THE PREDICTORS OF UPTAKE OF OPTIMAL DOSES OF SULPHADOXINE-PYRIMETHAMINE FOR INTERMITTENT PREVENTIVE THERAPY OF MALARIA DURING PREGNANCY AMONG POSTPARTUM WOMEN IN TANDAHIMBA DISTRICT, TANZANIA

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By

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A Dissertation Submitted In Partial Fulfilment for Requirement For Degree of Master of Public Health of

Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that they have read and here by recommend for acceptance by Muhimbili University of Health and Allied Science dissertation entitled. ***The predictors of uptake of optimal doses of Sulphadoxine-Pyrimethamine for intermittent preventive therapy of malaria during pregnancy among postpartum women in Tandahimba district, Tanzania****:* in Partial fulfilment of the requirements for the degree of Masters of Public Health (MPH) of the Muhimbili University of Health and Allied Sciences.

_____

Prof. Donath S. Tarimo (MD, MSc, PhD)

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Genchwele Makenge** hereby declare that this **dissertation** is my original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

Signature_____ Date----------

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DEDICATION

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ABBREVIATION

ANC	:	Antenatal Care
CHMT	:	Council Health Management Team
DOT	:	Direct Observation Therapy
IPTp	:	Intermittent Preventive Treatment in pregnancy
IPT3+	:	Coverage of Intermittent Preventive Treatment three or more doses
IPT (1, 2, 3, 4)	:	First, second, third and fourth dose of Intermittent Preventive Treatment
ITN	:	Insecticide Treated Nets
LBW	:	Low Birth Weight
MiP	:	Malaria in Pregnancy
MoHCDGEC	:	Ministry of Health, Community Development, Gender, Elderly and Children
PMTCT	:	Prevention of Mother to Child Transmission
RCH	:	Reproductive and Child Health
RAs	:	Research assistants
RHMT	:	Regional Health management Team
RMB	:	Roll Back Malaria
SP	:	Sulfadoxine- Pyrimethamine
SPSS	:	Statistical Package for the Social Sciences
TDHS	:	Tanzania Demographic and Health Survey
THMIS	:	Tanzania HIV and Malaria Indicator Survey
WHO	:	World Health Organization

DEFINITION OF TERMS

Antenatal care (ANC); Is the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy.

IPTp-SP 3+ coverage: Is the percentage of women with a live birth in the 2 years preceding the survey who received 3 or more doses of SP/Fansidar to prevent malaria during their most recent pregnancy. It is household survey indicator used to measure coverage of intermittent preventive treatment.

Focused antenatal care (FANC); Is the minimum package of evidence-based services to all pregnant women during ANC to promote health, detect existing diseases, prevent and detect complications of pregnancy and encourage birth preparedness.

IPTp-SP; Is a full therapeutic course of antimalarial medicine given to pregnant women at routine antenatal care visits, regardless of whether the recipient is infected with malaria.

Optimal dose of SP: Is the administration of sulphadoxine-pyrimethamine to all pregnant women starting as early as possible in the second trimester in all areas with moderate to high transmission in Africa. The women should receive at least three doses of SP during her pregnancy; with each dose being given at least 1 month apart-SP can safely be administered up until the time of delivery.

Uptake of IPTp; Is a clinically- proven method to prevent the adverse outcomes of malaria in pregnancy (Mip) for the mother, her foetus and the neonates.

ABSTRACT

Background

Intermittent Preventive Treatment (IPT) using Sulphadoxine-Pyrimethamine (SP) has been shown to avert the adverse effects of malaria in pregnancy to both the mother and foetus. Although the new guidelines of optimal (≥3) doses of SP-IPTp have been implemented in Tanzania for the last 5 years, coverage of IPTp3+ has consistently remained low by 26%, conceivably due to a number of factors from the facility and client perspectives. The timing of first ANC visits and number of visits as well as other obstetric characteristics and socio-demographic factors as predictors of optimal uptake of SP-IPTp have not fully been investigated. Other factors such as availability of SP, water and adequate cups for DOT as well as distance to the facility and knowledge of effects of malaria to the mother and unborn baby potentially affects uptake of optimal doses of SP-IPTp. This study appraised the predictors of uptake of optimal doses of SP- IPTp in Tandahimba district.

