

**SCHOOL OF NURSING
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA**

**PREGNANT WOMEN'S PERCEPTION OF INTERMITTENT
PREVENTIVE TREATMENT OF MALARIA: A STUDY IN HO
MUNICIPALITY**

BY

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**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA,
LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR
THE AWARD OF MPHIL NURSING DEGREE**

DECEMBER, 2013

DECLARATION

I, Gladys Betty Katsepor do hereby declare that this thesis is a record of my own research work. It has neither been submitted in part or whole to any institution elsewhere for an award of a degree. References made to the works of other researchers and authors have been duly acknowledged.

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DEDICATION

This work is dedicated to God the Father, my creator and source of help. God, the Son my intercessor and God, the Holy Spirit, who is my strength. This work is in fulfillment of their faithfulness in my life.



ACKNOWLEDGEMENT

I would like to express my sincere gratitude and appreciation to these special people: The first and foremost goes to God Almighty for His great help throughout this study, Dr. (Mrs.) Prudence P. Mwini-Nyaledzigbor; my supervisor, for the dedication shown me through to the end of this study, the same goes to Mrs. Adelaide Ansah Ofei. I also extend my profound appreciation to Dr. Timothy Letsa, the then Volta Regional Director of Health Services and his team, Dr. S. K. Atsu, Ho Municipal Director of Health Services and his team for granting me permission to conduct the research in the Ho Municipality. To Ms. Regina Ankrah of School of Nursing, College of Health Sciences, University of Ghana, Legon, I say thank you for your support and encouragement. My appreciation also goes to Mrs. Doris Kwame and Ms Pamela Ayimey for their encouragement and support. To Ms. Matilda Quist and Ms. Esther A. M. Anyidoho for their parental support I say, thank you. I extend my gratitude to the participants of this study for sharing their experiences on malaria prevention strategies in pregnancy with me. Same goes to the staff of the Reproductive and Child Health Unit of the health facilities in the Ho Municipality for the assistance given me. Finally, to all those who helped in diverse ways in seeing my study to a successful end, I say am grateful.

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LIST OF ABBREVIATIONS

ACP	-	Artemisinin-Based Combination Therapy
ANC	-	Antenatal Care
IPT	-	Intermittent Preventive Treatment
IPTp	-	Intermittent Preventive Treatment of Malaria in Pregnancy
MOH	-	Ministry of Health
SP	-	Sulphadoxine Pyrimethamine
WHO	-	World Health Organisation

ABSTRACT

Controlling the enormous health impact associated with malaria has become a global priority. Despite the fact that malaria is a completely preventable and treatable disease, it still stands tall as one of the leading health problems in Ghana. Malaria in pregnancy is associated with negative outcomes for the mother, foetus and the neonate. The study investigated pregnant women's perception of intermittent preventive treatment of malaria using Sulphadoxine Pyrimethamine the drug used for the prevention of malaria in pregnancy. The purpose of this study was to investigate the attitude of pregnant women towards antenatal care and their perceptions about the use of intermittent preventive treatment strategy for prevention of malaria during pregnancy. The objectives of the study were to determine the knowledge about the benefits of antenatal care services during pregnancy and to investigate the attitude and practices of pregnant women towards attending antenatal clinic. The study also aimed at investigating the perception and beliefs of pregnant women regarding the use of Sulphadoxine Pyrimethamine while pregnant. The research design employed in this study was an exploratory qualitative method. The population for the study was all pregnant women in the Ho Municipality. The sampling size was based on saturation where no new information was obtained. Using semi-structured interview design, in-depth interviews were conducted with 14 participants. Data was analysed using Tesch in Creswell (2009) content analysis approach. The findings included five themes and several categories. These included knowledge on the benefits of antenatal clinic attendance by the pregnant women and the mode of administration of Sulphadoxine Pyrimethamine. It was recommended that there should be in-service training for the midwives to be more vigilant when administering the Sulphadoxine Pyrimethamine as some pregnant women pretend to be swallowing the tablet under the directly observed therapy whilst in actual fact, they take the drug home to be taken one tablet a day while others reported they throw away the tablets because they felt swallowing the three tablets at a go was dangerous for their unborn babies.

CHAPTER 1

BACKGROUND

1.1 Introduction

This chapter discusses the background to the study, in addition to the problem statement, the purpose and objectives, the significance and the theoretical foundation of the study. Also definitions of terms are given in this chapter.

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 around the world every year are at risk of malaria infection (Dellicour, Tatem, Guerr, Snow & Ter Kuile, 2007).

Malaria is still a complex public health problem in the African region, where most cases and deaths occur due to this preventable disease. 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 malaria. Out of these, 24 million pregnancies are threatened by malaria, contributing to 15% of maternal anaemia and 35% of preventable low birth weight babies (WHO, 2004; Roll Back Malaria, 2000).

Malaria remains one of the major causes of morbidity in sub-Saharan Africa since the environment is conducive and sustains the population of the parasite and the vector responsible for the 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 and 200,000 of their infants die 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 and affecting people of all ages. Among pregnant women in Ghana, malaria accounts for 28.1% of Out Patients' Department attendance, 13.7% of ward admissions 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 death (MOH, 2005). Malaria infection is therefore, one of the major causes of maternal mortality in Ghana as most pregnant women tend to patronize unsupervised delivery service where there is no over sight screening for the parasite in pregnancy.

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 practice in Ghana where most gutters are choked with plastic waste and household refuse.

Clinical features of malaria are evident around the fourteenth day after an infectious bite from the mosquito. This may however, vary with the different species of the *Plasmodium* parasite. The common symptoms of malaria include headache, fever, joint pains, vomiting, diarrhoea, flu-like symptoms and others. The breakdown of red blood cells by the malaria parasite, in addition to diminished stores of iron, folate and haemodilution that occurs during pregnancy increase the rate of anaemia in the pregnant

woman (Antwi, 2010). Moreover, pregnancy comes with its own stress where some pregnant women might have even been malnourished before pregnancy and the occurrence of malaria in pregnancy increases the health risk nature of the women.

The complex physiological changes that occur during pregnancy and the hormonal and generalized immune suppression result in the loss of acquired immunity to malaria. This makes the pregnant woman to become more vulnerable to malaria. The first and second pregnancies are mostly affected with the prevalence of parasitaemia greatest in the second and third trimesters (MOH, 2010; Roll Back Malaria, 2000). After this the woman may acquire some immunity. However, acquired immunity for malaria depends on intensity of the transmission, number of previous pregnancies, nutritional status and haemoglobinopathies (Roll Back Malaria, 2000).

Malaria in pregnancy can therefore be said to be catastrophic and is associated with negative outcomes for the pregnant woman, the foetus or the neonate, since pregnant women are particularly vulnerable to malaria, thus making them very susceptible to the infection and severe illness (Roll Back Malaria, 2000). In areas of stable malaria, where women have considerably acquired immunity, *Plasmodium falciparum* does not develop typically into symptomatic febrile disease, but rather leads to maternal anaemia and placental infection, particularly in primigravidae and secundigravidae (Roll Back Malaria Partnership, 2008).

Usually, the parasite may be hiding in the placenta interfering with oxygen and nutrient transport to the foetus. Hence, placental malaria has several disadvantages for the pregnant woman. 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). Malaria in pregnancy is not only disastrous for the foetus but also endangers the health of the

pregnant woman. It was also reported that maternal malaria could lead to cerebral malaria, pulmonary oedema, post-partum haemorrhage, hypoglycaemia and puerperal sepsis (Global Malaria Action Plan, 2008; Action Alert, 2010).

Over the years, the World Health Organization recommended that pregnant women in malaria-endemic areas receive 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. In this case, Ghana over the past years employed various strategies to address malaria in pregnancy. The previous intervention of using chloroquine as a chemoprophylaxis in prevention of malaria in pregnancy has not been successful because of 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 on the part of pregnant women that chloroquine has detrimental effects such as its ability to cause abortion, has an unpleasant bitter taste, causes severe itching, coupled with the fact that too many tablets have to be swallowed vis a vis the poor antenatal attendance nature of Ghanaian pregnant women. These concerns necessitated a change in policy in malaria control in 2004 (MOH, 2009).

In this regard, Ghana adopted the World Health Organization's current recommendation package of interventions for controlling malaria during pregnancy in high transmission zones. This package includes, 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

three tablets to be taken at a go from 16 weeks up to 36 weeks. The first dose of the SP which comprised of three tablets is given after 16 weeks of gestation and for the subsequent second and third doses also, three tablets each are given at monthly intervals on directly observed treatment short course (DOTS).

The IPTp using SP has been identified as a cost-effective tool for the prevention of malaria if taken regularly in high transmission countries including Ghana. Also, the IPTp using SP is capable of controlling the occurrence of malaria among pregnant women. The only established evidence that poses a contra-indication 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. Apart from this recognized complications of G-6-PD, pregnant women in Ghana also have other misconceptions that necessitated a review of the existing strategies (MOH, 2010).

1.2 The Problem Statement

Malaria in pregnancy is a common medico-social problem requiring a multi-disciplinary and multi-dimensional solution (Action Alert, 2010). This problem of malaria in pregnancy is a huge one and continues to affect significant numbers of Ghanaian women and their babies. This is coupled with the fact that without healthy pregnancies, there can be no guarantee for the continuity of mankind (Action Alert, 2010).

In the Ho Municipality, the multi-pronged approach to prevention of malaria in pregnancy is used. This multi-pronged approach which is on-going comprises the ITNs, IPTp with SP and appropriate case management. However, the researcher has observed

that the use of IPTp using SP is not followed religiously by pregnant women in the Municipality. Pregnant women are to be given the SP from 16 weeks up to 36 weeks but these are usually delayed due to the inability of some pregnant women to report at the right time for the first ANC visit so that SP administration can be initiated. As a result, the annual reports from the Ho Municipality from 2008 – 2010 indicate a low coverage in Antenatal attendance and the IPTp administration.

The Intermittent Preventive Treatment with Sulphadoxine Pyrimethamine use from Jan-Dec 2008-2010 in the Ho Municipality is presented in Table 1.1.

Table 1.1: ANC attendance and IPTp utilization

Year	ANC Registration	%	IPT 1	%	IPT 2	%	IPT 3	%
2008	5288	79.2	2833	53.5	192	36.4	958	18.0
2009	5517	81.3	2568	46.1	1654	29.9	928	16.8
2010	5261	76.0	2431	46.0	1558	29.6	987	18.7

Source: Ho Municipal annual report 2010.

As shown in Table 1.1 the majority of the pregnant women failed to continue with the second and third doses of the IPTp administration. Interpreting Table 1.1, it follows that, thousands of pregnant women are usually eager to take the drug during the initial visit at the ANC. With the subsequent visits, the number of women who received the drug kept reducing until barely a minimal number of the pregnant women received the third dose of the drug. It is therefore not surprising that pregnant women continued to report at hospitals with malaria infection as observed by the researcher. This current study sought to investigate the pregnant women's perception of IPTp using SP as a way of preventing malaria among pregnant women in the Ho Municipality. This is because malaria in pregnancy is particularly problematic for both mother and unborn baby and it

is necessary to investigate the mother's knowledge and practices for the prevention of malaria in pregnancy.

To enable the researcher conduct this investigation, there are four research questions that need answers regarding the use of IPTp among pregnant women in the Ho Municipality.

- Why do pregnant women fail to attend ANC early enough to start SP from 16 weeks gestation?
- What are the perceptions and beliefs of pregnant women about the use of SP in pregnancy for the prevention of malaria?
- What are the practices of pregnant women towards the prevention of malaria in pregnancy in the Ho Municipality?
- How is the availability and accessibility of the IPTp with SP strategy in health facilities for pregnant women in the Ho Municipality?

1.3 Purpose of the Study

The purpose of this study is to investigate the attitudes of pregnant women towards ANC attendance and their perception, beliefs and practices for the prevention of malaria regarding the use of IPT in pregnancy. It would also include the accessibility of IPTp for use as a strategy for prevention of malaria in pregnancy in the Ho Municipality. To enable the researcher investigate the research problem systematically, the following objectives were set.

1.4 Objectives

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 Specific Objectives were to:

- Determine the knowledge about the benefits of ANC services during pregnancy.
- Investigate the attitude and practices of pregnant women towards the attendance of ANC.
- Investigate the perception and beliefs of pregnant women regarding the use of IPT in pregnancy using Sulphadoxine Pyrimethamine.
- Explore the availability and accessibility of IPTp in the Ho Municipality for pregnant women's use
- Explore the reason, for late attendance of pregnant women at antenatal clinics and
- Assess strategies employed by pregnant women for prevention of malaria during pregnancy.

1.5 Significance of the Study

It is the researchers' hope that available information about the beliefs, perceptions and practices of pregnant women on the use of IPT in pregnancy would specifically suggest other interventions for health care professionals on ways to implement the IPTp as a strategy for the prevention of malaria in pregnant women in the Ho Municipality. This would also contribute to the realization of the full benefits of the Roll Back Malaria Programme. It would contribute to nursing knowledge. Additionally, the study would offer opportunities to learn about the perceptions of health service users in regard to the attitudes of health care providers. Thus, the study would suggest ways of enhancing relationships of providers with clients. Above all, the study would offer an opportunity to put into practice all knowledge and practices of research learnt by the researcher and to generate interest of others in the field of malariology.

1.6 The Theoretical Foundation of the Study

King's system model on perception is chosen for this study. From King's framework, man is a dynamic human being whose perception of objects, persons and events influence his behaviour, social interaction and health (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, 1981). 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 include 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 a typical Ewe community surrounded by beliefs and other politico-social activities.

1.7 Definition of Terms

- Perception: the way one sees and thinks about something.
- Knowledge: the understanding that one has got through experience or observation.
- Attitude: what one thinks or feels about something.

- Belief: to think that something is true; the conviction of one's self about something.
- Sulphadoxine Pyrimethamine (SP): an anti-malaria drug administered in three doses starting from 16 weeks of pregnancy and repeated at monthly intervals to prevent malaria in pregnancy.
- Intermittent Preventive Treatment of malaria in pregnancy (IPTp): this is based on the use of anti-malarial drugs (SP) given in treatment doses from 16 weeks of pregnancy and the subsequent 2 doses at monthly intervals.
- Insecticide Treated Nets (ITNs): the use of bed nets treated with insecticides to prevent mosquito bite.

1.8 Conclusion

Chapter 1 presented the background to the study and the objectives for the study. Chapter 2 is the review of the literature for the study.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter presents review of literature from articles, books and data basis such as pub med, Google, plasmid among others. The literature was reviewed on spatial distribution of malaria, policy on malaria prevention in pregnancy in Ghana, attitude of pregnant women towards antenatal clinic attendance, knowledge of pregnant women on malaria and its prevention, perception of malaria disease management and prevention, pregnant women's perception on intermittent preventive treatment of malaria in pregnancy using Sulphadoxine Pyrimethamine (SP) and measures to improve SP acceptability by pregnant women.

2.1 Spatial Distribution of Malaria

Malaria has been a troubling disease the world over, occurring mainly in Latin America, Caribbean, some part of Indonesia, Japan and Korea, but more endemic in sub-Saharan Africa, Madagascar and the Middle East (Hay, Sinka, Tatem, Patil & Guerra, 2009). However, efficient allocation of resources in the intervention programmes against malaria in the developed world coupled with strict environmental hygiene regulations resulted in the eradication of the *plasmodium falciparum*, the contributing agent that causes malaria in those countries.

According to Souza, Kelly-Hope, Lawson, Wilson and Boakye (2010) malaria is endemic in sub-Saharan Africa as a result of the warm humid climate which favours the breeding of mosquitoes. The unhealthy environmental congestions coupled with collection of pockets of water in low lying grounds and lagoons also contribute immensely to the breeding of mosquitoes. Consequently, malaria has become one of the

top leading diseases among the population. The worst affected people are pregnant women and children less than five years of age. High levels of *Plasmodium falciparum* malaria endemicity are therefore, common in Africa. Uniformly low endemic levels are found in America, Central and South East Asia (CSEA) and pockets of intermediate and very rarely high transmission remained in the developed worlds of Europe and Germany. The eradication of malaria poses a great challenge to the Third World countries such as Ghana due to the system's unregulated public health laws.

Malaria is hyper endemic in all parts of Ghana. The country lies in the tropical region of Africa, with an estimated population of twenty three million. The climate of Ghana is warm and comparatively dry along the southeast coast, hot and humid in the southwest and hot and dry in the north. The disease distribution is associated with high prevalence and the high transmission zones are areas with high temperatures. As reported in World Malaria Report 2008, the transmission of malaria occurs all year round, with seasonal variations during the rainy seasons. In Ghana, an estimated 7.2 million cases of malaria was reported in 2006 (WHO, 2008). With this, there are therefore, significant opportunities for malaria prevention through interventions such as IPT and SP use among pregnant women. When women are experiencing healthy pregnancies and giving birth to healthy babies with resistance against malaria means that malaria can be controlled in Ghana and the sub region.

2.2 Health policy on malaria prevention in Ghana

“Policy” has been defined as a way of dealing with something especially, one that has been officially decided by a political party or an organization (Longman Active Study Dictionary, 2008:565). In the context of this study, the word ‘Policy’ is the overall plan that has been officially determined to guide the Ministry of Health in Ghana

in malaria prevention in pregnancy. Even though policies serve as a guide for their implementers and favour the target population, the outcome of some policies, worsens existing problems and serve as barriers to the health care utilization (MOH, 2007).

Since 1998, Ghana has committed itself to the Roll Back Malaria (RBM) initiative of the World Health Organization. This is built on the Global Malaria Strategy with the focus on Africa. The goal is to halve the World's Malaria burden by 2010 (MOH, 2009). Additionally, the country drew up a 'Medium Term Strategic Plan for Malaria Control in Ghana' from 1998 to 2002. This sought to improve the coverage of malaria control activities by adopting an inter-sectoral approach involving and promoting partnership with the private sector and the community (MOH, 2009).

Ghana has also committed itself to the Abuja Declaration on Roll Back Malaria in Africa. The Abuja Declaration sought to achieve specific targets on malaria prevention and control. In Ghana, as well as in other countries worldwide, the emergence and rapid spread of *Plasmodium falciparum* resistance to common anti-malaria drugs such as chloroquine, posed a serious challenge to the benefits of early diagnosis and prompt treatment of malaria (MOH, 2009). Thus in 2004, Ghana changed its anti-malaria drug policy by selecting Artesunate Amodiaquine combination as the first drug of choice for the management of uncomplicated malaria, and Sulphadoxine Pyrimethamine (SP) for intermittent preventive treatment of malaria in pregnancy (IPTp). The intermittent preventive treatment (IPT) is based on the use of anti-malaria drug SP (Sulphadoxine 500mg and Pyrimethamine 25mg), given in treatment doses at predefined intervals after 'quickening' (16 gestational weeks) to reduce malaria parasitaemia and poor pregnancy outcomes. The IPT was to be provided as part of a comprehensive antenatal package, with other products like haematinics and anthelmintics from 16 weeks up to 36 weeks of pregnancy.

The SP is to be administered under the supervision of a qualified health worker especially midwives. This approach is known as Directly Observed Therapy (DOT). However, before the commencement of the administration of the SP, all pregnant women undergo screening to exclude those that are either G – 6PD deficient or allergic to Sulphonamides. Thus, pregnant women who cannot take SP in intermittent preventive treatment were encouraged to sleep under Insecticide Treated Nets (ITNs) and report early when they have symptoms suggestive of malaria. The (ITNs) are also used throughout pregnancy as an additional method for malaria prevention. With respect to the adoption of SP for IPTp, systems were put in place to monitor the efficacy, quality, adverse drug reaction as well as G – 6PD status of the pregnant woman. The Ministry of Health and its agencies conduct regular surveys to assess compliance and acceptance of the drug under this policy. In effect, the (IPTp) is the inter-sectoral approach involving community and private sector partnership (MOH, 2009). This study aimed at improving compliance and acceptance of IPT, using SP in preventing malaria among pregnant women in Ghana.

