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PREGNANT WOMEN'S KNOWLEDGE AND PERCEPTION ABOUT ANTENATAL CARE AND PREVENTION OF MALARIA IN GHANA

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ABSTRACT

The study investigated pregnant women's perceptions, beliefs and practices on the use of Sulphadoxine Pyrimethamine (SP) for primary prevention of malaria in pregnancy. The objectives included assessing pregnant women's knowledge and benefits of antenatal care services, attitudes and practices on antenatal clinic attendance and perceptions regarding the use of Sulphadoxine Pyrimethamine (SP) in pregnancy. An exploratory qualitative research method was used. The population included all pregnant women in a Municipality. Sampling was purposive and the sample size was (14) based on saturation. A semi-structured interview guide was used to conduct in-depth interviews among pregnant women in homes. The Tesch in Creswell (2009) content analysis protocol was used to analyze the data. Five overarching themes emerged with several categories including bizarre beliefs about the dangerous effects of the three tablets dosage of SP on the foetus. The study concluded there was lack of health education for pregnant women by Midwives' about the drug SP and no vigilance for its administration under the directly observed treatment (DOTs). The study recommended the three tablets dosage of the drug SP should be formulated into one Tablet but same dosage, whilst in-service training should be given to midwives regarding the DOTs of Sulphadoxine Pyrimethamine (SP).

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INTRODUCTION

Malaria is a complex and a deadly disease that puts approximately 3.3 million people at risk in 109 countries and territories around the world (Roll Back Malaria Partnership, 2008). Malaria essentially is a global health challenge and remains one of the commonest devastating human parasitic infections in the world today, with the disease burden carried by children younger than five years and pregnant women. An estimated 125 million pregnancies in endemic areas around the world every year are at risk of malaria infection (Dellicour, Tatem, Guerr, Snow and TerKuile, 2007). Malaria continues to be a disease of public health importance in the African sub region, where most cases and deaths occur. Africa bears 90% of the world's burden of malaria and about 30 million women living in malaria endemic areas become pregnant and are

particularly vulnerable to the adverse consequences of the disease. Out of these, 24 million pregnancies are threatened by malaria, contributing to 15% of maternal anaemia in pregnancy and 35% of preventable low birth weight babies (WHO, 2004; Roll Back Malaria, 2000). Malaria remains the major cause of morbidity in sub-Saharan Africa since the environment is conducive and sustains the population of the vector and the parasite responsible for transmission of the disease. In endemic zones such as sub-Saharan Africa, approximately 50 million women become pregnant annually and an estimated 10,000 of these women face the danger of miscarriage and 200,000 of their infants born have a high risk of morbidity and mortality as a result of malaria infection in pregnancy. Furthermore, severe malaria and anaemia contribute to more than half of these deaths (WHO, 2007; WHO, 2008). Malaria is hyper endemic in Ghana, with perennial transmission afflicting people of all ages. Among pregnant women in Ghana, malaria accounts for 28.1% of Out Patients' Department attendance, 13.7% of ward admissions

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and 9.0% of maternal deaths (Ministry of Health (MOH), 2010). Reports from the World Health Organization (WHO) indicate that Ghana had an estimated 7.2 million cases of malaria in 2006 of which 9.4% contributed to maternal deaths (MOH, 2005). Malaria infection is therefore, one of the major causes of maternal morbidity and mortality in Ghana as most pregnant women tend to patronize unsupervised delivery services in homes where there is no over sight screening for the parasite in pregnancy or administration of the SP. Malaria, which is a parasitic disease of the genus *Plasmodium*, has *Plasmodium falciparum* as the predominant species in Ghana, accounting for about 90% of all cases and runs a severe and turbulent course in pregnant women. The female *Anopheles* species of the mosquito is the vector responsible for the transmission of the *Plasmodium* parasite from human to human through its bite. These mosquitoes are commonly found in peri-urban and urban areas where socio-economic activities lead to the creation of their breeding sites. This situation results from the poor sanitation practices engulfing most Ghanaian residences and habitats. Souza, Kelly-Hope, Lawson, Wilson and Boakye (2010) report that malaria is endemic in sub-Saharan Africa as a result of the warm humid climate which favours the breeding of mosquitoes. Coupled with the unhealthy environmental congestions, is the collection of pockets of water in low lying grounds and lagoons which all contribute immensely to the breeding of mosquitoes.