Methodology: A quantitative facility based cross sectional study was conducted among 330 postpartum women in six randomly selected public health facilities from Tandahimba district in Tanzania from July to August 2019. Probability proportional to size was used to obtain representative samples from each facility. Data were analysed using SPSS version 22 and summarized by descriptive statistics, while bivariate logistic regression analysis was carried out to assess the association between independent with dependent variables. All independent variables with a P-value < 0.2 were subjected to multivariate logistic regression analysis while controlling for confounders by calculating the AOR. The level of significance was set at 5% (0.05) two-tailed at 95% CI.

Results: A total of 330 postpartum women within 42 days were studied. The study revealed that 79.7% of respondents received optimal (≥3) doses of SP. Having married or living with partner (AOR 7.55, 95% CI3.79-15.05. attending ANC clinic four or more visits (AOR 4.97, 95%CI 2.46-10.03) and walking < 30 minutes from home (AOR 2.52, 95%CI 1.24-5.12) were found to be more likely associated with the uptake of optimal doses of sulphadoxine pyrimethamine.

Conclusion and recommendation: This study has demonstrated that having married or living with partner, attending ANC clinic four or more visits and short distance from home to facility with ANC can significantly influence the uptake of optimal doses of sulphadoxine

pyrimethamine. Hence, advocacy and sensitization for ANC visits for pregnant women, construction of health facility near community residence and importance of swallowed SP infront of health care providers should be strengthened through all stakeholders (MoHCDGEC, CHMT, community and USAID Boresha Afya) worked in Tandahimba district for improving higher uptake of optimal SP-IPTp. However since this study focused on the clients perspectives further studies are needed to examine the facility and providers factors that might contribute to promotion of uptake of ≥ 3 IPTp-SP.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Malaria, a parasitic infection transmitted by mosquitoes was one of the most overwhelming infectious diseases, killing more than 1 million people annually. Pregnant women, infants, and adults with low or no immunity have highest morbidity and mortality. Although, the disease was preventable and curable. It was currently getting global attention. It was still disease of public significance with an estimated 219 million cases and 435,000 deaths occurred worldwide in 2017 and 200 million or 92% were in the WHO African region [1] . Malaria in pregnancy applies major public health concerns worldwide, particularly in malaria endemic settings, and results in adverse health outcomes for both women and foetus [2]. Low birth weight, infant mortality, spontaneous abortions, maternal anaemia and stillbirth were reported as overwhelming health consequences by P. *falciparum* [3]. Malaria in pregnancy reportedly accounts for 26% of maternal anaemia and up to 200,000 infant mortality annually due to low birth weight. About 11% of neonatal mortality in sub Saharan Africa was attributable to low birth weight that results from malaria in pregnancy [2]. Some 10,000 maternal deaths were recorded each year due to malaria related anaemia [4, 5]. Globally, an estimated of more than 50 million pregnancies reported and an estimated of 30 million women living in malaria endemic areas of Africa become pregnant each year [4]. They were at risk of *Plasmodium falciparum* malaria infection compared to non-pregnant women. However, a fraction of these women has access to effective prevention methods of malaria [5].

Malaria prevention and control in pregnant women in Sub Saharan Africa was based on three pillars: Insecticides treated nets (ITNs), intermittent preventive treatment in pregnancy (IPTp) with sulphadoxine pyrimethamine, and effective case management of malaria illness and anaemia. [10]. Early diagnosis and proper case management compliment preventive strategies. Intermittent preventive treatment of malaria during pregnancy (IPTp) using sulphadoxine pyrimethamine leftovers an effective strategy for preventing malaria during pregnancy. This strategy involves the administration of full treatment doses of sulphadoxine pyrimethamine (SP) to pregnant women when they visits antenatal care (ANC) facilities for health services, regardless of whether pregnant women have malaria infection or not [6]. The SP-IPTp policy

was effective in reducing the level of malaria infection in pregnancy, maternal anaemia, low birth weight and neonatal mortality.

