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DEPARTMENT OF POPULATION, FAMILY AND REPRODUCTIVE HEALTH

FACTORS PROMOTING AND PREVENTING THE UTILIZATION AND UPTAKE OF  
IPT AMONG PREGNANT WOMEN IN THE MAMPONG MUNICIPALITY.GHANA

BY

GERALDA GHANSAH (Bed. HEALTH SCIENCE)

JUNE 2016

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KNUST

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A THESIS SUBMITTED DEPARTMENT OF POPULATION, FAMILY AND  
REPRODUCTIVE HEALTH, COLLEGE OF HEALTH SCIENCES,

SCHOOL OF PUBLIC HEALTH,

IN PARTIALFULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF THE  
AWARD OF MASTER OF SCIENCES IN POPULATION & REPRODUCTIVE HEALTH

JUNE 2016

## DECLARATION

I hereby declare that this thesis is a presentation of my original research work. Wherever assistance of others are involved, every effort is made to indicate this with due reference to the literature, and acknowledgement, and that it has neither been wholly or partly presented in this University or elsewhere.

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NAME.....

HEAD OF DEPARTMENT

## DEDICATION

This work is dedicated to my children, Gerald Jerry Quayson, Brian Jerry Quayson,  
Brendalynn Jereen Quayson and Anoldalynn Jereen Quayson

And

Mr. Anthony Kwesi Ghansah.



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## OPERATIONAL DEFINITIONS

DOT- Is when a pregnant woman swallowing Sulphadoxine-pyrimethamine (SP) at the antenatal clinic (ANC) and is being directly observed by a nurse.

IPT- The administration of anti-malarial drugs in treatment doses at predefined intervals to clear a presumed burden of parasites. IPT of malaria during pregnancy (IPTp) is based on the assumption that every pregnant woman living in an areas of high malaria transmission has malaria parasites in her blood or placenta, whether or not she has symptoms of malaria.



## ABREVIATIONS/ ACRONYMS



ACT	Artemisinin based Combination Therapy
ANC	Antenatal Clinic
CWC	Child Welfare Clinic
MHMT	Municipal health Management team
DOT	Directly Observed Treatment
GHS	Ghana Health Service
IPT	Intermittent Preventive treatment of malaria
IPTp	Intermittent Preventive treatment of malaria in pregnancy
ITN	Insecticide Treated Net
JHPIEGO	John Hopkins Program for International Education in Gynaecology and Obstetrics
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Survey
NHIS	National Health Insurance Scheme
NMCP	National Malaria Control Program
OPD	Out Patient's Department
PMI	President's Malaria Initiative

RBM Roll Back Malaria  
RCH Reproductive and Child Health

SP Sulphadoxine- Pyrimethamine

WHO World Health Organization

MiP Malaria in pregnancy

CHMT Community Health Management  
Team

HCW Health Center Worker

HIV/AIDS Human Immunodeficiency Virus

CHW Community Health Worker

IEC Information Education and  
Counselling

FGD Focus Group Discussion

ALu Artemether Lufantrim

LBW Low Birth Weight



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## ABSTRACT

**Background:** One of the interventions the MOH and the Ghana National Malaria Control Programme have adopted to control malaria in pregnancy is Intermittent Preventive Treatment (IPT) with sulphadoxine-pyrimethamine (SP), which has several brand names including Fansidar and Malafan. . According to this policy, from the second trimester of pregnancy (after quickening), pregnant women attending antenatal clinics are expected to be given three doses of SP as directly observed therapy (DOT), at monthly intervals. The objective of this study is to assess the level of utilization of IPTp and the barriers and enabling factors of the uptake of IPT among pregnant women in the Mampong Municipality. **Methods:** The study was conducted in August 2014 in Mampong Municipality, Ghana. A multistage sampling technique was used. At the first stage 2 sub districts were selected out of the 5 sub districts, which is Mampong sub and Kofiase. Each is made up of 16 communities. At the second stage, 4



communities were randomly selected out of each sub district selected. Finally a sample size of 442 pregnant women were selected from the communities. For the health providers and the facilities, after the randomization of the sub districts all the health facilities in each sub district were visited which were a hospital in Mampong sub and 3 health centres. All health providers at post at the time of visit were selected. Data analysis involved the use of Chi-Square ( $\chi^2$ ) for associations and multivariate analysis was performed using multinomial logistic regression.

**Results:** The study found that the use of IPTp among pregnant women was high that is 78.6%, where most pregnant women have either used it for one to three times. The high rate of IPTp use among the pregnant women could be attributed to marital status, level of education, easy access to services, availability, low cost of ANC services and counselling on the dangers of malaria.

**Conclusion:** From this study, the level of utilization of IPTp is high that is 78.6% as compared to the national target of 44.0% in the GDHS, 2008 and 65.0% in the MICS ,2011. Some of the barriers and enablers factors of the uptake of IPTp in the Mampong Municipality are increased in the level of education of the pregnant women, being counselled on the dangers of malaria in pregnancy, access to services, availability, cost of ANC services and time spent at the ANC. It is recommended that health education and counselling on the dangers of malaria in pregnancy during ANC attendance should be enhanced to promote the uptake of IPTp.

**Key words:** Malaria; Pregnancy; IPTp; SP; Mampong Municipal.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Background to the study**

About 250 million cases of malaria are recorded each year, with an estimated associated annual toll of 781,000 deaths (WHO, 2010). Pregnant women are especially susceptible to the disease in areas of stable transmission. In these areas, malaria is estimated to affect 30 million pregnancies annually (WHO, 2010). The majority of the burden of disease caused by malaria is borne by the populations living in the highly endemic areas of sub-Saharan Africa. Within these areas, the populations at the highest risk are pregnant women and infants (Heggenhougen, et al., 2003).

The World Health Organisation (WHO) has recommended a package of interventions for preventing and controlling malaria infection in pregnancy (MiP) in endemic areas, which includes the early diagnosis and treatment of malaria, intermittent preventive treatment during pregnancy (IPT) using sulphadoxine-pyrimethamine (SP) and the use of insecticide-treated nets (ITNs) (WHO, 2004). Finding in the (Ghana Statistical Service (GSS), 2009) shows that, there is also an increasing trend for women to have their first antenatal care visit before the fourth month of pregnancy (55 percent in 2008, compared with 46 percent in 2003), and the urban rural gap is narrowing. Sixty-one percent of women in urban areas and 51 percent of women in rural areas had their first antenatal visit before their fourth month of pregnancy (56 and 41 percent, respectively, in 2003) while 30 percent of women in urban areas and 33 percent of women in rural areas have their first visit between the fourth and fifth month of pregnancy (34 and 35 percent, respectively, in 2003). Among women who received antenatal care, the median number of months pregnant at first visit is 3.7 months for women in urban areas, and 3.9 months for women in rural areas, compared with 3.8 and 4.2 months, respectively, in 2003. (Ghana Statistical Service (GSS), 2009).

Malaria is hyper-endemic in Ghana and constitutes one of the leading causes of morbidity and mortality, especially among pregnant women and children under the age of five. The Ministry of Health (MOH) estimates that 3 to 3.5 million cases of suspected malaria are reported each year in public health facilities, representing 30-40 percent of out-patient attendance. Of this figure, over 900,000 are children under the age of five. Malaria also accounts for about 61 percent of hospital admissions of children under five years and 8 percent of admissions of pregnant women. It is estimated that malaria accounts for 22 percent of under-five mortality and 9 percent of maternal deaths (The President's Malaria Initiative, 2007).

The Abuja Accord sought to ensure that at least 60 percent of all pregnant women at risk of malaria, especially those in their first pregnancies, have access to appropriate chemoprophylaxis or intermittent preventive treatment (IPT) (WHO, 2000). The Ghana Health Service provides sulphadoxine-pyrimethamine (SP) to pregnant women as IPT free of charge and as directly observed therapy (DOT) at both public and private antenatal services delivery points across the country. One of the interventions the MOH and the Ghana National Malaria Control Programme have adopted to control malaria in pregnancy is Intermittent Preventive Treatment (IPT) with sulphadoxine-pyrimethamine (SP), which has several brand names including Fansidar and Malafan. According to this policy, from the second trimester of pregnancy (after quickening), pregnant women attending antenatal clinics are expected to be given three doses of SP as directly observed therapy (DOT), at monthly intervals (GHS, 2003b) (GSS, NMIMR, and ORC Macro, 2004). This replaces the former policy of giving a full dose of chloroquine for treatment at the first antenatal visit, followed by two tablets weekly until 6 weeks post-partum (GHS, 2003c; GSS, NMIMR, & ORC Macro, 2004).



## 1.2 Problem statement

Malaria is still a complex public health problem in the African region, where most cases and deaths due to the disease occur. An estimated 74% of the population in the African region lives in areas that are highly endemic for malaria and 19% in epidemic prone areas. (WHO, 2006).

Only 7% of the region's population lives in low risk or malaria-free areas. While the disease affects the lives of nearly everyone across the continent, children under five and pregnant women are the most vulnerable groups due to their lower levels of malaria immunity (WHO, 2006).

Malaria is hyper endemic in all parts of Ghana, which lies in the tropical region of Africa, with the entire population of an estimated twenty three million at risk. Transmission occurs all year round with seasonal variations during the rainy season. Malaria is the number one cause of morbidity in Ghana accounting for thirty-eight percent of all out-patient illnesses, thirty-six percent of all admissions and thirty-three percent of all deaths in children under five years (WHO,2008). Between 3.1 and 3.5 million cases of clinical malaria are reported in public health institutions each year (NMCP- Annual Report, 2006). According to the World Malaria Report (2008) Ghana had an estimated 7.2 million cases of malaria in 2006 (WHO, 2008). In Ghana, among pregnant women, malaria accounts for 13.8% of out patients' attendance, 10.6% of admissions and 9.4% of maternal deaths (NMCP, 2007).

Mampong Municipality is an area where malaria is a condition causing low birth weight (LBW) (i.e. <2.5kg).In 2012 303 LBW AND 748 malaria in pregnancy were recorded (MampongMunicipalDiarectorateAnnualReport, 2012). In the same year, out of 17156 who accessed ANC service 1897, 1508 and 909 received IPTp1, 2 and 3 doses, respectively. This gave a reflection of the high LBW and malaria in pregnancy cases.

In 2013 malaria in pregnancy was 787 and LBW was 317 out of 577 deliveries conducted. For the total attendance of ANC, which was 14018, 1767, 1192 and 769 had IPT1, IPT2 and IPT3 respectively (Mampong Municipal Directorate Annual Report, 2013)

This also gives a clear picture of the causes of the LBW and malaria in pregnancy.

Noticing these trends in their report, the municipal health directorate hope to increase the uptake of IPT from 33% coverage to 60% by December 2014.

This study aims to assess the uptake of IPTp and the barriers and enabling factors of the uptake of IPT among pregnant women in Mampong Municipality. This will help the municipal health directorate to be able to achieve their target, in respect of the IPT in pregnancy policy.

### **1.3 Rationale for the Study**

The World Health Organization (WHO) policy for malaria prevention and control during pregnancy in areas of stable malaria transmission in Africa is a package of intermittent preventive treatment (IPT) and insecticide treated nets together with effective management of clinical malaria and anaemia (WHO, 2004). The recommended drug for IPT in pregnancy in areas of Africa where transmission of *P. Falciparum* malaria is stable, and where resistance to the drug is low, is sulfadoxine-pyrimethamine (SP) (WHO, 2004). SP has a good safety profile in pregnancy and good programme feasibility, with the opportunity for delivery as a single dose treatment under direct observation. The policy states that ‘all pregnant women in stable malaria transmission areas should receive at least two doses of the recommended antimalaria drug at the first and second regularly scheduled antenatal clinic (ANC) visits after ‘quickening’ (first noted movement of the foetus)’. WHO presently recommends an optimal schedule of four antenatal visits, with three visits occurring after quickening (WHO, 2002a).

The delivery of IPT at each scheduled visit after ‘quickening’ would ensure that a high proportion of women received the minimum two doses of IPT. The Roll Back Malaria



(RBM) targets set by African leaders in Abuja in 2000 included a target that by 2005, ‘at least 60% of all pregnant women who are at risk of malaria, especially those in their first pregnancies, will have access to chemoprophylaxis or intermittent presumptive treatment’ (WHO, 2000). The aim of the present study was to review the status of IPT policy, the only policy now recommended for Africa (WHO, 2004) adoption and implementation in subSaharan Africa in the context of the target to achieve 60% coverage of pregnant women. Tutu, et al., (2011) Suggest that effective implementation of the IPTp using SP is an evidence based measure for control of malaria-related anaemia in pregnancy. Reduced maternal anaemia impacts positively on both maternal and neonatal health. The Ghana Health Service should, therefore, design and implement interventions to increase the proportion of pregnant women (especially primigravid women) who take the recommended three doses of SP during pregnancy. The rationale of the study is to assess the uptake of IPTp and the barriers and enabling factors of the uptake of IPT among pregnant women in the Mampong Municipality.

#### **1.4 Research Questions**

1. What is the level of utilization of IPT among pregnant women?
2. What are the pregnant women related factors that enable or prevent the utilization of IPT?
3. What are the health provider related factors that enable or prevent the utilization of IPT?
4. What is the quality of IPT service rendered to pregnant women?
5. What are the access factors that help the pregnant women to access IPT services?
6. What recommendation and suggestion can help increase the uptake of IPT during pregnancy?

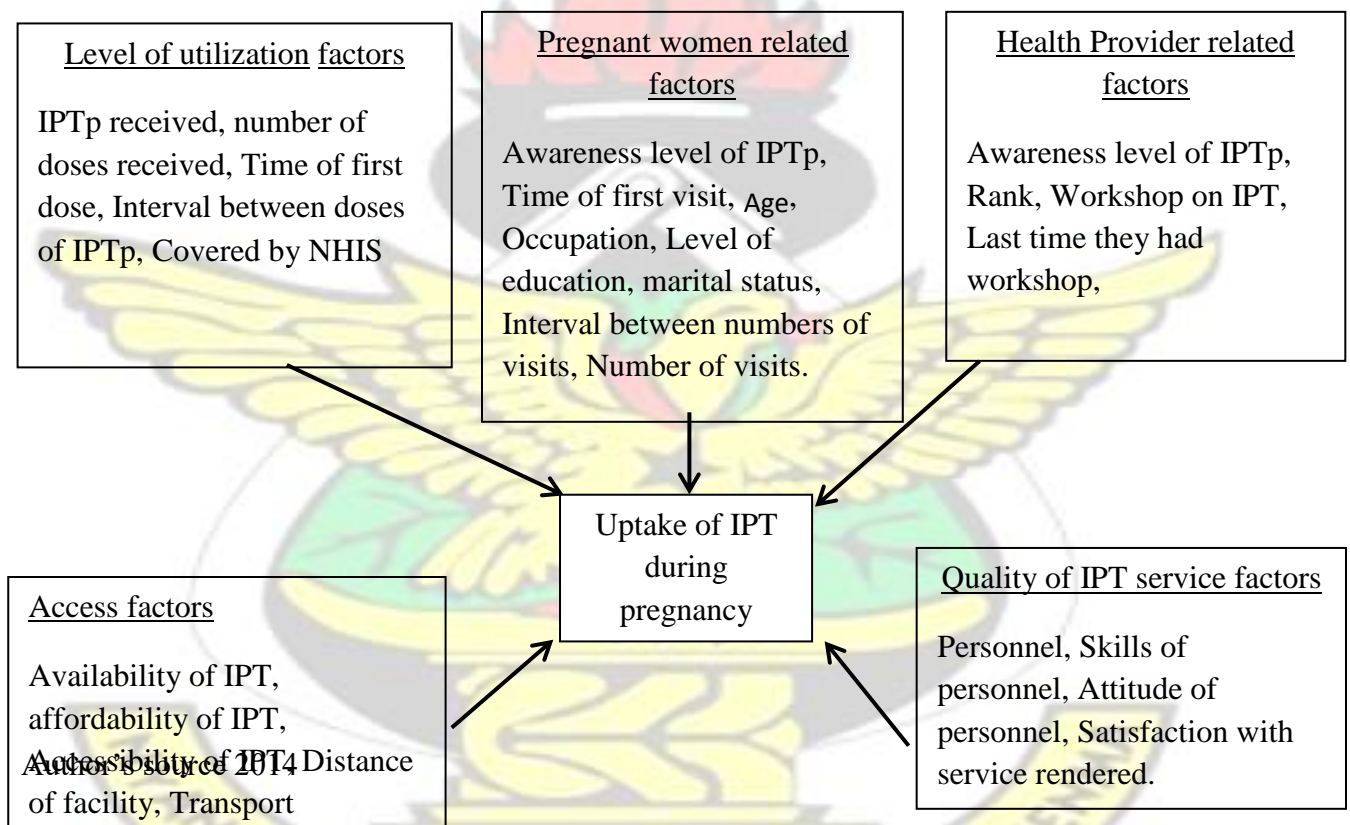
#### **1.5 General objectives**

The main objective of the study is to assess the level of utilization of IPTp and the barriers and enabling factors of the uptake of IPT among pregnant women in the Mampong Municipality.

## 1.6 Specific objectives

1. To determine the level of utilization of IPT among pregnant women in the Mampong Municipality.
2. To determine the pregnant women related factors that enable or prevent the utilization of IPT.
3. To determine the health provider related factors that enable or prevent the utilization of IPT?
4. To determine the quality of IPT service rendered to pregnant women.
5. To identify the factors that help pregnant women to access IPT services.