2.3 Attitudes of pregnant women towards Antenatal Clinic Attendance.

Antenatal care is the health care including education given during pregnancy. Although most pregnancies appear to be normal, antenatal care promotes targeted assessment in which the midwife/nurse examines and carries out relevant investigations at the antenatal clinic. According to Abov – Zahr, and Wardlaw (2003), antenatal care is viewed as an important point of contact between health workers and pregnant women. It is an opportunity for provision of health education, the detection of pregnancy complications and development of birth plan to ensure delivery at a health facility. This is to ensure optimal health for both mother and her unborn baby. The antenatal care can also be more effective in preventing adverse outcome, when it is sought early in

pregnancy and continued throughout to delivery. These unique functions of antenatal services have made it possible to incorporate malaria prevention strategies in most health facilities. The researcher, being a nurse and a midwife has observed with great worry, how some pregnant women report at the ANC when they are near term and IPTp (SP) cannot be initiated because the women reported very late at an advanced stage of pregnancy.

“Attitude” has been defined by the Longman Active Study Dictionary (2008:43) as, “what one thinks or feels about something”. In the context of this study, attitude of pregnant women towards antenatal clinic attendance is the opinion and the belief pregnant women have about antenatal care. This opinion and belief about the health care services provided at the antenatal clinic have serious impact on the utilization of the services as well as IPTp use by the pregnant women.

Studies conducted in three countries in sub-Saharan Africa on factors affecting antenatal care attendance provided some view points from qualitative studies in Ghana, Kenya and Malawi by Pell, Menaca, Were, Afrah, Chatio, Manda- Taylor, Hamel, Hodgson Tagbor, Kalilani, Ouma and Pool (2013). These studies reveal that women attended antenatal clinic at least once during their pregnancy and their description of antenatal care were often vague. Drawing on qualitative data, the researchers comparatively explored the factors that influenced ANC attendance in four socially diverse sites in three countries across sub- Saharan Africa such as Western Kenya, Southern Malawi and Northern and Central Ghana with varying levels of ANC attendance. For instance pregnant women in Kenya were often concerned about palpation and the prescription of blood booster tablets and injections than the use of IPTp using SP against malaria.

Whilst the Ghanaian and Malawian women seemed to lay emphasis on services such as being weighed, checking position of the baby and provision of haematinics and injections (Tetanol Toxoid), others also patronized the ANC because they were given ITNs. The fact that no woman ever remembered the name of IPTp and SP was an indication of the low awareness about IPTp use and malaria prevention in pregnancy. It is therefore appropriate to explore the beliefs and perception of pregnant women on the use of IPTp and SP use during pregnancy. This discovery could pave the way for new strategies of improving IPTp with SP use among pregnant mothers in Ghana. In another instance, Pell et al, (2013) investigated the reasons for ANC attendance among pregnant women in Ghana, Kenya and Malawi. Most of the pregnant women indicated that they attended ANC to monitor the progress of their pregnancy or to check the position of the unborn child.

In a comparative study, among the three countries namely Ghana, Kenya and Malawi, regarding the gestational age and timing of ANC initiation, respondents from different categories in Ghana tended to characterize the women as generally starting ANC around the third or fourth months of pregnancy (12-16weeks) whereas women in Kenya and Malawi were reported to make their first visit around the sixth or seventh month (24-28). This is an indication that pregnant women in Ghana attend ANC early enough to start the IPTp using SP and complete it before delivery. It is therefore possible that pregnant women can receive all the second and third doses of the SP before they deliver. However, the (MOH, 2010) report of Ghanaian women not receiving all the second and third doses of IPTp and SP, before going into labour indicated the need for investigation into the perception and beliefs of pregnant women about the use of IPTp and SP in pregnancy.

Age and parity were also reported to have a complex impact upon ANC initiation (Pell et al, 2013). The primigravidae were reported to be more likely to seek advice and initiated ANC earlier, since they were unaccustomed to experiences of pregnancy. In the case of some primigravidae, lack of familiarity with signs of pregnancy prompted uncertainty and since they were less likely to recognize pregnancy; they were more prone to unintentional delay ANC attendance. In the same study, adolescents and unmarried younger women were more likely to hide their pregnancy and delayed ANC just to avoid potential social implications of pregnancy such as exclusion from school, stigmatization and gossip. While in Malawi Pell et al., (2013) found that, older women did not make active effort to hide their pregnancy from their partners, but were reported to delay pregnancy disclosure and ANC attendance till forth month to avoid suffering from witchcraft that could harm the pregnancy.

Similarly, in Ghana and Kenya, pregnant women described how they were at a greater risk of witchcraft and sometimes attributed pregnancy interruption to witchcraft Pell et al., (2013). Also older multiparous women, being more accustomed to pregnancy experience, had the priority to obtaining the antenatal card to avoid embarrassment from health staff when they come to deliver. They were less concerned about monitoring the progress of pregnancy and the use of IPTp with SP, but rather visited the ANC in late pregnancy and in some instances, waiting till the ninth month (Pell et al, 2013). In some situations, health care providers contribute to the confusion of pregnant women not attending ANC early. For instance, in Kenya pregnant women who attended ANC in the first trimester were sent home and instructed to return in the second trimester when their pregnancies were visible and could be confirmed through palpation. This attitude of the health care providers has the tendency to interfere with IPTp SP use. In spite of the reprimands that women experienced from health care workers', their advice was

generally trusted and women claimed to follow their instruction.

Pell, Menace, Were et al (2013) also reported that attending ANC entailed direct and indirect costs. For example in Kenya small charges were levied for ANC card and also laboratory tests where available. Similarity in the Ashanti Region of Ghana incidences of charging for ANC was reported. However, in Upper East Region of Ghana ANC was largely free. Also, travel cost varied among the countries studied. In Kenya and Malawi, bicycle and taxies were available for women who had long distances to travel and those who could afford to pay. Other indirect costs included food that women purchased whilst waiting to be attended at the ANC and preparation by way of grooming for the clinic also cost them quite a lot of money and those who had the resources could afford these indirect costs. These indirect and direct costs of ANC service contribute to delays in ANC initiations among the participants. These attributes of ANC attendance have particular impact on IPTp implementation such as low coverage, persistent poor pregnancy outcomes and high infant and maternal morbidity and mortalities.

In an investigation of the time of registration for first ANC visit (Antwi, 2010), first ANC visit was found to be very crucial to the coverage of IPTp since, early registration increases one's opportunity of receiving the recommended doses of SP while, late first ANC attendance has been found to contribute to incomplete IPTp administration (Antwi, 2010). Furthermore, a study on indigenous beliefs and practices that influence the delayed attendance of antenatal clinic by women in Bohlabele District in Limpopo, South Africa found that pregnancy is regarded as an honour by the family that the news is kept confidential until the ancestors and relatives have been informed. Pregnancy brings joy to the family especially, in African culture where children are regarded as wealth and women accorded respect, power and status in the community. (Ngomane, Cur, Cukr, Malaudi, BCur, Phil & Dlitct 2010). These researchers also

reported that pregnancy is also viewed as a sacred event that must be kept secret for fear of bewitchment. The rationale behind this, indicate that evil spirits may be inflicted on to the pregnant woman, and would cause malformation of the fetus. For these researchers, women preferred to stay at home during the first trimester of pregnancy accounting for a major impact in ANC attendance and this has implication for IPTp utilization by pregnant women.

The study by Ngomane et al., (2010) reported that men feel joy and pride when their wives are pregnant, as it establishes their fatherhood and gains them respect in the family and the community as a whole. Despite the joy that pregnancy brings to the family, it is considered a taboo to share the news with friends and distant relatives. The pregnancy is therefore, kept secret from friends and outsiders until it becomes obvious. In this regard, the pregnancy is protected from evil spirit which may be inflicted by jealous people and who would bewitch the pregnant mother to give birth to malformed infants or to suffer a miscarriage. These beliefs of witchcraft are contributing factors to the delay in first attendance of antenatal clinic.

Another belief and practice revealed from the study (Ngomane et al., 2010) was the notion that pregnancy needed to be preserved physically and spiritually with herbs. This necessitated the consultation with a traditional birth attendant first before attending ANC. Having contact with other women at the ANC may expose the pregnant women to evil spirits thereby harming the fetus. The pregnancy needed to be strengthened with herbs to prevent malformation of the fetus and miscarriages which could be influenced by jealous people. In this traditional setting, once pregnancy had started, family elders were relied on to guide the pregnant woman for the preservation and rituals ensuring, maintenance of the pregnancy. With this, it is therefore very important for the women to start attending the antenatal clinic after three months. This could account for pregnant

women not starting ANC early in most African countries, including Ghana. There is the need for replication of such a study in Ghana to investigate and find solutions on the late start of ANC in the country.

It can be concluded that a positive belief system, trust and good interpersonal relationship would facilitate positive outcome of the pregnant women attending ANC. There should therefore, be an understanding of cultural beliefs and practices of the community by health workers especially, midwives so as to motivate clients to attend antenatal clinic as the clients feel secure in the care of service providers, who understand and accept them the way they are, taking into consideration their cultural heritage as a whole. It is also necessary that there should be dialogue between the community and the health sector. The similarities and differences between the two must be identified for them to reach consensus on issues pertaining to improved antenatal clinic attendance and services. This would create a feeling of empowerment and awareness to assist community members to make optimum use of antenatal service. Furthermore, midwives should devise strategies to build relationships of trust with communities to enhance satisfactory outcomes for pregnant women.

A study conducted by Ren (2010) on utilization of antenatal care in four counties in Ningxia, China had the objectives to analyze and evaluate the antenatal care services and its quality so as to improve the care and make it more available and cost effective to the clients. The study identified that ethnicity, education and the age of the youngest child, had a significant effect on the utilization of antenatal care. If women are not spacing their births but becoming pregnant immediately the youngest child is a toddler, they will need more time to care and manage with the current pregnancy. This could delay their ANC attendance. The low coverage of ANC by the pregnant women with inadequate antenatal care reported might be due to their low socio-economic status and

the lack of availability and accessibility to antenatal care services in the areas. However, if a mother receives antenatal care during the first trimester, she is more likely to be informed about the importance of antenatal care and might be more likely to comply with the model of antenatal care which will increase the utilization of antenatal services including IPTp use.

2.4 Knowledge on Malaria and its prevention in pregnancy

The word 'knowledge' has been defined as the information, skill and understanding that you have gotten through learning or experience (Longman Active Study Dictionary, 2008:413). Knowledge on malaria and its prevention in pregnancy in the context of this study means the information, skill and understanding that the participants (pregnant women) have on malaria and its prevention through learning or experience. The level of knowledge that pregnant women have on malaria and its prevention influence their attitude towards malaria prevention strategies. This however is important in understanding their health seeking behaviour since this would inform their decision and action towards regular attendance of antenatal clinic to receive SP and also use other malaria prevention measures. Most importantly, the knowledge of the pregnant woman in IPTp and other malaria prevention measures in pregnancy highly depends on the health worker's knowledge and attitude. This is because, the health worker provides the pregnant women with health education on IPTp during antenatal care.

A cross-sectional survey was conducted by Enato, Okhamafe and Okpene (2007) to assess the knowledge, attitude and practice of malaria management among pregnant women attending ANC from two health facilities in Edo State in Nigeria. The method used was a cross-sectional survey covering 867 pregnant women. Instrument used was self administered questionnaire.

Findings from the study indicated that 87% of the respondents had undergone at least 1 episode of malaria during their current pregnancy while chloroquine (44%) followed by SP (39%) were the most frequently used anti-malarial drugs in the management of the disease. Other medications reported included: quinine (6%) and herbal medicine (6%).

Almost, 10% of the women believed none of the anti-malarial drugs were safe during pregnancy meanwhile, 42% said chloroquine was the only safe anti-malaria and 33% mentioned SP as safe. These respondents used the presence of fever (53%), body pains (37%), weakness (35%), cough and loss of appetite (14%) as indications that, they had malaria. These findings have shown that malaria was perceived as a common health problem during pregnancy among the women. Majority (89%) of the respondents attributed malaria to the bites from infected mosquitoes, while 11% had erroneous knowledge on the cause of malaria. About 75% of the women believed that malaria constituted an important health risk during pregnancy. It was found that the respondents had a good knowledge of the cause of malaria and recognized it as an important health risk during pregnancy. However; knowledge of the consequences of malaria during pregnancy; especially, on the foetus was poor. This finding had a very serious implication, as it is likely to impact the utilization of anti-malarial interventions by pregnant women. This also has very important implication for IPT utilization by the pregnant women.

In the study (Enato et al., 2007) the respondents' beliefs and practices of malarial preventive measures were found to be poor. Only 4% believed that sleeping inside an ITN and receiving SP based IPT can prevent malaria during pregnancy. It is necessary that the knowledge and perception of pregnant women on IPT and SP be explored in Ghana in this 21st century. Thus the current study aims at exploring the beliefs and

perception of women in the Ho Municipality on prevention of malaria in pregnancy. The use of insect repellants also by expectant mothers is not a good health practice as pregnant women should live and sleep in an airy environment to prevent inhaling filthy air which can be detrimental to placental perfusion.

An exploratory study conducted by Mbonye, Neema and Magnusen (2005), on prevention of malaria in pregnancy looked at perceptions and policy implication in Mukono District in Uganda. The objective was to assess the perception, beliefs and practices associated with malaria prevention in pregnancy. The results indicated that malaria was perceived as a serious illness among pregnant women and children. The main reason was that their bodies were weak, as a result of low immunity against the disease. It was also stated that both pregnant and non-pregnant adolescents were perceived not to be at risk of malaria and found least likely to benefit from malaria prevention interventions. Although pregnant adolescents were reported to have realized the importance of seeking preventive care for malaria compared with non-pregnant adolescents, there were several constraints that limited their access to service due to stigma against adolescent pregnancy and some negative attitudes of health care providers. Furthermore, the adolescents did not know the dangers posed by malaria and how to prevent it. This called for increase awareness about the dangers of malaria among pregnant adolescent; focusing on the adolescent themselves, their peers and their parents as a whole.

Another essential finding of the Mbonye, Neema and Magnusen (2007) study was that mosquito nets were a useful preventive measure against malaria and that pregnant women and children were supposed to sleep under nets, since they were the most vulnerable groups but the availability and the use of the nets were found to be low due to the cost of the ITNs. Some of the participants in the study also thought that the

chemicals used to treat the nets were very harmful to adults, children and pregnant women. They believed that the chemicals used in treating the ITNs were responsible for difficulty in breathing, excessive heat and suffocation at night experienced by the pregnant women. They complained that if chemicals could kill mosquitoes instantly, it could kill human beings. The use of mosquito repellants by the participants as revealed in the study could be contributing to the difficulty in breathing among the pregnant women other than the ITNs. Health promotion packages to nurses and midwives have to be developed to demystify the negative perception on chemicals used in treating ITNs and also advocate for the ITNs to be subsidized so as to increase access to them.

A qualitative study on intermittent preventive treatment of malaria during pregnancy was undertaken in Korogive District, North-Eastern Tanzania. It was aimed at assessing the knowledge, attitude and practice of district health managers, antenatal care staff and pregnant women in relation to malaria control, with emphasis on IPTp services (Mubyazi, Bloch, Kamugisha, Kitua, & Ijumba, 2005). The study which involved in-depth interviews with the participants and separate focus group discussions with the pregnant women revealed that malaria was commonly known as a leading communicable disease.

Some conditions which were associated with malaria in pregnancy as indicated by the women included swelling of legs, dizziness, high blood pressure, abortion, dehydration, headache and vomiting. Also, fever, joint pains, fatigue, loss of appetite and general malaise were reported by the majority of the participants to be prominent malaria related conditions. If pregnant women understand the importance of ANC and attend ANC early and throughout the period of pregnancy, their knowledge will be improved on the prevention of malaria through the use of IPT and SP.

2.5 Perception of the malaria disease management and prevention

The word perception is defined as the way you think about something and your idea of what it is like (Longman Active Study Dictionary, 2008:544). Therefore perception of disease management and prevention in the context of this study means the way one (pregnant women) thinks about disease management and prevention and the idea of what it is like.

King's (2012) conceptual model of nursing shows that goal attainment is derived from three inter-related systems and each system has different concepts. The basic concept is the patient and nurse communication, goal setting and action taken to attain the goal. This theory relies heavily on the interaction between the nurse and patient (client).

The King's system model view man (patient) as a dynamic human being whose perception of objects, persons and events influence his/her behaviour as regards social interaction and health. Man as a dynamic human being has three fundamental needs: 1.the need for health information, 2. need for care that seeks to prevent illness and 3. need for care when unable to help oneself.

Nursing is a process of action, reaction and interaction by which the nurse and the client share information about their perception through communication and set goals. If perceptual interaction accuracy is present in the nurse-client interaction, transaction will occur which will result in goal attainment and finally lead to satisfaction. This transaction made through nurse-client interaction enhances growth and development. With this, the nurse with special knowledge will skillfully communicate appropriate information to the client for mutual goal setting and goal attainment to occur. However, if there is role conflict experienced by the nurse or the clients or both stress in nurse-client interaction will occur.

Many interventions for reducing the burden of malaria and other diseases depend on improved consumer's knowledge about the disease and its prevention. The knowledge about the disease and its control is enhanced by increased education to reduce the burden of the disease on the target audience. Health education often enlightens and aids in removing some of the cultural ideologies that lead to misconceptions that affect proper and adequate prevention and treatment of diseases (Dike, Ownujekwe, Ojukwu, Ikene, Uzochukwu & Shu, 2006).

A study on influence of education and knowledge on perception and practice to control malaria in South-eastern Nigeria by Dike et al (2006) investigated whether people's level of education and what they know about malaria affects how they seek treatment and prevention for the disease. The study was undertaken in Adu, Ahanti, Amaettiti and Enugu-Akwis in South-eastern Nigeria. Questionnaires were used to collect data from a random sample of 300 respondents per village on relevant areas namely, knowledge on causes, symptoms, treatment and prevention of malaria. The study found that education and knowledge of malaria both play a role in people's perception and practice to controlling malaria. It was also shown that most of the more educated respondents in the study had only 4 – 5 years of education which gave the indication that educational attainment needs not be necessarily very advanced to have a better knowledge, attitude and perception towards malaria.

Similarly, education increases the probability that households would purchase both treated and untreated mosquito nets. According to the researchers, the participants' identification of mosquitoes as the cause of malaria led to increased purchases of mosquito nets. However, there was a negative correlation of level of education with perception that herbs could be used to treat malaria, because this represents a source of potential inappropriate treatment and more educated people were expected to be aware of

this. In addition, there was a positive correlation of socio-economic status with correct perception and practice about malaria control. This could be because education enhances people's socio-economic status, hence the ability to pay for health care. Thus spending on education may well reduce cost on treatment of disease such as malaria and education contributed to people correctly identifying treatment and prevention of malaria.

2.6 Pregnant women's perception of intermittent preventive treatment of malaria using Sulphadoxine Pyrimethamine.

In African countries, including Ghana, as part of the Roll Back Malaria initiatives, one of the main strategies to reduce malaria infection during pregnancy is the promotion of intermittent preventive treatment (Launiala & Hanlosalo 2007). An ethnographic study was conducted in rural Malawi on factors influencing compliance to intermittent preventive treatment of malaria during pregnancy on Yao women by Launiala and Honkosalo (2007). The study found several factors affecting IPT namely, unclear messages about IPT with (SP) from nurses, timing of SP -1 administration, periodic shortages of SP, women's limited understanding of IPT – SP, tendency for late enrolment, and nurses' underperformance. The study also reported on the perception and fears of the use of SP in pregnancy that it could lead to miscarriage.

Another study on perception on the use of Sulphadoxine Pyrimethamine in pregnancy and the policy implication for malaria control in Uganda was conducted by Mbonye, Neemma and Maganussen (2006). The study explored perception, beliefs and practices associated with the use of SP in pregnancy in Mukono district in Uganda. Data was collected using qualitative methods including focus group discussion and key informant interviews. The results indicated that pregnant women's perception on the use of SP for treatment and prevention of malaria in pregnancy was that SP is an effective drug that cures malaria.