The world Health organization (WHO) revised 2012 recommendations for SP-IPTp and now demands for all pregnant women took SP at each ANC visit until delivery. The administration of SP should start early in the second trimester, which doses swallowed at least one month apart [7]. The recommendations additional demands for all pregnant women in Africa to receive at least three or more doses of SP during each pregnancy. Studies reports have showed that the number of ANC visits made by the pregnant woman and early uptake of the first dose of SP were major predictors of uptake of higher doses of sulphadoxine pyrimethamine for intermittent preventive treatment (SP-IPTp) [8owusu Ghana] during pregnancy and therefore assistances derived from programme. The Malaria Control Programme of Tanzania also revised the national policy and now demands every pregnant woman to take a minimum of three doses of sulphadoxine pyrimethamine during each pregnancy [8, 9,14]. The SP is to be taken at monthly intervals as they attend antenatal clinics starting from 16 weeks of gestation until delivery. The new policy become effective in the country in 2014. The forthcoming of intermittent preventive therapy to attain pronounced levels of programme coverage due to high level of acceptability by women and its benefits in reducing malaria in pregnancy that causes maternal anaemia and low birth weight made it a chosen policy (15). Studies have reported low uptake of optimal dose of sulphadoxine-pyrimethamine in various regions of sub-Saharan Africa (16,17, 20 & 21) and Tanzania (8,9&25). However, other studies reported higher uptake of optimal doses of SP-IPTp [20,31]. In addition, a recent health facility cross sectional study conducted in urban Bukoba, Tanzania reported that the overall uptake of SP IPTp was 96 % and the uptake of two SP (IPTp) doses was 86 %. Timely uptake of 1st dose was predicted by early antenatal booking, and the availability of SP at the facility [26].

Some of the apparent barriers for uptake of optimal doses of SP-IPTp in Sub Saharan Africa includes three or few antenatal (ANC) visits, low knowledge of effects of malaria in pregnancy and importance of SP-IPTp, Late ANC initiation, geographical locations for instance rural areas, shortage of SP and not taking SP under direct observation therapy (DOT) [16-25]. However, in Tanzania a recent facility study on optimal ≥2 doses of SP-IPTp reported that timely uptake of first dose was predicted by early antenatal booking. Uptake of second dose was independent of any predictor factors [26]. However, little was known on the predictors of uptake of optimal (≥3)

doses of sulphadoxine pyrimethamine for intermittent preventive therapy during pregnancy. This study therefore determined predictors of uptake of optimal doses of sulphadoxine pyrimethamine during pregnancy among postpartum women in Tandahimba district, Tanzania.

1.2 Problem statement

Tanzania changed guidelines from the 2-dose SP-IPTp regimen to ≥ 3 doses of SP-IPTp in 2013 in line with the revised WHO guidelines following the observation that the ≥ 3 SP-IPTp regimen was superior to the 2-dose regimen (17). Although the guidelines for ≥3 doses of SP-IPTp have been operational in Tanzania for the last 5 years, coverage has consistently remained low from 8% (7) to only about a quarter 26% (4). A number of factors from the facility and clients perspectives have been shown to be associated with a low coverage with the 2-dose regimen in sub-Saharan Africa, including Tanzania (18-19). It was not clear how the factors that lead to low coverage with the 2-dose regimen would influence coverage with ≥ 3-dose regimen. The same factors may conceivably influence coverage of (≥3)-dose regimen (18)

In the few studies that determined implementation of the ≥ 3 SP-IPTp, using new guideline results showed that early booking at ANC and having made ≥ 4 visits as well as obstetric and socio-demographic factors influences uptake of ≥ 3 doses SP-IPTp (Mchwampaka 2016). While SP-IPTp delivered at each scheduled ANC contacts with each dose given at least one month apart (13), it was not known how availability of SP, DOT practice , walking distance from home to nearest ANC ; knowledge on effects of malaria to the mother and unborn baby, affect uptake of the ≥ 3-doses of IPTp regimen. This study appraised the predictors of optimal uptake of SP-IPTp in Tandahimba district.