## 1.7 Conceptual Framework



**Figure 1 1: Conceptual Framework**

## CHAPTER TWO

## LITERATURE REVIEW

## **2.0 Introduction**

The chapter review literature on IPTp uptake among pregnant women. The literature review focused on the themes developed from the objectives and conceptual framework of the study. The chapter focused on the conceptualization of IPTp from the Global, Africa and Ghanaian perspectives. The chapter is arranged into sections per the objectives of the study which includes:

1. Conceptualization of IPTp
2. The level of utilization of IPT
3. Factors influencing the uptake of IPTp among pregnant women
  - a. Pregnant women related factors
  - b. Health provider related factors
  - c. Access related factors to IPTp uptake
  - d. Quality related factors to IPTp uptake
4. Policy implementation Experiences in Africa.

### **2.1 Conceptualization of IPTp**

In a study conducted in Nigeria, (Akinleye, et al., (2009)) only 27.3% had received a dose of SP during the index pregnancy. The probable reason for the low uptake is the low level of awareness and poor knowledge of IPTp by the pregnant women. This is supported by the fact that those who were able to define IPTp correctly in the study were more likely to have received IPTp at least once. (Akinleye, et al., 2009).

Maternal age, season of delivery, and distance of residence from the health center were identified as the main predictors for complete ANC attendance and IPTp-SP uptake as seen in another study done in Bunkin Faso (Gies , et al., 2009). It was noted that, age and season interact with promotion, and both modify the effect of the promotion on completion of ANC attendance. Promotion activities were associated with a more than two-fold increase of complete ANC

attendance in women who delivered during the low transmission season for adults and adolescents. For deliveries during the high transmission season, the effect of the promotion was border lined in adults and absent in adolescents. Consequently, the uptake of IPTp-SP was lowest in adolescent mothers who delivered during the high transmission season and did not differ between promotion and non-promotion areas. (Gies , et al., 2009)

According to Anders , et al., (2008) eighty percent (80%) of women had heard of intermittent preventive treatment (IPTp) with sulphadoxine-pyrimethamine (SP) to prevent malaria in pregnant women and 55% of respondents reported receiving at least one dose of IPTp. The outcome of having received one dose of IPTp (among those  $\geq 5$  months gestation) or two doses of IPTp (among those  $\geq 7$  months gestation) was associated in bivariate analysis only with the antenatal facility attended, and not with any other individual characteristics, including age, marital status, socioeconomic status, educational level, attendance at health education or timing of first ANC visit (Anders , et al., 2008). This means that, there can be a situation where individual characteristics , can be either a barrier or enabler to the uptake of IPTp.

Women seeking care at ANCs often have to overcome barriers at the household or societal level, and these barriers are more challenging to address. Women have commitments to farming or employers and the responsibility of childcare, and often have to defer to their husbands or in-laws in decision-making over accessing ITNs or use of household income to pay for ANC services. In a review of ANC access, use of ANCs was shown to increase with husband's educational level and was an even stronger predictor than women's education in some settings. Local cultural norms and practices present a considerable barrier to women accessing ANC services in some but not all study countries, with wide variation within countries and between countries ( Hil, et al., 2013).



In a study conducted in Tanzania, it was revealed that, optimal coverage of IPTp-SP of 44% in the study area could possibly increase to as high as 72% if sustainability was guaranteed for women who took only one dose. Improving health services especially ANC to ensure better counselling services on the dangers of MiP to pregnant women, proper timing of ANC initiation, formal education beyond primary school are necessary for enhanced coverage of IPTp-SP and consequently better health outcomes of pregnant women and their new born in the study area (Exavery, et al., 2014).

According to Sikambale , et al., (2013) the effective IPTp service utilization in Sesheke District is very low. They also identified factors and some challenges influencing IPTp service utilization. These factors and deficiencies urgently needed to be addressed if the district is to combat malaria in pregnancy. Address of these factors and deficiencies will not only contribute towards achievement of millennium development goals (MDGs) but also to overall improvement of maternal and child health (Sikambale , et al., 2013)

## **2.2 The level of utilization of IPT among pregnant women**

Whether the risk of adverse events was increased with increased doses of SP/IPT compared with two-dose SP/IPT is not known. Importantly, three prior studies have evaluated adverse event outcomes in pregnant women receiving more than two doses of SP/IPT (Parise et al.1998; Shulman et al.1999; Verhoef et al.1999). In all three of these trials, there were no increased adverse drug reactions or increased number of adverse pregnancy outcomes among those women who received up to three doses of SP compared with less doses, or placebo.

WHO recommend that all women, regardless of HIV status, receive two doses of SP/IPT during pregnancy (WHO, 2003; Holtz, et al., 2004)

WHO expects that 80% of all pregnant women living in areas of high transmission to receive IPTp during pregnancy by 2010 (WHO, 2005).



The 2011 Ghana MICS reports on the standard RBM indicator of two doses of IPTp with SP during ANC, said although Ghana has for some time aimed at three doses, WHO guidance for IPTp recommends IPTp in stable endemic countries at one dose for every antenatal care visit after quickening, which could mean three or four times during the entire gestation period. So the 2011 MICS shows 83% of recently pregnant women surveyed got one dose of IPTp during ANC while only 65% received two. (Brieger, 2013)

As stated by Gies , et al., (2009) in Burkina Faso, two-thirds of incomplete IPTp-SP-dosage could be attributed to insufficient or late ANC attendance, with the remaining third not having received SP during ANC visits (Gies , et al., 2009).

Relation between ANC attendance and SP uptake that Gies , et al., (2009) have observed that the number of SP doses a woman had received throughout pregnancy was strongly related to the number of ANC visits completed by the time of delivery. Among 1,514 women in the IPTp-SP study arms, 519 had received one dose of SP (34%), 870 had received two doses (57%), 36 had received three doses (3%), and 88 had received no doses (6%). Most women with only one ANC visit received one dose of SP (95%). The coverage with two or more doses of SP was 46% with two ANC visits, and increased to 83% after three visits, and to 97% after four or more visits. Among women with 3 ANC visits, the proportion of those with complete SP uptake was higher in the promotion area (88.4%) than in the non promotion area (76.2%) (Gies , et al., 2009).

In another study in Zambia (Sikambale , et al., (2013)) it was also found that gestational age of the pregnancy at which a woman first accesses ANC was associated with completion of IPTp doses .This could be because fansidar is given one month apart starting from the fourth month of pregnancy. Hence women who start ANC in good time, or early are more likely to complete all the three recommended doses than those that start late. Therefore if women are to be fully utilizing IPTp services so that they are fully protected from malaria, they

should be encouraged to be starting ANC early. Also the study found that the number of times a woman attends ANC did influence whether a woman was going to complete the three recommended doses of IPTp or not. This means that the more antenatal visits a woman makes the more likely she is able to complete the recommended IPTp doses (Sikambale, et al., 2013).

Kiwuwa & Mufubenga, (2008) also showed that, of the 769 participating women, 722 (94.4%) reported having visited an antenatal clinic during their most recent pregnancy. Antenatal clinic attendance was verified among 344 (86%) participants who presented ANC records at the time of the interview. Antenatal clinic attendance did not differ among those who lived within a distance of 4 km from the nearest formal health unit compared to those living beyond. Approximately 88% of the women made more than one ANC visit. The frequency of 4 or more self reported antenatal care visits among ANC attendees was 266 (37.1%). The majority of the women 417 (57.7%) reported attending the ANC for the first time in the second trimester, while 242 (33.5%) commenced in the third trimester. Women who had not attained post primary education, 39 (90.7%), were almost three times more likely not to have visited an ANC compared to women who had completed primary education, 4 (2.2%). Of the ANCs visited by the women, the health centre III level was the most commonly attended locality. However, only 12 (1.6%) acknowledged visiting traditional birth attendants for antenatal care services (Kiwuwa & Mufubenga, 2008).

A study found that the uptake of IPTp among pregnant women in Sesheke for the third dose of IPTp (fansidar) was very low (30%). Factors influencing IPTp utilization identified in the study included; educational status of a woman, knowledge level of a woman about IPTp services, gestational age of the pregnancy at which a woman first starts antenatal care, number of times a woman attends antenatal care, and cultural misconceptions in the community. Lack of resources and transport in order for health providers to reach women in

far and hard to reach areas was also identified as one of the most important challenges. The study also found that stock levels of fansidar in most of the health centers were good and that the majority of the women perceived use of fansidar during pregnancy as safe. The focus group discussions (FGD) also revealed that most of the women were willing to take fansidar despite the associated side effects. The commonest side effects were headache, dizziness, nausea and vomiting (Sikambale, et al., 2013).

A study indicates a high rate of antenatal care attendance as similarly observed in other African countries with IPTp-SP policy implementation (Hill & Kazembe, 2006) and offers the potential for implementing the nationally recommended approaches to the prevention and control of malaria. Six years after the introduction of IPT in Uganda, only a small percentage of women in this rural area are benefiting from this policy. More than two thirds of women attending antenatal care and delivering from formal health units received at least one dose, but fewer than 40% received the recommended full two dose SP regimen (Kiwuwa & Mufubenga, 2008).

In a study conducted by Anders, et al., (2008) in north-east Tanzania evidence was found of an association between early ANC attendance and uptake of intermittent preventive treatment (IPTp), a key malaria preventive strategy. They suggested that efforts to encourage timely ANC attendance alone are unlikely to improve the uptake of this intervention, at least where other barriers to delivery exist (Anders, et al., 2008).

## **2.3 Factors influencing the uptake of IPTp among pregnant women**

### ***2.3.1 Pregnant women related factors***

In a study conducted by Napoleon, et al., (2011), visiting ANC three or more times was associated with increased IPT use. This indicated that the more the women go for ANC, the more knowledge they acquire and the more likely they are to receive IPT (Napoleon, et al., 2011).



According to Mutagonda, et al., (2012), most pregnant women had minimum knowledge about the use and benefits of SP for IPT and ALu for treatment of malaria during pregnancy. Some erroneous beliefs about the safety of ALu during pregnancy were also identified among pregnant women. For effective implementation of IPT policy and treatment of malaria during pregnancy, pregnant women should be sensitized and educated on the use and benefits of antimalaria drugs ( Mutagonda, et al., 2012).

Overall, both intermittent screening and treatment and intermittent preventive treatment appeared equally acceptable to pregnant women as strategies for the control of malaria in pregnancy. The women were more concerned about quality of services received, in particular the polite and patient attitude of health staff, and positive health implications for themselves and their babies than about the nature of the intervention (Simth, et al., 2010).

According to Akinleye, et al., (2009) only a fifth of the respondents first attended ANC in the first trimester of gestation, half did so in the second trimester while another fifth registered in the third trimester. This late registration at ANC has implications for uptake of IPTp. With the late registration it is unlikely that pregnant women will take the recommended two doses of SP. Late first ANC attendance has been identified as an important factor contributing to incomplete IPT use. The decision that IPTp be administered through ANC was informed by the expectation that pregnant women will attend clinic frequently enough to allow for two doses of SP for IPTp (Launiala & Honkasolo , 2007). Although ANC attendance is high in most countries with IPTp policy (Launiala & Honkasolo , 2007), it has not been sufficient to ensure a high IPTp coverage (Akinleye, et al., 2009).

Community sensitization, health education activities and supervised uptake of SP by health staff were the key suggestions provided by pregnant women for improving IPTp services and increasing ANC attendance. The majority of the pregnant women felt that the community should

be adequately informed about potential malaria-related risks and disadvantages resulting from failure to use the recommended antimalaria drugs, be it for IPTp or other purposes. In addition, people should be educated on potential dangers associated with selfmedication without proper knowledge of the drugs taken or prior consultation with health personnel (Mubyazi, et al., 2005).

As seen by Sikambale , et al., (2013), majority of the women (81.8%) perceived use of fansidar in pregnancy as being safe and only a few women (4.2%) thought it was not safe while 14.1% of women did not know whether it was safe or not. Majority of the women were willing to take fansidar despite the side effects associated with it. This was attributed to the perceived benefits of taking fansidar during pregnancy (Sikambale , et al., 2013).

According to Sikambale , et al., (2013), knowledge level of a woman about IPTp among women was found to strongly influence IPTp utilization. Less than half of the women (48.9%) had good knowledge about IPTp services, 18.9% had fair knowledge while 32.2% had poor knowledge. Health education was also associated with effective utilization of IPTp services. Their finding showed that for IPTp coverage to be improved, a lot of women needed to be sensitized about the importance of this service. Therefore the district should encourage its staff to intensify information education and counselling (IEC) while providing services like IPTp. This is because when more women are educated about the importance of IPTp services, they will be empowered with knowledge and will be able to make informed decisions that impact positively on their lives.

This implies that if the community is adequately sensitized and also more IEC is provided to the women, IPTp coverage would improve as a lot of them will be able to utilize IPTp services. Education level of a woman was also found to be a factor influencing completion of three recommended doses of IPTp by a pregnant woman. This is because if a woman is educated, she is also in one way or another empowered with knowledge that enables her make



informed decisions and choices that impact positively on her health (Sikambale , et al., 2013).

The source of health information is important to the knowledge acquired. According to Mutulei, (2013) out of 121 participants who received less than IPTp2, 47 (38.8%) mentioned radio, 26 (21.5%) cited community health workers (CHWs), while 16 (13.2%) stated friends as the main source of health information. Among the 157 participants who had accessed IPTp2+, 50 (31.8%) indicated radio, another 50 (31.8%) cited CHWs, while 22 (14.0%) mentioned health facilities as the key sources of health information (Mutulei, 2013). This shows that order media of communication should be considered in health education.

### ***2.3.2 Health provider related factors that enable or prevent the of IPTp***

Experiences in a controlled trial setting, provide an insight into the potential motivating factors and barriers to delivering IST or IPT under routine ANC conditions. Encouragement of respectful communication between midwives and their clients can help to reinforce the trust relationship that exists. Good quality services at ANC are necessary to promote high coverage and to achieve actual and perceived health benefits for mothers and their children (Simth, et al., 2010).

According to Gikand, et al., (2008), the use of ITN had increased 10-fold and the use of IPT fourfold since last measured in 2001, but coverage remains low. Provider practices in the delivery of protective measures against malaria must change, supported by community awareness campaigns on the importance of mothers' use of IPT (Gikand, et al., 2008).

In a study conducted by Anders, et al., (2008), the overall coverage with at least two doses of SP was 60% in the two IPTp-SP study arms even though most women (80%) had visited an ANC two or more times. The first dose of SP was generally given at the first ANC visit and most women with just one ANC visit had received one dose of SP. Reasons for missed dosing

include client-related (e.g., late ANC attendance) or facility related factors, the latter including confusion of health workers about correct timing and spacing of SP doses, and restriction of SP early in pregnancy or difficulties in correctly assessing gestational age (Anders , et al., 2008).

As reviewed by Gies , et al., (2009), few women attended ANC too early to receive the first dose of IPTp-SP at the first visit. Because intervals between ANC visits were generally greater than one month, this simplified approach (one dose of SP at every ANC visit after the first trimester) would have been safe and could have achieved a substantially higher coverage with IPTp-SP (Gies , et al., 2009). IPTp was generally first given during the fifth or sixth month of gestation. This is consistent with the national guidelines for delivery of IPTp, which recommends giving the first dose between 20 and 24 weeks gestation and the second dose between 28 and 32 weeks gestation. According to the respondents' reports, 13% (8/63) of first IPTp doses were given earlier than the scheduled timing of five months gestation, almost half of the total respondents attended ANC prior to five months gestation, and thus the large majority of those early attendees (49/57; 86%) were not given IPTp on that first visit (Anders , et al., 2008).

More than 28% of the women made two or more ANC visits which were sufficient for them to access at least two doses of IPTp-SP (unless the visits were less than one month apart, which is unlikely) yet did not receive two doses of SP. This implies that several ANC visits might not be sufficient to ensure high IPTp-SP coverage in the presence of other barriers (Anders, et al., 2008).

Although ANC attendance is vital to achieving several of the Millennium Development Goals (MDGs) (reduce child mortality, improve maternal health, combat malaria and HIV/AIDS), which depend to a large extent on reaching women with proven effective interventions during pregnancy, some women missed these interventions, including IPTp, because they were sent

back home by the midwife for not wearing a maternity dress. This is a reflection of poor health systems and a barrier to pregnant women accessing vital interventions offered during ANC visits (Ndyomugenyi & Katamanywa, 2010).

Knowledge of malaria risks during pregnancy was high among pregnant women although some women did not associate coma and convulsions with malaria. Mubyazi, et al., (2005), revealed that, contacting traditional healers and self-medication with local herbs for malaria management was reported to be common. Pregnant women and ANC staff were generally aware of SP as the drug recommended for IPTp, but some nurses and the majority of pregnant women expressed concern about the use of SP during pregnancy. Some pregnant women testified that sometimes ANC staff allow the women to swallow SP tablets at home which gives a room for some women to throw away SP tablets after leaving the clinic. This was sceptical about health workers' compliance with the direct observed therapy in administering SP for IPTp due to a shortage of clean water and cups at ANC clinics. Intensified sensitization of pregnant women about the benefits of IPTp was suggested by the study participants as an important approach for improving IPTp compliance (Mubyazi, et al., 2005).