In the study by Mubyazi et al., (2005) investigated the pregnant women's attitude towards SP and IPTp. It was reported that the women sometimes were uninformed or misinformed about the standard dosage of the SP. The participants alleged that one of the drawbacks that linked to the low acceptance of the SP was about the side effects. They reported developing adverse reaction after using SP especially their belief and fear of the Steven-Johnson's Syndrome which they referred to as "burning of the skin". Thus the participants unanimously asserted that some women throw away the SP tablets after leaving the dispensary. It was further argued that some women believed SP taken during pregnancy could cause abortion. Whilst others decided to take smaller dosage of the SP than what is recommended, others also said SP does not lower body temperature rather it causes body weakness.

2.7 Measures to improve acceptability of IPT – SP intervention strategies by pregnant women

Successful implementation of IPTp with SP requires an acceptance from the targeted audience. This is because the acceptance of the IPTp with SP is one important aspect of its sustainability. Acceptance is defined as something good especially, for a particular purpose (Longman's Active Study Dictionary, 2008:4). Therefore acceptability in the context of this study means pregnant women's opinion and belief concerning IPT-SP use for prevention of malaria in pregnancy.

The study on intermittent preventive treatment of malaria during pregnancy carried out in Korogwe District in North-Eastern Tanzania on assessing the knowledge, attitude and practices of participants, for purposes of improving IPTp services (Mubyazi, et al., 2005). The researchers elicited suggestions from the pregnant women on how to improve IPTp services among them. The findings from the study revealed the key

suggestions from the participants on improving IPTp services and increasing ANC attendance were community sensitization and health education activities. The participants stated that the community should be adequately informed about the potential malaria-related risks and the disadvantages resulting from failure to use the recommended antimalaria drug.

Additionally, in a study to find out how malaria prevention with IPT could effectively reach more pregnant women at the community level, all respondents were of the view that deliberate effort is needed to reach the women in their communities. More than half of these respondents recommended that health care providers and community resource persons conduct home visits and explain the benefits of IPT to the pregnant women (Mbonye et al., 2007).

2.8 Summary

In order to improve pregnancy outcomes and reduce maternal morbidity and mortality, effective ANC is paramount. Consequently, several strategies have been adopted over the years in Ghana to improve maternal health during pregnancy. These strategies include focus antenatal care services, training workshops on use of the partograph in labour and IPTp using SP.

The antenatal care can be more effective in preventing adverse pregnancy outcomes when it is sought early and continues through to delivery. This is not without the good knowledge and skills of the health care giver as well as their attitude to the client who is receiving the service. However, studies have shown that some pregnant women report quite late to the ANC, hence contributed to the incomplete IPTp regimen (Pell et al; 2013). Additionally, the belief held by pregnant women in some parts of Africa was that revealing pregnancy at early stage puts them at great risk of witchcraft

which can cause pregnancy interruptions and malformations in the foetus.

Other reasons given were the inaccessibility to the antenatal clinic, inability to leave farmlands, direct and indirect cost of ANC services, health care provider's attitude and the pregnant woman not having any problem during the pregnancy. All these prevented many pregnant women from accessing ANC early (Pell et al; 2013: Ngomane et al; 2010). Other studies have shown that early reporting to ANC by pregnant women was necessitated by ill-health. Meanwhile, the health-seeking behaviour of the pregnant women at ANC is determined by the quality of service delivery at the clinic which motivate the clients to access the service at the right time. Other factors that were said to influence ANC attendance included parity, household decision-making and the belief system of the pregnant women (Pell et al., 2013: Zen, 2010: Ngomane, 2010).

Malaria during pregnancy is a major global health concern resulting in adverse outcome including maternal death (Menendez et al., 2007) since the pregnant woman is more vulnerable to infection. However, the level of knowledge that pregnant women have on malaria and its prevention influence their attitude and perception towards malaria prevention strategies. This is important in understanding the woman's health seeking behaviours, since this would inform them to receive SP and also practice other malaria preventing strategies. However this knowledge of the pregnant women in IPTp – SP intervention and the practice of other malaria preventive measures depend highly on health workers knowledge and attitude since they provide the pregnant women with health education on IPTp – SP and other malaria preventive strategies during antenatal care service (Enato et al; 2007). Malaria was perceived to constitute an important health risk during pregnancy by the women, the consequences of which during pregnancy especially on the foetus was found to be poor (Enato et al., 2007: Mbonye et al, 2005). In addition the women's practice on malaria preventive measures, were found to be poor

despite their knowledge on malaria and its prevention interventions.

Effective interactions between health care providers and users of the health care services leads to improved knowledge change in behaviour and practices that promote health. This interaction to improve knowledge between the nurse and the client leads to transaction. Thus, if the role expectation and role performance as perceived by the nurse and the client are congruent transaction occurs; which, ultimately results in goal attainment for both the client and the nurse at the health care facility. However, if role conflict is experienced by nurse or client or both, stress in nurse - client interaction occurs (King, 2012).

The use of SP as the current most effective single-dose antimalaria drug for prevention of malaria in pregnancy has been described as safe and efficacious. Although there are concerns that SP is associated with adverse reactions including level of resistance, the optimum dose, taste and various uncertainties about its effects on the foetus, pregnant women perceived SP to be effective in preventing malaria. This however is partly based on their trust in the health care providers who they think cannot give medications which can harm them and their babies in the uterus. To improve SP acceptability by users, therefore these suggestions have been made; intensification of health education, sensitization programmes at the ANC and at the community levels to demystify the numerous uncertainties with IPTp – SP utilization. Furthermore, service providers need to be trained on IPTp service delivery.

2.9 Conclusion

The review of studies included spatial distribution of malaria, health policies on prevention of malaria in Ghana, the attitude of pregnant women towards ANC attendance, knowledge of pregnant women on malaria and its prevention, perception on

malaria disease management and prevention, pregnant women's perception on intermittent preventive treatment using Sulphadoxine Pyrimethamine and measures to improve acceptability of IPTp and SP among expectant mothers. The next chapter deals with the research methodology and design.

CHAPTER 3

RESEARCH METHODS

3.0 Introduction

This chapter provides an exposition of the research methods, the strategy and design of the study. It also provides the description of the research setting, target population, sample size and sampling technique. A detailed description of data gathering procedures and ethical considerations involved in the study is also given in this chapter. The methodological rigour, data analysis and interpretation procedures were also described.

3.1 Research Strategy

The strategy for this study was exploratory qualitative strategy (Polit & Beck, 2008). 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 Ho Municipality. According to Polit & 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 related to it. This then provides more insight into the phenomenon, to determine priorities for further research and development of new hypothesis to investigate the phenomenon. The use of the exploratory descriptive design allowed the researcher to investigate and describe the perception of the pregnant women on IPTp use. This approach was used because not enough information was known about the participants' opinion on the use of IPTp in the Ho Municipality.

3.2 Research Design

The design of the study was qualitative descriptive design. Qualitative descriptive study involves the exploration of the phenomenon of interest with the participants in a particular situation (Creswell, 2009). The qualitative study ensures rich understanding of the phenomenon of interest as it exists in the real world and as it is constructed by the individual in the context of the word (Polit & Beck, 2008). The qualitative approach was chosen for this study, which enabled the participants to share and express their feelings and experience pertaining to their perception, beliefs and practices with regards to IPTp using SP. The research was essentially exploratory and aimed to describe, understand and explain a particular phenomenon. The entire qualitative research process enabled the researcher to focus on learning the meaning that the participants hold about the use of IPTp with SP in pregnancy for the prevention of malaria.

3.3 Research Setting

The study was carried out in the Ho municipality. This municipality is one of the eighteen administrative districts in the Volta Region of Ghana, located in the middle zone of the region. The municipality is divided into four main sub municipalities which include: Abutia, Tsito, Kpedze-Vane and Ho/Shia sub-municipalities respectively. The Ho municipality is bordered on the north by Hohoe District, west by Asuogyaman District in the Eastern Region of Ghana, south west by Adaklu-Anyigbe District, north-west by South Dayi District and north-east by the Republic of Togo.

The municipality has a land surface area of approximately 1,506 sq. km with an estimated population of 225, 026 people and an annual growth rate of 1.9%. It has 51,765 Women in Fertile Age (WIFA). The Ho municipality has a total of 55 health facilities. These include 3 Hospitals, 1 Polyclinic, 26 Health centres, 4 Reproductive and

Child Health Clinics (RCH), 3 Christian Health Association of Ghana clinics (CHAG), 7 Private Clinics, 2 Maternity Homes and 7 Community Based Health Planning and Services (CHPS) Zones. The majority of these hospitals and clinics provide antenatal services to pregnant women within the municipality. Furthermore, 40 of these health facilities are owned by the Ghana Health Service, whilst the rest are owned by individuals, missions and other non-governmental organizations.

The Municipality has two main rainy seasons of which the major one is from March-June and the other minor one from September - November with the mean rainfall ranging between 1020 mm to 2000 mm. Temperatures throughout the year are high, except for mountainous areas where the vegetation is described as semi-deciduous with savannah woodland in the lowland areas. The majority of the inhabitants have access to pipe borne water; whilst the rest depended on hand-dug wells and streams. There are no rivers surrounding this Municipality but the tributaries of rivers and pockets of rain fed ponds serve as mosquito breeding sites.

The municipality has three main ethnic groups the Ewes, the Ga-Dangbe and the Avatimes. Christianity is the predominant religion. The main economic activities of the people include agriculture farming, formal employment, trading and construction works. The road network is approximately 639 kilometers of which about 286 kilometers formed the feeder road network which usually becomes less motorable during the rainy season.

3.4 Target Population

The population describes all elements of individuals, objects or substances that comply with specific criteria for inclusion in a given universe (Burns & Grove, 2005). In this study the population investigated was pregnant women from the ages of 20 to 40 years whose gestational ages were 16 weeks and above and up to 2 weeks postnatal.

Since this study sought to explore the perception of pregnant women on IPTp use, these participants had some experience from attending ANC to understand the relevance of IPTp use in pregnancy. Thus by 16 weeks these pregnant women might have commenced the three doses of the SP and by 2 weeks postnatal might have completed the full three doses of the SP. Pregnant women who were less than 16 weeks and those who met the above inclusion criterion but were not willing to participate were excluded.

3.5 Sample Size and Sampling Technique

Qualitative sampling ensures rich understanding of the phenomenon of interest (Polit & 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 most benefit the study based on the researcher's judgment or interest (Polit & Beck, 2008; Creswell, 2009). The various hospitals and clinics within the Ho Municipality were visited. The research purpose and objectives were explained to the nurse in-charges at the antenatal clinic and then to the pregnant women at the clinic using information sheet (Appendix A). A notice was pasted at the clinic informing the pregnant women about the research 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. The contact number of the researcher 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 (Appendix A). A

copy of each signed consent form was kept by the researcher. Then a convenient date, place and time for the interview were planned and fixed based on the decision and arrangement of the participant. The researcher planned to interview 10-16 participants however, 14 participants were used for the interview when saturation of data was reached. According to Polit & Beck, (2008) saturation is the process of collecting data to the point at which a sense of closure is attained as new data yield only redundant information.

3.6 Realization of Data Gathering for the Study

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. Three participants were used to pilot test the interviewing instruments; the questions and the tape recorder. The semi- structured interview gave an indication for the time to be allotted to each participant and the questioning techniques used. The interview instruments were found to be appropriate for the study.

3.7 Data Gathering Procedure

Burns & Grove (2005) define data gathering as a systematic gathering of information relevant to research purpose or specific objective and questions of the study from respondents selected for the research. In this research two data gathering methods were employed; self-report through in-depth interviews using a semi structured interview guide (Appendix B) and writing of field notes by observation in the field. Burns & Grove (2005) define the interview as a process that involves verbal communication between the participants and the researcher, during which information is provided to the researcher. Unstructured or semi-structured interviews provide narrative data for qualitative analysis (Polit & Beck, 2008) and most narrative self-report data are collected using guiding

questions rather than by questionnaires (Polit & Beck, 2008). In such semi structured interview, the researcher would prepare in advance, a written question guide (Appendix B) which is a list of questions to be covered with each participant. The interviewer's function is to encourage the participant to talk freely about the phenomenon under study and to tell stories in their own words to enable the researcher obtain all the information required (Polit & Beck, 2008). This method was used since the purpose of the study, was to gain understanding into how pregnant women in the Ho Municipality perceive IPTp using SP for malaria prevention in pregnancy. Face-to-face interaction was preferred to ensure flexibility of the interview process and to enhance free interaction between the researcher and the participants.

The researcher employed 'Ewe', the most predominantly spoken language in the Ho Municipality, to conduct the interviews. Nine participants were interviewed using the local language "Ewe" while English was used to interview five participants since they understood and were able to express themselves more freely in English than "Ewe". This was to help create a deeper understanding of the interview conducted with the participants. The interviews were conducted in one of the consulting rooms in the Reproductive and Child Health Department in the Hospitals. These interviews were carried out in the days that the pregnant women were scheduled to attend the antenatal clinic. Techniques such as probing, clarifying, reflecting and paraphrasing were used during the interview to encourage participants to express themselves freely to enhance in-depth description of the required phenomena. "Double-checking" questions were also asked in order to confirm what the participants really wanted to say.

A voice recorder was used to record the data during the interview with the consent of the participants. The interview sessions lasted between 45 minutes to 50 minutes. Being an "Ewe" herself, the researcher translated all the interviews that were

conducted in “Ewe” into English and later transcribed them verbatim. The observational data were collected through direct observation and documentation in field notes.

According to Creswell (2009), qualitative observations are those in which the researcher takes field notes on the behaviour and activities of the participant in the research site.

The researcher also picked up verbal and non- verbal cues from the participants and took cognizance when participants were bored or tired. Most of the participants were relaxed and calm when they expressed their perception and experiences on the use of IPTp using SP.

3.8 Data Analysis and Interpretation

Analysis of data is conducted to reduce, organize and give meaning to the data (Burns & Grove, 2003). The process of data analysis in a qualitative research involves making sense out of the text data. It also involves preparing the data for analysis, conducting different analysis deeper and deeper into the understanding of the data and making interpretation of the larger meaning of the data (Creswell, 2009). Qualitative data analysis is done concurrently with data collection.

This study’s data was analyzed using content analysis approach recommended by Tesch in Creswell (2009). This analysis is an ongoing process involving continual reflection about the data, asking analytical questions and writing memos throughout the study. This qualitative data analysis was conducted concurrently with data collection. Interpretation and writing of reports (Creswell 2009) were done to reduce, organize and give meaning to the data. To do this, immediately after the interview, the recorded information was replayed and transcribed verbatim. Tesch, in Creswell (2009) has provided detailed and comprehensive guidelines when transcribing and analyzing in-depth interview data.

The data analysis for this study was done using the following approach:

Step 1: Transcripts - The researcher listened to the tapes and transcribed the interview verbatim, adding the identification label for each participant. The transcription of the tapes was a critical step in preparing for the data analysis and the researcher made sure that they were accurate and truly reflected the totality of the participants' views and their experiences.

Step 2: Extracting significant concepts and statements by coding. As the researcher read the transcripts to gain understanding, coding and naming the units according to the content they represented was done. To get a sense of the whole information, the researcher read and re-read through each of the transcripts and used markers to code concepts and statements within the narrative content. Ideas and their underlying meanings of each coded paragraphs were jotted down in the margins of the transcripts.

Step 3: Theme clusters- The coded concepts and statements were sorted and listed into topics after the researcher re-read the interviews to gain an understanding of the recurrent concepts and their full meaning. The significant statements were formulated into topics. Similar topics were further clustered together as themes. Each significant statement and theme from the interviews were then typed out and labeled as the first level of the analysis.

Step 4: Themes categorization- At this point the researcher went back to the data with the list of clustered themes and searched for not only commonalities across participants but also how the themes were patterned and interrelated within the data. The appropriate segments of the data from all the participants were then copied and placed under the topics as codes to see what categories would emerge.

Step 5: Exhaustive description- At this stage, the researcher found the most descriptive wording for the topics and put them into categories by grouping topics and themes that

related to each other. Sub-categories were then drawn between the main categories for easy identification and description.

Step 6: Category labeling- Before the final decision regarding the label of each category by the researcher, the audio-tape recordings and the transcript data and the levels of coding and analysis were made available to the supervisor of the study at the School of Nursing, College of Health Science at the University of Ghana to verify the themes and categories.

Step 7: Category grouping- The researcher then grouped the categories into major categories with their sub-categories. Each category was then described and supported with the verbatim quotations from the participants in a literally style.

3.9 Ethical Considerations

The participants in a research study are given protection which includes the right to freedom from risk, right to anonymity, privacy and confidentiality. The researcher made sure that the full benefits and the risk of the research were well explained to the participants (More & Richards, 2002). Ethical clearance was sought from the Institutional Review Board of Noguchi Memorial Institute for Medical Research of the University of Ghana before the collection of data from the participants.

An introductory letter (Appendix A) for permission to undertake the study was sent with the title and purpose of the study to the Volta Regional Director of Health Services, the Municipal Director of Health Services of the Ho Municipality and the various Managers of the Health Institutions within the Municipality, to use their facilities for the study. This was to ensure access to the research participants. The participants for the study were given explanation on the research including the purposes and how the result would be used. They were assured of privacy, security, protection and anonymity

as well as confidentiality. They were informed about the inclusion of some of their comments in the reports. They were informed about their freedom to withdraw from the study at any stage if they so wished without any risk involved in terminating the services they received. The participants were assured that the research was for academic purposes and would have influence on quality of nursing care. The source of funding was explained to the participants for the study. This enabled them to be aware that the researcher had control over the study.

The participants were finally given information sheets to read about the research and offered consent forms to endorse and those who could not read and write had the information explained to them in “Ewe” and made to endorse by a thumbprint. The management of data involved the assurance of the participants that their responses would remain confidential. The audio tapes, transcribed data, field notes and other documented information given by participants were stored under lock and key at the School of Nursing for a period of five years but would be available only to the researcher’s supervisors. The storage for this period of time would only ensure retrieval for legal purposes until which time they can be destroyed deliberately. Biographic data would be separated to provide anonymity.

3.10 Methodological Rigour/ Trustworthiness

In qualitative research rigour or trustworthiness is most often a preferred term for reliability and validity as the methods for establishing reliability and validity differ from those used in quantitative studies (Brink, 2006). Rigour in qualitative research is demonstrated through a researcher’s attempts and efforts to confirm information discovered and to ensure that the information accurately represents the study participants’ view (Streubert & Carpenter, 1999). According to Lincoln and Guba (1985)

trustworthiness constitutes the overriding goal of qualitative research and encompasses five different dimensions for evaluating qualitative research studies. These include credibility, dependability, conformability, transferability and authenticity.

Credibility of a study demonstrates that, the inquiry is conducted to ensure that the participants are accurately identified and described (De Vos, 2005). The researcher used purposive sampling to interview pregnant women who were attending ANC and had received SP during their current pregnancy as their information will be based on accurate reasons on perception, beliefs and practices for IPTp with SP interventions. To ensure credibility, the researcher also met the participants prior to the interview to establish rapport and spent time with each in in-depth interview. Facilitative communication skills such as probing, minimal verbal responses and clarification were used to validate the meaning of communicated messages and observations. An audio recorder was used to capture the data and information shared during the interview. This process helped the researcher to ensure that data was recorded correctly and that no information was missed. The participants own words were used to ensure correct representation of their voices. Consistency with interview using multiple data collection method: interview guide and field notes were employed. The researcher also reviewed other studies to compare and discuss the findings of the study.

Dependability refers to the researcher's attempts to account for the changing conditions in the phenomenon chosen for the study (De Vos, 2005). To ensure dependability, the raw data were coded, audited and have been archived at the School of Nursing for five years to permit checking of the findings against the raw data. Consistent checking of data by the researcher and supervision by the supervisor of the study were done.