Usually, the parasite may be hiding in the placenta interfering with oxygen and nutrient transport to the foetus. Hence, a placenta infected with malarial parasites has several disadvantages for pregnant women. It can lead to cord anaemia, intra-uterine growth retardation, low birth weight, spontaneous abortion, prematurity, intra-uterine foetal death, neonatal malaria and high perinatal mortality (Roll Back Malaria Partnership, 2008). Also, malaria in pregnancy is not only disastrous for the foetus but endangers the health of the pregnant mother as well. Maternal malaria can lead to cerebral malaria, pulmonary oedema, post-partum haemorrhage, hypoglycaemia, puerperal sepsis and maternal mortality as reported by (Global Malaria Action Plan, 2008; Action Alert, 2010). Upon recognizing the above dangers, the World Health Organization over the years recommended that pregnant women in malaria-endemic areas be administered with full anti-malaria treatment on their first contact with antenatal service followed by weekly chemoprophylaxis (WHO/UNICEF, 2005). Malaria in pregnancy is also a priority area in the Roll Back Malaria strategy, and control depends on prevention of the infection and clearing parasitaemia when the disease occurs.

Ghana over the past years employed various strategies to address malaria in pregnancy according to the WHO design. The previous interventions by using chloroquine as a chemoprophylaxis in prevention of malaria in pregnancy did not help the situation due to the increasing resistance of the parasite to chloroquine. This failure was due to poor compliance to the chloroquine strategy as a result of unfounded fear among pregnant women about chloroquine having detrimental effects on pregnancy such as its ability to cause abortion (MOH, 2009). Ghana then adopted the World Health Organizations' current recommendation package of interventions for controlling malaria during pregnancy in high transmission zones using the Intermittent Preventive Treatment of malaria in pregnancy (IPTp) with Sulphadoxine Pyrimethamine (SP) and Insecticide Treated Net (ITN) for

malaria prevention and the Artemisinin-based combination therapy for case management of malaria illness in 2004 (MOH, 2010). In the new malaria prevention strategy, the eligible pregnant woman is given the SP comprising of three tablets to be taken at a go from 16 weeks up to 36 weeks on three occasions during the antenatal period. The first dose of the SP comprising of the three tablets is given after 16 weeks of gestation and for the subsequent second and third doses also of three tablets each are given at monthly intervals on directly observed treatment short course (DOTS). The Intermittent Preventive Treatment (IPTp) of malaria in pregnancy using Sulphadoxine Pyrimethamine (SP) has been identified as a cost-effective tool for the prevention of malaria if taken regularly. The only established evidence that poses a contraindication to the use of IPTp using SP is the presence of G-6-PD deficiency in pregnant women. A recent survey on malaria in pregnancy revealed approximately 20% prevalence of Glucose-6-Phosphate Dehydrogenase (G-6-PD) deficiency among some pregnant women, which has some implications for IPTp use (MOH, 2010). Apart from these recognized complications of G-6-PD women, pregnant women in Ghana also have other misconceptions that necessitated an investigation into the existing strategy for prevention of malaria during pregnancy using SP. The researchers observed that the use of IPTp using SP is not followed religiously by some pregnant women in the Ho Municipality. Although SP is to be administered from 16 weeks of gestation to 36 weeks most women initiate antenatal care services late and some nearly at term for birthing. The annual reports from a Municipality indicate a low coverage in Antenatal clinic (ANC) attendance and the IPTp with SP administration (Ho Municipal Annual Report, 2010). The main objective of the study was to investigate the perceptions, beliefs and practices of pregnant women towards ANC attendance and the use of IPT in pregnancy for the prevention of malaria.

The Theoretical Foundation of the Study

King's system model on perception is chosen for theoretical basis for this study. From King's framework, man is a dynamic human being whose perception of objects, persons and events influence his social behaviour, social interaction and health seeking (King, 1971). King's framework includes three interacting systems; person, interpersonal and social systems. The concepts with the personal system are fundamental in understanding human being's perception, self, body image, growth and development, time and space (King, 2012). From King's point of view, perception is the most important because, it influences behaviour and beliefs. The interpersonal system is concerned with interaction, transaction, communication, role and stress and this interaction occurs between the health care provider (nurse) and the client. Social system provides social interaction and relationship and establishes rule of behaviour and course of action (King, 1971). The social system includes the family, community, policies, health care organizations and cultural or religious beliefs which have power, authority, status and decision making that has bearing on the life style and attitudes toward health and well-being of individuals. The relationship between these three systems (personal, interpersonal and social systems) however leads to King's theory of goal attainment. The adoption of King's system model as the foundation of the study is appropriate since this study originates from an indigenous community surrounded by beliefs and other politico-social activities.