Both the staff working at health facility level and CHMT members at district level admitted that since the IPTp strategy was a new malaria intervention recommended at national level, not all the health care service providers at peripheral health facility level were fully knowledgeable about it. For this reason, it was suggested that for the IPTp services to be effectively delivered and actually utilized by target users, health care providers need to be trained well about IPTp service delivery. At the same time, more deliberate efforts should be made to sensitize pregnant women and the public at large about the strategy and importance of complying with the malaria treatment services as recommended. The issue of understaffing was highlighted as an impediment to delivering the desirable quality of service at most public health facilities, especially at dispensary level. It was added that unless the government addresses the problem



of staff shortages in addition to providing other incentives such as timely staff promotion, remuneration and staff houses or housing allowances, there is a danger that staff compliance with the IPTp guidelines at most of the peripheral health facilities will be undermined (Mubyazi, et al., 2005).

Counselling to pregnant women on the dangers of malaria in pregnancy and formal education beyond primary school is important to enhance uptake of optimal doses of SP for malaria control in pregnancy in Tanzania. ANC initiation in the first trimester should be promoted to enhance coverage of optimal doses of IPTp-SP (Exavery, et al., 2014).

In a study conducted in Kenya, 724 women interviewed, 626 (86.5%) attended the ANC once and 516 (71.3%) attended two or more times. Overall IPTp coverage was 41% for at least one dose, and 21% for at least two doses of SP. In Asembo, coverage increased from 19% in 2002 to 61% in 2005 for at least one dose and from 7% to 17% for two doses of SP. In Gem, coverage increased from 17% to 28% and 7% to 11%, respectively. Interviews of HCW in both Asembo and Gem revealed confusion about appropriate timing, and lack of direct observation of IPTp. Training of HCW and use of simplified IPTp messages may be a key strategy in achieving Roll Back Malaria targets for malaria prevention in pregnancy in Kenya (Ouma, et al., 2007).

Reaching out to development actors and humanitarian agencies for partnership arrangements is an option that the Government should consider to access supplementary resources to support health education at ANC facilities. Partners have an important role to play in the realization of IPTp program targets. Their involvement is not only socially logical, but also and more importantly, a matter of women's rights (Mutulei, 2013).

Continuous sensitization of pregnant women through a multi-media approach is a critical intervention in which the government and development partners should invest to encourage early and consistent attendance of ANC facilities. At the facility level, the Government should



improve the programming and content of health education sessions, while minding the needs and circumstances of pregnant women from various local communities (Mutulei, 2013).

Barriers to the delivery of IPTp and ITNs were found at different levels of implementation, and broadly fall into policy and guidance, healthcare system issues, health facility issues, and healthcare provider performance. Whilst many of the barriers reflected broader weaknesses in the healthcare system, some were specific to the intervention. With regard to IPTp, a key identified barrier to effective delivery was healthcare provider confusion about the timing of the two doses of IPTp and whether IPTp can be given on an empty stomach. This confusion stemmed from a combination of unclear policy and guidance, inadequate training, and lack of information and job aids on IPTp (Hil, et al., 2013).

Organisational problems at the facility level were also common, such as lack of privacy and confidentiality in the health encounter and the restriction of hours of ANC services, resulting in high client-to-staff ratios, long waiting times, and reduced consultation times, all of which contribute to poor quality of care at ANCs. Absenteeism and high staff rotation at the facility leading to lack of continuity of care and high workload among staff on duty was also reported. Most of these organisational problems present another area for improvement in the short term that does not require additional resources, though it will require better management and accountability by the heads of health facilities. Other barriers were, however, dependent on higher levels of the healthcare system, such as high staff turnover, understaffing (particularly in remote areas), poor infrastructure, poor supervision, and poor use of data to identify problems and inform decision-making. These problems are inherent in the healthcare systems in some areas in some countries, and will require longer term strategies and increased investment in healthcare system strengthening. Also persistently reported across the studies and dependent on

action taken at higher levels were stock outs of both SP for IPTp and ITNs, and lack of water or cups for providing IPTp by DOT ( Hil, et al., 2013).

Consideration of the context for employing community-based distribution of IPTp is important; this distribution strategy appears to be an effective additional strategy to boost coverage in areas where there is already a successful community-based distribution programme, as seen in the onchocerciasis control programme in Uganda, but may serve to undermine women's attendance at ANC's in areas where ANC attendance is fragile. Community-based promotion, has the potential benefit in some settings of increasing access and uptake of IPTp by providing women with information about the importance and benefits of IPTp, and at the same time reinforcing the message that women should obtain antenatal care from ANC's, where they benefit from the full range of focussed ANC services ( Hil, et al., 2013).

### **2.3.3 Quality of IPT service rendered to pregnant women.**

SP-IPT has been rated as having the most favourable cost-benefit profile because of its relatively low cost, high compliance and efficacy in reducing maternal anaemia and low birth weight (Goodman, et al., 2001).

Mubyazi, et al., (2005), identifies several potential constraints to the effective implementation of IPTp services in Tanzania. Based on that, it reveals that the effective delivery of antenatal and IPTp services may be influenced by the motivation of health service givers which by itself depends on the broad policy and health service environment in which they work. Timely and regular attendance to antenatal clinics by pregnant women and their positive perception of IPTp as a strategy and the drug recommended and on the quality of antenatal care are also important for the complete uptake of the recommended IPTp doses.

According to Mubyazi, et al., (2005) there is the need for intensifying health education and sensitization of beneficiaries and community members on the one hand and for addressing staff

motivation factors and quality of care through training, supervision and monitoring of health service providers on the other. Better health infrastructure, well equipped health facilities and hospitable staff are an attraction to service clients and policy makers should prioritize these issues in their strategic plans for antenatal care, IPTp and general health services (Mubyazi, et al., 2005). Mubyazi, et al., (2005) opined that ,the successful implementation of the IPTp strategy in Tanzania depends on the proper planning of, and support to, the training of health staff and sustained sensitization of pregnant women at health facility and community levels about the benefits of IPTp for the women and their unborn babies.

Barrier studies among women highlighted additional healthcare system barriers leading to poor uptake of IPTp and/or ITNs. Having to pay user fees or pay for SP, drinking water for DOT, or ITNs was a common barrier, as were the indirect costs associated with visiting ANC's, such as transport, food, and opportunity costs. This finding was supported by the meta-analysis of determinants of coverage among pregnant women, which showed that socioeconomic status and employment status are important predictors of IPTp and ITN coverage, respectively. These inequities may to some extent reflect the determinants of women's access to ANC's, where user fees are routinely applied to registration, consultations, laboratory tests, and drugs, as identified in a review of factors affecting utilisation of antenatal care in developing countries. However, in some instances user fees are also applied to SP (e.g., where women have to purchase SP or water to take IPTp by DOT) and to ITNs ( Hil, et al., 2013). Another common barrier to ANC utilisation was the poor quality of interactions between healthcare providers and pregnant women. Women were generally perceived as passive recipients and were provided with little or no information about the services provided, and women with a low social position, such as adolescents, and less educated women are most vulnerable ( Hil, et al., 2013). This issue appears to be a problem in some resource-poor settings and is more difficult to tackle. However,



educating women about their rights and about the ANC services available to them may go some way to empowering women to be able to demand better services.

The ministries of health need to pay more attention to IPTp and ITN promotion and health education, with additional targeting of risk groups, as well as using new innovations for communication of messages, since traditional health education is not offered at all facilities or is not always effective ( Hil, et al., 2013).

Sensitization should also target the general community to enable them play an active role in ensuring that all pregnant women begin their ANC visits at least by the fourth month of gestation Health information is important in shaping knowledge, perceptions and attitudes to facilitate behaviour change. The source of such information is critical for its internalization, acceptability and translation into action. Pregnant women obtained health information from various sources, including radio, television, friends and community health workers (Mutulei, 2013).

The information provided by health facilities is bound to be clearer and more authoritative than information provided by community health workers, serving as volunteers with minimal training. This reemphasizes the need for the Government to improve the quality of health education program during clinic days, through better programming, adequate staffing, better facilities and materials, as well through staff motivation (Mutulei, 2013).

Poor quality of healthcare services was reported to contribute to poor attendance of pregnant women at health facilities providing ANC services. Specific physical and service-related factors mentioned to be inappropriate or inadequate are: No quick service; Staff are too slow; patient have to wait for a long time and no blood transfusion services for pregnant mothers and children. These all have potential negative implications on ANC attendance (Mubyazi, et al., 2005).



Most of the health providers expressed concern that they faced some challenges while providing IPT. The commonest challenges were lack of transport in health centers to enable health staff to reach women in very far and hard to reach areas so that even these women can access IPTp services. Other challenges of note included, inadequate resources in form of allowances to enable health staff to conduct outreach activities, periodic stock out of fansidar and misconceptions by some women that fansidar might cause abortion (Sikambale , et al., 2013).

#### ***2.3.4 Factors that help pregnant women to access IPT services***

The Focused Antenatal Care approach recommends: 1) Focused antenatal care and health education: 2) Use of insecticide treated nets (ITNs): 3) Case management of women with features of clinical malaria: and 4) Use of Intermittent Preventive Treatment of Malaria in Pregnancy (IPTp) (WorldHealthOrganization, 2007).

Given the overlap of common pregnancy problems with the symptoms of malaria, and the limited association of malaria with its main outcomes, a comprehensive antenatal care programme is the most appropriate strategy for the provision of health education, prevention and treatment for MiP. Variations in locally shared understandings of MiP must however be taken into account when designing and promoting MiP intervention strategies (Menaca, et al., 2013).

Delivery of ITNs through antenatal clinics presents fewer problems than delivery of IPTp. Many obstacles to IPTp delivery are relatively simple barriers that could be resolved in the short term. Other barriers are more entrenched within the overall healthcare system or socioeconomic/cultural contexts, and will require medium- to long-term strategies ( Hil, et al., 2013).

According to Hil, et al., (2013), the key barriers to access, delivery, and use of IPTp and ITNs are relatively consistent across countries. These barriers may be helpful as a checklist for use by country malaria programmes and/or policy-makers to identify factors influencing uptake of these interventions in their specific location or context. The review also highlights the need for multi-country studies that evaluate targeted or multifaceted interventions aimed to improve the delivery and uptake of IPTp and ITNs. More research is also needed to understand and improve the policy change process to facilitate future replacement of SP with alternative drug regimens for IPTp or alternative strategies such as screening and treatment that will present even greater challenges for delivery ( Hil, et al., 2013).

According to Ministry of Health's National Consultative meeting on the reduction of maternal mortality in Ghana report Staff availability , knowledge and skill; Availability of equipment, drugs; Distribution of facilities; Management of institutions; Availability and use of technology; Educational achievement; Knowledge & awareness of health care services; Preferences for place of delivery; Cultural factors; Distance and availability of transport; Costs of services and Gender issues are the reasons for inequitable coverage of quality maternal care (MINISTRY OF HEALTH, 2008).

Antenatal and postnatal services were still under-utilized, despite community members' positive attitudes regarding these services. The factors that hindered utilization of antenatal and postnatal care services in our study included financial difficulties, physical distance to health facilities aggravated by poor road infrastructure, a limited availability of health services, and perceived need for health services. Misunderstanding about the eligibility of Jamkesmas has also prevented poor communities from fully benefitting from this insurance scheme. For some women who perceived pregnancy and delivery as a natural process in life's events, the services of the traditional birth attendants were part of their cultural practices. Unless obstetrics complications arise, there is no perceived necessity in using health professional services. No

‘magic bullet’ solution is available to overcome the constraints; instead, comprehensive public health approaches are required. Poverty alleviation strategies will help financially deprived communities to access and use maternal and child health services. Appropriate socialization programs about Jamkesmas are important to ensure its optimum utilization among poor and near poor communities (MINISTRY OF HEALTH, 2008). In addition, evaluation and monitoring programs about its benefit and effectiveness should be conducted regularly. Strategies that address problems related to the limited availability of health services should be a priority. This includes efforts to retain village midwives in isolated areas, as well as the use of a team of providers, such as a midwife and midwife assistants, to increase the coverage of their services. The involvement of traditional birth attendants might be an alternative solution for providing basic antenatal and postnatal services under the supervision of health professionals.

Health programs aimed at increasing community awareness about the importance of antenatal and postnatal services should be considered. Strengthening community-based participatory programs to actively engage in overcoming constraints will be beneficial. Local community members should also be involved to encourage pregnant women and newly delivered mothers to use health services (Titaley, et al., 2010).

Almost half the women interviewed first attended ANC during or before the fourth month of gestation, however 86% of these early attendees did not receive IPTp on their first visit. The timing of IPTp delivery complied closely with the national guidelines which stipulate giving the first dose at 20–24 weeks gestation. Uptake of at least one dose of IPTp among women who had reached this gestation age was 67%, although this varied considerably between clinics. At one facility, IPTp was not delivered because SP was out of stock (Anders, et al., 2008).

According to Akinleye, et al., (2009), one hundred and nine of 109 (52.2%) respondents have heard about IPTp but only 26 (23.9%) were able to define it. Fifty seven 57 (27.3%) reported to



have received at least one dose of IPTp during the index pregnancy and all were among those who have heard of IPTp (52.3%). Twenty one of the 57 (36.8%) took the SP in the clinic. Only three of the twenty-one (14.3%) were supervised by a health worker. Twenty two of the 36 women (61.1%) who did not take their drugs in the clinic would have liked to do so if allowed to bring their own drinking cups. Almost half (43.9%) of those who had used IPTp during the index pregnancy expressed concern about possible adverse effect of SP on their pregnancies. Periodic shortages of SP in the clinics were also reported (Akinleye, et al., 2009).

In a study conducted in Kenya, it was seen that, Distance to health facilities is also a critical factor influencing IPTp2+ uptake. Shortage of health facilities vis-à-vis increment in human population is the main factor contributing to the challenge of long distance between available facilities and residences. For poor households, coping with transportation costs remains a key challenge to early and consistent ANC attendance, which is an antecedent of the IPTp2+ uptake. Construction of new health facilities in high-risk malaria zones is an investment that the Central and Devolved Governments should prioritize to improve access, particularly to pregnant women from poor households. As a short-term measure, the Government should establish partnership arrangements with development partners to support the mobile clinics program in areas that are seriously constrained to improve the IPTp uptake. The duration of stay in health facilities before receiving services is an element of quality of care that also influences the uptake of IPTp2+ services. In this regard, women perceiving the duration of stay at health facilities before receiving services as 'short' were more likely to take IPTp2+ as those saying that the duration taken was 'too long'. This factor connects to a number of human resource management issues, including understaffing, inadequate remuneration, poor work environment, ineffective supervisory system and lack of appropriate motivation programs. Of all resources in an institution, human resource is the most critical, because it plans and manages the utilization of other resources to achieve institutional goals. Consequently, the Government should recruit and



deploy more health workers to rural health facilities to improve staffing level and improve staff motivation for better services to pregnant women (Mutulei, 2013).

For those who did not receive IPTp as scheduled, the key reason reported was that it was not offered by ANC staff. Only one woman said she had refused SP when given, due to perceived negative physical effects. Of the 12 ANC staff interviewed, all said they knew the schedule for delivery of IPTp and 8/12 (67%) could describe it correctly (3/12, 25% partly correctly; 1/12, 8% incorrectly). The only two reports of deviation from the IPTp schedule were in giving an additional SP dose outside the recommended time windows, however two staff at one clinic also reported that SP was not currently stocked in their clinic for use in IPTp (Anders , et al., 2008).

The observations of consultations were limited by the fact that women of different gestation ages and number of prior visits received different information and interventions. However they did highlight the variability between facilities in the degree to which IPTp was discussed and delivered, and specifically that women at four months or less gestation were commonly told that they should come back at five months to receive the first dose of IPTp, as was reported also by the women themselves in interview. Data from observations of consultations also confirmed that at the facility in which IPTp coverage was lowest, staff were currently not dispensing SP at all. At this clinic, patients were told that SP was out of stock and that they would need to purchase it elsewhere, however the cross-sectional nature of this study meant that it was not possible to determine whether these women did obtain SP from another source, nor how long SP remained out of stock at this clinic (Anders , et al., 2008). The vast majority of respondents attended ANC at least once before the third trimester of pregnancy, and approximately half made their first visit early, i.e. during or before the fourth month of gestation (Anders , et al., 2008).

In a study conducted in Tanzania, it was seen that, the national IPTp coverage had declined over the survey period being 71% for first dose in 2005 falling to 65% in 2007, and 38% for second dose in 2005 but 30% in 2007. There was no evidence of any individual factors being associated with second dose coverage beyond living in an urban area. Availability of sulphadoxine-pyrimethamine at RCH had decreased year on year from 85% of clinics in stock in 2005 to 60% in 2007. This reduction was evident in rural but not urban clinics. If safety recommendations and national antenatal care guidelines for IPTp delivery were followed, in 2007 only 76% of pregnant women could have received IPTp first dose and only 46% could have received second dose (Marchant, et al., 2008).

In the same study, it was seen that, there is scope to improve IPTp first and second dose coverage at national scale within existing systems by improving stock at RCH, and by revising the existing guidelines to recommend delivery of IPTp after quickening, rather than at a pre-defined antenatal visit (Marchant, et al., 2008).

Across mainland Tanzania in 2007, 65% of women who had a pregnancy in the previous year reported receiving first dose of IPTp and 30% second dose. This national level analysis of individual, facility and policy influences on coverage has revealed that throughout the period 2005–2007 delivery of second dose was negatively influenced by facility level factors, and probably policy related factors in Tanzania, but not by the individual characteristics of women beyond living in an urban area (Marchant, et al., 2008).