1.3 Conceptual framework.

Appropriate training of health workers on ANC services and IPTp is likely to improve their knowledge in the implementation of the IPTp policy, and thus likely to enhance direct observation practice but also the general attitude of health care providers towards their clients. Positive attitude of health care providers and practice of DOT are more likely to increase uptake of IPTp-SP hence improve coverage. Availability of IPTp-medicines (SP) at health facilities is likely to enhance IPTp coverage. All the above can be achieved if there was proper supervision and monitoring at the health facility on the ANC services provision including IPTp.

The social-demographic factors of pregnant women such as age, place of residents, education background etc. may influence ANC attendance hence IPTp uptake, also social demographic factors may influence the knowledge of pregnant women, and may determine accessibility to ANC services (example residence), all these in turn will affect IPTp uptake and thus coverage

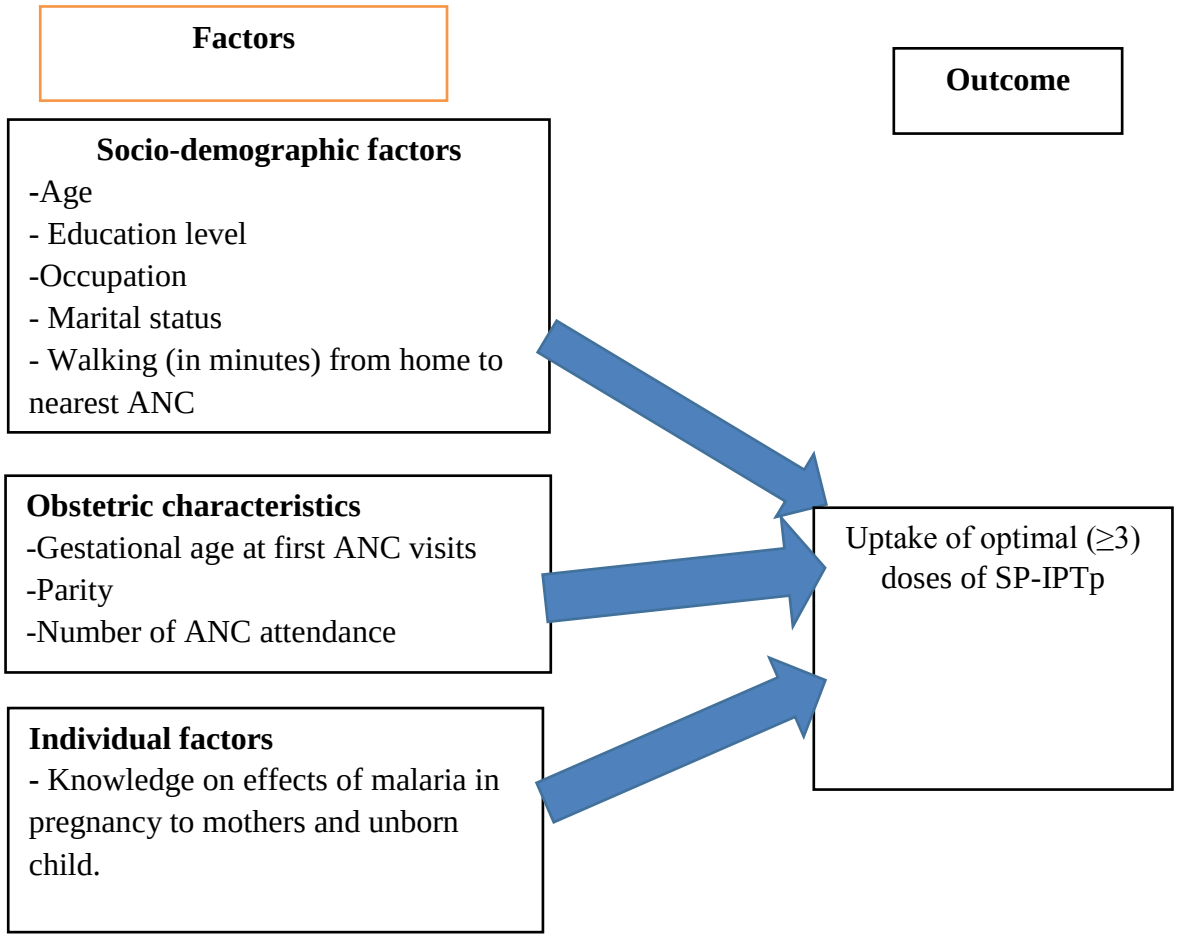


Figure 1: Conceptual framework.