METHODS AND MATERIALS

Research Design

An exploratory qualitative design (Polit and Beck, 2008) was used for the study. An exploratory strategy was chosen for identification and description of the practices, beliefs and perceptions of pregnant women since little or no information was available regarding the phenomenon of the perception of pregnant women on IPT use in the setting. According to Polit and Beck (2008) and Creswell (2009), an exploratory qualitative research investigates the full nature of the phenomenon, as it occurs in the natural setting, the manner in which it manifests and other factors relating to it. The participants were recruited from two urban hospitals and two rural hospitals within the Ho Municipality.

Study Population

The population was all pregnant women in the 12th weeks or more of gestation within the Ho municipality and attending antenatal clinic services in health facilities within the municipality.

Sampling Method and Data gathering

Qualitative sampling ensures rich understanding of the phenomenon of interest (Polit and Beck, 2008). In this regard, the participants were purposively selected for the study (Creswell, 2009). Purposive sampling was specifically used since this involves selecting of cases that would readily communicate their experiences freely. The various hospitals and clinics within the Ho Municipality were visited. The research purpose and objectives were explained to the nurses in-charges at the antenatal clinics and then to the pregnant women at the clinics using information leaflets. A notice was pasted at the clinics informing all pregnant women about the research and the inclusion criteria and inviting the prospective participants to join the study. The midwives were also informed about the study and their role in it. They were then given information sheets which they used as a guide to select the prospective participants willing to belong to the study. The contact number of the chief investigator was included for both the participants and the nurses. When the prospective participants had been identified by the midwives at the ANC, the researcher then approached them and further explained the purpose and the aims of the study using the information sheet. Each participant was given the chance to ask questions for clarification then after, their consent was obtained. A convenient date, place and time for the interview were planned and fixed, based on the decision and arrangement of the participants. Fourteen participants were used for the interview when saturation of data was reached. The actual data gathering for this study was preceded by pilot study. This was conducted in order to use the outcome to review the study instruments and to test the audio-tape recorder. Two data gathering methods were employed; self-report through in-depth interviews using a semi structured interview guide and writing of field notes by observation in the field, Burns and Grove (2005)

Data analysis

The audio-tape interviews were transcribed verbatim and analyzed using content analysis approach recommended by

Tesch in Creswell (2009). This analysis was an ongoing process involving continual reflection about the data, asking analytical questions and writing memos throughout the study.

Trustworthiness/rigour

Rigour was demonstrated through efforts made by the researchers to confirm the information obtained and to ensure that the information accurately represents the study participants' views (Streubert and Carpenter, 2011). Detailed description of the research processes was done to ensure transferability of the research to other settings.

Ethical Considerations

The study protocol was submitted for ethical clearance from the Institutional Review Board of Noguchi Memorial Institute for Medical Research of the University of Ghana (NMIMR-IRD CPD D42/11-12) and the Volta Regional Health Directorate before the site approval was given for the collection of data. Individual consent was also sought from each participant.

RESULTS

Demographic Profile of the participants

Fourteen interviews were conducted between December 2011 and February 2012. The age group of the participants ranged between 20 and 31 years with only one participant being not formerly married and co-habiting. All the participants had formal education ranging from Junior Secondary School (JSS) to Senior High School with three of them holding Higher National Diploma and one university degree. Almost all the participants indicated they started attending the ANC between 12 weeks and 24 weeks and had received first, second and third doses of SP. Whilst at the time of gathering the data, two participants, Gravid⁷ Para⁶ AA and Gravid¹ Para⁰ reported at the ANC for the first time to commence their antenatal clinic attendance at 30 weeks and 40 weeks gestation respectively. The two participants were both JSS graduates. With regard to the occupational roles of the participants, ten were engaged in petty trading while the higher degree holders were unemployed.

Themes and categories of the study

The results are presented in the sequence of themes and their respective categories. The themes of this study were arrived through rigorous content analysis using the Tesch approach to qualitative data analysis. The main themes that emerged were as follows: Reasons for attending antenatal clinic, Knowledge of malaria and its prevention, Knowledge of SP for IPTp, Mode of administration of SP under DOT and Suggested measures to improve SP acceptability. Thereafter, each theme was further analyzed to arrive at categories. Out of the five themes, seventeen categories emerged which will be presented verbatim as reported by the participants using pseudonyms for each participant to conceal their identity as well as ensure confidentiality.

Theme 1: Reasons for attending antenatal clinic

This theme deals with experiences relating to the rationale for antenatal clinic attendance by participants. The participants

gave various reasons for ANC attendance which essentially fall into four categories that emerged from the above theme such as to monitor health of mother and baby, antenatal clinic viewed as means for treatment of ailments, commencement of antenatal clinic attendance early or late and benefits for attending ANC. The results of this study showed that participants' reasons given for antenatal clinic attendance correlate with the ANC purpose.