#### **2. 4. Policy implimentation Experinces in Africa.**

The Ghana Statistical Service, (2009), survey results show that, nearly two-thirds (65 percent) of women 15-49years with a live birth in the two years preceding the survey took some kind of anti-malarial medicine for prevention of malaria during the last pregnancy. Over half (58 percent) of the women said they took SP/Fansidar—which is the recommended drug for

prevention of malaria during pregnancy in Ghana—at least once during the pregnancy. Less than half (46 percent) of pregnant women said they took SP twice during the pregnancy. Intermittent Preventive Treatment (IPT) using SP/Fansidar was introduced in Ghana in 2003 as a replacement for chloroquine prophylaxis because of the high levels of chloroquine resistance (Ghana Statistical Service (GSS), et al., 2009).

Some pregnant women may have received chloroquine prophylaxis because the drug was still in stock for some time after the change of anti-malarial drug policy. Over half (56 percent) of women with a birth in the two years preceding the survey who used IPT received SP/Fansidar during an antenatal visit. Most of them were from the Volta and Brong Ahafo regions (73 and 74 percent, respectively). (Ghana Statistical Service (GSS), et al., 2009).

The MOH and the Ghana National Malaria Control Programme recommend that pregnant women receive at least two doses of SP/Fansidar during pregnancy as IPT against malaria. In the 2008 GDHS, only 44 percent of women reported receiving two or more doses, at least one of which was during an ANC visit. By inference, 56 percent of respondents who were eligible did not get the recommended doses of SP. IPT coverage increased the mother's level of education, from 35 percent among those with no education, to 53 percent among those with middle/JSS education, and 49 percent among those with some secondary or higher education. Similarly, IPT coverage increased the wealth quintile, from 31 percent among those in the lowest wealth quintile to 50 percent among those in the highest wealth quintile (Ghana Statistical Service (GSS), et al., 2009).

As seen in Ghana Statistical Service (GSS), et al., (2009), percentage who took any antimalarial drug was 72.8, Percentage who took any SP/Fansidar/ Malafan 66.6, Percentage who took 2+ doses **SP/Fansidar/Malafan** 51.8, Percentage who received any SP/Fansidar/ Malafan during



an ANC visit 65.7 and Percentage who received 2+ doses, at least one during an ANC visit 50.8 (Ghana Statistical Service (GSS), et al., 2009).

Review by Hill & Kazembe, (2006) summarises the extent of IPT-SP implementation in Africa and highlights some of the experiences and lessons learned from five countries with widespread programme implementation. Malawi and Zambia have shown that IPT-SP can be introduced relatively quickly and effectively where there is political will, effective integration between malaria control and RH programmes, adequate funding and drug supply, high ANC attendance and community receptiveness. One important lesson highlighted in this review is that high ANC attendance alone is not sufficient to ensure high IPT-SP coverage. Many of the operational challenges for the delivery of IPT-SP were associated with a need to strengthen overall health systems by reducing staff shortages, improving drug supply, increasing ANC access and improving health worker performance. Another key lesson highlighted in this review is the need for well-designed, timely communication campaigns to promote awareness and confidence among pregnant women to take IPT-SP. In four of the five review countries, poor design and/or late delivery of communications campaigns were major weaknesses. Research is required to understand the socio-cultural and economic determinants of ANC utilisation, upon which IPT delivery hinges, and how to expand coverage to vulnerable groups such as adolescents and the very poor. Of the 24 countries which have so far adopted IPT-SP policy, only one country (Malawi) is close to achieving the Abuja target of 60% coverage of pregnant women, though Zambia, Uganda and Tanzania also appear to be making good progress. The remaining 20 countries have yet to overcome some of the many operational challenges highlighted in this review. Countries with high ANC coverage and attendance are in a better position than countries where coverage and attendance is low, but health services and health worker practices will require strengthening ( Hill & Kazembe, 2006).



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 INTRODUCTION**

Chapter three presents the methods that were used in the study. It has been presented under the following heading : Study methods and design, Data collection techniques and tools, Study area, Study Population, Study Variable, Sampling size, Sampling technique, Data collection, Statistical analysis, Ethical consideration, Pre-testing, Data Handling and Analysis, Limitation of study, and Basic Assumptions.

#### **3.1 Study methods and design**

A cross sectional study was conducted to collect quantitative and qualitative data at ANC's at health facilities and in the communities in Mampong municipality. Two (2) out of the 5 sub municipality were randomly selected then four (4) health facilities were selected and visited on the day of their clinic during the months of July and August 2014 and in the communities pregnant women of second and third trimester who were willing to participate in the study were randomly selected and interviewed with structured questionnaire.

All four (4) health facilities that provide ANC services selected in the municipality were visited and observations made in them. All the health care workers on duty on the day of the visit were recruited into the study and given questionnaires to respond to answer after their consent had been sought.

### **3.2 Data collection techniques and tools**

Structured questionnaires were administered to pregnant women in the community and health providers at the health facilities. The questions asked included utilization level of IPT factors, pregnant women related factors, and health care provider related factors, access factors and quality of IPT service factors.

### **3.3 Study area**

The main study population are pregnant women in their second and third trimester in the communities, and healthcare workers at the antenatal clinics of the health facilities that provide antenatal (ANC) services in the Mampong Municipality.

#### **3.3.1 Location and Size**

Mampong Municipality is one (1) of the six (6) municipal areas in Ashanti region following the splitting and upgrading of the former Sekyere West district into Mampong municipal and Sekyere Central district by legislative Instrument (L.I.) 1908 passed on the first day of November 2007. It is also one of the Thirty (30) administrative districts in the Ashanti Region of Ghana. The municipal capital, Mampong is about 57km from the regional capital Kumasi. It is bounded in the south by Sekyere South district, the East by Sekyere Central and the North by Ejura Sekyeredumasi districts. The municipal area is also the seat of the second most important stool in the Ashanti Kingdom: the Silver stool. Daasebre Osei Bonsu II is the current occupant of the Silver stool.

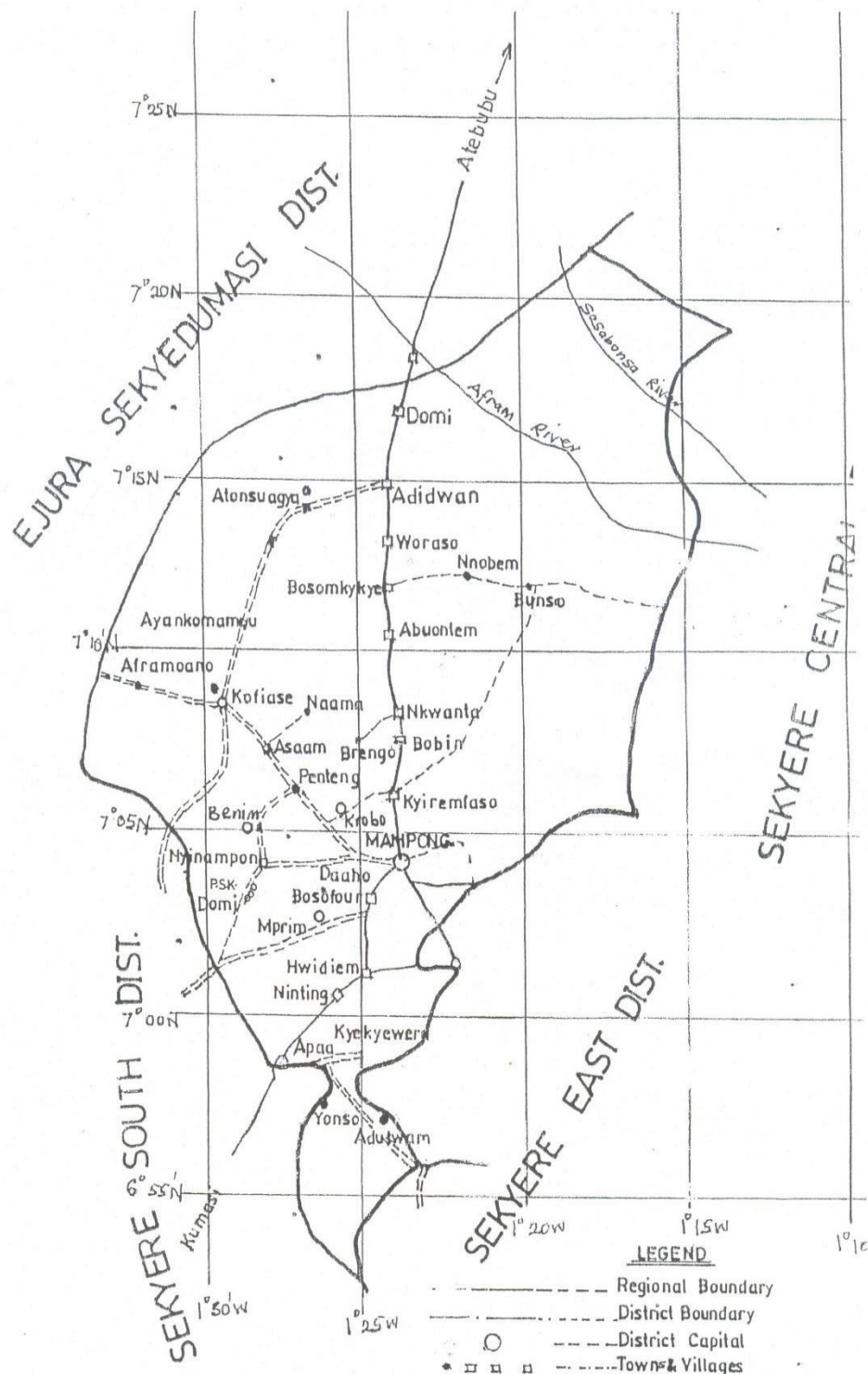
The municipal area forms about 2.2% of the total land area of the Ashanti region. The major towns within the municipality are Mampong, Krobo, Dadease, Asaam, Kofiase, Adidwan and Apaah.

It is also located on longitudes 0.05 degrees and 1.30 degrees west and latitudes 6.55 degrees and 7.30 degrees north, covering a total land area of 449km<sup>2</sup>. It has about 79 settlements with

about 61percent being rural. The rural areas are mostly found in the northern part of the municipality where communities with less than fifty (50) people are dispersed.

**Map 3 1:** Map of Mampong Municipality





### 3.3.2 Population Size and Growth Rate

The population of the municipality is currently 91,483 (2010 projection), as against 78,056 as at 2000 (Ghana Population and Housing Census, 2000). Over a period of a decade, the municipality experienced a population increase of about 13,427 which is also about 15.3%



increase and represents a growth rate of 1.6%. The Municipal Population Growth Rate since 1960 is shown in the Table below.

**Table 3.1: Population Sizes and the Growth Rate of Mampong Municipal by year**

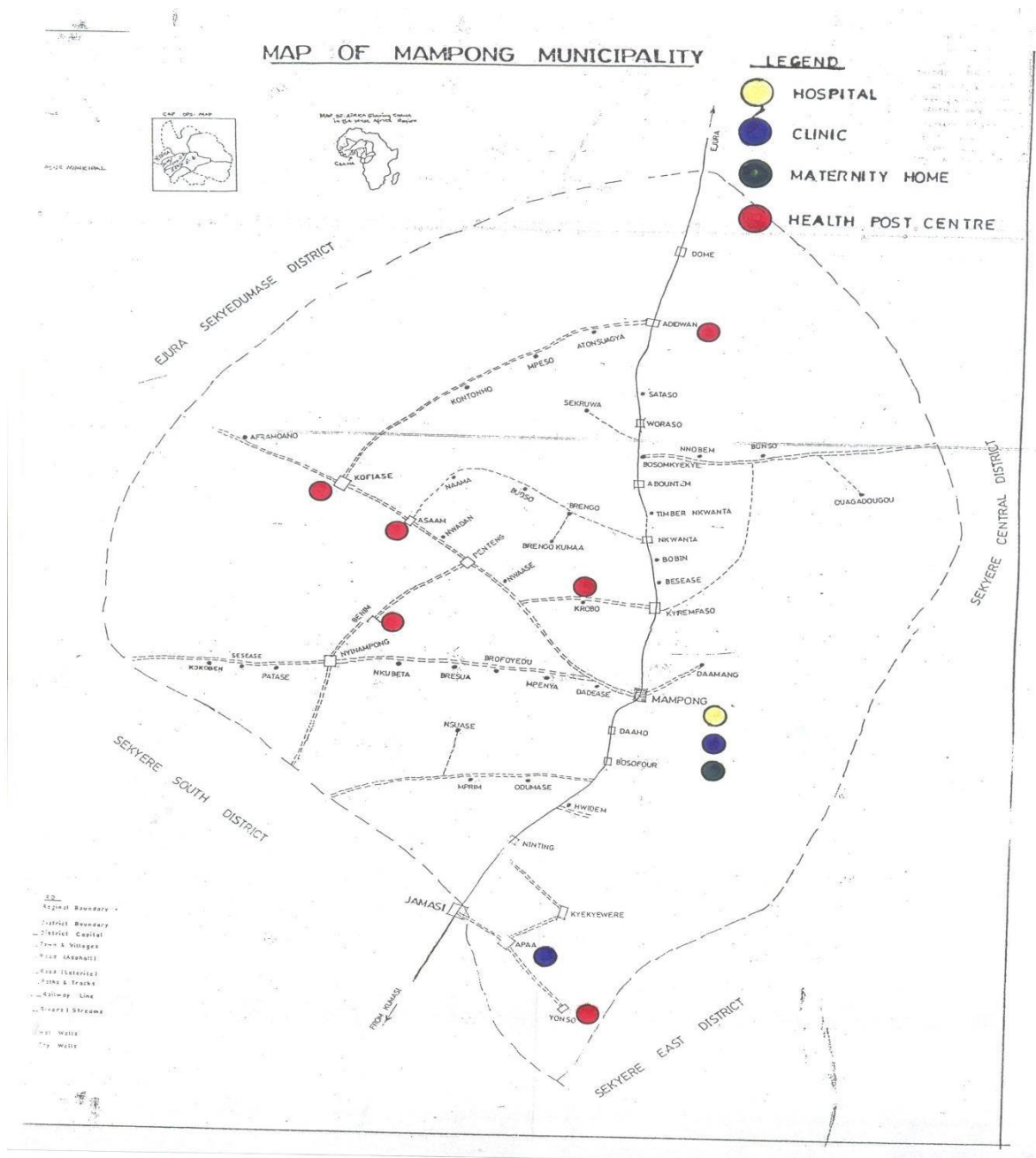
Year	Population	Year	Growth Rates
1970	43,290	1970-1984	2.4%
1984	60,289	1984-2000	1.6%
2000	78,056	2000	
2010	91,483		
2011	92,947		
2012	94,436		
2013	95,945		

Source: Municipal Statistical Service, 2010

### **3.3.3 Health**

The Mampong municipal area has a number of health facilities including one (1) Hospital, six (6) Health Centres, one (1) Maternity Home, five (5) MCH/FP Points, and four (4) Clinics.

**Map 3 2: Map of Mampong Municipality Showing The Distribution of Health Facilities**



### 3.3.4 Malaria Control:

The Municipal Health Directorate intends to adopt the following control measures during the plan period;

- Sensitization of the public on treatment compliance and prevention of malaria.
- Training of (109) CBSV/TBAs

- Treatment of malaria cases with Artesunate -Amodiaquine drug

**Table 3.2:** Under-five malaria prevalence by year in the Mampong Municipal

INDICATOR	2007	2008	2009
# of under-five with malaria	5,806	7,545	8,430
Total under-five malaria admissions	182	605	750
Under-five malaria case fatality	0.6	0.2	0.13

Source: Municipal Health Directorate, 2009

### **3.3.5 PHYSICAL ACCESSIBILITY TO HEALTH CARE**

According to the physical accessibility to health care map, all the major health facilities are located at Mampong, Kofiase, Asaam, Dome, Birem and Oku. People who have access to health facilities within 30 minutes are considered to have access to health care. These are people who stay within 30km from a health facility. A study of the map indicates that Aframso nos. 2 and 3 do not have accessibility to health facilities. Other parts like Adidwan nos. 1, 2 and 3 also do not have accessibility to health facilities. It is therefore commendable that the Aframso no. 3 health facility be completed to improve health services in the area.

### **3.3.6 HEALTH SERVICE**

The Municipal is made up of five sub-municipals as follows:

- Mampong
- Kofiase
- Krobo
- Adidwan
- Yonso

**Table 3.3 Sub-Municipal Characteristics of Mampong Municipal**

NO.	SUBDISTRICT	NO. OF OUTREACH POINTS	NO. OF COMMUNITIES	COMMUNITY BASED SURVEILLANCE VOLUNTEERS	TRADITIONAL BIRTH ATTENDANTS		CHEMICAL SELLERS	SPIRITUAL HEALERS& HERBALIST
					TRAINED	UNTRAINED		
1	Mampong	11	16	10	6	1	25	7
2	Kofiase	12	16	13	5	5	8	32
3	Adidwan	9	14	7	3	0	1	7
4	Krobo/Dadeas	10	23	12	8	8	1	10
5	Yonso	4	5	6	3	2	3	1
	TOTAL	46	74	48	25	16	38	57



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Table 3.4 Geographical Distributions Of Population By Age Sub-Municipal in 2011.