1.4 Rationale of the study

Low (26%) uptake of optimal (≥3) doses of IPTp-SP. High prevalence (20%) of malaria among children in Mtwara region and High (22.9%) malaria positivity rate among pregnant women at their first ANC visits in Tandahimba. Therefore, revealed current predictors influencing the uptake of recommended optimal (≥3) doses of SP-IPTp will help stakeholders at local and national level (Community, CHMT, RHMT, MoHCDGEC & PORALG) for improving public health activities/interventions towards achieving national and global target set (80%) for uptake of optimal doses of SP-IPTp.

Research question

What are predictors of uptake of optimal (≥ 3doses) sulphadoxine-pyrimethamine for intermittent preventive therapy during pregnancy among postpartum women in Tandahimba district?

1.5 Research questions.

1. What was the proportions of the uptake of optimal doses of IPTp-SP among postpartum women attending ANC?
2. How do socio demographic characteristic of pregnant women affect uptake of optimal (≥3) doses of IPTp-SP?
3. How do obstetric characteristics of pregnant women influence uptake of optimal (≥3) doses of IPTp-SP?
4. How do knowledge of effects of malaria in pregnancy to mothers and unborn child affect uptake of 3 or more doses of IPTp-SP?

1.6 Objectives

To determine the predictors of uptake optimal doses of sulphadoxine-pyrimethamine for intermittent preventive therapy of malaria during pregnancy among postpartum women in Tandahimba district.

1.6.1 Specific objectives

1) To determine proportion of uptake of optimal (≥3) doses of SP- IPTp among postpartum women in the selected health facilities in Tandahimba district, Mtwara region.
2) To determine the association of socio demographic characteristics with uptake of optimal (≥3) doses of SP-IPTp among postpartum women in the selected health facilities in Tandahimba district, Mtwara region.
3) To determine the association of obstetric characteristics with uptake of optimal (≥3) doses of SP-IPTp among postpartum women in the selected health facilities in Tandahimba district, Mtwara region.
4) To determine association of knowledge on effects of malaria in pregnancy to mothers and unborn child of postpartum women with uptake of optimal (≥3) doses of SP-IPTp in the selected health facilities in Tandahimba district, Mtwara region.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 **Overview**

This chapter presents information from different researchers, books, articles and reports on what other authors have done concerning the related topic.

2.2 Uptake of optimal (≥3) doses of sulphadoxine-pyrimethamine for intermittent preventive therapy (SP-IPTp).

Among the approximately 840 million persons at risk of malaria in endemic countries in sub Saharan Africa, an estimated 35 million pregnant women could benefit from IPTp each year. However, during last few years, WHO has observed a declining effort to scale up IPTp in a number of African countries. In high burden countries, IPTp noticeably lags behind other malaria control measures. This does not appear to be due to low level of antenatal clinic attendance. As of 2016, 36 African countries have adopted a policy of providing 3 or more doses of SP-IPTp to pregnant women. Progress in adherence to this policy has increased only marginally: among the 23 countries that reported in 2017, an estimated 22% of eligible pregnant women received the recommended three or more doses of SP-IPTp compared with 17% in 2015 and 0% in 2010 (1)