This was expressed by Madam Han in the following words:

"It is very important for me to attend antenatal clinic because being pregnant is a critical condition and anything can happen to me at any time. I have to check to know the health status of my baby (foetus) and myself during pregnancy, in order to deliver safely".

Another participant, Madam Mona also stated:

"I have seen antenatal clinic attendance to be good because when I became pregnant I have to go to the hospital to see if anything is wrong with the baby or me. At the ANC, I was told how I can take good care of my baby".

In the words of a 28 years Madam Lin:

"I attend antenatal clinic for them to see how my baby is faring, to give me drugs so that the baby would be strong and I would deliver without any problem. In addition, I also attend the clinic for them to identify whether I have enough blood in my body or not, they would be aware of this and give me drug when necessary, but what entice me most is the way the nurses check how my baby is lying inside me, how they listen to the breathing and also measure my weight, and height".

The Antenatal Clinic was viewed as means for treatment of diseases during pregnancy not a mandatory policy. This made the participants to attend antenatal clinic only when they were sick in order to seek for treatment. This was reported by some of the participants as follows:

Madam Ann a 31-year-old G⁵P^{3AA} food vender who had received 1st dose of SP at 24weeks of gestation indicated:

"I know about antenatal clinic attendance as when a pregnant woman feels sick otherwise, once I am not sick and everything is well with me, there is no need to go there. When I am not well and I go there, both I and my baby are treated for any ailment that is present."

A 24 years old Madam Jan G³P^{2AA} also expressed her view thus:

"When I became ill, I went to the antenatal clinic where I was given drugs. After taking the tablets I became healthy. So I prefer to go to the clinic when I am not feeling well to be examined and given treatment, so that I would be healthy to undertake my daily chores".

Madam Ena, a 31-year-old but grand multipara G⁷P^{6AA} mother and a farmer, who initiated antenatal services at almost 40 weeks of gestation remarked:

"Before then, I was all the time healthy until during the eighth month that I became sick. I fell into a gutter and got injured at

my perineum. When I fell, I saw stains of blood in my pant which made me to go to the ANC for help. There I was asked to do a scan after which they realized that the pregnancy was intact. The nurses then, gave me some 3 drugs to take".

With regard to the commencement of antenatal clinic attendance either early or late, most of the pregnant women started ANC at 20 weeks of gestation, while a few of them started at later times. Antenatal clinic attendance should begin as soon as the woman realizes that she is pregnant; from one month up to three months (4-12 weeks). However, findings from this study show that the participants began antenatal clinic (ANC) attendance late. Various reasons were assigned to their late booking. This was reported by Madam Ken, a 23-year old mother as:

"I was six months pregnant when I started to attend the clinic. I chose to attend the clinic at this time because the clinic is too far from our village. This made me feel reluctant to attend the clinic as I am not sick. Sometimes, if I want to go to the clinic, I have to walk to Todome, a village which is closer, before I can get a motor rider, who would then take me to the clinic. Otherwise, I have to call him on his phone to come and pick me to the clinic and in that I will pay a higher price. You could only get him if he is around before he would come and take you to the clinic. Apart from these difficulties, over here in my village, pregnancy is not made known that early for fear of bad people's eyes being on you and the pregnancy can miscarry and abort".

Madam Cin a 23-year-old nullipara G¹ P⁰ lamented:

"My pregnancy is seven months now before I am at the clinic. This is because I have been having numerous ailments and I cannot even take in water without bringing it out, but my husband did not show any concern. I cannot even tell anybody I was pregnant because the witches in the village will remove my baby and fill my abdomen with leaves rather. This is the reason why I am coming at this time. Even now that I have come; it is by my own efforts that I managed to be here".

Furthermore, another participant who booked very late and close to term indicated her reasons for attending late. Madam Bea, (G³P⁰) a three-time pregnant woman but had always miscarried remarked:

"As for me, I have learnt enough lessons for showing my pregnancy to people early through reporting to the clinic the moment I miss my period. In my previous pregnancies, the moment my menstruation does not come, the following month I start to attend the clinic but usually by the 6th month (24 weeks), I lose the pregnancy. In my home town, it's a taboo to show that you are pregnant because the witches remove the baby. So this time I am being extra careful. This is why I am now reporting at this stage".

Theme 2: Knowledge of malaria and its prevention in pregnancy

People can prevent the occurrence of disease only if they are empowered with knowledge about the causes or prevention of the disease. The following categories were derived from the theme regarding factors that contribute to malaria infection in pregnancy, knowledge of effects of malaria during pregnancy and knowledge on prevention of malaria. The participants reported their views in vivid expressions as follow:

Madam Doh a 27-year old trader and a mother of one (G² P^{1A}) who had received three doses of the SP at 28 weeks gestation indicated:

“Malaria can occur in the environment, when there is stagnant water in the gutters, empty tins and tanks which is not cleared. This can breed mosquitoes which would bite us”.

