes and practices about malaria in an urban community in south-western Nigeria. Journal of Vector Borne Diseases; 47(3): 155 – 159.

Nosten, (2011) Perception and treatment seeking behavior for malaria in rural Nigeria:Implications for control. Journal of Human Ecology, 24(3): 215 – 222

Ogbonnaya ,(2005). Outdoor-sleeping and other night-time activities in northern Ghana: implications for residual transmission and malaria prevention. Malaria journal.

Onyeneho (2006) Knowledge and utilization of intermittent preventive treatment for malaria among pregnant women attending antenatal clinics in primary health care centers in rural southwest, Nigeria: BMC Pregnancy Childbirth, 9: 28

World Health Organization, (2013). World malaria report, Geneva, United Nation,pp. 99-.101

World Health Organization(2011) progress in malaria control, Geneva, United Nation.Retrieved March 10, 2012 from www.who.int/mediacentre/factslects/FSO914/en.

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APPENDIX

UNIVERSITY OF BENIN

FACULTY OF EDUCATION

DEPARTMENT OF HEALTH SAFETY AND ENVIRONMENTAL EDUCATION

RESEARCH QUESTIONNAIRE

Dear Sir/Madam,

I am conducting a study titled **Knowledge of the effect of malaria on pregnant women Among antenatal women in UBTH. It** is one of the requirements for the award of a Bachelor Degree in health education. I would appreciate your participation in completing this questionnaire because your opinion would be valuable to the study.

Please, be assured that there is no right or wrong answers and information provided in this questionnaire is purely for academic purpose and therefore would be treated with utmost **Confidentiality.**

Thank You.

Yours faithfully,

_____

Apepe Akpevwe
Student

Please, read each question and tick or fill the statement that clearly reflects your view:

Section A: Demographic Profile

1. 1. Age group: 19 & below [ ] 20s & 30s [ ] 40s & 50s [ ]
2. 2. Marital status: Single [ ] Married [ ] Divorced [ ] Separated [ ]
3. Religious affiliation: Christian [ ] Muslim [ ] Traditional [ ]
4. Educational level: Primary school [ ] Secondary school [ ] Tertiary institution [ ]

Section B: Knowledge of the effect of malaria on pregnant women Among antenatal women in UBTH

Please tick marks the most appropriate response as per the scale below

S/N	ITEMS	YES	NO
	What is the level of knowledge of the effects of malaria on pregnant women?		
1	Malaria disease is transmitted by the bite of an infected female Anopheles mosquito into person's circulatory system		
2	Malaria is common in tropical and subtropical regions because of rainfall.		

3	The use of insecticide treated nets and intermittent preventive treatment can prevent the cause of malaria.		
4	Stagnant water around the house can lead to Malaria in pregnant women		
5	Sweat, vomiting, headache and muscle aches are symptom of malaria		
6	Regular check-up can support the avoidance of malaria in pregnant women		
	What are the level of the effects of malaria on pregnant women?		
7	Malaria can lead to anemia among pregnant women		
8	Malaria can affect child birth during delivering		
9	Malaria can lead to death in pregnant women if treatment is not regularly taken		
10	Malaria disease imposes serious effect on the blood by		

	interfering with hemoglobin and destroying red blood cells		
11	Malaria can cause maternal anemia during pregnancy period		
12	Malaria can lead to fetal loss during the early stage of pregnancy		
13	Malaria can lead to delivery of low birth-weight infant		
14	jaundice is an effect of Malaria on pregnant women		
15	Malaria can lead to premature delivery on pregnant women		
16	Pregnant women suffering from malaria are at increased risk of miscarriage		