Literature reported that majority of sub Saharan Africa countries have low uptake of optimal (≥3) doses of SP-IPTp, for instance a study conducted in Zomba district, Malawi on uptake of intermittent preventive treatment for malaria during pregnancy with sulphadoxine-pyrimethamine (IPTp-SP) among postpartum women revealed that 127 (29.8%) received three or more doses of SP.(16). also a study conducted in Cho'kwe', Mozambique which reported that Of 1141 participants, 46.6%, took optimal (≥ 3)doses of SP for IPTp (21). Another study conducted in Uganda reported that the uptake of three or more doses of IPTp-SP was 18% (27). In Tanzania, the national guidelines updated in 2013/2014 to include 2012 WHO recommendations for optimal doses of SP-IPTp, official implementation programme with the new guidelines launched in July 2014 and was completed country wide in July 2015. A study conducted in Geita district, Tanzania reported that 26 (6.03%) took ≥3 doses of sulphadoxine-pyrimethamine during pregnancy for IPTp. The uptake of (≥3) doses of IPTp-SP among delivering women at Geita hospital and Katoro health centre was 9.06% and 1.2% respectively(28). Moreover, women with a live birth in the two years preceding the survey conducted in Tanzania reported that 8% took three or more doses of sulphadoxine-pyrimethamine during an ANC visit for their whole period of pregnancy (8).Therefore, IPTp3+

receipt increased from 3% to 26% between the 2 surveys. The most substantial increase in the percentage of women receiving IPTp3+ occurred between 2015/2016 (8) and the 2017 TMIS (18percentage points)(9).

However, little was known on proportions of uptake of optimal (≥3) doses of sulphadoxine-pyrimethamine for IPTp in Southern regions including Tandahimba district. Therefore, this study was determining proportions of uptake of optimal (≥3) doses of sulphadoxine-pyrimethamine for IPTp among postpartum women in Tandahimba district.

2.3 Association of socio demographic characteristics with uptake of optimal (≥3) doses of SP-IPTp.

Socio-demographic characteristics was worth to be considered as an influence towards uptake of optimal doses of sulphadoxine-pyrimethamine for IPTp. For instance, married pregnant women discussed health issues with their spouse/partners and among of partner tend to escort pregnant women for ANC services like health education and promotion as well as counselling and testing. In the health facilities providers inspires male involvement and they provide incentives to couple by giving them priority on ANC services. Because of male involvement, pregnant women with partners/spouse were more likely received IPTp-SP compared to women who had not partner/ spouse. Furthermore, Pregnant women who live at long/far distances from health facilities whether governmental, Faith Based Organization facilities (FBO) and private were less likely to complete optimal dose of sulphadoxine-pyrimethamine for intermittent preventive therapy during pregnancy than those who have such services close at hand, mostly because of no transport and funds for private transport payment.

A study conducted in Senegal reported that women aged 35-49 years and living in the richer or middle wealth quintile were more likely to use optimal doses of SP-IPTp (17). This study was consistent with evaluation of demand and supply predictors of SP-IPTp for malaria in pregnancy in Malawi reported that age of women 35-49 years were associated with optimal uptake of SP-IPTp (29). However, a study conducted in Uganda was contrary and reported that being older than 34 years, and seeking first ANC attendance in the third trimester reduced the chances of uptake of optimal (≥3) doses of SP-IPTp, while attaining a secondary-level education, attending ANC at least four visits and exposure to radio messages associated with optimal doses of SP-IPTp (27). Moreover, a study conducted in Tanzania, results showed that being in the age groups 30-34 and 35-39 versus other age groups was associated with uptake of optimal doses of SP-

IPTp (25). Pregnant women with secondary or higher education cooperated and received maternal and newborn services provided at public and private health facilities. They were attended ANC early, getting health education by health care providers , accepted different tests such as tests on malaria, HIV and other tests, given supplements and informed to adherence of ANC schedule and complete ANC visits as recommended through ANC Tanzania guidelines also demanded services provided at ANC. Furthermore, pregnant women with higher education understand the pregnancy and unborn child risks that without intervention resulted to poor pregnancy outcomes, which made them to initiate early ANC as compared to never been to school. A study conducted in Cho'kwe' district, southern Mozambique reported that low IPTp uptake (< 3 doses) was associated with having no or only primary education (21). This study was consistent with a study conducted in six districts that revealed women with secondary and higher education were almost twice as likely as those who had never been to school for receiving optimal doses of SP-IPTp (2). However, a study conducted in Sierra Leone reported that women with higher education had lower odds of taking SP-IPTp.