Confirmability is the objective and neutrality of the data gathered and whether the findings of the study can be confirmed by another (Polit & Hungler, 1999; De Vos,

2005). Multiple methods of data collection were used; interview guide and field notes and the researcher identified and held in abeyance her own preconceived beliefs and opinions about the phenomenon under study as she is a registered nurse and a midwife and also a public health nurse.

Transferability refers to the extent to which the results can be transferred to other settings or groups (generalisability). The researcher triangulated (multiple sources of data from different sources) to elaborate the research study to enhance generalisability (De Vos, 2005). Transferability ensures detailed description of research setting, transactions and processes during the inquiry. This provides the means for other researchers to replicate the study in a different setting.

Authenticity refers to the extent to which the researcher fairly and faithfully displays a range of different realities in the analysis and interpreting of data (Polit & Beck, 2008). The researcher made sure that the message was conveyed as reported by the participants in the study during the recording of the findings.

3.11 Conclusion

This chapter discussed the research methods and the study context and design. The ensuing chapter presents the study findings accrued from the content analysis and the themes and categories realized from the in-depth interviews.

CHAPTER 4

FINDINGS OF THE STUDY

4.0 Introduction

This chapter deals with the findings of the study. The chapter covers saturation of data and narrative description of the participants of the study. It also covers the data gathered and the findings from the study. The participants were given pseudonyms to enable the researcher personalize the verbatim quotes. Thus participant 1 was named Ann, participant 2 Bee, participant 3 Cin and so on.

4.1 Saturation of data

According to Burns and Grove (2005), the sample size of a qualitative study depends on the concept of saturation. This occurs when the recruitment of the participants continues until no new themes emerge from the data. Polit and Beck (2008) stated that saturation occurs in qualitative research when the data collected reach a point where further data yield redundant information.

In all, fourteen interviews were conducted even though saturation was attained with the ninth participant. Five other participants were recruited to test the new information gathered. Table 4.1 provides the point of data saturation.

Table 4.1: Illustration of Data Saturation

Interviews	Evidence of Saturation
Total number of interviews conducted	14
Number of interviews with emerging themes and categories	9
Number of interviews to confirm new emerging theme	5

The participants were recruited from two urban hospitals and two rural hospitals within the Ho Municipality. The fourteen interviews were conducted between December 2011 and February 2012. The researcher used both English and “Ewe” (local language) to enable her probe and rule out uncertainties. The interviews were all audio taped and recorded with the consent of the participants and transcribed verbatim into English.

4.2 Narrative description of the participants

The study participants were pregnant women and postnatal mothers. They were selected purposively from the study area; which was the Ho Municipality. To ensure anonymity and confidentiality, the participants were given pseudonyms with the first letters of their names arranged in alphabetical order.

- *Ann*: was a 31 year old woman. She was a food vendor and a married woman. She had three children and an educational level of JSS 2. Ann started her antenatal clinic when she was three months pregnant. She had received two doses of the SP when her pregnancy was six months.

- *Bee*: was a 29 year old trader. She was married and had one child. Bee had completed JSS 3. She commenced her antenatal clinic attendance at five months. She was eight months pregnant and had two doses of the SP.
- *Cin*: was a 23 year old married woman. She had no child yet and had an educational level of Higher National Diploma. She was unemployed. Cin started her antenatal clinic at five months. She was six months pregnant and had received two doses of the SP.
- *Doh*: was a 27 year old married woman with one child. She was a trader. She had obtained educational level up to JSS 3. Doh started antenatal clinic attendance when she was four months pregnant. She was seven months pregnant and had received three doses of SP.
- *Ena*: was a 31 year old woman. She was married and had six children. Ena was a farmer and had never been to school. She commenced her antenatal clinic attendance at six months. She was six months pregnant and had received the first dose of the SP.
- *Faa*: was a 26 year old postnatal mother with two children. She completed SSS and was married. Faa was unemployed. She started antenatal clinic at two months and was two weeks postnatal. She had three doses of the SP.
- *Gin*: was a 31 year old teacher. She was married and had one child. She had obtained educational level up to Higher National Diploma. She commenced her antenatal clinic at one month. She was six months pregnant and had two doses of the SP.
- *Han*: was a 20 year old Graduate. She had no child. She was in a relationship, but not married. She was unemployed. Her higher educational achievement was first Degree. Han commenced her antenatal clinic attendance at three months. She was five months two weeks pregnant and had the first dose of the SP.

- *Ivy*: was a 29 year old married woman with two children. She was a trader and had obtained an educational level up to Business College. Ivy started antenatal clinic at five months. She was eight months pregnant and had received three doses of the SP.
- *Jan*: a 24 year old trader was married and had two children. She completed JSS and began her antenatal clinic attendance at six months. She was seven months pregnant and had received two doses of SP.
- *Ken*: a 27 year old married woman with two children completed JSS and was a seamstress. Ken began antenatal clinic at two months. Her gestational period was six months and she had received two doses of the SP.
- *Lin*: was a 28 year old trader married with two children, and had an educational level of Teacher Training College. She started antenatal clinic at three months gestation. She was seven months pregnant and had two doses of the SP.
- *Mon*: was a 26 year old married woman. She had two children. Mon had completed JSS 3 and was a seamstress. She commenced her antenatal clinic attendance at two months. She was one day postnatal and had received three doses of the SP.
- *Naa*: a 23 year old woman was married and had no child. She obtained an educational level up to JSS. She was unemployed. Naa was one month two weeks pregnant when she commenced prenatal clinic attendance. She was seven months and two weeks pregnant and had three doses of the SP. A summary of the participants profile is presented in (Appendix C).

4.3 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 at 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 analysed to arrive at categories. Out of the five themes, seventeen categories emerged. The themes and their respective categories are shown in Table 4.2.

Table 4.2: Themes and Categories generated from the study

	Themes	Categories
4.3.1	Reasons for attending antenatal clinic.	• To monitor health of mother and baby • ANC-viewed as means of treatment for ailments • Commencement of antenatal clinic early or late • Benefits of attending antenatal clinic
4.3.2	Knowledge of Malaria and its prevention	• Factors contributing to Malaria • Occurrence of malaria in pregnancy • Knowledge of effects of malaria during pregnancy • Knowledge of prevention of malaria
4.3.3	Knowledge of SP for intermittent preventive treatment of malaria in pregnancy	• Knowledge of SP Administration • Perceptions and beliefs about using SP for IPTp. • Feelings about taking SP while pregnant • Belief about taking SP during pregnancy
4.3.4	Mode of administration of SP under DOT	• Taking 3 tablets of SP could be too much for the foetus. • SP is bitter and sticks to the teeth after chewing • Pretending to be swallowing the drug before the midwife under DOT
4.3.5	Suggested measures to improve SP acceptability	• Health Education • Peer Education

Antenatal clinic attendance is very important for early detection and management of any abnormality or risks associated with pregnancy and child birth of which malaria is a part. The purpose of antenatal care is essentially to ensure successful pregnancy outcomes; that is, healthy babies and healthy mothers, with minimal stress. However, this study revealed various reasons given by participants for ANC attendance, hence their attitudes towards it.

4.3.1 Reasons for attending antenatal clinic

This section deals with experiences relating to the rationale behind antenatal clinic attendance by participants. The participants gave various reasons for antenatal clinic attendance which essentially fall into four categories that emerged from the above theme as follows: to monitor health of mother and baby, antenatal clinic is viewed as means for treatment of ailments, commencement of antenatal clinic attendance early or late and benefits for attending Antenatal Clinic.

ANC is being viewed as a means to monitor the health of mother and baby was a prominent theme amongst the participants. Antenatal clinic provides goal directed health interventions that are appropriate to the gestational age of the pregnancy, and most specifically addresses the prevailing health issues of the pregnant women relevant to health promotion, prevention and maintenance. The participants indicated that they attend antenatal clinic for health monitoring for themselves and their unborn babies to promote good health throughout pregnancy. The results of this study showed that participants' reasons given for antenatal clinic attendance correlate with the programme purpose. They indicated the attendance as a way of monitoring the health of the mother and baby. This was expressed by

Madam Han as:

It is very important to attend antenatal clinic because being pregnant is a critical condition and anything can happen to the pregnant woman at any time. One has to check to know the health status of baby (foetus) and the mother during pregnancy, in order to deliver safely.

Another report from Madam Mon stated:

I have seen antenatal clinic attendance to be good because when one becomes pregnant one has to go to the hospital to see if anything is wrong with the baby or the mother. At ANC, education is given on diet and how one can take good care of one's baby. I realised I was pregnant and I went to the clinic because, if you are pregnant, you have to attend antenatal clinic and that was why I went.

According to Madam Naa:

Attending the antenatal clinic is good, it is a form of preserving the pregnancy. At the clinic they will see how the baby has turned and will give you medicine for the baby to turn normal. They will also see how your baby is inside your womb including the health of the mother as well.

Madam Doh gave her reason thus:

It is good for all pregnant women to attend ANC to remain healthy all the time. If you become pregnant and you do not attend ANC you will not be in good health; you would be sick and your baby too would not be healthy. If you do not attend ANC for you to be given drugs to keep you and your baby healthy, you would have problem during delivery. It is good for all pregnant women to attend ANC and when the time comes for them to deliver they would deliver safely.

Madam Lin, another participant also stated:

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.

The Antenatal Clinic was viewed as means for treatment of diseases during pregnancy. 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 food vender who had received two doses of SP at 24weeks of gestation indicated:

What I know about antenatal clinic attendance is that pregnant women are attended to whenever they are sick or are not feeling fine. Both mother and baby are treated for any ailment they present at the clinic. They always do this to ensure that we remain healthy as well as our unborn babies. At the clinic you would be examined and if the baby does not turn well or something is wrong or they have done a scan and there is a need for operation to be done it can be provided. You are also given blood in case you are suffering from anaemia.

A 28weeks old pregnant mother, Madam Jan 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 to be examined and given treatment, so that I would be healthy to undertake my daily chores.

Madam Doh a 27 year old gravida 2 para 1 mother who initiated ANC attendance at 20weeks of gestation had this to say:

Before then, I was all the time healthy until during the fourth 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 hospital for help. There I was asked to do a scan after which they realised that the pregnancy was intact. The nurses then, gave me some drugs to take.

With regards 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 6 weeks or much earlier. Antenatal clinic attendance should begin as soon as the woman realises that she is pregnant; from one month up to three months.

However, findings from this study showed that the participants began antenatal clinic (ANC) attendance late. Various reasons were assigned to their late booking including: geographical inaccessibility to the antenatal clinic, less premium being placed on antenatal clinic attendance, poverty and lack of knowledge about continuity of antenatal

care at any location in times of emergency. The participants indicated that when they realised they were pregnant, they never felt like attending ANC early for various reasons.

This was reported by Madam Jan, a 24-year old mother of 2 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 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.

Madam Cin, a 23-year old primigravida and unemployed, started ANC at 20 weeks gestation gave reasons for her late attendance as:

I started to attend the clinic when I was 5 months pregnant that was January this year, 2012. Before then, I was preparing to write my final examinations and I could not get time enough to go to the clinic. Now that I have finished the examinations, I have time to attend the clinic.

Madam Ena a multigravida, para 6 and a farmer, indicated:

My pregnancy is six months now before I am at the clinic. This is because: I have been having numerous minor ailments, but my husband did not show any concern. 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.

Madam Ivy a mother of 2 and a trader, who was uncertain about where to start ANC because of relocation, remarked:

My pregnancy was five months before I started going to antenatal clinic. At first, I was living at Ashiaman before I decided to come back and deliver in my home town, Ho. That was why I waited and the pregnancy was five months before I came back to my hometown. It was during this period that I started going to the antenatal clinic at the Health Centre.

Those who attended antenatal clinic early ranged from 1 month up to 3 months did so as a result of ill health during the pregnancy which pushed them to attend ANC. This

attitude was expressed by the following participants.

Madam Ann started ANC when she was 12 weeks pregnant and experiencing ill-health.

She explained:

I attend clinic at Ho Municipal Hospital. I started when I was three months pregnant. I started having abdominal pains, headache, difficulty in breathing and pain after urinating. When I went to the hospital they thought I was getting a miscarriage but after scanning I was given drugs.

Similarly, Madam Gin, a mother of one commenced ANC at 4 weeks gestation and reported:

I was exactly one month pregnant when I started to attend antenatal clinic here. This was because I was having lower abdominal pain at the time. When I came to the hospital, I was given treatment which I took as instructed. Unlike my first pregnancy, which I started the antenatal clinic at three months because, I was not having any problem, the current pregnancy is different.

Madam Faa a 26-year old postnatal mother of 2 who had 3 doses of the SP stated:

I was two months pregnant when I started to attend the antenatal clinic. This was because when I became pregnant I felt sick. I became very weak and could not do anything for myself. I told my mother about it and she told me to start the clinic early. From that time on, I came to the hospital and after seeing the doctor, he told me to come regularly every month to see whether the drugs given me are working well.

The benefits of Antenatal Clinic Attendance were also explored from the women and various reasons were cited. Other reasons given by participants were the benefits they derived from attending antenatal clinic such as good pregnancy outcomes, detection and treatment of any ailment in the mother as well as prevention of illness in pregnancy.

Madam Jan a 24-year mother of 2 and a trader who was 7 months pregnant and had received 2 doses of the SP reported that:

If you go to the antenatal clinic you would be attended to. If you are sick you would be given treatment. This would help you to deliver a healthy baby.

Madam Ken a mother of 2 and a seamstress who began her ANC at two months gestation also held a similar view thus:

As I attend antenatal clinic, I have seen that all drugs given to me have benefited me a lot. I have seen that I am no longer disturbed by sickness and so is my baby. It helped me to deliver safely. We are also given anti malaria drugs at the clinic so that malaria would not disturb me and my baby.

Madam Han a 20-year old graduate and unemployed commenced ANC attendance at three months of gestation. She was five months and two weeks pregnant and had two doses of the SP indicated:

I attend antenatal clinic for a safe delivery, good health after delivery and to have a healthy baby after delivery.

4.3.2 Knowledge of malaria and its prevention in pregnancy

The individual can prevent a disease only if the cause and its contributory factors are known. There is the need to assess the knowledge of pregnant women on malaria and its prevention during pregnancy. In the light of this, the following categories were derived from the theme regarding factors that contribute to malaria infection, occurrence of malaria in pregnancy, knowledge of effects of malaria during pregnancy and knowledge on prevention of malaria in pregnancy.

The participants' views were sought on factors that contribute to malaria infection. The findings of this study revealed that some participants were aware of the contributory factors to malaria infection in pregnancy. The factors mentioned included the following: vector responsible for transmission of malaria, environmental factors that enhance the breeding of the vector and how these can be prevented. Some participants have this to say:

Madam Doh a 27-year old trader and a mother of one who had received three doses of the SP 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 you. Also, when you do not sleep under the insecticide treated bed net. If you expose yourself to the mosquito bite you would get malaria. Bushy surroundings also breed mosquitoes which bite people to infect with malaria.

Madam Han also indicated:

Malaria is caused by untidy environment and bushes around the house which breeds mosquitoes. When you do not sleep under treated bed nets you can get malaria.

Madam Jan expressed her view as follows:

The disease malaria comes about when you are bitten by mosquitoes. A pregnant woman would get malaria if she is bitten by the mosquitoes.

Madam Gin a 31-year old teacher and a mother of one commenced her ANC at one month of gestation. She received two doses of the SP at six months of pregnancy stated that:

Mosquitoes are the main cause of malaria. When you do not sleep under treated bed net, and the mosquitoes bite you, then you would get malaria.

Madam Cin who was six months pregnant and had received two doses of the SP indicated that to:

Malaria is caused by not sleeping under mosquito bed net. Dirty water in a gutter at a place can breed mosquitoes, which can give malaria. Bushy environment around the home can invite mosquitoes to bite you which would give you malaria.

On the contrary, some participants were not aware of the relevant contributory factors in malaria infection. Some of the factors mentioned included care of food, bath house and improper care of cooking utensils and drinking of dirty water. Others were, working hard under the scorching sun or spending long hours in the scorching sun, extreme cold weather and very high temperatures, and Tsetse fly causing malaria by

laying eggs in food. Some of such participants have this to say:

Madam Ann a 31-year old woman and a food vendor having three children exhibited her ignorance 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.

Madam Ena a 31-year old farmer expressed her view 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 temperature are all responsible for malaria.

Madam Naa also reported:

Malaria is caused by mosquitoes and Tsetsefly laying eggs inside your food.

The Occurrence of malaria in pregnancy was a category teased out of the theme concerning knowledge of malaria prevention in pregnancy. Pregnant women in malaria endemic areas, experience more frequent episodes of malaria infection than those in non-endemic areas. This situation is aggravated when the preventive measures are not adequately provided. They could be provided though, but the awareness by the client; that is, the pregnant woman could make its use effective or otherwise. The findings of this study revealed two main situations such as frequent episodes of malaria infection among majority of the participants and the practices of the pregnant women in respect of seeking medical assistance. Out of those who had episodes of malaria, one of them resorted to self medication with herbal medicine which she boiled herself. Nonetheless, those participants who sought treatment from the hospital were not educated about the treatment given to them.

Madam Doh a 27-year old trader has this to say:

I had severe malaria during my first pregnancy. It appeared on my eyes, lips, palms and the soles of my feet became yellow. I was weak; I could not do anything, I could not even eat and my urine also became red. The malaria actually troubled me before I got treated.

Madam Ena stated that:

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

Madam Faa had this to say:

I had malaria when I was five months pregnant. 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.

Madam Jan who began her ANC at six months of gestation and received two doses of the SP also stated:

During this pregnancy, before I started the antenatal clinic I was sick with malaria. My urine was very yellow, I felt very dizzy and I could not even eat. When I went to the hospital, I was given drugs to take and I became well.

Madam Bee a 29-year old and mother of one who was eight months pregnant and had received two doses of the SP also narrated her experience as follows:

I had malaria with this current pregnancy. My eyes became yellow and when I went to the hospital the nurses saw it, gave me drugs and it stopped.

The knowledge of effects of malaria during pregnancy was also identified.

Malaria in pregnancy has various effects on both the mother and the unborn baby. Some of the effects include anaemia in pregnancy, abortion, intrauterine anaemia (anaemia of the unborn baby), still birth, perinatal deaths and small for date babies. 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 Bee indicated that:

Malaria occurring during pregnancy will cause harm to the mother and mainly her baby if the mother does not go to the hospital for treatment.

Madam Ann also expressed her view as:

When a woman has malaria while pregnant both 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 can also fall sick to other sickness. If care is not taken it could result in death.

Madam Han said:

Malaria would lead to severe sickness. Automatically, the malaria would affect both the mother and the baby. It might lead to the death of both the mother and the baby.

Madam Gin also expressed her view as:

Malaria is not a good sickness, so as a pregnant woman, you have to be healthy all the time. When malaria occurs during pregnancy the woman would not be healthy and it would affect her unborn baby too. The unborn baby might have the malaria.

However, some participants were ignorant of the effects of malaria during pregnancy.

Madam Faa stated that:

However, I do not know what would actually happen if the pregnant woman gets malaria as well as the effects of the infection on her baby.

Madam Lin a 28-year old trader married with two children who had two doses of the SP stated that:

I know when one has malaria during pregnancy it would harm the baby, but to what extent or how the harm would be, I do not know.

Knowledge of prevention of malaria was also explored. The knowledge of the pregnant women on prevention of malaria was generally good. This study showed that majority of the participants mentioned measures such as clearing their surroundings

including gutters, sleeping under insecticide treated bed nets and regular antenatal clinic attendance as some of the ways to prevent malaria in pregnancy.

Madam Naa stated:

It is important to sleep under insecticide treated bed net for the malaria not to attack you. Also you have to clean your surroundings and the gutters to prevent the mosquito 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.

Madam Han also had this to say:

There should be frequent checkups at the antenatal clinic and taking the malaria drugs. One should also sleep under insecticide treated bed net and live in a clean environment.