INDICATOR	Mampong	Kofiase	Krobo/Dadease	Adidwan	Yonso
	49.0%	17.0%	13.0%	12.0%	9.0%
POPULATION	50932	17991	12178	12998	9662
WIFA	11816	4174	2825	3016	2242
EXP. PREG.	2037	720	487	520	386
CHN-0-11mths	2037	720	487	520	386
CHN 12-23mths	1986	702	475	507	377
CHN. 0-59MTHS	8404	2969	2009	2145	1594
24 – 59 MTHS	4380	1547	1047	1118	831
SCHOOL AGE	18539	6549	4433	4731	3517

Table 3.5: Distributions Of Health Facilities in Mampong Municipal.

SUB-DISTRICT	HOSPITAL	H/CENTER	CHPS COMPOUND	CLINICS GHS(MCH)	PRIVATE/ MISSION	TOTAL
Mampong	1	0	0	0	4	5
Kofiase	0	3	0	0	0	3
Krobo	0	1	0	0	0	1
Adidwan	0	1	0	0	0	1
Yonso	0	0	1	0	1	2
TOTAL	1	5	1	0	5	12

### 3.4 Study Population

The study used two main study groups, pregnant women and health providers. The respondents were women who can speak English or Twi (the local language of the study area)

### 3.5 Study variables

DEPENDENT- Uptake of IPTp (Coverage of IPTp)

INDEPENDENT are: For pregnant women; age, educational status, marital status, parity, occupation, attendance to ANC, gestational age at 1st ANC visit, SP swallowed at health facility and number of times, gestational age at first dose SP, level of knowledge of IPTp, attitude of staff . For health workers: level of knowledge of health worker on IPTp, training of health worker in IPTp and the number of times in the past year, availability of clean, safe water and SP at health facility, practice of DOT for SP and monitoring and supervision of IPTp in ANCs.

**Table 3.6: Logical Framework of Study Variables**

Variable	Indicators	Operational Definition	Scale of Measurement	Method of Data collection	Data collection Tool	Objective
Level of utilization factors	IPTp received,	Ever receive IPTp or not	Categorical	Interview	Questionnaire	
	number of doses received,	number of IPTp doses received during ANC	Numeric Discrete	Interview	Questionnaire	
	Time of first dose,	The Trimester at which IPTp is first given	Ordinal	Interview	Questionnaire	
	Interval between doses of IPTp,	The month at which 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> doses of IPTp was	Nominal	Interview	Questionnaire	



		given				
	Covered by NHIS	Weather IPTp is covered by NIHS or not	Categorical	Interview	Questionnaire	
Pregnant women related factors	Awareness level of IPTp,	Awareness as measured by answers to questions	Categorical	Interview	Questionnaire	
	Time of first visit,	The time of the trimester at which ANC was first visited	Continuous	Interview	Questionnaire	
	Age,	Age in Completed Years	Continuous	Interview	Questionnaire	
	Occupation,	One's occupation for the past 6 months	Nominal	Interview	Questionnaire	

	Level of education,	The highest level of education attained	Ordinal	Interview	Questionnaire	
	marital status,	The state of marriage	Nominal	Interview	Questionnaire	
	Interval between number of visits,	The number of weeks from which 2 <sup>nd</sup> visits was attended	Continuous	Interview	Questionnaire	
	Number of visits.	The number of times ANC was attended	Discrete	Interview	Questionnaire	
Health Provider related factors	Awareness level of IPTp,	The level at which client is aware of IPTp	Ordinal	Interview	Questionnaire	
	Rank,	The position at which the person occupy	Ordinal	Interview	Questionnaire	
	Workshop on IPT,	Ever attended workshop	Categorical	Interview	Questionnaire	

		on IPTp				
	Last time they had workshop,	The month at which workers had workshop on IPTp	Nominal	Interview	Questionnaire	
Access factors	Availability of IPT,	Whether IPTp is available or not	Categorical	Interview	Questionnaire	
	affordability of IPT,	Whether IPTp is affordable or not	Categorical	Interview	Questionnaire	
	Accessibility of IPT,	Whether IPTp is accessible or not	Categorical	Interview	Questionnaire	
	Time spent at facility,	The duration of time spent at ANC	Categorical	Interview	Questionnaire	
Quality of IPT service factors	Personnel,	The number of workers at post	Discrete	Interview	Questionnaire	
	Skills of personnel,	Whether worker are skilful or	Nominal	Interview	Questionnaire	

		not				
	Attitude of personnel,	Weather worker have good attitude or not	Ordinal	Interview	Questionnaire	
	Satisfaction with service rendered.	Weather clients are satisfied with service or not	Ordinal	Interview	Questionnaire	





### 3.6 Sampling size

The sample size is calculated from the following formula,

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where:

n = Total number of subjects required in the sample

Z= Reliability coefficient corresponding to 95% level of significance, given as 1.96

P= Estimate of prevalence of malaria in pregnancy d= Margin of error which correspond to the level of precision of results desired.

Using the safe value  $p=0.5$ , it gave 384 as the sample size. When 15% of lost to follow-up was calculated 442 was obtained.

### 3.7 Sampling Techniques

A multistage sampling technique was used. At the first stage 2 sub districts were selected out of the 5 sub districts, which were Mampong sub and Kofiase. Each is made up of 16 communities. At the second stage, 4 communities were randomly selected out of each sub district selected. Finally pregnant women were selected from the communities. For the health providers and the facilities, after the randomization of the sub districts all the health facilities in each sub district were visited which is a hospital in Mampong sub and 3 health centres. All health providers at post at the time of visit were selected.

### 3.8 Data collection

Five research assistants were trained to help with the data collection.

Two sets of questionnaires were designed for pregnant women and for health providers. Data was collected between July and August 2014. Questionnaires were Self-administered and with the support of research assistants.

### 3.9 Statistical analysis

The data was analysed both descriptively and analytically using standard methods of applied statistics in public health. Frequency distribution of participants across background characteristics was performed first, then bivariate analysis was conducted, in which the outcome variable, IPTp-SP uptake, was cross tabulated against each of the independent variables. The degree of association between each pair of variables was tested using

Pearson's Chi-Square ( $\chi^2$ ) because all variables were categorical. In this process, the degree of IPTp-SP uptake was compared across categories of each of the independent variables. Where the test of association between the outcome and each of the independent variables show a P-value of 5% or less, the null hypothesis of no association between the variables was rejected and consequently conclude that they are significantly associated, otherwise no association was deduced. The data was finally subjected to regression analysis using multinomial logistic regression. This will ensure that variables are adjusted for one another to obtain independent predictors of the IPTp-SP uptake. The category 'none uptake of IPTp' of the outcome variable was made a baseline/pivot outcome thus assessing what predicts the uptake of IPTp.

Selection of independent variables for the multivariate models relied on each one's ability to improve the overall model. This was achieved through the use of log likelihood ratio test. From the model outputs, odds ratios (OR), their corresponding 95% confidence intervals (CI) and P-values were presented. Significance level was set at 5%. The whole process of data analysis was conducted using STATA (version 11) statistical software after it had been sorted in excel by two different people at different times.

### 3.10 Ethical consideration

Ethical approval was sought from the Committee of Ethics and Human Research, at the School of Medical Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. The Municipal Director of Health Services, the Medical Superintendents of

the hospitals and the Heads of the ANC's and CWC's was informed of the study and their consent sought. During the study period, informed consent was sought from all eligible participants before the questionnaires was administered or interviews held. The interview was conducted and questionnaires administered only when the respondent have agree to partake in the study. The data was manage carefully and remain anonymous.

### **3.11 Pre-testing**

The data collection tools and the techniques were pre- tested in a non-study zone, that is, Jamasi within the study area. A random selection of pregnant women and some health providers in the community were interviewed. Again, the simple random sampling techniques were also pre-tested as well. All other data collection techniques were pre-tested as well. The format or presentation of the checklist, data compilation forms and questionnaires were all pre-tested too and then revised accordingly. After this, the study area was then piloted in the Jamasi. No major problem was encountered so the questionnaires were maintained

### **3.12 Data Handling and Analysis**

Data collectors recruited from the respective study areas were trained to administer the questionnaires very well. They were particularly coached on ways of administering the questionnaire and conducting the interviews through house-to-house visits. Completed questionnaires were checked for consistency and completeness by the principal investigator before entered into excel 2013.

### **3.13 Limitations of the study**

The instrument may be limited in determining the anthropological details in relation to the use of health services considering the limited use of qualitative tools however; this was minimized through extensive interview. Further, the use of local language (Twi), may have led to misunderstanding or misinterpretation of the import of the set questions and therefore lead to inaccurate results. These limitations were however mitigated through training of field

workers for standardization of the interpretation of the questions and through close monitoring by researcher of the data collected.

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## CHAPTER FOUR

### RESULTS



#### 4.0 Introduction

This chapter presents the results of the questionnaire issued out to pregnant women and health providers within the Mampong municipality. The results are presented at univariate, bivariate and multivariate level. The analysis involves descriptive statistics and inferential statistics. The chapter is structured per the objectives of the study starting with the background information of respondents.



#### 4.1 Background characteristics of pregnant women

**Table 4. 1: Background Characteristics of pregnant women**

<i>Variables</i>	<i>Frequency</i>	<i>Percentage (%)</i>
<b>Age (n=444)</b>		
15 – 24	153	34.54
25 – 34	228	51.47
35 – 44	59	13.32
45 – 55	3	0.68
<i>Mean (SD); Min/Max</i>	<i>27.35 (6.20); 15/52</i>	
<b>Occupation(n=444)</b>		
Unemployed	63	14.19
Trading	149	33.35
Artisans	83	18.69
Farming	25	18.47
Government employee	82	5.63
Private entrepreneur	42	9.46
<b>Marital Status(n=444)</b>		
Single	88	19.82
Married	256	57.66
Co-habitation	94	21.17
Separated/Divorce	6	1.35
<b>Educational level(n=444)</b>		
None	98	22.12
Primary	142	32.05
Secondary	140	31.60
Vocational/technical	14	3.16
Tertiary	49	11.06

**Source: Field Data, 2015**

Table 4.1 presents the background information of pregnant women enrolled in the study. The average age of the respondents was 27.35years and standard deviation of 6.2. A little above half (51.4%) of the pregnant women were between the age of 25 – 34 years, 34.5% were between 15 – 24 years and 0.68% were above 45 years. On employment, more than 85.0% of

the pregnant women were working as traders, artisans, farmers and government employees. However, 14.1% were unemployed. The majority of pregnant women (57.6%) were married, 21.2% co-habituating and 19.8% of them either separated or divorced. The highest education among the pregnant women was at tertiary level, however, 32.0% had primary, 31.6% had secondary and the least 3.2% had vocational training.

**Table 4. 2: Background Characteristics of Health Provider**

Variable	Frequency	Percentage
<b>Age of respondent</b>		
18-29		
30-39	10	50.00
40-49	10	50.00
<b>Profession of respondent</b>		
Enrolled nurse/health assistant clinicals	6	30.00
General nurse	5	25.00
Midwife	9	45.00
General nurse/midwife	-	-
<b>Rank of respondent</b>		
Enrolled nurse	5	25.00
Senior enrolled nurse	-	-
Principal enrolled nurse	- 6	-
Staff nurse	2	30.00
Senior staff nurse	6	10.00
Staff midwife	1	30.00
Midwife		5.00

*Source; Field Work, 2015*

Table 4.2 shows Background Characteristics of Health Provider enrolled in the study. Midwives enrolled was 45.0% and Enrolled nurse and General Nurse were 30.0% and 25.0% respectively. The ranks of the respondent revealed 30.0% for both Staff nurse and Staff Midwife.

#### **4.2 Level of utilization of iptp among pregnant women**

**Table 4. 3: Level of Utilization of IPTp**

Variable	Frequency	Percentage (%)
<b>Ever used IPTp before (n=444)</b>		
Yes	349	78.60
No	95	21.40
<b>The number of times IPTp taken (n=349)</b>		
Once	133	38.11
Twice	121	34.67
Thrice	95	27.22
<b>Stage of pregnancy when IPTp dose was first taken (n=344)</b>		
First trimester	170	49.42
Second trimester	155	45.06
Third trimester	19	5.52
<b>The interval between the first dose and second dose (n=259)</b>		
Four weeks	205	79.15
Five weeks or more weeks	53	20.46

**Source: Field Survey, 2015**

The level of utilization of IPTp among pregnant women is presented in Table 4.3. The analysis revealed that most respondents (78.6%) had ever used IPTp before while 21.4% had a contrary view. Among respondents who indicated the use of IPTp, 38.1% mentioned once, 34.6% said twice and 27.2% used it thrice. On the stage of pregnancy when IPTp dose was first taken, 49.4% disclosed first trimester, 45.0% revealed second trimester and 5.5% representing the least cited third trimester. The study further asked respondents about the interval between the first dose and second dose of taken IPTp among respondents. The majority (79.2 %) indicated four weeks while 20.4% said five weeks.



**Table 4. 4: Association between IPTp update and various background characteristics of pregnant women**

<i>Variable</i>	<i>IPTp uptake</i>		<i>Chi-square</i>	<i>p-value</i>
	<i>Yes N (%)</i>	<i>No N (%)</i>		
<b>Age</b>			<b>33.57</b>	<b>0.00</b>
15 – 24	97 (27.79)	56 (59.57)		
25 – 34	199 (57.02)	29 (30.85)		
35 – 44	50 (14.33)	(9.57)		
45 – 55	3 (0.86)	-		
<b>Occupation</b>			<b>28.89</b>	<b>0.000</b>
Unemployed	35 (10.03)	28(29.47)		
Trading	130 (37.25)	19(20.00)		
Artisans	62 (17.77)	21(22.11)		
Farming	66 (18.91)	16(16.84)		
Government employee	22 (6.30)	3(3.16)		
Private entrepreneur	34 (9.74)	8(8.42)		
<b>Marital Status</b>			<b>33.06</b>	<b>0.000</b>
Single	51 (14.61)	37(38.95)		
Married	222 (63.61)	34(35.79)		
Co-habitation	72 (20.63)	22(23.16)		
Separated/Divorce	4 (1.15)	2(2.11)		
<b>Educational level</b>			<b>10.28</b>	<b>0.036</b>
None	76 (21.84)	22(23.16)		
Primary	106 (30.46)	36(37.89)		
Secondary	108 (31.03)	32(33.68)		
Vocational/technical	11 (3.16)	3(3.16)		
Tertiary	47 (13.51)	2(2.11)		

**Source: Field Survey, 2015**

Table 4.4, shows the chi-square analysis to establish the association between the utilization of IPTp among various background characteristics of respondents. The analysis revealed that background information such as age, occupation, marital status and education level had a significant relationship with the IPTp uptake among respondents. The IPTp uptake was highest

among pregnant women who were between 25 – 34 years than those who were below 25 years, 57.0% compared with 27.8%. Also, pregnant women who described their marital status as married had the highest IPTp uptake compared with those who described their status as single, 63.6% versus 14.6%. Pregnant women who had some level of education were more profound to use IPTp than those who had not received any education as shown in Table 4.4.