According to Madam Mon’s experience:

“Malaria is caused by untidy environment and bushes around our house which breed mosquitoes. When I do not sleep under treated bed nets I can get malaria”.

On the contrary, some participants were not aware of the relevant contributory factors in malaria infection. Some of the factors they cited included care of food, bath house and improper care of cooking utensils and drinking of dirty water. Other factors they mentioned included working hard under the scorching sun, walking long distances, extreme cold weather, very high temperatures, and houseflies Madam Naa, a 31-year old mother of 3 (G⁴ P^{3AA}) and a JSS 2 dropout and a cooked food vendor exhibited her lack of knowledge on causes of malaria and its prevention thus:

“First of all, it depends on how we care for our food and our bathing place. If proper care is not given to our cooking and feeding utensils, in addition to drinking of dirty water, these can all lead to malaria”.

Similarly, Madam Ena, a grand multipara (G⁷P^{6AA}) mother and a farmer, expressed her views on malaria prevention as:

“The causes of malaria include working very hard under the sun without taking any drug, staying longer periods under the scorching sun, extreme cold weather and very high temperatures such as staying near fires and walking long distances and houseflies are the most dangerous causes of malaria by laying their eggs inside our food”.

The findings of this study revealed two main situations such as frequent episodes of malaria infection among majority of the participants and the practices in respect to seeking medical assistance and use of over the counter drugs and local herbal preparations. Out of those who had episodes of malaria, some resorted to varied ways of self medication with herbal medicine which they boiled to drink or douche.

Madam Faa, a 26-year-old mother of 2 (G³P^{2AA}) stated:

I had been having malaria during my previous pregnancies. I had been working very hard and staying longer periods under the scorching sun. When I had the fever, I experienced severe bitterness in my mouth, and so I boiled fever grass (herb) to drink and ground some herbs to douche to treat myself.

Madam Beaa, a 23-year-old prim gravida (G¹P⁰) JSS graduate and unemployed reported:

“I became too weak and could not eat and also vomited very much. I then went to the hospital after which I was given drugs and told how to take them. I was also told to come back and see the doctor. When I went, my urine was tested again to find out whether I still had the malaria in my urine. Nobody told me what my problem was”.

The knowledge about the effects of malaria in pregnancy was also investigated among the participants. Majority of the participants were able to mention some effects of malaria in pregnancy. They explained that malaria in pregnancy is dangerous to the health of the mother and her unborn baby.

Madam Doh explained:

“Malaria occurring during pregnancy will cause harm to me and my baby. It can kill my baby inside me”.

Madam Ivy, a 27year G³P^{2AA} mother also expressed her view as:

“When a woman has malaria while pregnant, both the mother and the baby would be sick. The baby would also have malaria. There would be shortage of blood in the woman’s body and she could also feel weak to other sickness. If care is not taken it could result in death.”

The knowledge of prevention of malaria was explored. The knowledge of the pregnant women regarding the prevention of malaria was generally good.

Madam Keni stated:

“It is important to sleep under insecticide treated bed net for the malaria not to attack me. Also I have to clean my surroundings and the gutters to prevent the mosquitoes from breeding”.

Madam Jan said:

“I must ensure that I attend antenatal clinic regularly so that I would be given the drug to prevent me from getting the malaria. Also I must sleep under treated bed net and weed around my surroundings”.

Theme 3: Knowledge of SP for intermittent preventive treatment of malaria in pregnancy

This explains the participants’ view and experiences on the use of the drug SP for IPTp under the following categories: Knowledge of SP administration, perception and belief about using SP for IPTp, feeling about taking SP when pregnant in front of the nurse and belief about taking SP during pregnancy. The participants’ knowledge on SP administration was investigated regarding Sulphadoxine Pyrimethamine (SP), the anti-malaria drug of choice by WHO for the prevention of malaria during pregnancy. This study revealed that, the participants were not educated on the administration of the SP by the midwives. This made all the participants ignorant about SP administration; when to commence SP, how often it should be taken, and at what intervals it should be administered. They also did not know the name of the drug that they were made to take on each visit to the clinic. Furthermore; they were made to take the drug without considering their mental and emotional feelings, beliefs as well as their rights regarding administration of medication to clients. The above verbatim reports were evidenced in the participants’ reports as follow:

Madam Gin, a mother and a teacher reported thus:

“Well, I do not know the name of the drug used to prevent malaria during pregnancy. We were not educated on it. When you come to the hospital, you are told that you have to take

medicine. Then they ask you to go get some water and you are given the medicine to take in front of the nurse with no explanation. I was given three tablets to take but I do not know when I should start taking the drug. We were not given education on when to start and how many times we would take the medicine. However, whenever we come to the clinic whoever is treating you would ask you to take it with water in her presence. I obeyed the first time the 3 tablets were dished out to me. Considering what happened to me in the night after I took the drugs, I was restless; my abdomen kept moving and paining me. Then subsequent visits, when the nurse told me to go and get water and take the drug, I pretended to be swallowing the drug but just put it into my bag and sent it home where I then broke them into pieces and I took half a tablet each day till they got finished. I was very afraid that my baby would die because I went to the clinic when I was about one month pregnant.”