The burden of travel from home to nearest health facilities with antenatal care remained to be a challenge, particularly to pregnant women residing in rural arears. Pregnant women residing near health facility both in rural and urban arears attended ANC for services because of no need of transport or cost for transport, this allow these women to walk from home to facility with ANC services. Therefore, short distance from home to facility made pregnant women for adherence for ANC schedule and complete ANC visits, but long distance made pregnant women not to adhere for ANC schedule and made partial ANC visits as recommended. In addition, location of health facility has been affected ANC attendance, schedule and uptake of optimal doses of SP-IPTp. In Tanzania, village has mandate to allocate sites for construction of health facility for community use, some villages located facilities site away from community residence, which limits pregnant women attended ANC regularly as scheduled and failed to complete ANC visits as recommended and women failed to receive optimal doses of SP-IPTp. Women in rural arrears mostly were farmers and unemployed these made them not leave their work particularly cultivation and cattle feeding and attend ANC clinics that situated away from their residence. Therefore, pregnant women who residing far away (rural areas) from health facility had partial uptake of optimal doses of SP-IPTp as compared to those leaving near (urban) health facility. A study conducted in two regions of Uganda reported that burden of travel and cost associated with antenatal care attendance was challenging, but did not keep them from accessing a service they

perceived as beneficial (19). Another study conducted in Mali and Kenya reported that distance from hospital or health facility was cited as a problem mainly because of lack of transport and lack of money as essential requirements for receiving ANC services (30). Being married was associated with a 60% decline in the partial uptake of IPTp-SP(2). and being married or living with partner versus those who reported as never married or divorced/ separated were associated with high uptake of optimal SP for IPTp(25).

Studies in Sub Saharan Africa have pointed out the possibility of socio demographic characteristics limit uptake of optimal doses of SP-IPTp, while SP-IPTp uptake depends with geographical locations. Therefore, there was a need to have more information whether socio demographic characteristics such as marital status, education level, age and distance from home to nearest health facilities in Tandahimba, Tanzania were primarily associated with uptake of optimal (≥3) doses of SP- IPTp.

2.3 Association of obstetric characteristics with uptake of optimal (≥3) doses of sulphadoxine-pyrimethamine among postpartum women (IPTp3+).

2.3.1 Number of ANC attendances

Predictors influencing uptake of optimal SP-IPTp among pregnant women focused on attending regularly ANC visits and swallow SP infront of health care providers as recommended by WHO in 2012. Antenatal care clinics strengthened to deliver safe and quality services with an objective of improving maternal and newborn outcomes. In Tanzania, nurses or midwives generally provided ANC by 80% with the rest receiving services from doctors, clinical officers or medical attendants. According to Tanzania Demographic Health Survey 2015-16, 2% of pregnant women still do not have access to ANC, 51% had at least four visits during their last pregnancy. However, 24% of women started ANC before the fourth month of pregnancy, and 26% did not seek care until at least the sixth month of pregnancy. Despite of 51% of pregnant women had at least four visits during their last pregnancy 8% received optimal (≥3) doses of SP-IPTp (8). This report of Tanzania survey was similar to analysis of data from the Uganda Demographic and Health Survey, 2016 revealed that uptake of three or more doses of IPTp-SP was 18%. The likelihood of taking optimal doses of IPTp-SP increased among those who attended ANC ≥4 visits (27). A study conducted in Sunyani Municipality among pregnant women in Ghana, the uptake of three doses or more was 71at the time of study (20). Results revealed that women who attended ≥4 contacts had knowledge on malaria in pregnancy and IPTp that made them positively with the uptake of optimal doses of sulphadoxine pyrimethamine (SP). That means

pregnant women attending ANC irregularly and less than 4 visits made less interaction with health care providers and received inadequate knowledge on malaria in pregnancy and intermittent preventive therapy during pregnancy. Having made < 4 ANC attendance during the whole period of pregnancy resulted on low uptake of SP-IPTp. Another study conducted in Zomba district, Malawi reported that 29.8% received optimal doses of SP-IPTp. Women with three of few antenatal care (ANC) visits were less likely to get at least three doses of SP versus four or more visits (16). Similarly, a study conducted in Sierra Leone, reported that the uptake of optimal doses of SP was 93.24%. Education, parity and antenatal care (ANC) use were significant predictors of IPTp-SP in this study adequate ANC use increased the odds of taking IPTp-SP in both urban and rural areas (31). Based on findings, promoting adequate antenatal care visits regarded as a key strategy to improve the use of SP-IPTp.