**Table 4. 5: Logistics regression analysis for background characteristics on IPTp uptake**

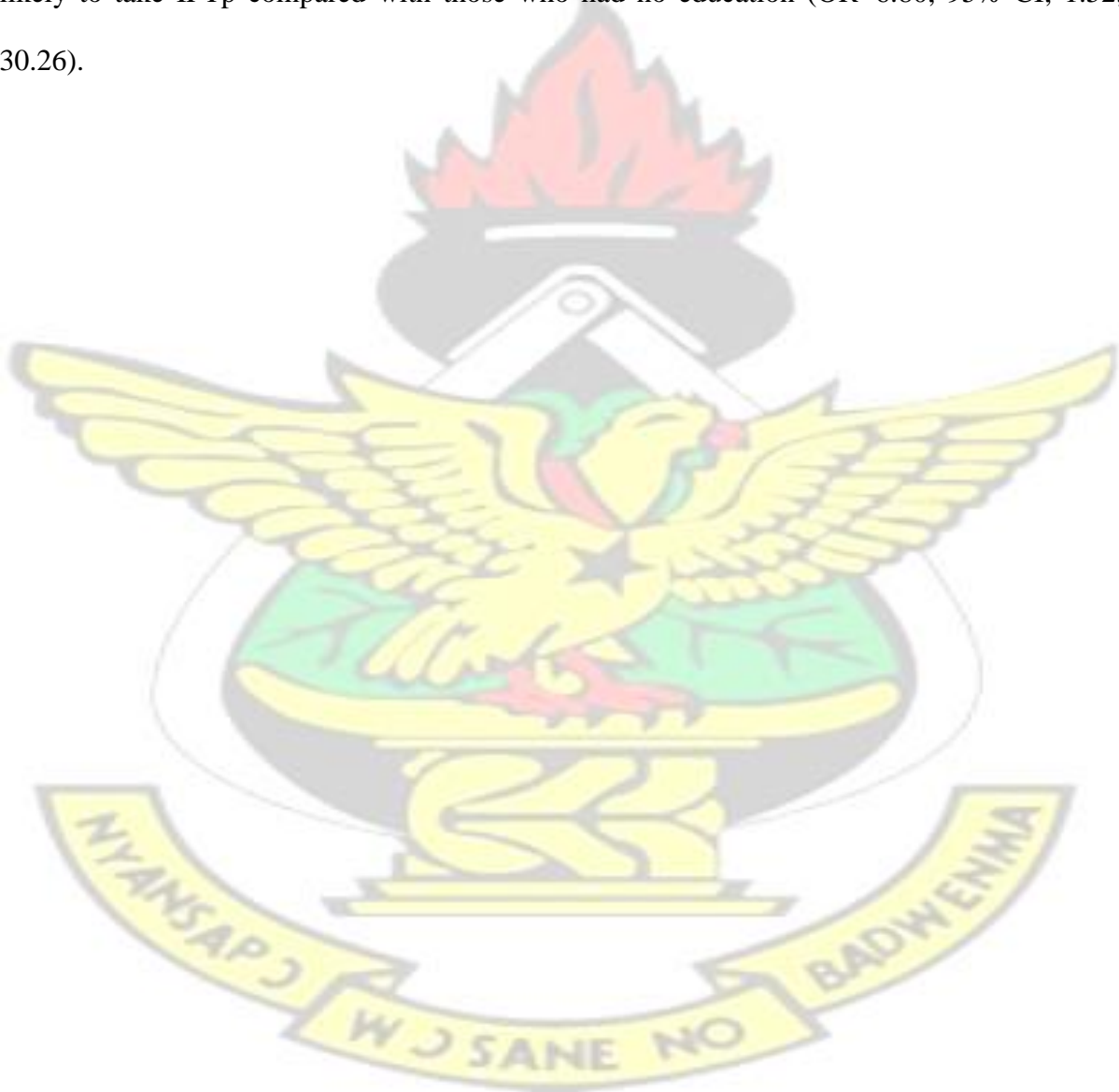
<i>Factors</i>	<b>IPTp uptake</b>		
	<i>OR</i>	<i>95% CI</i>	<i>p- value</i>
<b>Age</b>			
15 – 24	1.00		
25 – 34	3.96	2.37, 6.59	0.00
35 – 44	3.20	1.46, 7.01	0.00
<b>Occupation</b>			
Unemployed	1.00		
Employed	3.75	2.14, 6.58	0.00
<b>Marital Status</b>			
Single	1.00		
Married	4.74	2.72, 8.26	0.00
Co-habitation	2.37	1.25, 4.49	0.01
Separated/Divorce	1.45	0.25, 8.34	0.68
<b>Educational level</b>			
None	1.00		
Primary	0.85	0.46, 1.56	0.60
Secondary	0.97	0.53, 1.81	0.94
Vocational/technical	1.06	0.27, 4.14	0.93
Tertiary	6.80	1.52, 30.26	0.01

**OR=Odds Ratio; CI=confidence interval, Outcome measures: IPTp uptake**

*Source: Field Survey, 2015*

Table 4.5 explored the logistics regression analysis for background factors influencing IPTp uptake among pregnant women. The analysis revealed that there was an increase of the odds in favour of taking IPTp with the age of pregnant women. Those who were in the age group 25 –

34 years and 35 – 44 years were 4.0 times and 3.2 times more likely to take IPTp compared with those 15 – 24 years. Pregnant women who were employed were 3.8 times (95% CI; 2.14, 6.58) more likely to take IPTp compared with those who are unemployed. There was again increased in odds in favour of taking IPTp with the marital status of pregnant women. Those who were married were 4.8 times (95% CI; 2.72, 8.26) more likely to take IPTp compared with those who were single. Pregnant women who had tertiary education were more likely to take IPTp compared with those who had no education (OR=6.80, 95% CI; 1.52, 30.26).



**Table 4.6: Percentage distribution of pregnant women related factors to IPTp uptake**

Variable	Frequency	Percentage (%)
<b>Ever used ANC services(n=444)</b>		
Yes	440	99.10
No	4	0.90
<b>The time ANC was first visited(n=444)</b>		
First trimester	343	77.25
Second trimester	76	17.12
Third trimester	25	5.63
<b>The number of visits to the ANC</b>		
Once	76	17.16
Twice	103	23.25
Thrice	56	12.64
Four times	81	18.28
Five times	46	10.38
Six times or more	81	18.28
<b>The interval between the ANC visits</b>		
Two week	28	6.78
Three weeks	59	14.29
Four weeks	300	72.64
Four weeks or more	26	6.78
<b>Knowledge on available information on IPTp</b>		
Yes	444	100
No	-	-
<b>Source of information on IPTp</b>		
Friends and/ family	42	9.46
Media	76	17.12
ANC	326	73.42
<b>When IPTp first dose is recommended during pregnancy</b>		
Anytime	46	10.36
After quickening / 4weeks	335	75.45
Second trimester	53	11.94
Third trimester	10	2.25
<b>Ever counselled on the dangers of malaria in pregnancy at ANC</b>		
Yes		
No	337	75.90
	107	24.10



**Source: Field Survey, 2015**

Table 4.6 presents the results of pregnant women related factors to IPTp uptake among pregnant women. The percentage distribution indicated that almost all pregnant women have ever attended ANC services while only 4 participant had a contrary view. On the number of times ANC was first visited, the majority (77.2%) disclosed first trimester, 17.1% indicated second trimester and 5.6% representing the least mentioned third trimester. The study also gathered information on the number of visits to the ANC by the pregnant women. Responses indicated that participants visited the ANC once (17.2 %), twice (23.3 %), thrice (12.6 %), four times (18.3 %), five times (10.4 %) and six times or more (18.3 %). On the interval between the ANC visits, the majority (72.7 %) disclosed four weeks, 14.3% mentioned three weeks and 6.8% respectively said two and four weeks.

The study further asked respondents knowledge on where to obtain IPTp information. All pregnant women had a common view on known sources of IPTp services. The sources of obtaining information was mostly through the ANC visit (73.5%), the media (16.2 %) and Friends and/family members (9.5 %). The results also indicated that the majority of respondents had their IPTp first dose recommended after quicking or 4 weeks. On counselling on the dangers of malaria in pregnancy at ANC, the majority (75.9 %) opined ever receiving counselling while 24.1% had a contrary view.

**Table 4. 7: Differences in IPTp uptake by pregnancy related factors**

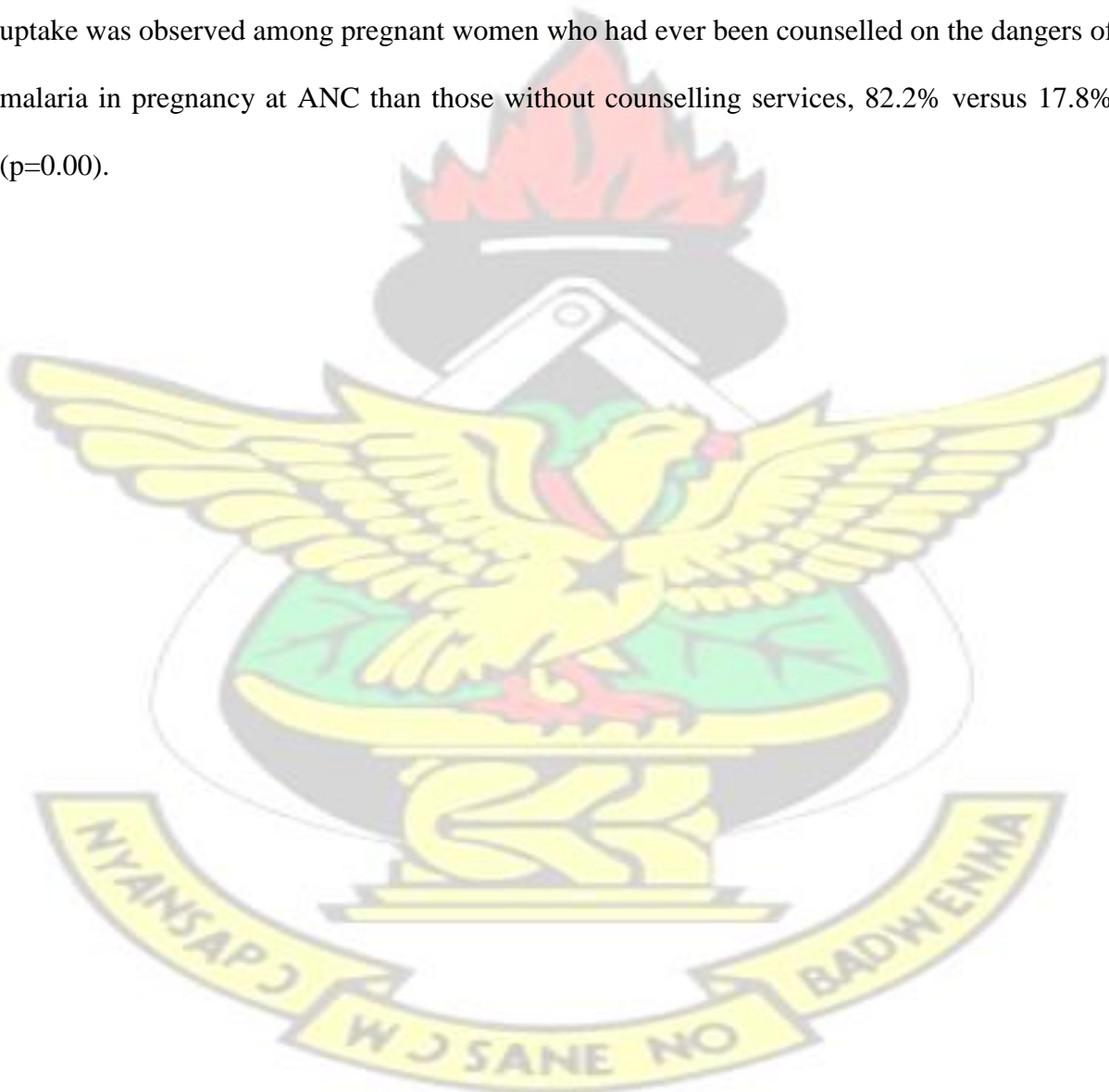
<i>Variable</i>	<i>IPTp uptake</i>		<i>Chi-square</i>	<i>p-value</i>
	<i>Yes N (%)</i>	<i>No N (%)</i>		
<b>Ever used ANC services</b>			<b>14.82</b>	<b>0.00</b>
Yes	349(100.00)	91(95.79)		
No	-	4 (4.21)		
<b>The time ANC was first visited</b>			<b>51.93</b>	<b>0.00</b>
First trimester	288 (82.52)	55 (57.89)		
Second trimester	55 (15.76)	21 (22.11)		
Third trimester	6 (1.72)	19 (20.00)		
<b>The number of visits to the ANC</b>			<b>89.68</b>	<b>0.000</b>
Once	31 (8.88)	45 (47.87)		
Twice	80 (22.92)	23 (24.47)		
Thrice	50 (14.33)	6 (6.38)		
Four times	76 (21.78)	5 (5.32)		
Five times	37 (10.60)	9 (9.57)		
Six times or more	75 (21.49)	6 (6.38)		
<b>Source of information on IPTp</b>			<b>7.77</b>	<b>0.02</b>
Friends and/ family	28 (8.02)	14 (14.74)		
Media	67 (19.20)	9 (9.47)		
ANC	254 (72.78)	72 (75.79)		
<b>Ever counselled on the dangers of malaria in pregnancy at ANC</b>			<b>35.78</b>	<b>0.00</b>
Yes	287 (82.23)	50 (52.63)		
No	62 (17.77)	45 (47.37)		

**Source: Field Survey, 2015**

Table 4.7 presents the results of chi-square analysis to establish relationship between IPTp uptakes and various pregnancy related factors or characteristics. The analysis revealed that factors including the use of ANC services and the time ANC was first visited have a significant relationship with the uptake of IPTp among pregnant women ( $p < 0.05$ ). Pregnant women who

visited the ANC within the first trimester were more profound to use IPTp compared with the second trimester (82.5% versus 15.8 %).

The analysis further disclosed that the number of visits to ANC and the source of information of IPTp have a significant relationship with the uptake of IPTp ( $p < 0.05$ ). The uptake of IPTp was highest among pregnant women who had information on IPTp at the ANC visits compared with other sources like the media, 72.8% versus 18.0% respectively. Similarly, the highest IPTp uptake was observed among pregnant women who had ever been counselled on the dangers of malaria in pregnancy at ANC than those without counselling services, 82.2% versus 17.8% ( $p = 0.00$ ).



**Table 4. 8: Logistics regression analysis for pregnant women related factors on IPTp uptake**

<i>Factors</i>	<b>IPTp uptake</b>		
	<i>OR</i>	<i>95% CI</i>	<i>p- value</i>
<b><i>The time ANC was first visited</i></b>			
First trimester	1.00		
Second trimester	0.51	0.28, 0.89	0.02
Third trimester	0.07	0.02, 0.15	0.00
<b><i>The number of visits to the ANC</i></b>			
Once	1.00		
Twice	4.82	2.63, 9.28	0.00
Thrice	17.33	5.66, 53.04	0.00
Four times	21.068	7.63, 58.23	0.00
Five times	5.70	2.40, 13.50	0.00
Six times or more	17.33	6. 69, 44.88	0.00
<b><i>Source of information on IPTp</i></b>			
Friends and/ family	1.00		
Media	3.72	1.44, 9.59	0.00
ANC	1.76	0.88, 3.52	0.10
<b><i>Ever counselled on the dangers of malaria in pregnancy at ANC</i></b>			
No	1.00		
Yes	4.17	2.55, 6.78	0.00

**OR=Odds Ratio; CI=confidence interval, Outcome measures: IPTp uptake**

***Source: Field Survey, 2015***

Table 4.8 explored the logistics regression analysis for pregnant women related factors influencing IPTp uptake. The analysis revealed that pregnant women who attended ANC the first time in the third trimester were less likely to use IPTp compared with those who attended ANC in the first trimester (OR=0.07, 95% CI; 0.02, 0.15). However, there were increase odds of using IPTp with the number of visits to the ANC among pregnant women. Those who visited ANC more than once were more likely to use IPTp compared with those who visited once.



Similarly, there were increase odds of using IPTp the source of information on IPTp among pregnant women. Those who had information on IPTp from the media were 3.7 times (95% CI; 1.44, 9.59) more likely to use IPTp compared with those who described their sources of information from friends and family members. Pregnant women who had ever been counselled on the dangers of malaria in pregnancy at the ANC were more likely to use IPTp compared with those with no such counselling services (OR=4.17, 95% CI; 2.55, 6.78).

#### 4.4 Quality of IPTp Services Factors

**Table 4. 9: Percentage distribution of Quality factors to IPTP uptake among pregnant women in Mampong Municipal**

<i>Variable</i>	<i>Frequency</i>	<i>Percentage (%)</i>
<b>Satisfaction with the service at the ANC</b>		
Very satisfied	97	21.85
Satisfied	247	55.63
Somehow satisfied	83	18.69
Unsatisfied	17	3.83
<b>Perceived attitude of health care providers toward pregnant women at the ANC</b>		
Poor	27	6.08
Fair	97	21.85
Good	231	52.03
Excellent	27	6.08
<b>Influence of IPTp uptake on quality of care at the health facility</b>		
Yes	247	55.63
No	197	44.37

*Source: Field Data, 2015*

Table 4.9 presents the results of the quality factors that influence the uptake of IPTp among pregnant women. The section presents the views of pregnant women and health service providers on the perceived quality of IPTp service and how it influence the uptake. As shown in Table 4.9, more than half (55.6 %) of pregnant women opined that they were satisfied with

the services offered at the ANC while 21.9% were very satisfied. Only 3.8% had a contrary opinion when they disclosed they were unsatisfied with the services. The attitude of health services providers towards pregnant women at the ANC was rated on a scale of four (4) point scale. More than half (58.1%) of the pregnant women rated health providers as good and excellent, 21.9% rated the attitudes as fair and only 6.1% the attitudes as poor. On the influence of IPTp on quality of health care at the facility, the majority (55.6 %) confirmed it indeed influence the quality of care while 44.4% had a contrary view.

**Table 4. 10: Percentage distribution of health care providers view on the quality of IPT uptake in Mampong Municipal**

Variables	Frequency	Percentage (%)
<b>Skillful respondent to work at the ANC</b>		
Unskillful	4	20.00
Skillful	11	55.00
Very skillful	5	25.00
<b>Satisfaction with the ANC service rendered to pregnant women</b>		
Unsatisfied	1	5.00
Satisfied	12	60.00
Very satisfied	7	35.00
<b>Workforce at the ANC</b>		
Inadequate	5	25.00
Adequate	11	55.00
Very adequate	4	20.00
<b>How IPTp should be given</b>		
Under direct observation	20	100.00
At bed time	-	-
At home	-	-

**Source: Field Data, 2015**

The study further gathered information from health care providers on the quality of IPTp service they offered to pregnant women. Responses indicated that most health care workers were skillful to work at the ANC while only 20.0% had a contrary suggestion. On the services

offered to clients at ANC, almost all respondents were satisfied with the services offered to pregnant women. The majority of health care providers again opined overall adequacy of workforce at the ANC while only five (5) health care providers representing 25.0% indicated inadequate work force. The finding again indicated that all health care providers were of the view that IPTp should be giving under direct observation.