Madam Cin indicated:

To prevent malaria during pregnancy; when you go to the hospital you would be given the drug called SP; which when taken can protect the pregnant woman and her unborn baby from getting malaria. You also have to take care of yourself by eating well as well as cleaning your environment.

Madam Ena expressed her view as:

To prevent malaria one has to come to the hospital for the drug to be given to you. One could also boil the fever grass at home and drink or take any other drug which is not harmful to the mother and baby.

4.3.3 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 explored. Sulphadoxine Pyrimethamine (SP), the anti-malaria drug of choice by WHO is used to prevent malaria during pregnancy. It is given in treatment doses at predefined intervals, starting from 16 weeks of gestation and is repeated at four weeks interval for three doses.

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 interval 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 status as well as rights related to medication to clients. These are evidenced in the participants' reports as follows:

Madam Gin a 31-year old 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 get some water and you are given the medicine to take in front of the nurse. 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; whoever is treating you would ask you to take it with water in her presence.

Madam Ann a 31-year old mother with three children expressed her opinion as follows:

I do not know when to start taking the medicine to prevent malaria during pregnancy. What I know is that when you are sick while pregnant you do not need to take any drug, you have to go to the hospital for treatment, except paracetamol which, you can take on your own for pain. I do not know the name of the drug given to me to prevent malaria in pregnancy and when to start taking it. But I remember it was 3 tablets given to me by the nurse to take in her presence with water. I do not know how often a pregnant woman needs to take this drug. Previously, when I was pregnant the drug was given to me to take to the house but this current one, the nurse gave it to me at the hospital which I took.

Madam Faa 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 you come to antenatal clinic, you will be asked to take the drug every month with water. I cannot remember how many times you 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 follows:

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.

Madam Doh was seven months pregnant and had received three doses of the SP also expressed herself thus:

I do not know the full name of the drug used to prevent malaria in pregnancy, but it is called SP for short. When I was having the symptoms of malaria, I was given the SP at four months and it all stopped.

The participants' perception and belief about using SP for IPTp were teased out of the theme and explored. 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. Others reported that SP was given for both prevention and treatment of malaria in pregnancy.

Meanwhile, some participants reported that the SP was given at antenatal clinic to indicate a more severe health problem that the pregnant woman was experiencing.

As indicated by Madam Gin:

My perception about this drug is that; even though we are not nurses, I know that, they know what is good for us; that is why they give this drug to us. And I also have the belief that; when I take it the malaria would stop. This is because they know what is good for us.

Madam Ivy expressed her view 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 neither my baby. However, if the number of tablets taken could be reduced or made into one tablet, but with the same composition 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 as 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.

Madam Ann perceived the administration of SP as follows:

My perception about this drug is that if you are sick you need to go to the hospital for treatment. After they have listened to your complaint you would be examined before the drug is given to you including checking your weight. In my opinion, if you are given the drug, then they have seen it very necessary at that time. They have seen your condition to be very severe.

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 DOT. 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 nurse and other clients. These feelings by the participants were stated by some of them as follows:

From Madam Jan's own words:

The way I feel, however, it is important for a pregnant woman to take the drug. For that matter I have to take it to have strength, so that I do not become sick frequently. As I mentioned earlier I experience itching all over my body whenever I take the drug.

Madam Gin stated that:

I just like the way they are doing it, because most of us do not like taking medicine. 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, but in all I like it.

Madam Ken stated:

As for me what I think is that it is good for all pregnant women to take the drug. However some people do not like to take the drug that is why it may not be good for them to take it home. Many of these people consider the side effects of the drug, while the rest just feel reluctant to take the drugs on their own.

Madam Lin also said:

When given the SP I feel it is good since the midwives are our health advisors so we have to obey them by taking their advice. In my opinion, I like the way they give you the drug at the clinic. They will first of all ask you whether you have eaten and if not they will ask you to go and eat after that you are given the drug to take.

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 medicine so I was confused when they gave me this one to take. However, I like the way they are doing it since some people would not like to take it when given to send home before taking.

The participants' belief about taking SP during pregnancy was explored. The findings showed that the participants had the idea and the belief that SP can prevent malaria in pregnancy. The majority of them were of the opinion that the drug – SP is effective in the prevention of malaria in pregnancy. Their views as expressed are stated

as follows:

Madam Ivy had this to say:

My belief about this drug is that it has worked for me very well that is why my baby and I are healthy.

Madam Jan also indicated that:

I believe when I take the drug it would protect me from malaria; however anytime I take it my body itches. The health workers who give us this drug have seen that when you are given the drug it would protect you from getting the disease. I do not think we are given the drug to harm us or the baby.

Madam Doh expressed:

The SP gives strength to both the mother and the unborn baby. It works through her body and the blood vessels to prevent malaria in the pregnant woman.

4.3.4 Mode of administration of SP under DOT.

This section indicates how the SP was administered to the participants at the antenatal clinic under DOT. Oral drug administration, even though is simple and the easiest way for the clients to manage by themselves or with assistance, has a problem with compliance; especially, in a situation where the drug is bitter to taste and perceived as too big to swallow or too many for a single dose. In this instance, compliance becomes a problem. To address the issue of compliance in oral drug administration, the client is made to take the drug under direct observation of the nurse. This approach is referred to as “directly observed treatment (DOT)”.

The following categories were teased out of the above theme; taking 3 tablets of the SP could be too much for the foetus, SP is bitter and sticks to the teeth after chewing and pretending to be swallowing the SP before the midwife under DOT at the clinic.

The participants indicated that taking 3 tablets of SP could be too much for the foetus when their views were investigated. The results of this study show that the drug;

SP, was administered to the participants at a dose of 3 tablets. With this dose, some participants were not comfortable, and were of the view that, taking 3 tablets of the SP at once under DOT was too much for them and perhaps their unborn baby. They would prefer a reduction in the number of tablets, however, with the same level of efficacy. This is because bitter tablets are generally associated with adverse effects on the unborn baby 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 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 after which I became well. I also vomited when it was given to me, but the vomiting stopped later. 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 seat down and take it. I felt the drug will be too much for the baby too.

Madam Ivy expressed her view as:

As for me, I eat before coming but when I take it the taste still remains in my mouth and make me feel as if I should vomit. The drug is not bitter however, I took toffee to prevent the vomiting. With me I feel it should be swallowed, but they say we should chew it. That is why I chew it. As for me I will prefer to swallow it.

Madam Han also stated that:

When they told me to chew it I did not like it. I felt sad but I have no choice when I first took it, it was bitter but I have to take it and after that I was O.K.

The participants' opinion about SP is that it is bitter and sticks to the teeth after chewing. This opinion was explored and the findings indicated the responses of the participants about their experiences during the intake of the SP. Some of them reported that the SP tastes bitter in the mouth after taking it, while others said it is bitter and sticks to their teeth after chewing it.

Madam Cin had this to say:

The drug is bitter, so I could not take it, but threw it away.

Madam Doh remarked

When I took the drug, I realised it was bitter and I felt weak afterwards.

Madam Han reported:

After chewing and swallowing the drug I realised it was bitter. It also stuck on my teeth. To avoid the drug from sticking onto my teeth and the bitter taste still remaining in my mouth I prefer swallowing to chewing it.

The participants admitted pretending to be swallowing the drug before the nurse under DOT due to various reasons. The findings of this study revealed that some participants felt reluctant, unhappy or feared the side effects of the SP. 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 Naa 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 have 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.

4.3.5 Suggested measures to improve SP acceptability

This section intends to solicit the input of participants in improving the acceptability of the SP by the 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 of the study suggested Health education as one major means of improving acceptability of the SP by pregnant women within the Ho Municipality.

Health education is given by the health worker to create awareness about a condition and its treatment. It is also given to promote and maintain good health of the client. In effect, the participants advocated for an intensive health education and information to them on the SP. This they said would enhance their knowledge and understanding about the SP and improve acceptability. The inputs of the participants included education on SP administration, effectiveness and its importance. The participants' suggestions were as follows:

Madam Gin suggested that:

As I mentioned earlier no education was given on the drug that, there is this medicine available to be taken when pregnant beginning from this period till the next period, that you need water to take it. We have to be educated on the number of times that you have to take the medicine, and when to start and how many times you have to take it and all that. 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 question from your friend with regards to what has been said and you would be given the explanation. But when giving 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 said:

The acceptability would improve through education of the women. If the pregnant women are educated on the benefits of the drug including the problems they and their babies would encounter, if they do not take the drug, they would accept it. If you tell them you might die without taking the drug, they would be shivering and would be willing to take the drug since nobody will like to die, they will take it.

Madam Faa stated that:

Health education will ensure that the drug would be adequately accepted by all pregnant women since through education many of them would become aware about the drug and its importance.

Madam Ann expressed her view thus:

The nurses should give education on the drug since they have been telling us about malaria and how to prevent it. The same way, when they give education on the drug it can help to increase the acceptability.

The participants suggested Peer Education as another means of improving acceptability of the SP by the pregnant women in the Municipality. The participants were of the view that, the pregnant women who received the information on SP at antenatal clinic should be encouraged to tell their peers or family members on the relevance of the drug, SP to improve the acceptability. Peer education was advocated by some of the participants as follows:

Madam Jan stated that:

When I came to the clinic we were given specific days to come back for review. When we came and we were given the drug, we have to take them. Some of us who come to the antenatal clinic, while the rest stay at home and would never come at all, we have to listen very well to whatever we are told so that we can also tell the women at home. This would encourage them to attend the clinic and receive the SP.

Madam Cin indicated:

It is important that the drug is shown to the pregnant woman and told what it does and that it is good. If the pregnant woman also goes home, she would tell other pregnant women that there is a new drug that would prevent malaria, and to keep you and your baby healthy.

CHAPTER 5

DISCUSSION

5.0 Introduction

Chapter four presented the findings of the study according to the themes and categories. Chapter five presents the discussion of the findings in relation to the perception of pregnant women about intermittent preventive treatment of malaria in pregnancy in the Ho Municipality. The discussion will be guided by the themes and the categories found in the participants' report of their perception on intermittent preventive treatment of malaria in pregnancy. The various themes will be examined and compared with other studies to determine areas of congruence or otherwise and to confirm or build on ideas from the literature as well as deduce recommendations for action by policy makers.

Malaria in pregnancy is a topical public health concern in Ghana and in other endemic countries in the sub-Saharan Africa (Action Alert, 2010). To help solve this problem, Ghana adopted the WHO recommendation package of interventions, in controlling malaria during pregnancy in high transmission zones of which Ghana is one. The package includes IPTp with Sulphadoxine Pyrimethamine (SP) and Insecticide Treated Bed Nets (ITNs) (MOH, 2010). The SP administration has been programmed according to the gestational age in pregnancy; from 16 weeks to 36 weeks. The SP dosage of 9 tablets is given from 16 weeks of gestation and three tablets are taken by the pregnant woman at 4 weeks interval for 3 times. It is given on "directly observed treatment short course" (DOTS). Compliance with the IPTp using SP is dependent on early and regular attendance of ANC by the pregnant woman who has her own motivation or reasons for attending the clinic.

5.1 Reasons for Attending Antenatal Clinic

This study revealed that participants attend antenatal clinic for various reasons among which were monitoring of their health and that of their unborn babies, treatment of ailments in pregnancy and other perceived benefits they derive from attending the clinic. This finding 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 as indicated by the participants. It is even more 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 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 in the future.

5.1.1 The participants' reason for attending ANC is to monitor health of mother and baby.

According to Longman Active Study Dictionary (2008: 476), “to monitor means to carefully watch or measure something to see how it changes over a period of time”. This definition corresponds with the purpose of antenatal care. According to Fraser and Cooper (2003), the aim of Antenatal care is to monitor the progress of pregnancy in order to support maternal health and normal foetal development. This means that the pregnancy is carefully watched and monitored, and also any problem that can lead to poor outcome is treated and prevented which will minimise its effect on both mother and baby.

One of the findings of this study showed that the participants visit the ANC with the view to monitoring their health and that of the unborn baby. This finding therefore corresponds with the purpose of the antenatal services. It also confirms the findings of studies by Mubyazi et al. (2010) and Smith et al. (2010) in coastal and high land areas of Tanzania and Central Region of Ghana. It has been found that, checking the position of the baby motivated some pregnant women to access ANC services. In the same studies in Western Kenya, Southern Malawi and northern and central Ghana, it was observed that the pregnant women were concerned about examination of the unborn babies and checking the weight of the mother among other things. Antenatal care in a health facility is a key platform for the implementation of malaria prevention interventions in pregnancy. However, pregnant women's understanding of their vulnerability to malaria and other illnesses is paramount to promoting appropriate malaria prevention strategies.

5.1.2 Antenatal clinic-viewed as means for treatment of diseases.

Antenatal clinic was reported to be a place for treatment of diseases by some of the participants rather than a place for disease prevention. Thus, participants only attended Antenatal Clinic when they became ill and were seeking for medical care. This finding is in agreement with other studies where the antenatal women did not view ANC as offering disease prevention, but attended the ANC when illness was encountered (Mbonye et al., 2006; Purinyo et al., 2008). Some of the participants viewed ANC as a treatment centre for ailment and attended only when they had medical complaints. This is because health facilities are seen as institutions that attend to patients seeking for medical care rather than providing preventive services. More so in Ghana, ANC services are conducted in a problem-focused manner that health workers mostly pay more attention to women's complaints and probable remedies (Pell et al., 2013). This has a

serious impact on ANC attendance and the coverage for IPTp use by pregnant women in the Ho Municipality (Ho Municipal Annual Report, 2010). Pregnant women often view pregnancy not as a disease but a process to childbirth. Hence the experiences of ill-health or minor ailments in the process push them to report at the ANC.

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 concluded that ANC was all about assessing the health of the unborn baby. Hence, most pregnant women do not view ANC as preventive strategy but an occasion for checking the health and wellbeing of the foetus. The women's perception of the ANC this way made them report to the ANC only in times of illness because they hold the belief that being pregnant and not experiencing good health could 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 their unborn babies. Thus some preferred to discard the drug or take it in divided doses.

5.1.3 Commencement of antenatal clinic early or late.

The participants of this study had various reasons for their late ANC attendance (after 20 weeks) although the gestational age at first ANC visit has consequences for the provision of IPTp as it is appropriate for SP to be commenced as early as 16 weeks of gestation and at the 24th week gestation. But this has never been the practice in the use and uptake of IPTp and SP in the Ho Municipality. Some of the reasons given by the participants were long distance, poverty and ignorance about continuity of ANC at other

health facilities other than those familiar to them, family decision-making and lack of interest in ANC attendance. The issue of geographical inaccessibility would impact negatively on the coverage of IPTp, if the malaria prevention strategy of using SP for pregnant women is not generalized to all, this will result in persistent poor pregnancy outcomes, high maternal and infant morbidity and mortality (van Eijk, Ayisi, ter Kuile, Slutsker, Otieno, Misore, Odondi, Rosen, Kager, Steketee, & Nahlen, 2004; Anders, Marchant, Chambo, Mapunda, & Reyburn, 2008). This has been one of the major national concerns and all efforts are being made by government to bridge the gap between the rural and urban dwellers in respect of health care to both urban and rural folk. This is being done through the Primary Health Care Approach (MOH, 1995; MOH, 1996; MOH, 2000). There is therefore no health care institution in Ghana where ANC is not made available to expectant mothers.

The late ANC attendance by the majority of the participants is in consonance with the findings by Launiala and Honkasalo (2007) in a study conducted in Malawi. One of their findings was that women who preferred delayed ANC visits to starting early in pregnancy (before 20 weeks) had the perception that revealing an early stage pregnancy puts them at risk of miscarriages from witches and wizards. For these reasons pregnant women would wait to be certain about the advanced stage of the pregnancy before making the decision to attend the clinic. On the contrary however, the current study did not reveal any issues about witchcraft being the reason for the late attendance to ANC or otherwise.

Another important reason revealed by older pregnant women in the same studies was that, they were more accustomed to pregnancy and more experienced. This study confirms this assertion of the older pregnant women. This is because some of the participants who started antenatal clinic late were the older women who had pregnancy

and child birth several times. Furthermore, from the findings of other studies, the participants felt they had no serious medical complaints so they visited ANC late just for the acquisition of the ANC cards to avoid embarrassment from the health workers when they came in labour (Pell et al., 2013; Pell et al., 2011). This study has shown other reasons which contributed indirectly and directly to the late ANC visit initiation. These reasons included grooming for the clinic, which has financial implication that might have emanated from the harsh psychosocial environment of the pregnant women where some find themselves competing with others from financially sound environment during the visit. In addition, lack of financial independence made some of the pregnant women to rely on their husbands to meet the cost of the ANC. This negatively affects decision-making towards ANC attendance and ultimately resulting in persistent poor pregnancy outcomes. These have specifically negative impact on the IPTp implementation such as low coverage persistent poor pregnancy outcomes that is, increased infant and maternal mortalities.

Some reasons which were assigned to early ANC attendance in other studies included pregnant adolescents who, due to uncertainty and lack of experience, initiated ANC early (Pell et al., 2013; Pell et al., 2011). On the contrary, this study did not pay special attention to pregnant adolescents. However, it revealed that participants who started antenatal visits early in pregnancy did so due to ill-health they experienced at the time of pregnancy. In another study by Mubyazi et al., (2010), found that Tanzanian women described the complex nature of ANC services and fees, which discouraged some of them. They complained about varied user fees, penalties and punishment for late attendance including unnecessary referrals which need to be paid for. With this, there was clear evidence that the way care was provided at ANC could affect women's decision and thereby influence their perception and the need for ANC services. It was

also clear in the current study that communication between the nurses and their clients was not adequate. This study identified that midwives do not provide any health education to the expectant mothers at the ANC regarding malaria and its prevention and consequently, the need for the use of IPTp and SP for the prevention of malaria in pregnancy. This ultimately had various implications for IPTp strategies such as the low coverage, the proliferation of low birth weight babies, still births, anaemia in pregnancy and increased malaria episodes in pregnancy as well as increased infant and maternal morbidities and mortalities in the Ho Municipality (MOH, 2009). In this instance, King's conceptual model of perception has not been clearly demonstrated, where effective interaction between the nurse and the client will lead to behaviour change. King (1971), states that changes in behaviour vary more often by interactions among nurses and their clients and the situation than by differences among situations or differences of individuals alone.

5.1.4 Benefits of attending Antenatal Clinic

The participants of this study stated some of the benefits they derived from attending ANC. Such benefits included: health monitoring during their ANC visits which ultimately leads to safe delivery, healthy baby and good health after delivery. They also said they were given drugs for their ailments which also prevented them from getting sick. This finding was in agreement with those from studies conducted in Tanzania and central Ghana (Mubyazi et al., 2010; Smith et al., 2010). In such studies, the pregnant women were reported to have said that, being tested for sickness, checking the progress of pregnancy and having one's abdomen examined at ANC motivated them to attend the Antenatal Clinic. The major activities carried out at ANC by midwives involve physical assessment and history taking. These sensitive activities require the establishment of trusting relationships between nurses and their clients and consequently, the change in

perception of people about health care issues. But the study has observed that there is a communication gap between nurses and their clients leading to knowledge deficit and gross ignorance of clients/patients concerning their health rights. Hence, the exhibitions of gross ignorance by the participants in the current study about malaria and its prevention. There is the need to further investigate midwives' interaction with their clients at the Antenatal Clinic.

5.2 The knowledge on Malaria and Its Prevention in Pregnancy was explored among the expectant mothers and varied findings point to displayed ignorance.

Regarding factors contributing to malaria in pregnancy was one of the evidence. According to Longman's Active Study Dictionary (2008:413:2), "knowledge means when you know about a particular situation or event, or the information you have about it". Following from the above definition, therefore, knowledge about cause of disease makes one to be able to prevent the disease from happening. The findings of this study, showed how pregnant women understand their vulnerability to malaria and when malaria in pregnancy occurs, are perceived as a serious risk which will influence the uptake of ITPp with SP. From this study, almost all the participants linked malaria with the mosquito bite and described factors that relate to malaria transmission. This implies that participants had knowledge on transmission of malaria in pregnancy. The finding of this study is therefore consistent with findings of other studies (Launiala & Kulmala, 2006). It was stated that the respondents of the study associated mosquito bite with malaria. According to Enato et al (2007), majority of respondents (89%) attributed malaria to the bite from infected mosquito. Furthermore, it was reported that the respondents had good knowledge of the cause of malaria and recognised it as an important health risk during pregnancy.