Madam Haa who had received three doses of the SP also said:

“I do not know the name of the drug given to prevent malaria during pregnancy but when I come to antenatal clinic, I will be asked to take the drug every month with water. I cannot remember how many times I need to take this drug but I was given three tablets. I took mine after my urine was tested.”

Madam Ivy, a 29-year old trader who received three doses of the SP expressed her views as follow:

“My pregnancy was five months when I started to take the drug. However, I do not know when a pregnant woman should begin to take the drug. I do not also know the name of the drug and how often it should be taken.”

The participants' perception and belief about using SP for IPTp were assessed. Even though the majority of the participants were ignorant about the SP, they had a positive perception about its administration. This was because they trusted the midwives to give them this anti-malaria drug correctly.

Madam Bea expressed her views as:

“My view about this drug is that I have seen that I am healthy after taking it. I did not experience any malaria illness and neither did my unborn baby. However, if the number of tablets taken could be reduced or made into one tablet, this could make it easier for the pregnant women to take. In all, I have seen the drug to be good.”

Madam Han expressed her thoughts as:

“It is a good drug because after taking it I felt good and comfortable. Since all that I heard about malaria is that it is a deadly disease and causes other problems, it is rather good to take the drug. However, swallowing the drug would be better for me than chewing it. This is to avoid the drug from sticking onto your teeth and the bitter taste still remaining in your mouth after taking it.”

Madam Doh expressed her opinion thus:

“My perception about the SP is that, it is good irrespective of its side effect and the taste. We take it for us to remain in good health. When I took the first dose of the SP I became weak, but

after I slept for some time I became well. This second dose I did not experience any problem.”

The participants' feelings about taking of SP while pregnant in front of the Nurse and among other clients were investigated. The findings revealed that even though the pregnant women felt uncomfortable with the mode of administration of the SP, they still complied because of its importance. They however, said that they felt that they were under pressure to take the drug under the DOTs. Some also said they felt that some of the pregnant women might not comply with the regimen at home hence they were pressurized to take it in the presence of the nurses and other clients. These feelings were express as follow:

From Madam Jan's own words:

“I experience itching all over my body whenever I take the drug and fear my baby will abort. I imagine how I will feel, what will happen to my baby inside, so I just hide the drug in my cloth and on my way home I throw them away even though the midwives are busy recording how many times I am taking the drugs”.

Madam Lin stated that:

“I do not like taking medicines. This is because, you are not sick and you feel nothing is wrong so you do not like to take the medicine. But when it is given to you at the hospital, it is like pressure is on you to take it, I just pretend and take it home and then I throw them away. I fear it will make my bay abnormal.”

Madam Kena stated:

“Many of us consider the side effects of the drug on the baby while the rest just feel reluctant to take the drugs on their own, so they hide it and send it home to discard”.

Madam Mon, a 26-year old mother of two and a seamstress who received three doses of the SP expressed her view thus:

“During my first pregnancy, I was not given this kind of medicine so I was confused when they gave me this 3 tablets to take. I don't like the way they are doing it since they never ask me about my feeling regarding taking medicines in pregnancy. I am one person who doesn't like to take medicine when I haven't eaten, so when I am given, I just send them home before taking one tablet each day because the 3 doses can affect the baby too since in trying to cure malaria, one will end up killing her baby”.

Theme 4: Mode of administration of SP under DOT.

This section indicates how the SP was administered to the participants at the antenatal clinic under the DOTs. According to the participants taking 3 tablets of the SP could be too much for the foetus. Besides, they lamented SP is bitter and sticks to the teeth after chewing, and this informed the participants of the tricks of pretending to be swallowing the SP before the midwife at the clinic. This is because bitter tablets are generally believed to be associated with adverse effects on the unborn baby and can cause abortion in the study area. Additionally, they were also not sick because drugs are given to sick people. In furtherance to this, the drug made them have

nausea, even leading to vomiting which rendered them weak for the rest of the day whenever the drug is taken. These concerns were expressed by the participants as follows:

Madam Naa reported that:

“The medicine is not sweet so I throw it away. The drugs are too many, and I cannot take them now. If I take them, I would vomit. It is too much for me and perhaps for my unborn baby”.