**Table 4. 11: Relationship between quality factors and IPTp uptake among pregnant women**

<i>Variable</i>	<i>IPTp uptake</i>		<i>Chisquare</i>	<i>p-value</i>
	<i>Yes N (%)</i>	<i>No N (%)</i>		
<b>Satisfaction with the service at the ANC</b>			3.4960	0.32
Very satisfied	81 (23.21)	16 (16.84)		
Satisfied	194 (55.59)	53 (55.79)		
Somehow satisfied	60 (17.19)	23 (24.21)		
Unsatisfied	14 (4.01)	3 (3.16)		
<b>Perceived attitude of health care providers toward pregnant women at the ANC</b>			3.39	0.33
Poor	18 (5.16)	9 (9.47)		
Fair	76 (21.78)	21 (22.11)		
Good	181 (51.86)	50 (52.63)		
Excellent	74 (21.20)	15 (15.79)		
<b>Influence of IPTp uptake on quality of care at the health facility</b>			30.85	0.00
Yes	218(62.46)	29(30.53)		
No	131(37.54)	66(69.47)		

*Source: Field Survey, 2015*

Table 4.11 presents the results of the differences in quality factors to IPTp uptake among pregnant women. The results disclosed that respondents who perceived IPTp to influence the

quality of care at the health facility had association with the uptake of IPTp. The IPTp uptake was highest among respondents who perceived it to have influence on the quality of care at the facility compared those who had contrary opinion (62.5% versus 37.5%). Other factors such as the satisfaction of the ANC services and perceived attitude of health care providers toward pregnant women at the ANC had no significant relationship with the uptake.

**Table 4. 12:** Logistics regression analysis for Quality related factors on IPTp uptake

<i>Factors</i>	<b>IPTp uptake</b>		
	<i>OR</i>	<i>95% CI</i>	<i>p- value</i>
<b><i>Satisfaction with the service at the ANC</i></b>			
Unsatisfied	1.00		
Satisfied	1.39	0.39, 4.98	0.60
<b><i>Perceived attitude of health care providers toward pregnant women at the ANC</i></b>			
Poor	1.00		
Fair	1.80	0.71, 4.60	0.21
Good	1.81	0.76, 4.27	0.17
Excellent	2.46	0.93, 6.53	0.06
<b><i>Influence of IPTp uptake on quality of care at the health facility</i></b>			
No	1.00		
Yes	3.78	2.32, 6.16	0.00

**OR=Odds Ratio; CI=confidence interval, Outcome measures: IPTp uptake**

***Source: Field Survey, 2015***

Table 4.12 performed logistic regression analysis for quality related factors on IPTp uptake. The results revealed that pregnant women who perceived IPTp to influence the quality of care at the health facility were 3.8 times (95% CI; 2.32, 6.16) likely to take IPTp compared to those with contrary view.

#### **4.5 Access Factors to IPTp uptake**



**Table 4. 13: Access Factors to IPTp uptake**

Variable	Frequency	Percentage (%)
<b>The cost of seeking ANC care</b>		
Not expensive	273	61.49
Moderate expensive	151	34.01
Very expensive	20	4.50
<b>IPTp is covered by NHIS</b>		
Yes	364	81.98
No	80	18.02
<b>The time taken to access ANC services</b>		
30 minutes	68	15.32
60 minutes	121	27.25
1hour 30minutes	138	31.08
2hours	117	26.35

**Source: Field Survey, 2015**

Table 4.13 presents findings on access related factors to IPTp uptake among pregnant women. The majority (61.5 %) of the pregnant women indicated that the cost of seeking ANC was not expensive while 34.0% suggested it was moderately expensive. On insurance coverage, most pregnant women (82.0 %) revealed that IPTp uptake is covered by the NHIS while only 18.0% disclosed it is not covered. The study further suggested that nearly one third of the pregnant women spent 1hour: 30 minutes to access the ANC services while 15.3% spent 30 minutes.

**Table 4.****14: Relationship between access factors and IPTp uptake among pregnant women**

<i>Variable</i>	<i>IPTp up</i>		<i>Chisquare</i>	<i>p-value</i>
	<i>Yes</i> <i>N (%)</i>	<i>No</i> <i>N (%)</i>		
<b>The cost of seeking ANC care</b>			5.1392	0.077
Not expensive	224(64.18)	49(51.58)		
Moderate expensive	111(31.81)	40(42.11)		
Very expensive	14(4.01)	6(6.32)		
<b>IPTp is covered by NHIS</b>			0.0707	0.790
Yes	287(82.23)	77(81.05)		
No	62(17.77)	18(18.95)		
<b>The time taken to access ANC services</b>			0.1160	0.990
30 minutes	53(15.19)	15(15.79)		
60 minutes	96(27.51)	25(26.32)		
1hour 30minutes	109(31.23)	29(30.53)		
2hours	91(26.07)	26(27.37)		

***Source: Field Survey, 2015***

In Table 4.14, association between access related factors on IPTp uptake among pregnant women was performed. The results revealed that no significant association was observed between IPTp uptake and factors such as cost of seeking ANC care, NHIS coverage and the time taken to access ANC services.

**Table 4.**

<b>15: Logistics regression analysis for access related factors on IPTp uptake</b>			
<i>Factors</i>	<b>IPTp uptake</b>		
	<i>OR</i>	<i>95% CI</i>	<i>p- value</i>
<b><i>The cost of seeking ANC care</i></b>			
Not expensive	1.00		
Moderate expensive	1.18	0.42, 3.30	0.74
Very expensive	1.95	0.71, 5.35	0.19
<b><i>IPTp is covered by NHIS</i></b>			
No	1.00		
Yes	1.08	0.60, 1.93	0.79
<b><i>The time taken to access ANC services</i></b>			
30 minutes	1.0		
60 minutes	1.08	0.52, 2.24	0.82
1hour 30minutes	1.06	0.52, 2.15	0.86
2hours	0.99	0.48, 2.03	0.97

**OR=Odds Ratio; CI=confidence interval, Outcome measures: IPTp uptake**

***Source: Field Survey, 2015***

Table 4.15 Logistics regression analysis for access related factors on IPTp uptake was performed. The results revealed no significant influence from the variables.

**16: Percentage distribution of access factors to IPTp uptake: health providers' perspective**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
-----------------	------------------	-------------------

**Table 4.****Availability of IPTp drugs at the ANC**

Unavailable	3	15.00
Sometimes	11	55.00
Usually/ always available	6	30.00

**Administration of IPTp at your facility**

Yes	19	95.00
No	1	5.00

**IPTp medicine available at the ANC**

Yes	15	75.00
No	5	25.00

**Description of uptake of IPTp**

Poor	-	-
Good	7	35.0
Satisfied	7	35.0
Excellent	6	30.0

**Uptake of IPTp influenced by Health related factors**

Yes	6	30.0
No	14	70.0

*Source: Field Survey, 2015*

Table 4.16: presents the results of the differences in access factors to IPTp uptake among health providers. The results disclosed that respondents who perceived uptake of IPTp influence by health related factors was 30.0% while those who said not was 70.0%. The respondents who perceived Administration of IPTp at your facility was 95.0%.



#### 4.6 Health Provider related factors

**Table 4. 17: Health Provider related factors**

Variable	Frequency(n)	Percentage (%)
<b>Ever attended workshop on IPTp</b>		
Yes	7	35.00
No	13	65.00
<b>Medicine recommended for IPT use</b>		
Fansidar (SP)	20	100.00
Chloquine	-	-
Artesunate-amodiaquine Lumether	-	-
Don't know	-	-
<b>When IPTp first dose is recommended during pregnancy</b>		
Anytime	4	20.00
After quacking /16 weeks	14	70.00
Second trimester	1	5.00
Third trimester	1	5.00
<b>Last time respondent attended workshop on IPTp</b>		
Last 3 months	1	5.00
Last 6 months	3	15.00
Last year	1	5.00
Last 2 years	1	5.00
3years or more	1	5.00
Nil	13	65.00
<b>Gestational age IPTp is not recommended during pregnancy</b>		
32weekss	3	15.00
34weeks	- 7	-
36weeks	10	35.00
38-40weeks	-	50.00
Don't know	-	-

**Source: Field Survey, 2015**

Table 4.17 present the results of Health Provider related factors to IPTp. The percentage distribution indicated that almost all Health Provider have never attended workshop on IPTp while only 35.0% have. On their knowledge on IPTp, 50.0% said 36weeks to Gestational age IPTp is not recommended during pregnancy while 15.0% and 35.0% said 32weeks and 36weeks respectively. All the respondent said drug of choice for IPTp is SP ,but for the time at which first dose should be given 70.0% said 16 weeks and 30.0% said other things.



**Table 4. 18: Multivariate Logistics regression analysis of factors influencing the uptake of IPTp**

<i>Factors</i>	<b>IPTp uptake</b>		
	<b>AOR</b>	<b>95% CI</b>	<b>p- value</b>
<b>Age</b>			
15 – 24	1.00		
25 – 34	2.15	0.99, 4.67	0.05
35 – 44	1.04	0.36, 3.06	0.94
45-55	-	-	
<b>Occupation</b>			
Unemployed	1.00		
Employed	1.26	0.49, 3.25	0.49
<b>Marital Status</b>			
Single	1.00		
Married	2.18	0.83, 5.70	0.11
Co-habitation	1.29	0.46, 3.64	0.62
Separated/Divorce	2.03	0.18, 22.08	0.56
<b>Educational level</b>			
None	1.00		
Primary	1.01	0.43, 2.38	0.97
Secondary	1.02	0.40, 3.64	0.97
Vocational/technical	0.30	0.05, 1.91	0.20
Tertiary	3.79	0.65, 21.87	0.14
<b><i>The time ANC was first visited</i></b>			
First trimester	1.00		
Second trimester	0.64	0.30, 1.37	0.25
Third trimester	0.16	0.05, 0.56	0.00
<b><i>The number of visits to the ANC</i></b>			
Once	1.00		
Twice	4.23	1.82, 9.79	0.00
Thrice	13.85	3.75, 50.98	0.00
Four times	13.60	3.70, 49.96	0.00
Five times	2.43	0.84, 7.06	0.10
Six times or more	11.86	3.62, 38.97	0.00
<b><i>Source of information on IPTp</i></b>			

Friends and/ family	1.00		
Media	1.76	0.66, 4.67	0.26
ANC	4.03	1.09, 14.88	0.04
<b><i>Ever counselled on the dangers of malaria in pregnancy</i></b>			
<b><i>at ANC</i></b>			
No	1.00		
Yes	2.45	1.16, 5.18	0.02
<b><i>Satisfaction with the service at the ANC</i></b>			
Unsatisfied	1.00		
Satisfied	1.37	0.14, 12.92	0.79
<b><i>Perceived attitude of health care providers toward pregnant women at the ANC</i></b>			
Poor	1.00		
Fair	2.04	0.38, 10.90	0.40
Good	2.02	0.41, 9.94	0.39
Excellent	5.22	0.92, 29.51	0.06
<b><i>Influence of IPTp uptake on quality of care at the health facility</i></b>			
No	1.00		
Yes	3.05	1.52, 5.11	0.00
<b><i>The cost of seeking ANC care</i></b>			
Not expensive	1.00		
Expensive	1.10	0.26, 4.61	0.90
<b><i>IPTp is covered by NHIS</i></b>			
No	1.00		
Yes	1.49	0.65, 3.43	0.35
<b><i>The time taken to access ANC services</i></b>			
30 minutes	1.00		
60 minutes	0.95	0.36, 2.53	0.92
1hour 30minutes	1.44	0.55, 3.80	0.46
2hours	0.99	0.37, 2.64	0.99



**OR=Odds Ratio; CI=confidence interval, Outcome measures: IPTp uptake**

*Source: Field Survey, 2015*

Table 4.18 showed the multivariate logistic regression analysis performed to determine predictor of factors for IPTp uptake among pregnant women. After considering the effect of other confounding variables, pregnant women of 25 – 34 years had consistent increased odds of IPTp uptake; AOR=2.15 (95% CI; 0.99, 4.67). The odds of using IPTp did not change substantially for pregnant women who visited the ANC the first time in their third trimester after the inclusion of other covariates AOR=0.16 (95% CI; 0.05, 0.56). The number of visits to ANC (second, third, fourth and sixth visits) was consistently associated with IPTp uptake as an independent factors after adjusting for other covariates. Consistently, the trend followed that there is an increase odds of IPTp uptake among pregnant women who source received information on IPTp at the ANC (AOR=4.03, 95% CI; 1.09, 14.88) and had ever received counselling on the dangers of malaria in pregnancy at ANC (AOR=2.45, 95% CI; 1.16, 5.18) after adjusting for other covariates. The pregnant women who perceived IPTp to influence the quality of care at the health facility was consistently associated with IPTp uptake (AOR=3.05, 95% CI; 1.52, 5.11) after accounting for other confounding variables.

## **CHAPTER FIVE**

### **DISCUSSION**

## **5.0 Introduction**

In this chapter, the discussion of the finding of the study is presented. The finding is discussed with other relevant published literature related to IPTp and pregnancy. The chapter is arranged per the study objective as per the results. The study first discuss the background information of respondents enrolled in the study before various specific objectives.

### **5.1 Background information of respondents**

The finding of the study revealed that half of the pregnant women were between the ages of 25 – 34 years with an average age of 27 years. Women are mostly found to become pregnant when they are within their reproductive age group than when they are below or above. The finding suggests the numerical strength of women with high fertility rate at this age group. The pregnant women were mostly married, employed as traders and had primary and secondary school qualification. In Ghanaian society, women are mostly expected to get marry before pregnancy. The finding that most pregnant women were married confirmed the general expectation of the society from pregnant women. Also, the finding that most pregnant women had primary and secondary school qualification suggest how females performed poorly in education in the African setting. Males are mostly encouraged to take the mantle in education and leave females to the house keeping activities.

### **5.2 Level of Utilization of IPTp**

In Sub-Saharan Regions, World Health Organization has recommended the use of IPTp as one of the interventions to mitigate the impact of malaria in pregnancy to ensure the best outcome for both the mother and her unborn child (Sikambale et al., 2014). The level of utilization of IPTp among pregnant women seem to be low particularly in most rural communities where access to health services are limited. This section of study provide evidence of IPTp utilization among pregnant women in the Mampong Municipality to inform action.

The study found that the use of IPTp among pregnant women were high where most pregnant women have either used it for one to three times. The rate of IPTp uptake was higher than the national rate of 44.0% from the 2008 Demographic and Health survey (USAID Bureau for Global Health, 2011) and 65.0% in the Multiple Indicator Cluster Survey (MICS) in 2011 (USAID Bureau for Global Health, 2011). Also, the pregnant women mostly used the IPTp in their first trimester which is a good indicator and might suggest future utilization. The high rate of IPTp use among the pregnant women could be attributed to a number of factors. For instance, marital status of the pregnant women influenced the level of utilization of IPTp. There was increased in odds of taking IPTp with the marital status of pregnant women such that married pregnant women were 4.7 times more likely to take IPTp compared with those who were single. This suggests that their partners might play a crucial role contributing to the high rate of IPTp utilization. This suggest that partners might support their pregnant women in diverse ways towards the uptake of IPTp. The support could possibly be providing finances for pregnant women to visit ANC. The finding confirms previous study in Kenya where personal attributes like marital status influenced the uptake of IPTp among pregnant women (Ouma et al., 2007). The finding again concur with previous study where women who received support from their partners towards ANC had about 8.2 times the odds of taking IPTp compared with those with no such support from partners (Mutulei, 2013). On the contrary, a study in Tanzania found lack of significant association between the uptake of IPTp and background characteristics like marital status (Marchant et al., 2008). As in marital status, the increased in the level of education of the pregnant women had influenced on the level of utilization of the uptake. Pregnant women who had tertiary education were more likely to take IPTp compared with those who had no education. This suggests that highly educated pregnant women particularly at the tertiary level might have adequate knowledge and information on the need to use IPTp. This finding corroborates previous finding in Zambia where education was major factor that



determine the level of utilization of IPTp among pregnant women (Sikambale et al., 2014). Similarly, the finding concur with previous study in Kenya (Ouma et al., 2007) and Uganda (Marchant et al., 2008) where education level of pregnant women play crucial role in the uptake of IPTp. In such studies, IPTp uptake was significantly higher among participants with university education than those reporting primary education. Particularly in Uganda, the lack of post primary education among pregnant women were significantly associated with the failure to access IPTp (Marchant et al., 2008).

**5.3 Pregnant women related factors that enable or prevent the utilization of IPT** Pregnant women related factors have been linked to the uptake of IPTp among pregnant women in most recent studies. This study explored pregnancy related factors that influenced the uptake of IPTp among pregnant women in the Mampong Municipality.

The study found that almost all pregnant women have ever attended ANC services which were mostly in their first trimester. The high rate of ANC attendant corroborates with national level where at least 96.0% of pregnant women in Ghana attend ANC (Brieger, 2013). ANC are mostly considered an important entry point to target the pregnant women (Akinleye et al., 2009, Mubyazi et al., 2005). The finding is a significant step towards ensuring the uptake of IPTp among pregnant women. This finding suggest a possible use of IPTp once the pregnant women visit the ANC services particularly when the visit happens to be in the first trimester. This finding reinforce that the visit to ANC the first time in the third trimester have less likelihood to use IPTp compared with those who might attend ANC in the first trimester. In previous studies, the high use of IPTp is closely linked to the access and utilization of ANC (Akinleye et al., 2009).

The visit to ANC influencing the uptake of IPTp might be linked to easy access to services, availability, low cost of ANC services. The decision for pregnant women to visit ANC early in



their pregnancy might probably imply high level of education and socio-economic status of the family.