However, other factors which were also viewed by participants of this study as important and contributed to malaria infection included: exposure to extreme heat or cold, inadequate diet, hard work under the scorching sun, unhygienic conditions around the environment, dirty water and tsetsefly laying eggs in the food among others. This finding agrees with the findings of a study by Ahorlu et al., (2007). In their study, it was reported that factors such as exposure to heat, poor hygiene and evil spirit were stated by some respondents as playing a role in malaria infection during pregnancy. Furthermore, in central Uganda, poverty, dirty water, poor hygiene and lack of blood were mentioned as contributory factors to malaria infection (Mbonye et al., 2006; Enato et al., 2007). In a situation where the individual holds erroneous information about the cause of a disease, preventive strategies become difficult to implement. This was corroborated by Enato et al (2007), erroneous knowledge held by respondents on the cause of malaria in pregnancy had serious implications for IPTp with SP utilization by the pregnant women.

5.2.1 Occurrence of malaria in pregnancy.

This study revealed that almost all the participants experienced various symptoms of malaria episode. This happened even before they commenced ANC and sometimes during the episode they were compelled to report for the first time at the ANC for medical assistance. This finding confirms the finding of a study undertaken in the Ashanti Region of Ghana, which revealed that 15 percent of the pregnant women studied had parasitaemia (Tutu, Lawson & Browne, 2011). This situation made the participants in this study to start ANC early as indicated earlier. This was supported by a statement made by one of the participants thus: *During this pregnancy, before I started ANC, I was sick with malaria. My urine was very yellow I felt very dizzy and could not eat. When I went to the hospital I was given drugs to take and I became well.* A study in Edo State in

Nigeria also revealed that 87% of respondents had experienced at least one episode of malaria during their current pregnancy (Enato et al., 2007). Another study by Mubyazi et al (2005) revealed that malaria risk during pregnancy was high among the pregnant women.

5.2.2 Knowledge on effects of malaria during pregnancy

The perceived seriousness intended towards malaria in pregnancy is related to the uptake of the appropriate interventions in malaria prevention. Findings from this study indicated that majority of the participants perceived malaria as having some consequences in pregnancy. Although, some of them had knowledge on the risk of malaria in pregnancy, they did not think of malaria as having serious consequences in pregnancy. According to Mubyazi et al (2005), though malaria risks during pregnancy were high among the women, some of the pregnant women did not associate convulsion and coma with malaria. Findings from this study show that the participants reported extreme weakness, high body temperature and unhealthy mother and baby as some of the effects of malaria during pregnancy. The findings from this study agree with the findings of a study in Ashanti Region of Ghana. However; the findings were in contrast with other studies done in the Gambia and southern Malawi. The findings of those studies revealed that the respondents identified malaria in pregnancy as serious condition and associated it with miscarriages, preterm births, dizziness, high blood pressure, dehydration, headaches, vomiting, persistent menstruation, weakness and joint pains (Pell et al, 2011; Brabon et al., 2009; Mbonye, Neema & Magnussen, 2007; Mubyazi et al., 2005). Furthermore; some of the participants of this study were also not clear about the actual effect of malaria in pregnancy. This implied that, they were ignorant about the effects of malaria in pregnancy. Additionally, the extent to which malaria in pregnancy would affect the unborn baby was also not clear to them.

5.2.3 Knowledge on prevention of malaria

Findings from this study show that the participants had knowledge on preventive measures taken to avoid malaria in pregnancy. Some of the preventive measures mentioned by participants included weeding around the home, draining stagnant waters, use of mosquito repellent, taking SP and the use of ITNs. This finding agrees with studies which reported that, use of bed nets were effective for malaria prevention (Ahorlu et al., 2007; Mbonye, Neema & Magnussen, 2007; Mbonye et al., 2005). On the contrary, it was reported that even though pregnant women in Mukono District in Uganda, know ways of preventing malaria, this knowledge was not used in daily practice. The reason attributed to this behaviour was that the pregnant women were not really concerned. It is known that in high malaria endemic areas people get used to the sickness and with time adapt to the disease. It is therefore possible that malaria was not seen as life threatening and death due to malaria could be attributed to other causes and not malaria itself per se (Mubyazi et al., 2005).

5.3 Knowledge on SP for Intermittent Preventive Treatment of Malaria in Pregnancy

This component involves the use of IPTp and knowledge on SP administration. For a drug to be effective for either treatment or prophylaxis there is the need for compliance. Compliance is facilitated by the client knowing the name of the drug, the dose and dosage and the interval between doses and what effects are to be expected. This information is to be conveyed to the client by the health worker to enable the client co-operate with the administration of the drug. This study revealed that most participants were not aware of SP administration. They were not sure about the drug used for IPTp.

They were also not aware of the name of the drug for IPTp, when to commence

IPTp and the taking of SP, how often SP should be taken and the interval between each administration. According to King (1971), the client's need for health information is paramount which she receives through interaction and reaction with the nurse. With this, the nurse and the client are able to share information through communication to achieve the set goal. But in this study, the goal of SP administration by the nurse was not communicated to the participants for interaction, reaction and transaction to occur. This could have serious implications on compliance with IPTp and SP administration. These findings were consistent with a study in the Gambia in which the respondents were unclear about the drug used for IPTp, but only accepted them to be safe, because it was administered by the health care providers (Pell et al., 2011; Ahorlu et al., 2007). The finding by Tutu et al (2011) observed that few of the pregnant women really knew what kind of drug they were taking and why they took it.

On the contrary, some of the participants in this study also reported that if they were given SP at the ANC, it was an indication that they were severely sick and needed urgent medical treatment. This showed the lack of knowledge about whatever goes on at ANC and the wide gap opened for nurse/client communication needs. This finding is in agreement with the finding of a research conducted in southern Malawi where SP was associated with treatment rather than preventing malaria in pregnancy. The respondents reported that if a woman was given SP at ANC it was an indication that she was sick (Launiala & Honkasalo, 2006). In another study by Ouma et al (2007), it was reported that, 75% of participants reported of having ever used SP in their life time. Although 61% of the women thought that SP was a helpful drug when used for malaria in pregnancy, only 50% thought it was safe to use during pregnancy. The varied perceptions surrounding the use of SP in pregnancy formed the pregnant women's decision to attend ANC late, if they felt they were not sick. The effect of this on the IPTp

strategy is the low coverage recorded in most of malaria endemic areas and the poor pregnancy outcomes that prevail in the Ho Municipality.

In Ghana, it was said that self-medication was seemingly infrequent as most pregnant women would not take medicine unless advised by health professionals (Ahorlu et al., 2007). This could account for the participants' full dependence on the health care providers for instruction on administration of the SP but harboured unclear perceptions about the drug SP and its effect on the unborn babies. In contrast, Kenyan pregnant women often bought drugs over the counter and self-treat rather than relying on health care providers' instructions at ANC (Pell, et al., 2011; Buabeng, et al., 2007). However, findings of a study in the Ashanti Region of Ghana (Tutu et al., 2011) were in contrast with the findings of Ahorlu et al (2007).

5.3.1 Perception and belief about using SP for IPTp.

In spite of the numerous uncertainties about the SP administration in pregnancy, more than three quarters of the participants of this study had a positive perception about using SP for IPTp. This was because, they trusted the antenatal clinic nurses and said that, they knew what is good for them; therefore, they preferred taking the SP to having the effects of malaria in pregnancy. This finding corresponds with the finding of a study by Mbonye et al (2007), where pregnant women in central Uganda were willing to take IPTp, because they trusted the TBAs and drug vendors who recommended IPTp to them. Similarly, SP was perceived to be a good cure by some pregnant women, though some had no knowledge about how SP can prevent malaria during pregnancy (Mbonye et al., 2006).

According to King, (1971), an individual's perception of his/her health status is influenced by knowledge about health and availability of health services, and previous experiences with illness and treatment among others. Meanwhile, the needs of the client and the nature of the setting influence the values and perceptions of the client and the service provided in specific areas of client care. King (1971) stated that changes in behaviour vary more often through the perception of the people's interactions. Hence, nurses and clients' interaction can influence changes in a situation. Even though the interaction between the nurse/midwife and the pregnant women were reportedly not good enough in relation to their education on the SP administration, the pregnant women accepted the administration of the drug as it was. This was because the drug met their needs; it treated their malaria and protected them from getting episodes of the disease. In this instance, the action of administering the SP to the women by the nurse resulted in the recognition given to them as health care providers. But in the case of central Ugandan women, the interactions between the TBAs and drug vendors helped build the recognition that SP was good for them hence, their acceptance (King, 1971). This concept was demonstrated in the finding of a study conducted in Ghana, Kenya and Malawi. It was recommended that, providing ANC that focuses on pregnant women's health concern, and allowing them to communicate such concerns to health staff, particularly during the first trimester, may encourage women to start ANC early (Pell, et al., 2013).

Additionally, client satisfaction increases when the nurse's performance is congruent with the client's expectations. Differential perceptions of the nurse and the pregnant woman at the ANC directly affected the nurse-client interactions and the dosage and completion of the SP for IPTp (King, 1971:36). This study revealed the issue of household decision making, where it was reported that financial dependence on a

spouse made one of the participants to report for ANC late as she could not finance the cost of her clinic attendance by herself. This finding agrees with that of Pell et al (2011), where it was reported that, structural factors affect the uptake of malaria in pregnancy interventions at a range of levels: from household decision making to national to international implementation strategies. In furtherance to that the report continued to say that, the reality of ANC in health facilities complicated the implementation of national IPTp guidelines in Tanzania. There remained structural challenges linked to uptake of IPTp in Tanzania, but the same cannot be said about Ghana.

According to King (1971:36), if the health facility as a social system has multiple purposes and goals which are not commonly known and accepted by the individuals (pregnant women) involved, conflict results. From King's system model on perception which consists of three interrelating systems as personal, interpersonal and social systems, it follows from the said model that the pregnant woman as an individual has a perception that could be influenced by the interpersonal relation with the nurse. It is this relationship that would draw the attention of the pregnant woman at the clinic to listen to whatever information that is given to her by the nurse to make her accept or not to accept the information and use it. The social system that is, both physical and psychological environments created by human activities at the clinic can also contribute to the acceptance of the said information about the SP administration or otherwise. The social system in our health facilities are complex, even the organisation of the clinic sessions could facilitate free flow of clients or obstruct it as a result of long waiting time; which could make the client feel uncomfortable and might not pay attention to verbal communication by the nurse/midwife. This situation is almost always compounded by the nurse/midwife's negative attitude toward the client. This might result into a conflict as propounded by King (1971:36). In this instance, the discomfort of the client becomes

the sign of impending conflict between the two that is, the nurse and the pregnant women, hence negative perception of the pregnant women about ANC can exist due to the nurse's behaviour.

5.3.2 Belief about taking SP during pregnancy.

The word "belief" has been defined as the feeling that something is definitely true or definitely exists (Longman Study Active Dictionary: 62). The finding of this study showed that participants have the belief that SP can prevent malaria in pregnancy. They believed SP would prevent them from malaria infection during pregnancy. This was because they trusted the nurses and thought they would not administer drugs that cause harm to them and their unborn babies. This finding was at variance with the finding by Mubyazi et al (2006), which revealed that SP was perceived to be harmful thus deterring pregnant women from taking it. Furthermore, a study by Mushi et al (2008) revealed that women linked SP with larger babies and difficult deliveries which they were keen to avoid. The larger baby factor could be explained by the good placental perfusion available for good foetal nutrition as SP prevents disease of the placenta from malaria effects. To buttress the point of participants believing in the SP as effective in preventing malaria in pregnancy made them to accept it even without education on it to them. According to King (1971), client's satisfaction of a service increases when the nurse's performance is congruent with the client's expectations. In the case of participants of this study, the performance was the administration of SP to them that had met their expectations. Sulphadoxine Pyrimethamine (SP) prevented the participants of this study from contracting malaria in pregnancy was observed, hence their trust and belief in their nurses.

5.3.3 The pregnant woman's feeling about taking SP in front of the nurse.

Administration of SP under direct observation by health care providers is a way of ensuring that the drug is taken by the pregnant women, thus ensuring compliance. Once this event is recorded, it serves as a means for monitoring the number of doses and the timing of the administration of the SP which are all important in IPTp. This study revealed that more than half of the total number of participants had a positive feeling after taking SP under the direct observation of the nurse (DOT). They however, acknowledged that the SP administration under the DOT put pressure on them to take the drug. According to Ansah-Ofei, Mwini-Nyaledzigbor and Affram (2011), most of the respondents made good remarks about IPT-SP. They reported that, the respondents said SP generally, ensured quality of life throughout pregnancy. It was also stated that most women remarked that they felt strong and healthy during pregnancy when SP was administered to them. In King's conceptual model of perception, it is stated that, health facility as a social system, has multiple purposes and goals which if not made known to the individuals (clients and service providers) in the subsystem, it creates conflict between the individual client and the nurse. Moreover, if priority goals are not clear, conflict would result as experienced and reported by participants in this study concerning the administration of SP under DOT (King, 1971:36).

5.4 Mode of Administration of SP under DOT

5.4.1 Taking three tablets of SP could be too much for the foetus

Although some participants were of the view that SP is good for them, the rest expressed a different view that, three tablets of SP at once under the observation of the nurse put too much stress on them. For this reason, they said they would have preferred that the three tablets are made into one tablet with the same efficacy; to protect them and

their unborn babies against malaria. These findings were in agreement with respondents in several studies which observed that respondents viewed SP as harmful and thought its strength could cause miscarriage. The respondents of the said studies described the side effects as including mouth sores, fatigue, fever, rashes and itchiness. The women also linked taking SP with large babies ((Mubyazi et al., 2005; Mushi et al., 2008; Ren, 2009). Here again participants of this study were seemingly not aware of the goals and priorities of the social subsystem of the ANC, they became anxious and confused as to what might be happening to their unborn babies for taking the SP; which was forced on them and asking for a change of approach to the administration of the drug (King, 1971:36).

5.4.2 SP is bitter and sticks to the teeth after chewing

The responses of the participants about their experiences during intake of SP indicated that it tasted bitter and stuck to the teeth after chewing and swallowing under the direct observation of the nurse. They reported that, they preferred swallowing the drug to chewing to avoid the bitter taste and to prevent it from sticking onto their teeth. The women also reported that SP is bitter so could cause miscarriage. This finding was consistent with the finding of a study conducted in Malawi which reported of bitter medicines including SP as a cause of miscarriage and stillbirths (Mubyazi et al., 2005). From the above findings, participants could find it difficult to undergo such experiences each time they visited the ANC. Furthermore, in a study conducted in Korogwe in North-Eastern Tanzania revealed that women believed SP taken during pregnancy could cause abortion; whilst they decided to take smaller doses than what is recommended (Pell et al., 2011; Mubyazi et al., 2005). This experience in itself might contribute to the low uptake of the SP as they might not visit the ANC early enough to receive all three doses.

As indicated earlier on, undisclosed objectives and priorities become unclear and confusing resulting into conflict and suspicion of the service provider or the nurse by the client, making it difficult to achieve the set objectives (King, 1971:36). This action of the study participants could render the IPTp strategy ineffective and lead to poor pregnancy outcomes in the Ho Municipality.

5.4.3 Pretending to swallow the SP before the nurse (DOT)

Some participants of this study reported that three tablets of SP was too much to be taken at once and stated that it could be harmful to their unborn babies. They had the view that the strength of the drug was too much and either felt reluctant and unhappy to take it or afraid of its side effects. They therefore pretended to swallow the drug whilst in actual sense they only swallowed the water without taking the drug. The confusion caused to this study's participants by the unclear objectives of the SP for IPTp might have created conflict between the nurse and the participants according to King (1971:36). As a result, there was an element of mistrust and participants concerned devised their own means of mitigating the said fear by swallowing the water under the pretence of swallowing the drug (SP). This action of the participants was with the aim of protecting their unborn babies from mishap as a result of taking "overdose" of a drug whose effect was highly suspicious and probably dangerous to the health of the unborn baby. Furthermore, a study conducted in rural Western Kenya revealed that, among women who thought SP was not safe during pregnancy, 57% associated it with miscarriage (Ouma et al., 2007). This finding therefore has been confirmed by the finding of this study. Mubyazi et al (2005) observed that respondents stated that some women hesitated to take the drug at the clinics, while majority took the drug but either hid it and threw them away later in the bush on their way home or when they reached home.

5.5 Suggested Measures to Improve SP Acceptability

Perceptions are like mirages that form varying images on the mind of people. The doubts confronting the minds of pregnant women about SP made them to verbalize their suggestions on the need for health education, providing basic information on the drug SP. According to King (1971), structured, informative communication of coming events decreases tension in a potentially stressful situation. The effectiveness of antenatal care is directly related to the number, the kind, and duration of nurse-client interactions. If the nurse's actions at verbal level of communication are congruent with the actions at doing level, client satisfaction occurs. In the case of the pregnant woman with regard to SP administration, health education on IPTp-SP by the nurse creates a positive perception which creates the resultant attitude towards ANC attendance and utilisation of services (King, 1971:37).

The participants of this study based on their experiences with the ANC in relation to IPTp suggested a number of measures to improve acceptability of the SP. They advocated for intensive education, information and communication on SP. The areas of doubts included the importance of SP and its effects on mothers and their unborn babies, which they identified to be the most relevant in increasing acceptability of the drug. In the views of Mubyazi et al., and Nganda et al (2005; 2004), intensive health education and sensitization programmes at ANC facilities and communities appeared to be useful measures for increasing acceptability and coverage of IPTp services among its users. On the contrary, a study by Mbonye et al (2007) revealed that, health care providers advised women attending ANC to drink plenty of sweet fluids when taking SP in order to withstand the strength of the drug. This was said to be misleading information to the pregnant women. As a consequence, women were deterred from visiting the clinic because they could not afford to buy these fluids. In Malawi women reported of being

rebuked by health workers which discouraged them from attending ANC (Pell et al., 2011).

Health education has been defined at the World Health Assembly in 1978 as “a process aimed at encouraging people to want to be healthy, to know how to stay healthy, to do what they can individually and collectively to maintain health, and to seek help when needed”. It follows from the above definition that, when the women are continuously and persistently educated with the right information about the IPTp – SP, they would have accepted the administration and even be reminding the midwives about when they had the last dose and when they were due. Furthermore, understanding the need for the SP could become the motivating factor to initiating ANC early. In this regard, coverage of SP use would have improved. This would even go a long way to prevent development of resistance by the malaria parasite against the drug (Briand, et al., 2007) as a result of non-compliance.

5.5.1 Peer Education

In this study, participants also suggested that peer education should be encouraged at the ANC and in their communities to enhance the information dissemination that would improve the acceptability of the SP among the pregnant women. The prevailing emphasis on health education is usually based on understanding and changing lifestyle choices and individual health behaviours related to health status. Although such approaches are appropriate for some health problems, the association between increased morbidity and mortality and social, structural and physical factors in an environment of unemployment, minority status, powerlessness or alienation and lack of supportive interpersonal relationships among others are ignored (Israel, Checkoway, Schulz & Zimmerman, 1994; King, 1971). This implies that, though health education

might be given to the pregnant women at ANC, it has not yielded any positive relationship between the IPTp-SP and the direct observed treatment. Furthermore, the relevance of the health education should be reflected in their community or communal life which may provide them the social support as and when the need arises. This would go a long way to enable the pregnant women to take charge of their health needs and at the same time creating demand for the IPTp-SP service at the health facility as a result of the constant reminder given them by the community members on the issue.