Madam Mon had this to say:

“I became weak the whole day when I took the first dose. I slept throughout the day. One month later when I was given the second time I felt weak, this time too. When I went again the third time I told them I would not take it again. But they said I should sit down and take it. I felt the drug will be too much for the baby too and it may even be born with abnormalities.”

The participants admitted pretending to be swallowing the drug before the nurse under DOTs due to various reasons. The findings of this study revealed that some participants felt reluctant, unhappy or feared the side effects of the SP on their unborn babies. As a result of this, they pretended swallowing the drug in the presence of the midwife, while in reality, they have swallowed only the water without the drug.

Madam Nue, a 23-year old woman who had three doses of the SP stated that:

“When I was given the drug I did not take it. I just swallowed the water and pretended as if I had swallowed it. I then wrapped the drug in a piece of paper and put it into my bag. I did this with the intention of taking one tablet daily at home.”

Madam Jan also indicated:

“When I was given the drug the second time at the clinic I hid it from the nurse and pretended swallowing it in front of her.”

Madam Ivy explained her reason for her action:

“When I took the drug on my first visit to the clinic, I felt like vomiting. Some still remained in my mouth and stuck onto my teeth. I had to take toffee to prevent the vomiting. As a result, during my second visit I did not take the drug. Rather I pretended swallowing it, and threw it away afterwards”.

Theme 5: Suggested measures to improve SP acceptability

This section solicited the input of participants in improving the acceptability of the SP by pregnant women for the intermittent preventive treatment of malaria in pregnancy (IPTp). There were two emerging categories, which included Health Education and Peer Education. The participants suggested Health education should be a way of improving acceptability of the SP by pregnant women. Health education should be given by health workers to create awareness about a condition and its treatment. This would enhance knowledge and understanding about the SP and improve acceptability.

Madam Gin suggested that:

“We have to be educated on the number of times that one has to take the medicine and when to start and how many times to

take it. This education, I would like it to be given in a group since not all of us have been to school. But in group you would ask questions from your friend with regard to what has been said and you would be given the explanation. But when given the education alone with the nurse or doctor, sometimes when you do not understand anything you may not ask. As for me I would like it to be given in a group or to a group of pregnant women for their acceptability of the drug”.

Madam Han also indicated:

“The acceptability would improve through education of the women by the midwives. If the pregnant women are educated on the benefits of the drug including the problems we and our unborn babies would encounter, we would accept it.”

DISCUSSION

The discussion is guided by the themes and the categories found in the participants' reports regarding their perceptions on intermittent preventive treatment of malaria in pregnancy.

Reasons for Attending Antenatal Clinic

The findings that antenatal clinic help monitor the unborn babies, detect and treat ailments in pregnant women is congruent with the national policy objectives of antenatal care in general, and specifically, the Roll Back Malaria Programme (MOH, 2007; MOH, 2009). Antenatal care is essential to ensure optimal health for both mother and unborn baby. It is effective in preventing adverse outcomes, when it is sought early in pregnancy and continued through to delivery. These unique functions of antenatal services have made it possible to incorporate the malaria prevention strategies for the control of malaria in Ghana. The current findings reported by the participants on the reasons for attending ANC to monitor health of mother and baby can be aligned to Longman (2008) definition of monitor, meaning to carefully watch or measure something and see how it changes over a period of time. This definition corresponds with the philosophy behind the antenatal care strategy to put expectant mothers under observation by health experts such as midwives and nurses. Furthermore, the findings are congruent with Fraser and Cooper (2003) earlier findings that the aim of antenatal care is to monitor the progress of pregnancy in order to support maternal health and normal foetal development for good outcomes, as well as confirming Mubyazi et al. (2010) and Smith et al. (2010) studies in coastal and high land areas of Tanzania and Northern and Central Regions of Ghana that pregnant women's visit the antenatal clinic (ANC) with the view of monitoring their own health and that of their unborn babies.

Thus, the perception of pregnant women in Ghana to attend ANC explains the almost 90% ANC attendance in Ghana which contrast greatly with the countries' supervised delivery services of 40%. There is the need to investigate the attitude of pregnant women towards supervised delivery services also, in Ghana. The findings of the current study that, checking the position of the baby and concerns about examination of the unborn babies and checking the weight of the mother among other things motivated most pregnant women to access ANC services. Thus, the presence of an Antenatal care in a health facility forms a good platform for the implementation of malaria prevention interventions in pregnancy.