The study further found that visiting ANC more than one were more likely to increase the use of IPTp compared with those who visited once. The finding has the implication that visiting ANC for more times might ensure that the pregnant woman have easy access to the IPTp services. The continue visit to the ANC may further ensure continuity of the services. For instance, between 2008 and 2011, the IPTp uptake in Ghana increased from 44.0% to 65.0% which were largely linked to increase ANC attendance and provided an effective platform for the delivery of comprehensive services during pregnancy including frequent dosing of IPTp.

The high rate of ANC attendant was further linked to women's desire to identify the cause of pregnancy-related problems and take correct medicines. The high rate of ANC attendant might also be linked to the perception among pregnant women that ANC is routine or even mandatory during pregnancy and the health workers' willingness to pay attention to women's complaints when they attend ANC.

The study found that most pregnant women have been counselled on the dangers of malaria in pregnancy when they attended ANC. The pregnant women who benefited from counselling on the dangers of malaria in pregnancy were more likely to use IPTp compared with those with no such counselling services. This finding has the implication that the health professionals are leading the frontier in educating pregnant women on the dangers of malaria in pregnancy. The education provided by professionals at ANC might strongly change how the pregnant women perceive malaria in pregnancy. This might also have influence on how the pregnant women may react to other health problems in pregnancy. The finding concur with previous study in Tanzania where counselling on the dangers of malaria in pregnancy affected the uptake of IPTp (Exavery et al., 2014).

**5.4 Health Provider related factors that enable or prevent the utilization of IPTp** The study found that majority of the health providers had never attended workshop on IPTp before but all of the health providers knows the drug of choose as SP. The finding suggest that, the health providers have knowledge on the drug of choose.

The study further found that some of the health providers have no idea on the time at which the first dose of SP is recommended. This finding corroborate to previous finding revealed by Anders et al., (2008). Which said health workers are confused about correct timing and spacing of SP, early in pregnancy or difficulty assessing gestational age.

#### **5.5 Quality of IPTp Services Factors**

This specific objective provide the quality related factors to IPTp uptake among pregnant women in the Mampong Municipality. The study found that most pregnant women were satisfied with the services offered at the ANC. This suggest that pregnant women had no negative perception towards the services offered them at the facility. This implies that the health workers were providing the services to the standard of the pregnant women at the ANC. The quality of the services that will be offered to pregnant women might influence the uptake of IPTp. However, the high satisfaction level with the services had no significant association with the uptake of IPTp. This implies that the pregnant women uptake of IPTp did not basically rely on their satisfaction with the services at ANC.

The study further found that most pregnant women perceived the health providers attitude towards them at ANC as positive. This finding confirms why the pregnant women were satisfied with the services offered at the ANC. The perceived positive attitudes towards pregnant women might probably translate to increased visits to ANC and substantially on IPTp uptake. Despite this, there was no significant difference between perceived attitudes and IPTp uptake among pregnant women. This suggest that the pregnant women were influenced by other factors other than the perceived attitudes of staff. Furthermore, the study found that

pregnant women who perceived IPTp to influence the quality of care at the health facility were likely to take IPTp compared to those with contrary view. This finding implies that the quality of services at health facilities is a key factor influencing the IPTp uptake. The finding suggest that when the services offered is below quality, it may have strong effect on the uptake of IPTp. Previous studies in Ghana found that most public health facilities provided IPTp services, but nearly 27.0% of the facilities had experienced SP stock-outs over the preceding six months period (Ghana Statistical Service (GSS), et al., 2009). This might significantly undermined the delivery of IPTp services (Olliaro et al., 2008). Similarly, factors such as inconsistent supply of clean drinking water and inadequacy of clean cups at the facility might also affect the quality of the services and have significant impact on the IPTp uptake (Mutulei, 2013; Mubyazi et al., 2005; Tarimo, 2007).

#### **5.6 Access Factors to IPTp uptake**

The study found that the cost of seeking ANC services were not expensive for most of the pregnant women. This might suggest that the pregnant women were not facing financial barriers to ANC visit and could attribute to increased access to the services. Despite this, the perceived inexpensive nature of ANC services did not influence the IPTp uptake among pregnant women.

The study further found that the IPTp services offered to the pregnant women were mostly covered by the NHIS. This finding suggest that the pregnant women did not faced any financial risk to IPTp services and could contribute to high level of IPTp uptake. The finding that the NHIS covers IPTp uptake implies an important step by the Government in an effort to reduce malaria in pregnancy. This might again motivate pregnant women to utilize the services once there is the realization of pregnancy. This finding corroborates to previous finding in revealed by Goodman, et al., (2001). Despite the coverage of NHIS, no significant difference was observed between IPTp uptake and NHIS coverage.

The finding again suggest that most of the pregnant women were sitting for about 60minutes or 90 minutes to access the ANC services. Although the time to access ANC services seems to be longer, it did not translate to influence the IPTp uptake among pregnant women. This was evidenced from the study when no significance difference was observed between time taken to access ANC services and IPTp utilization.



## **CHAPTER SIX**

### **CONCLUSIONS AND RECOMMENDATIONS**



## **6.0 INTRODUCTION**

This chapter presents the conclusion, as reflects the specific objectives and the recommendation targeting Government/ GHS, Municipality, Health staff and community.

### **6.1 CONCLUSIONS Level of Utilization of IPTp**

The use of IPTp among pregnant women was high where most pregnant women have either used it for one to three times. The high rate of IPTp uptake was higher than the national rate of 44.0% from the 2008 Demographic and Health survey and 65.0% in the MICS in 2011. Also, the pregnant women mostly used the IPTp in their first trimester which is a good indicator and might suggest future utilization.

The high rate of IPTp use among the pregnant women could be attributed to a number of factors. For instance, marital status of the pregnant women influenced the level of utilization of IPTp. As in marital status, the increased in the level of education of the pregnant women had influenced on the level of utilization of the uptake. This suggests that highly educated pregnant women particularly at the tertiary level might have adequate knowledge and information on the need to use IPTp.

#### **Pregnant women related factors that enable or prevent the utilization of IPT**

Almost all pregnant women have ever attended ANC services which were mostly in their first trimester. The visit to ANC influencing the uptake of IPTp might be linked to easy access to services, availability, low cost of ANC services. The decision for pregnant women to visit ANC early in their pregnancy might probably imply high level of education and socioeconomic status of the family.

Most pregnant women have been counselled on the dangers of malaria in pregnancy when they attended ANC. The pregnant women who benefited from counselling on the dangers of malaria in pregnancy were more likely to use IPTp compared with those with no such counselling

services. This finding has the implication that the health professionals are leading the frontier in educating pregnant women on the dangers of malaria in pregnancy. The education provided by professionals at ANC might strongly change how the pregnant women perceive malaria in pregnancy.

### **Health Provider related factors that enable or prevent the utilization of IPTp**

Majority of the health providers had never attended workshop on IPTp before but all of the health providers knows the drug of choose as SP. Also, health providers have no idea on the time at which the first dose of SP is recommended and this affect the uptake of IPTp.

### **Quality of IPTp Services Factors**

Most pregnant women were satisfied with the services offered at the ANC. This suggest that pregnant women had no negative perception towards the services offered them at the facility. This implies that the health workers were providing the services to the standard of the pregnant women at the ANC. The quality of the services that will be offered to pregnant women might influence the uptake of IPTp. However, the high satisfaction level with the services had no significant association with the uptake of IPTp. This implies that the pregnant women uptake of IPTp did not basically rely on their satisfaction with the services at ANC. This suggest that the pregnant women were influenced by other factors other than the perceived attitudes of staff. Furthermore, pregnant women who perceived IPTp to influence the quality of care at the health facility were likely to take IPTp compared to those with contrary view. This finding implies that the quality of services at health facilities is a key factor influencing the IPTp uptake. The finding suggest that when the services offered is below quality, it may have strong effect on the uptake of IPTp.

## **Access Factors to IPTp uptake**

The study found that the cost of seeking ANC services were not expensive for most of the pregnant women. This might suggest that the pregnant women were not facing financial barriers to ANC visit and could attribute to increased access to the services. Despite this, the perceived inexpensive nature of ANC services did not influence the IPTp uptake among pregnant women.

The IPTp services offered to the pregnant women were mostly covered by the NHIS. This finding suggest that the pregnant women did not faced any financial risk to IPTp services and could contribute to high level of IPTp uptake. Lastly, most of the pregnant women were sitting for about 60minutes or 90 minutes to access the ANC services. Although the time to access ANC services seems to be longer, it did not translate to influence the IPTp uptake among pregnant women.

## **6.2 RECOMMENDATIONS HEALTH PROVIDERS**

As counselling on the dangers of malaria in pregnancy during ANC attendance enhanced the uptake of IPTp , it is recommended that counselling on the dangers of malaria in pregnancy should be enforced and enhanced by organizing in-service training on counselling and providing all needed items for prepare counselling at the ANC. Pregnant women should be continuously sensitised during ANC sessions about the consequences of malaria in pregnancy and the benefits of IPT for them as well as their unborn babies.

The health workers at the ANCs should plan, manage and evaluate health education schedules for the year and this should include malaria in pregnancy and IPTp. Also all the ANCs should

display posters, flayers, banners among others, educating the clients about IPTp and malaria in pregnancy.

### **MUNICIPAL HEALTH DIRECTORATE**

Health education on prevention of malaria in pregnancy should also be intensified. Intensifying education about IPTp in the communities will add to the knowledge of the pregnant women and thus inspire them to attend the ANC early adequate to receive all the recommended doses of SP. The MHMT as well as the nurses and midwives can organize programs to Health education. Messages about IPTp should be broadcasted via local public address systems at the ANC and communities to ensure uniformity of messages and the right message as well. Broadcasting on the local FM stations and mobile phone text message as well as the use of the mobile health service vans will help in further educating the communities.

### **GOVERNMENT/GHANA HEALTH SERVICE**

Health worker in services training and retraining should be enforced. Training programs should be planned, organized and evaluated by the MHMT on a regular basis so that all the health workers in the ANC are capable of working effectively at all times. The MHMT should also supply all needed training manuals and the IPTp policy guidelines to all the ANC in the municipality.

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## APPENDIX 1

**KWAME NKRUMAH UNIVERSITY OF SCIENCES AND TECHNOLOGY  
COLLEGE OF HEALTH SCIENCES /SCHOOL OF MEDICAL SCIENCES**

**/DEPARTMENT OF COMMUNITY HEALTH**

**TOPIC: UPTAKE OF PREVENTIVE TREATMENT AMONG PREGNANT WOMEN  
IN MAMPONG MUNICIPALITY**

**TARGET GROUP: QUESTIONNAIRE FOR PREGNANT WOMEN INTERVIEW**

### INFORMATION

**SUBDISTRICT.....**

**COMMUNITY .....**

**DATE OF INTERVIEW**  
Year

Day   Month

**INTERVIEWER'S NAME.....**

**INTERVIEWER CODE NUMBER**

### SECTION A: BACK GROUND CHARACTERISTICS

1) Age of respondent   age

(complete years) a. 19-20 ☐

b. 20-29 ☐

c. 30-39 ☐

d. 40-49 ☐

e. 49+ ☐

2) What is your occupation?

Trading ☐

Artisanship (hairdressing/ seamstress) ☐

Farming ☐



- Unemployed ☐
- Private enterprise ☐

3) What is your marital status?

- Married (civil, traditional, religious) ☐
- Living together ☐
- Single ☐
- Separated/Divorced ☐

4) What is your highest level of education?

- None ☐
- Primary ☐
- Secondary ☐
- Vocational technical ☐
- Tertiary ☐

## SECTION B: LEVEL OF UTILIZATION OF IPT<sub>P</sub> FACTORS

5) Have you ever used IPT<sub>P</sub> before?

- a. Yes ☐
- b. No ☐

6) What is the number of times you have taken it

- a. Once ☐
- b. Twice ☐
- c. Thrice ☐

7) At What stage of your pregnancy did you take first one.....

- a. First trimester ☐
- b. Second trimester ☐
- c. Third trimester ☐

8) What is the interval between the first dose and second dose?

- a. Two weeks ☐

- b. Three weeks ☐
- c. Four weeks ☐
- d. Five weeks or more weeks ☐

### SECTION C: PREGNANT WOMEN RELATED FACTORS

9) Have you ever used ANC services

- a. Yes ☐
- b. No ☐

10) What was the time of your first ANC visits

- a. First trimester ☐
- b. Second trimester ☐
- c. Third trimester ☐

11) What is the number of visits to the ANC you have, made?

- a. Once ☐
- b. Twice ☐
- c. Thrice ☐
- d. Four times ☐
- e. Five times ☐
- f. Six times or more ☐

12) What is the interval between the ANC visits.....weeks, days.

- a. Two week ☐
- b. Three weeks ☐
- c. Four weeks ☐
- d. Four weeks or more ☐

13) Have you had any information on IPT<sub>p</sub>?

- a. Yes ☐
- b. No ☐

14) Where did you have the information?

- a. Friends and / family ☐
- b. Media ☐
- c. ANC ☐

15) When is IPT<sub>P</sub> first dose recommended during pregnancy?

- a. Anytime ☐
- b. After guicking / 4weeks ☐
- c. Second trimester ☐
- d. Third trimester ☐

16) Were you counselled on the dangers of malaria in pregnancy at ANC? a.

- Yes ☐
- b. No ☐

#### **SECTION D: QUALITY OF IPTP SERVICES FACTOR**

17) Are you satisfied with the service at the ANC?

- a. Somehow satisfied ☐
- b. Satisfied ☐
- c. Unsatisfied ☐
- d. Very satisfied ☐

18) How will you describe/rate the attitude of health care providers toward pregnant women at the ANC

- a. Poor ☐
- b. fair ☐
- c. good ☐
- d. excellent ☐

#### **SECTION E: ACCESS FACTOR**

19) What is the cost of seeking ANC care?

- a. Not expensive ☐
- b. Moderate expensive ☐
- c. Very expensive ☐

20) Was the IPT<sub>P</sub> covered by NHIS

- a. Yes ☐
- b. No ☐

21) How long does it take to access ANC services?

- a. 30 minutes excellent ☐
- b. 60 minutes Good ☐
- c. 1hour 30minutes Fair ☐
- d. 2hours Poor ☐

## APPENDIX II

### KWAME NKRUMAH UNIVERSITY OF SCIENCES AND TECHNOLOGY COLLEGE OF HEALTH SCIENCES /SCHOOL OF MEDICAL SCIENCES

#### /DEPARTMENT OF COMMUNITY HEALTH

#### TOPIC: UPTAKE OF PREVENTIVE TREATMENT AMONG PREGNANT WOMEN IN MAMPONG MUNICIPALITY

NAME.....

INTERVIEWER CODE NUMBER

#### SECTION A: BACKGROUND CHARACTERISTICS

1. Age of respondent. .... age (completed years) a.
  - 20-29 ☐
  - b. 30-39 ☐
  - c. 40-49 ☐
  - d. 50+ ☐
2. What is your profession?
  - a. Enrolled nurse/health assistant clinicals ☐
  - b. General nurse ☐
  - c. Midwife ☐
  - d. General nurse/midwife ☐
3. What is your rank .....?
  - a. Enrolled nurse ☐
  - b. Senior enrolled nurse ☐
  - c. Principal enrolled nurse ☐
  - d. Staff nurse ☐



- e. Senior staff nurse ☐
- f. Nursing officer ☐
- g. Senior nursing officer ☐
- h. Principal nursing ☐
- i. Director of nursing service ☐

## SECTION B: HEALTH PROVIDER RELETED FACTORS

4. Have you ever attended workshop on IPTp?
  - a. Yes ☐
  - b. No ☐
5. What medicine is recommended for IPT use?
  - a. Fansidar (SP) ☐
  - b. Chloquine ☐
  - c. Artesunate-amodiaquine ☐
  - d. Lumether ☐
  - e. Don't know ☐
6. When is IPTp first dose recommended during pregnancy?
  - a. Anytime ☐
  - b. After quacking 116 weeks ☐
  - c. Second trimester ☐
  - d. Third trimester ☐
7. When was the last time you went on IPTp workshop?
  - a. Last 3 months ☐
  - b. Last 6 months ☐
  - c. Last year ☐
  - d. Last 2 years ☐
  - e. 3 years ☐
8. After what and more gestation is IPTp not recommended during pregnancy?
  - a. 32weekss ☐
  - b. 34weeks ☐
  - c. 36weeks ☐

- d. 38-40weeks ☐ Don't know ☐

### SECTION C: QUALITY OF IPTP SERVICES FACTOR

9. Are you skillful to work at the ANC

- a. Unskillful ☐  
b. Skillful ☐  
c. Very skillful ☐

10. Are you satisfied with the ANC service rendered to pregnant women?

- a. Unsatisfied ☐  
b. Satisfied ☐  
c. Very satisfied ☐

11. What is the workforce of the ANC?

- a. Inadequate ☐  
b. Adequate ☐  
c. Very adequate ☐

12. How should IPTp be given?

- a. Under direct observation ☐  
b. At bed time ☐  
c. At home ☐

### SECTION D: ACCESS FACTOR

13. Is IPTp drugs available at the ANC?

- a. Unavailable ☐  
b. Sometimes ☐

Usually/ always available ☐

14. Do you administer IPTp at your facility

- a. Yes ☐  
b. No ☐

15. Do you have IPTp medicine at the ANC

a. Yes ☐

b. No ☐

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