5.6 Conclusion

The discussion of the findings of this study covered all the major themes that emerged from the study. It considered works of other researchers whose findings were mostly confirmed by the study. However, few of other study findings contrast the findings of the current study. Also, suggestions made by the study participants were congruent with some respondents of other studies whose relevant works were used in the discussion. For instance, suggestions from the participants on education, information and communication to improve acceptability of SP was also recommended by other research participants with an extension to health care provider education on the use and administration of IPTp using SP.

The conceptual model used for this study is King's model of perception. It states that changes in behaviour vary more often by interaction of nurses/midwives with pregnant women and the situation than by differences among situations or differences of the pregnant women alone. The pregnant women's need for health information about their health and that of their unborn babies are important to them. This they are to receive through interaction and reaction with the nurse/midwives. The information sharing on the ANC services are to be provided through interpersonal communication and

interaction with the pregnant women's reactions. Transaction then occurs by way of provision of the service which should be accepted by the pregnant woman. The outcome of transaction should fulfil the expectations and the health needs of the pregnant woman to bring about positive perception between the two parties and the ANC services and the health facilities.

More so, the above process should be facilitated by the social system; the health facility which has its own goals and priorities. In this case, the administration of SP to achieve the policy objective of IPTp must be known to the pregnant women through structured informative communication at the verbal level before following it up with the action of SP administration to them. This approach decreases tension in the potentially stressful situation that is, the administration of SP, which generates fear among the women based on past experiences with bitter drugs in relation to the health of their unborn babies regarding abortions, miscarriages, premature births among others. Thus far, the study is concluded by making recommendations to the health care delivery sectors in the country as per the next chapter.

CHAPTER 6

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

The focus of this chapter is to provide a summary on the study. An appraisal of the limitation encountered during the study has also been outlined. Through data analysis the researcher identified themes and categories related to the participants' perception on intermittent preventive treatment of malaria in pregnancy. These findings from the study were used to present its implication for nursing practice, education and research. Recommendations as well as final conclusion for the research are presented.

6.1 Limitations of the Study

The following limitations were identified by the researcher:

- Due to the self-report nature of the study, a re-call bias can be possible.
- Another limitation was that, the study was qualitative and exploratory in nature, conducted in Ho Municipality using purposive convenient sampling design.

Using a sample size of fourteen (14) could not be a good representative of all pregnant women in Ghana, therefore the results of the study could not be generalized. However, they can be used as a guide for further research and by health care management of the facilities involved.

6.2 Summary and Conclusion

Malaria is hyper-endemic in Ghana and remains the single most important cause of morbidity and mortality; especially, among children under five and pregnant women. Malaria infection can be catastrophic and associated with negative outcomes such as maternal anaemia and placental parasitaemia both of which are responsible for miscarriage and low birth weight babies, prematurity, increased infant and maternal morbidity and mortalities among pregnant women; who are particularly vulnerable to malaria (Tutu et al., 2011).

Over the years, Ghana employed various strategies to address malaria in pregnancy issues. The preventive intervention by using chloroquine was unsuccessful as the parasite developed resistance as a result of non-compliance to the chloroquine. In view of this, Ghana in 2004 adopted the World Health Organization's recommended package, of controlling malaria in pregnancy. This is the Intermittent Preventive Treatment (IPT). The anti-malaria drug of choice is Sulphadoxine Pyrimethamine (SP). The SP is given in treatment doses at predefined intervals starting from sixteen weeks of pregnancy at an interval of one month in three doses due to Ghana's hyper-endemicity, meanwhile, WHO recommended at least two doses to reduce malaria parasitaemia and poor pregnancy outcomes (WHO, 2004; MOH, 2004).

Though, this strategy has been identified to be effective, there are various uncertainties among pregnant women concerning its use. As a result, this study was set out to investigate the perception, belief and practices of pregnant women towards antenatal clinic attendance and the use of intermittent preventive treatment of malaria in pregnancy (IPTp). The study took place in the Ho Municipality in the Volta Region of Ghana.

Fourteen pregnant women within the target group were interviewed. The interview covered issues relating to antenatal clinic attendance, knowledge on malaria and its prevention and perception on intermittent preventive treatment of malaria in pregnancy; using Sulphadoxine Pyrimethamine. The study revealed that pregnant women attend ANC late; but if early then it is due to ill-health. Prevention of malaria is not seen to be important even though they have some knowledge about effect of malaria in pregnancy, lack of knowledge on SP administration and various concerns on the SP use for IPTp because they were not educated by the health workers.

Although the level of knowledge about malaria was generally adequate among the participants, the risk factors associated with malaria in pregnancy were not well known. Acknowledging, the participants' knowledge on SP administration, it was very clear they were ignorant. Though they held a positive perception about SP administration, they only relied on the health care providers and trusted them with the reason that the health care providers knew what was good for them and their unborn babies.

6.3 Recommendations

Following the findings of this study, it is being recommended that:

1. Efforts should be made to improve the knowledge of the pregnant women and motivate them on the importance of early ANC attendance to enhance compliance with the IPTp and SP administration.
2. Measures should be taken to improve the implementation of the IPTp through intensified health education and sensitization programme at ANC facilities and at community level. This would help to increase acceptability and coverage of IPTp services among users.

3. The health care providers should also be trained on SP and health education skills and customer care.
4. Health education of the pregnant women with attention to optimum dosage, frequency of administration of SP and its side effects and how to manage them.
5. Health care providers (nurses and midwives) should be trained on the use of SP and its side effects and how to manage them.
6. The health care providers should also be updated on the medication rights of the client.
7. The IPTp using SP policy should be reviewed and the three tablets combined in to one tablet, but the same dosage to erase the perception that the drug is too much for unborn babies. This would address the concern of the pregnant women about the number of SP tablets to be taken. This would facilitate compliance by the pregnant women and also reduce the tendency of developing resistance to the drug by the malaria parasite to the SP as a result of non-compliance (Briand, et al, 2007).
8. Community Health Nurses should be allowed to administer SP to pregnant women at community level just as how Tetanus Toxoids are given by the Community Health Nurses. They should be trained on the use of SP, its side effects and how to manage them.
9. Community Health Nurses should undertake an intensive health education at the community to dispel all misconceptions about IPTp with SP to all people in the community. This approach would empower the community members to meaningfully support the pregnant women in the community. It would also create demand for ANC services.

10. The quality of health care must include technical competence of the provider in delivering the care. Although perception of quality of care is highly subjective, users expect courtesy and attention from health care providers as well as proper clinical examination and medical advice.
11. Supervision of staff should be intensified as a measure to improving staff motivation and performance.

6.4 Implication to Policy, Nursing and Midwifery Education, Practice and Research

The perception of pregnant women on intermittent preventive treatment of malaria has a wide variety of implications. The Ministry of Health in collaboration with the Ghana Health Service and Ministry of Education should device strategies in training and orienting of nurses and midwives. This would improve and strengthen the standard of nursing and midwifery practices.

The involvement of Local Government in health promotion programme should be intensified. There is the need to intensify the current health promotion strategy to involve community approach in healthcare management at ANC; especially, the traditional birth attendants who are in direct contact with the pregnant women in the community. It should include advocacy for access to ANC and IPTp with SP administration in the community. This would improve and increase the awareness and acceptability of IPTp with SP among the pregnant women.

The Ministry of Health in collaboration with Ministry of Education should provide quality education for students in nursing. Malaria prevention strategies should be incorporated in their curriculum. The student in training should be given the opportunity to observe and attend practical sessions of antenatal care including malaria prevention

modalities in pregnancy.

Efforts should be made to increase the performance of Community Health Nurses and midwives as well as motivating them to intensify health education and sensitization programmes at ANC facilities and community levels. This would improve acceptability and demystify all misconceptions surrounding SP administration. Supervision of staff at work to support them through constant coaching should be highly encouraged.

Finally, future researches on malaria prevention during pregnancy should look at the perception of midwives on intermittent preventive treatment of malaria in pregnancy.

REFERENCES

- Abov-Zuhr, C. & Wardlaw, T. (2003). Antenatal care in developing countries' promises, achievements and missed opportunities. Analysis of trends, levels and differentials, 1990 – 2001. World Health Organization. Geneva.
- Agyepong, I. A. (1992). Malaria: Ethnomedical perceptions and practice in an Adangbe farming community and implications for control. *Journal of Social Science Medicine*, 35 (2), 137.
- Ahorlu, C., Koram, K. & Weiss, M. (2007). Children, pregnant women and the culture of malaria in two rural communities in Ghana. *Journal of Anthropology & Medicine*, 14, 167-181.
- Anders, K., Marchant, T., Chambo, P., Mapunda, P. & Reyburn, H. (2008). Timing of intermittent preventive treatment for malaria during pregnancy and the implications of current policy on early uptake in north-east Tanzania. *Malaria Journal*, 7, 79.
- Ansah-Ofei, A., Mwini-Nyaledzigbor, P. P. & Affram, C. K. (2011). Improving the quality of life of pregnant women using the intermittent preventive treatment with Sulphadoxine Pyrimethamine (IPT-SP): Experiences from Dangme West District, Ghana. *Journal of Ghana Science Association*, 13 (2), 88 – 101.
- Antwi, G. D. (2010). Factors influencing the uptake of intermittent preventive treatment of malaria in pregnancy in the Bosomtwe District of Ghana.
- Berman, A. & Synder, S. J. (2008). In Kozier, B. & Erb, G. (2008). *Fundamentals of Nursing Concepts process and practice* (8th ed.) Pearson: Prentice Hall.
- Brabin, L., Stokes, E., Dumbaya, I. & Owens, S. (2009). Rural Gambian women's reliance on health workers to deliver Sulphadoxine – Pyrimethamine as recommended intermittent preventive treatment for malaria in pregnancy. *Malaria Journal*, 8 (25).
- Briand, V., Cottrell, G., Massougbdji, A. & Cot, M. (2007). Intermittent preventive treatment for the prevention of malaria during pregnancy in high transmission areas. *Malaria Journal*, 6, 10.1186/1475-2875-6-160.

- Brink, H., Van Rensburg, G., Van der Walt, C. (2006). *Fundamentals of Research Methodology for Health Care Professionals*. Juta, Cape Town.
- Buabeng, O. K., Duwiejua, M., Dodoo, N. O. A., Matowe, K. L. & Enlund, H. (2007). Self-reported use of anti-malarial drugs and health facility management of malaria in Ghana. *Malaria Journal*, 6, 85.
- Burns, N. & Grove, S. K. (2005). *The practice of nursing research: Conduct, critique and utilization*. Philadelphia: W. B Saunders.
- Burns, N. & Groves, S. K. (2009). *The practice of nursing research: appraisal, synthesis and generation of evidence*. United State of America: Saunders.
- Creswell, J. W. (2009). *Research Design Qualitative, Quantitative and Mixed Methods Approaches*. London: Sage.
- d'Almeida, C. D. A., Tania, Agboton-Zoumenou M. A., Andre, G., Massougbdji, A., Briand V., Yacoubou, I. & Cottrel, I. G. (2011). Field evaluation of the intermittent preventive treatment of malaria during pregnancy (IPTp) in Benin: evaluation of the coverage rate since its implementation, *Parasite and Vectors Journal*, 4, 108.
- de Souza, D. K., Kelly-Hope, L., Lawson, B., Wilson, M. & Boakye, D. (2010). Environmental factors associated with the distribution of *Anopheles gambiae* ss in Ghana: an important vector Lymphatic Filariasis and Malaria: *Journal of Virology. PLOS ONE*. 5 (3): e9927.
- Dellicour, S. S., Tatem, A. J., Guerr, C. A., Snow, R. W. & ter Kuile, F. O. (2010). Quantifying the number of pregnancies at risk of malaria: A demographic study. *Plos Medicine*. 7, (1): e1000221. Doi: 10.1371/ *Journal PMed* 1000221
- Denzin, N. K. & Lincoln, Y. S. (2000). *Handbook of qualitative research*. Thousand Oaks CA: Sage.

- Devos, A. (2005). *Research at grass roots: for the social science and human service profession*. Van Schaick. Pretoria.
- Enato, E. F. O., Okhamafe, A. O. & Okpere, E. E. (2007). A survey of knowledge, attitude and practice of malaria management among pregnant women from two health care facilities in Nigeria. *In Acta Obstet Gynecol Scand.*, 86 (1),33-6.
- Federal Ministry of Health, (2005). National guideline and strategies for malaria prevention and control during pregnancy. A publication of the Federal Ministry of Health, Nigeria, Abuja. *Malaria Control Programme*, 14.
- Fraser, D. M.&Cooper, M. A. (2003). *Myles Textbook for Midwives*. 14th ed. Churchill Livingstone. Pg. 252.
- Ghana Health Service/National Malaria Control Programme/Johns Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO)/GLOBAL FUND, (2005:2006). Intermittent Preventive treatment of Malaria in Pregnancy: *Training Manual for Health Providers. Participants guide*.
- Ghana Malaria Action Alert, (2010). Malaria in Pregnancy: A critical Issue for our Survival. 1 (II), February, 2010.
- Global Malaria Action Plan, (2008). Executive Summary: For a Malaria-free world. 2/4/2011
- Goodman, C. A., Mnzava, A. E. P., Dlamini, S. S., Sharp, B. L., Mthembu, D. J. & Gumede, J. K. (2001). Comparison of the cost and cost-effectiveness of Insecticide and residual house spraying in KwaZulu-Natal, South Africa. *Tropical Medicine and International Health* (4), 280-295.
- Hay, S. I., Sinka, M. E., Tatem, A. J., Patil, A. P., Guerra, C. A. (2009). Developing global maps of the dominant Anopheles vectors of human malaria, *PLoS Med*.

- Hill, J. & Kazembe, P. (2006). Reaching the Abuja target for intermittent preventive treatment of malaria in pregnancy in African women: a review of progress and operational challenges. *Journal of Tropical Medicine & International Health*, 11(4),409-418
- Israel, B. A., Checkoway, B., Schulz, A. & Zimmerman, M. (1994). Health Education and Community Empowerment. Conceptualizing and Measuring Perceptions of Individuals,
- King, I. (1971). *Towards a theory for Nursing. General Concept of Human Behaviour*: Willey paperback nursing series, 35 – 37.
- King, I. (2012). *Goal Attainment Theory. A Theory for Nursing: Systems, Concepts, Process*. New York: *Online Journal of Rural Nursing and Health Care*, 2,1.
- Launiala, A. & Honkasalo, M. (2007). Ethnographic study of factors influencing compliance to intermittent preventive treatment of malaria during pregnancy among Yao women in rural Malawi. *Journal of Transactions of the Royal Society of Tropical Medicine and Hygiene*: 101 Pp. 980-986
- Launiala, A. & Kulmala, T. A. ((2006). The importance of understanding the local context. Women's perception and knowledge concerning malaria in pregnancy in rural Malawi. *Acta Tropica* 98:111-117
- Lincoln, Y. & Guba, E. G. (1985). *Naturalistic inquiry*. Sage, Newbury Park, C A
- Longman, (2008). *Active Study Dictionary* New ed. Pearson Education Limited: Pp. 4, 413, 544 & 565.
- Mangeni, J. B. W. (2003). Analysis of acceptance and compliance with Intermittent Presumptive Treatment (IPT) in Busia District, Eastern Uganda (unpublished). Department of Sociology Makerere University, Kampala.

- Marchant, T., Nathan, R., Jones, C., Mponda, H., Bruce, J., Sedekia, Y., Schellenberg, J., Mshinda, H. A. & Hanson, K. (2008). Individual, facility and policy level influences on national coverage Estimates for Intermittent Preventive Treatment of Malaria in Pregnancy in Tanzania. *Malaria Journal*, 7,260.
- Mbonye, A. K., Bygbjerg, I. B. & Maganussen, P. (2006). Intermittent preventive treatment of malaria in pregnancy: Evaluation of a new delivery approach and the policy implementation for malaria in Uganda. doi: 10:1016/j.healthpol. 05 018
- Mbonye, A. K., Bygbjerg, I. B. & Magnussan, P. (2008). Intermittent preventive treatment of malaria in pregnancy and its effects on parasitaemia, anaemia and low birth weight in Uganda. *International Journal of infectious Disease*, 12, 22-29.
- Mbonye, A. K., Maganussen, P. & Bygbjerg, I. B. (2007). Intermittent preventive treatment of malaria in pregnancy: the effect of new delivery approaches on access and compliance rate in Uganda. *Journal of Tropical Medicine and International Health*. 12 (4), 519-531
- Mbonye, A. K., Neema, S. & Magnussen, P. (2005). Perceptions on use of Sulphadoxine-Pyrimethamine in pregnancy and the policy implications for malaria control in Uganda. *Journal of Health Policy*: Elsevier Ltd. 77 (3), 279 - 289.
- Mbonye, A. K., Neema, S. & Magnussen, P. (2005). Preventing malaria in pregnancy. A study of perceptions and policy implications in Mukono District, Uganda. *Oxford University Press in association with London School of Hygiene and Tropical Medicine*. March 23rd, 2011.University of Ghana. Balme Library. 141.
- Mbonye, A. K., Neema, S. & Magnussen, P. (2006). Preventing malaria in pregnancy. A study of perceptions and policy implications in Mukono District, Uganda. *Oxford Journals of Medicine Journal of Health Policy and Planning*, 21 (1),17 – 26

- Mbonye, A. K., Neema, S. & Magnussen, P. (2007). Perceptions on use of Sulphadoxine Pyrimethamine in pregnancy and the policy implication for malaria. *British Journal of Obstetrics and Gynaecology An international Journal of Obstetrics and Gynaecology*, 114, 448 – 452
- Menendez, C. Fleming, A. F. & Alonso, P. L. (2007). Malaria-related anaemia. *Parasitol Today*. 16, 469 – 476
- Ministry of Health, (2007). Malaria in Pregnancy. *Training Manual for Healthcare Providers*.
- Ministry of Health, (2007). Revised Anti-malaria Drug Policy for Ghana.
- Ministry of Health, (2008). Strategic Plan for Malaria Control in Ghana 2008-2015.
- Ministry of Health, (2009). Revised Anti-malaria Drug Policy for Ghana.
- Ministry of Health, Ghana, (2010). Guideline for malaria in pregnancy
- Mpungu, S. K. & Mufubenga, P. (2008). Use of antenatal care, maternity services, intermittent presumptive treatment and insecticide treated bed nets by pregnant women in Luwero District, Uganda. *Malaria Journal* 7(1), 44
- Mubyazi, G. M., Bygbjerg, I. C., Magnussen, P., Olsen, O., Byskov, J., Hansen, K. S. & Bloch, P. (2008). Prospects, achievements, challenges and opportunities for scaling-up malaria chemo-prevention in pregnancy in Tanzania. The perspective of National Level Officers. *Malaria Journal*. 7,135.
- Mubyazi, G., Bloch, P., Kamugisha, M., Kitua, A. & Ijumba, J. (2005). Intermittent preventive treatment of malaria during pregnancy: a qualitative study of knowledge attitude and practices of district health managers, antenatal care staff and pregnant women in Korongwe District, North-Eastern Tanzania. *Malaria Journal*, 4(31), 1-10

- Mubyazi, G., Bloch, P., Magnussen, P., Olsen, O., Byskov, J. (2010). Women's experiences and views about costs of seeking malaria chemoprevention and other antenatal services. A qualitative study from two districts in rural Tanzania. *Malaria Journal*, 9, 54.
- Mushi, A. K., Schellenberg, J., Mrisho, M., Manzi, F. & Mhuya, C. (2008). Development of behavior change communication strategy for a vaccination-linked malaria control tool in Southern Tanzania. *Malaria Journal* 7.
- Nganda, R. Y., Drakeley, C., Reyburn, H. & Marchant, T. (2004). Knowledge of malaria influences the use of insecticide treated nets but not intermittent presumptive treatment by pregnant women in Tanzania. *Malaria Journal*, 3(42), 1-7.
- Ngomane, S., Cur, B. A., Cur, M. A., Malaudi, F. M., BCur, Cur, M. A., Dlict, & Phil. (2010). Indigenous beliefs and practices that influence the delayed attendance of antenatal clinic by women in the Bohlabele District in Limpopo, South Africa. *Journal of Midwifery. Elsevier Ltd*.
- Nosten, F., McGready, R. & Mutabingwa, T. (2007). Case management of malaria in pregnancy. *Lancet Journal of Infectious Diseases*, 7, 118-25
- Organizational and Community Control. *Journal of Health Education Quarterly*, 21(2):149-170.
- Ouma, P. O., Van Eijk, A. M., Hamel, M. J., Sikuku, E., Odhiambo, F., Munguti, K. Ayisi, J. G., Kager, P. A. & Slutsker, L. (2007). The effect of healthcare worker training on the use of intermittent preventive treatment for malaria in pregnancy in rural Western Kenya. *Journal of Tropical Medicine and International Health*. 12 (8), 953–961
- Palton, M. Q. (2002). *Qualitative evaluation and research methods (3rd ed.)*. Thousand Oaks, CA: Sage Publications, Inc

- Pell, C., Menaca, A., Were, F., Afrah, N. A., Chatio, S., Manda-Taylor, L., Hamel, M. J., Hodgson, A., Tagbor, H., Kalilani, L., Ouma, P. & Pool. (2013). Factors Affecting Antenatal Care Attendance: Results from Qualitative Studies in Ghana, Kenya and Malawi. *PLOS ONE*. 8 (1), 1-11.
- Pell, C., Straus, L., Andrew, E. V. W., Meneca, A. & Pool, R. (2011). Social and cultural factors affecting uptake of interventions for malaria in pregnancy. A Systematic Review of the qualitative Research. *PLoS*. 6 (7), 1-12.
- Polit, D. F. & Beck, C. T. (2008). *Nursing Research; Generating and Assessing Evidence for Nursing Practice*. Philadelphia: Lippincott.
- Polit, D. F. & Beck, C. T. (2010). *Essentials of Nursing Research: Appraising Evidence for Nursing Practice*. Lippincott. Williams & Wilkins: Philadelphia.
- Polit, D. F. & Hungler, B. (1997). *Essentials of Nursing Research: methods, appraisal and utilization* (4th ed.) J.B. Lippincott Company: Philadelphia, Pennsylvania USA.
- Polit, D. F. & Hungler, B. P. (1999). *Nursing Research: Principles and Methods* (7th ed.) USA. Lippincott.
- Ren, Z. (2010). Utilisation of antenatal care in four counties in Ningxia, China. *Journal of Midwifery: Elsevier Ltd*. Pp. 260 – 266.
- Roll Back Malaria, (2000). Scaling up insecticide – treated netting (ITN) programmes in Africa: A strategic Framework for coordinated national action: Roll Back Malaria, Technical Support Network for Insecticide-Treated Materials: Geneva.
- Roll Back Malaria, (2002). Malaria in Armenia.
- Roll Back Malaria, (2008). Global strategic plan 2005–2015: Roll Back Malaria.
- Roll Back Malaria, (2008). What is the Roll Back Malaria Partnership?