Antenatal clinic-viewed as means for treatment of diseases

On the other hand, the unfounded view of the Antenatal clinic as a place for treatment of diseases reported by participants in the current study other than a place for disease detection and prevention has also been documented (Mbonye, et al., 2006 and Purinyo et al., 2008) where participants viewed ANC as a treatment centre for ailment and attended only when they had medical complaints or when illness strikes. This is a peculiar finding which is an indictment of our health care professional attitudes particularly nurses, towards health education communication to society on health issues, or patient education on the condition. This is emerging evidence that in Ghana, health care professionals create "Malls" within health facilities by name wards, departments or clinics where patients/clients seeking healthcare "(the shoppers)" are attended to in a culture of silence. The non communicative attitude of our nurses and health care professionals has serious repercussions for public health promotion and diseases prevention particularly for a place like the ANC where health education should be key for coverage of the ITpP SP and the use of insecticide treated nets (ITNs) for the prevention of Malaria in Ghana. The lack of public health education in Ghana coupled with the vast majority of low literacy on health matters by most literates and non literates fortifies the norm that hospitals and clinics exist for the sick and unwell. The culture of periodical health assessment or examination in developing countries is rather absent in the Ghanaian health care sector. Hence the negative experiences regarding no health education at the ANC as reported by the participants of this study.

According to King (1971) man is a dynamic being, capable of taking decision that most favour his wishes and perception of things in his socio-cultural environment. Thus, pregnant women realizing that ANC services dwell mostly on the physical assessment of the women's abdomen regarding measuring the gestational age and the lie of the foetus, and listening to foetal heart rates without communicating findings and educating the woman on the assessment findings, concluded that ANC was all about assessing the health of the unborn baby and the mother. Thus, most pregnant women do not view ANC as preventive strategy but an occasion for checking the health and wellbeing of the foetus and therefore, will only attend the clinic when unwell as being ill can be detrimental for the unborn baby. It is also in the line of their perception and belief about foetal safety and survival that they decline to swallow three tablets of SP which they suspect could be dangerous to the survival of the unborn baby. Hence, some preferred to discard the drug or take it in divided doses which have implications for the efficacy of the SP drug.

Commencement of antenatal clinic early or late

Some of the reasons given by the participants for late ANC attendance confirm studies documented by (van Eijk, Ayisi, terKuile, Slutsker, Otieno, Misore, Odondi, Rosen, Kager, Steketee, and Nahlen, 2004; Anders, Marchant, Chambo, Mapunda, and Reyburn, 2008). Proximity of ANC has been provided by various Government health planning policies through the Primary Health Care policy in Ghana, where Public Health Nurses take control of maternal and child health care issues. The late ANC attendance by the majority of the participants is also in consonance with the findings by Launiala and Honkasalo (2007) who conducted a study in

Malawi and found that women who preferred delayed ANC visits to starting early in pregnancy (before 20 weeks) hold beliefs and perceptions that revealing an early stage pregnancy puts them at risk of miscarriages from witches and wizards. The findings ultimately have implications for ITpP that need to be administered in early pregnancy. Also the proliferation of low birth weight babies, still births, anaemia and increased malaria episodes in pregnancy as well as increased infant and maternal morbidities and mortalities in the Ho Municipality Annual Health Reports (MOH, 2009) could be explained by the findings of this study. In this instance, King's conceptual model of perception has not been clearly demonstrated, where effective interaction between the nurse and her client could lead to health behaviour change. King (1971), states that changes in health behaviour vary more often by interactions between nurses and their clients and the situation.

Benefits of attending Antenatal Clinic

The knowledge about the benefits of antenatal clinic as found in the current study confirms that reported by (Mubyazi et al., 2010; Smith et al., 2010) in Tanzania. The exhibition of gross ignorance by the participants in the current study about malaria and its causes and prevention require further investigation as well as the lack of midwives' interaction with clients at Antenatal Clinics.

Conclusion

Malaria is hyper-endemic in Ghana and remains the single most frequent cause of morbidity and mortality among children under five and pregnant women. Malaria infection can be catastrophic and associated with negative outcomes such as maternal anaemia and placental parasitaemia resulting in miscarriage and low birth weight, and prematurity. The Intermittent Preventive Treatment (IPT) and Sulphadoxine Pyrimethamine (SP) strategy when properly implemented can minimize malaria occurrence in pregnancy in Ghana.

Recommendations

The study recommends good communication interactions between nurses and their clients and efforts should be made to improve the knowledge of pregnant women and motivate them on the importance of early ANC attendance to enhance compliance with the IPTp and SP administration. Also, the Ghana Health Service should collaborate with pharmaceutical companies to consider the formulation of Sulphadoxine Pyrimethamine (SP) into a single dose tablet to replace the three tablet dose package.

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