- Shulman, C. E. & Dorman, E. K. (2003). Importance and prevention of malaria in pregnancy. *Journal of Transactions of the Royal Society of Tropical Medicine and Hygiene* 96(1),30-35.
- Smith, A. L., Jones, C., Adjei, R. O., Antwi, G. D, Afrah, N. A., Greenwood, B., Chandramohan, D., Tagbor, H. & Webster, J. (2010). Intermittent screening and treatment versus intermittent preventive treatment of malaria in pregnancy. User acceptability. *Malaria Journal*. 9(18),1 -10.
- Smith, E. R., & Macki, M. (2000). *Social Psychology*, (2nd ed.). Psychology Press
- Smith, L., Jones., Adjei, R. O., Antwi, G., Boateng, N. A., Chandramohan, D., Tagbor, H. & Webster, J. (2009). Intermittent Screening and treatment versus intermittent preventive treatment of malaria in pregnancy. User acceptability. *Malaria Journal*.
- Steketee, R.W., Sipilanyambe, N., Chimumbwa, J., Banda, J. J., Mohamed, A., Miller, J., Basu, S. & Miti, S. K. & Campbell, C. C. (2008). National malaria control and scaling up for impact. The Zambia experience through 2006. *American Journal Tropical Medicine Hygiene*. July. 79(1), 45-52.
- Streubert, H. S., Streubert, H. J., & Carpenter, D. R. (2011). *Qualitative Research in Nursing. Advancing the humanistic imperative*. Philadelphia: Lippincott Williams and Wilkins.
- Tarimo, S. D. (2007). Appraisal of the prevalence of malaria and anaemia in pregnancy and factors influencing uptake of intermittent preventive therapy with Sulfadoxine Pyrimethamine in Kibaha District, Tanzania. *East African Journal of Public Health*. 4, 80–83.
- Tatem, A. J., Guerra, C. A., Kabaria, C. W., Noor, A. M. & Hay, S. I. (2008). Human population, urban settlement patterns and their impact *Plasmodium falciparum* Malaria endemicity. *Malar Journal*. 7,218

- Tutu, E. O., Lawson, B., & Browne, E. (2011). The effectiveness and perception of the use of Sulphadoxine-pyrimethamine in intermittent preventive treatment of malaria in pregnancy programme in Offinso District of Ashanti Region, Ghana. *Malaria Journal*. 2011, 10:385.
- Valley, A., Valley, L., Chagalucha, J., Greenwood, B. & Chandramohan, D. (2007). Intermittent preventive treatment for malaria in pregnancy in Africa: What's new, what's needed? *Malaria Journal. BioMed Central Ltd.*, 6 (16), 2, 9 & 10
- Van Eijk, A. M., Blokland, I. E., Slutsker, L., Odhiambo, Ayisi, J.G., Bles, H. M., Rosen, D. H., Adazu, K. & Lindblade, K. A. (2005). Use of intermittent preventive treatment for malaria in pregnancy in a rural area of Western Kenya with high coverage of insecticide-treated bed nets. *Journal of Tropical Medicine International Health*. 10(11), 34-40.
- Van Eijk, M., Ayisi, J. G., ter Kuile, F. O., Slutsker, L., Otieno, J. A., Misore, A. O., Odoni, J. O., Rosen, D. H., Kager, P. A., Steketee, R. W. & Nahlen B. L. (2004). Implementation of intermittent preventive treatment with Sulphadoxine-Pyrimethamine for control of malaria in pregnancy in Kisumu, Western Kenya. *Journal of Tropical Medicine International of Health*, 9(5), 630-7.
- Van Eijka, A. M., Ayisi, G. J. & ter Kuile, F. O. (2002). Implementation of IPT with SP for control of malaria in Kisumu, Kenya. *Malaria Journal*, 265-266
- World Health Organization, (2000). Implementation of the global malaria control strategy. Report of a WHO study group on the implementation of the Global Action for Malaria Control: WHO Technical Report series no. 839 Geneva.
- World Health Organization, (2000). Roll Back Malaria. The Abuja Declaration and the Plan of Action. An extract from the African Summit on Roll Back Malaria, Abuja, 25 April 2000. World Health Organization, Geneva.

World Health Organization, (2004). A strategic Framework for malaria prevention and control during pregnancy in the African region. Brazzaville WHO Regional Office for Africa.

World Health Organization, (2005). Malaria Control. Resolution of WHA58.2. Geneva: *58th World Health Assembly*. 23 May, 2005.

World Health Organization, (2007). Global Malaria Programme- pregnant women and Infants. World Health Organization, Geneva.

World Health Organization, (2008). Global Malaria Report. *Medicine Centre* (<http://www.who.int/mediscenter/factsheets/2003/fs134/en/> 1/25/2012

World Health Organization/UNICEF, (2005). World Malaria Report. WHO Roll Back Malaria Department and UNICEF.

APPENDICES

APPENDIX A: CONSENT FORM

STUDY TITLE: Pregnant Women's Perception On Intermittent Preventive Treatment Of Malaria: A Study In Ho Municipality.

PRINCIPAL INVESTIGATOR: Gladys Betty Katsekor, Mphil nursing student. Tel. number 0243606062 e-mail katsekor.gladys@yahoo.com

ADDRESS: School of Nursing, College of Health Sciences
University of Ghana, Legon

NAME OF SUPERVISORS: DR Prudence Mwini-Nyaledzigbor Cell phone number: +233274131004 and Mrs Adelaide Ansah Ofei Cell phone number: +233244653065

GENERAL INFORMATION ABOUT RESEARCH

You are invited to volunteer information in a research study. This information sheet is to help you agree or not if you would like to be part in the study. Before you agree to take part in the study, you should fully understand what is involved in case you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the researcher.

You should not agree to take part except that you are completely satisfied with all the procedures involved in the study. The study will describe the pregnant women's perception on intermittent preventive treatment of malaria and the purpose is to investigate the perception of pregnant women on intermittent preventive treatment of malaria in the Municipality. You will be asked to share your experiences and opinion in my interview with you which will be lasting approximately forty-five minutes to one hour.

The topic to be discussed will be related to intermittent preventive treatment of malaria in pregnancy. An appropriate time will be arranged for the interview based on

your convenience. The interview will be recorded on a voice recorder and the information will be later typed out. The typed out copy and the recorded data will be kept for at least five years at the end of the study. The researcher will store the typed copies, the recordings and the consent forms in a securely locked cabinet. The written interview will only be reviewed by the researcher and her supervisors. The results from this study may be published or presented at conferences however; your name and any other information that may identify you will be withheld.

POSSIBLE RISKS AND DISCOMFORTS

The study procedures will involve no foreseeable physical, social and psychological risks to you as a person or your health care.

POSSIBLE BENEFITS

You will also contribute to the development of effective implementation strategy of intermittent preventive treatment of malaria in pregnancy

CONFIDENTIALITY

All information obtained during the course of this study will be strictly confidential. Your name will not be mentioned anywhere in the study. The study data will be coded so that it will not be linked to your name. Your identity will not be revealed while the study is being conducted or when the study is reported in Scientific Journals.

COMPENSATION

There will be compensation in form of snack or its equivalent of Ten Ghana (GH¢10.00) for your participation in the study at the end of the interview.

VOLUNTARY PARTICIPATION AND RIGHT TO LEAVE THE RESEARCH

Your participation in this study will be voluntary. You will be under no obligation to participate. You will have the right to withdraw anytime; your services

offered to you will not be withdrawn, and your relationship with the researcher will not be affected by termination of the services you are provided.

CONTACTS FOR ADDITIONAL INFORMATION

If you need any additional information about the research please, you can contact the researcher on the cell phone number 0243606062 or my supervisors: Dr. Prudence Mwini- Nyaledzigbor cell phone number 0274131004, and Mrs. A. Ansah Ofei cell phone number 0244653065.

YOUR RIGHTS AS A PARTICIPANT

This research will be review and approve by the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR-IRB). If you have any questions about your right as a research participant, you can contact the IRB Office between the hours of 8am-5pm through the landline 0302916438 or email addresses: nirb@noguchi.mimcom.org HBaidoo@noguch.mimcom.or. You may also contacts the chairperson, Rev. Dr. Ayete-Nyampong through mobile number 0208152360 when necessary.

VOLUNTEER AGREEMENT

The above document describing the benefits, risks, procedures and the research title **pregnant women's perception on intermittent preventive treatment of malaria;** has been read and explained to me. I have been given the opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Date

Name and signature or mark of volunteer**If volunteers cannot read the form themselves, a witness must sign here:**

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Date

Name and Signature of Witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

Date

Name Signature of Person Who Obtained Consent

APPENDIX B: INTERVIEW GUIDE

RESEARCH PARTICIPANTS

SECTION A: DEMOGRAPHIC INFORMATION

Age:

Occupation:

Educational level:

Marital status:

Parity:

Maturity of pregnancy in weeks (gestational age):

Religious background:

SECTION B

1. Importance of antenatal care

Please tell me where you attend antenatal clinic?

Can you tell me why pregnant women need to attend antenatal clinic?

1. First antenatal clinic attendance and its relevance

Please tell me the maturity of your pregnancy when you started attending the clinic.

PROBES

- What are your reasons for attending the clinic?
- Did you start attending the clinic as soon as you realized that you were pregnant or later?

- How many months were you pregnant then?
- Tell me why you chose this time to attend the clinic?

Please tell me what you know about malaria and its prevention during pregnancy?

- Please tell me the causes of malaria?
- How can you tell **whether** you have malaria?
- Tell me whether you have had malaria before during this pregnancy and what did you do?
- What do you do to avoid getting malaria in pregnancy?

Please tell me what you think about intermittent preventive treatment of malaria for pregnant women using the drug SP?

- Tell me the number of times a pregnant woman needs to take the SP.
- Tell me the number of doses you have received so far.
- Please what are your perceptions and beliefs about the use of these drugs in pregnancy?
- Please how do you feel when you take the drug?
- Tell me the reasons for taking or not taking all the 3 doses of SP during pregnancy.
- Tell me your fears, if any, about the use of these drugs in pregnancy.
- Is there any reason(s) that you feel prevent you from taking SP during pregnancy/?

Tell me how easy it is to come by the SP for use in pregnancy

- Tell me how the SP is usually given to pregnant women at the clinic?
- Tell me how you can access the SP when it is available at the clinic?

Please tell me what can be done to increase the acceptance of intermittent preventive treatment of malaria among pregnant women at the antenatal clinic?

- Tell me how you would like the SP to be administered?
- Tell me if nurses visit you in the home to give the SP how would you like it?

Please tell me how you feel when nurses give you the SP at the clinic under directly observe therapy?

What information do you think are most relevant to you before and after the administration of the SP?

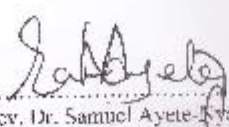
Is there anything else you would like to discuss with me?

APPENDIX C: PARTICIPANT'S PROFILE

Participant Pseudonym	Age	Educational Background	Occupation	Marital Status	Gravida	Parity	Gestationa l Maturity	A.N.C. attended	Commence -ment of ANC	SP Received
Ann	31 years	JSS 2	Food Vendor	Married	4	3	6 months	Municipal Hospital, Ho	3 months	2 doses 1 st dose at 5 moths
Bee	29 years	JSS 3	Trader	Married	2	1	8 months	Municipal Hospital, Ho	5 month	2 doses 1 st dose at 6 months
Cin	23 years	Higher National Diploma	Unemployed (Just Completed School)	Married	1	0	6 months	Tsito Health Centre	5 months	2 doses 1 st dose at 5 months
Doh	27 years	SSS 3	Trader	Married	2	1	7 months	Tsito Health Centre	4 months	3 doses 1 st dose at 4 months
Ena	31 years	Illiterate	Farming	Married	7	6	6 months	Tsito Health Centre	6 months	1 st dose taken at 6 months
Faa	26 years	SSS	Unemployed	Married	3	2	2 weeks Postnatal	Ho Regional Hospital	2 months	3 doses 1 st dose at 5 months
Gin	31 years	Higher National Diploma	Teacher	Married	2	1	6 month	Ho Regional Hospital	1 month	2 dose 1 st dose at 5 months

Participant pseudonym	Age	Educational Background	Occupation	Marital Status	Gravida	Parity	Gestational Maturity	A.N.C. attended	Commencement of ANC	SP Received
Han	20 years	Graduate	Unemployed (Just Completed School)	Not Married	1	0	5 month 2 weeks	Kpedze Health Centre	3 months	1 st dose taken at 5 months
Ivy	29 years	Business College	Trader	Married	3	2	8 months	Kpedze Health Centre	5 months	3 doses started at 5 months
Jan	24 years	JSS	Trader	Married	3	2	7 months	Kpedze Health Centre	6 months	2 doses 1 st dose at 6 months
Ken	27 years	JSS	Seamstress	Married	3	2	6 month	Kpedze Health Centre	2 months	2 doses 1 st dose at 5 months
Lin	28 years	Teacher Training School	Teacher	Married	3	2	7 months	Regional Hospital Ho	3 months	2 doses 1 st dose at 6 months
Mon	26 years	JSS 3	Seamstress	Married	2	2	1 st day Postnatal	Ho Municipal Hospital	2 month	3 doses 1 st dose at 4 months
Naa	23 years	JSS	Unemployed	Married	1	0	7 months 2 weeks	Ho Regional Hospital	1 month 2 weeks	3 doses 1 st dose at 5 months

APPENDIX D: ETHICAL CLEARANCE

NOGUCHI MEMORIAL INSTITUTE FOR MEDICAL RESEARCH <i>Established 1979</i>		<i>A Constituent of the College of Health Sciences</i> University of Ghana
INSTITUTIONAL REVIEW BOARD		
Phone: (+233-302-916438 (Direct) 233-289-522574 Fax: (+233-302-502182/513203) E-mail: nirb@noguchi.mimcom.ug Telex No: 2556 UGL GH		Post Office Box LG 581 Legon, Accra Ghana
		
My Ref. No: D/22 Your Ref. No:		
		30 th November, 2011
ETHICAL CLEARANCE		
FEDERAL WIDE ASSURANCE FWA 00001824		IRB 00001276
NMIMR-IRB CPN 042/11-12		ICRG 0000908
On 30 th November, 2011, the Noguchi Memorial Institute for Medical Research (NMIMR) Institutional Review Board (IRB) conducted expedited review and approved your protocol titled:		
TITLE OF PROTOCOL	: Pregnant Women's Perception on Intermittent Preventive Treatment of Malaria: A Study in Ho Municipality	
PRINCIPAL INVESTIGATOR	: Gladys Betty Katsekor (MPhil Student)	
Please note that a final review report must be submitted to the Board at the completion of the study. Your research records may be audited at any time during or after the implementation. Any modification of this research project must be submitted to the IRB for review and approval prior to implementation. Please report all serious adverse events related to this study to NMIMR-IRB within seven days verbally and fourteen days in writing. This certificate is valid till 1st December, 2012. You are to submit annual reports for continuing review.		
 Signature of Chairman: Rev. Dr. Samuel Ayete-Kyampong (NMIMR – IRB, Chairman)		
cc: Professor Alexander K. Nyarko Director, Noguchi Memorial Institute for Medical Research, University of Ghana, Legon		

APPENDIX E: INTRODUCTORY LETTER

SCHOOL OF NURSING
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA
LEGON

Telephone: 021-513255 (Main)
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021-513250 } Secretary
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E-mail: nursing@ug.edu.gh



P. O. Box 1047
LEGON, GHANA

Our Ref:
Your Ref:

December 29, 2011

The Municipal Health Director,
Municipal Health Directorate,
Ghana Health Service,
Ho.

Dear Sir/Madam,

PERMISSION FOR SITE APPROVAL

I am a student of School of Nursing, College of Health Sciences, University of Ghana, Legon. I am conducting a research into "Pregnant women's Perception on Intermittent Preventive Treatment of Malaria". The participants are pregnant women attending Antenatal Clinic in the Ho Municipality. The study will describe the perception of pregnant women on intermittent preventive treatment (IPT) of malaria.

This will enhance the effective implementation strategy for intermittent preventive treatment of malaria in pregnancy based on the findings of the study to improve the control of malaria among pregnant women in Ho Municipality. My supervisor is Dr. Prudence Mwini-Nyaledzigbor and her contact number is 027-4131004.

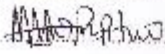
Please find attached, a copy each of Ethics Clearance Form from Noguchi Memorial Institute for Medical Research, Information sheets, Informed Consent will be made available to the participants to agree before the interview.

In case of any problem concerning this study, please contact my supervisor and chairman of Ethics Committee, Noguchi Memorial Institute for Medical Research.

Supervisor: Dr. Prudence Mwini-Nyaledzigbor: contact number 027-4131004. E-mail: Mwinituo@yahoo.com

Chairman, Ethics Committee: Rev. Dr. Ayete-Nyampong: Contact number: 0208152360.

Student: Gladys Betty Katsekpor: contact number: 0243606062 E-mail: katsekpor.gladys@yahoo.com

Signature: 

Cc: All District Directors,