2.3.2 Gestation age at first ANC visits

Antenatal care can be most effective in avoiding adverse pregnancy outcomes when it was sought early in pregnancy and continue through to delivery. World Health Organization (WHO) recommends that a pregnant woman without complications has at least four antenatal visits and that the first visit occur during the first trimester of pregnancy (8). Late presentation to ANC clinic resulted to a significant factor to low SP-IPTp. In Tanzania the recommended gestation age at first ANC visit was 16 weeks, a second visits between 20-24 weeks, a third visits between 28weeks and 32 weeks and a fourth visits at 36 weeks. Literatures reported association between numbers of antenatal care visits and other obstetric characteristics with uptake of optimal doses of SP for IPTp. For instance, a study conducted in Malawi reported that 30.2% took the recommended three or more IPTp doses. Despite inadequate ANC visits, early ANC initiation increased the likelihood of these women taking the recommended IPTp dose; women who initiated in the first and second trimesters were more likely to take the recommended dose compared to late initiators (16). Another study conducted in Malawi reported that there were low utilisation of at least three doses of SP in the study population and this seems to be associated with the number of ANC visits. Therefore, four ANC visits a pregnant woman made was associated with higher proportion of taking three or more SP doses as long as the visits were scheduled at least 1 month apart beginning from second trimester than three or less visits (25). These studies were similar with a study conducted in Senegal reported that women who initiated antenatal care in at least 6 weeks of pregnancy or who attended four antenatal visits or more were more likely to use optimal malaria preventive methods during pregnancy.

Literature in Tanzania, reported that ANC initiation in the first trimester (proper timing) was significantly associated with uptake of optimal doses of SP. The number of ANC visits made during pregnancy showed no important effect, suggesting that the quality of ANC counts more than just the quantity of visits. This means that the earlier a pregnant woman initiates ANC the more the time she has to be counselled on the dangers of malaria in pregnancy and the use of SP and other interventions such as mosquito bed nets (2). According to TDHS 2015-2016, reported that only 24% of women started ANC before the fourth month of pregnancy and the percentage of women seeking ANC during first trimester increased from 15% in 2010 to 24% in 2015(8).

However, a little was known on the association of obstetric characteristics and uptake of optimal (≥3) doses of sulphadoxine-pyrimethamine (SP), this stances low uptake of optimal doses of SP during pregnancy among pregnant women. Therefore, this study investigated association of obstetric characteristics and uptake of optimal doses of SP-IPTp and added new information.

2.4 Association of knowledge on effects of malaria in pregnancy to mothers and unborn child of postnatal mothers with uptake of optimal (≥3) doses of SP-IPTp.

An estimated 30 million women living in malaria endemic areas in Africa become pregnant each year. Pregnant women were vulnerable to malaria because pregnancy reduces immunity to malaria and increase susceptibility to malaria infection (4). Due to that, pregnant women recommended to have knowledge on malaria consequences that helps them to use prevention methods for malaria. Knowledge of malaria in pregnancy can be obtained in various sources, in low and middle countries including Tanzania commonly sources were media (television and radio), relatives, friends' especially younger pregnant women and majority of pregnant women received knowledge through ANC clinics.

A study conducted in Sunyani Municipality, Ghana on factors influencing uptake of intermittent preventive treatment of malaria in pregnancy using SP reported that 89% of the participants said malaria was transmitted through a mosquito bite, majority of participants 55% attributed anaemia in pregnant women and be one of the adverse effects of malaria in pregnancy. In addition, 33.8% of the participants opined that malaria can cause spontaneous abortion in a pregnant women. In this study the uptake of optimal doses of SP was 71% (20). However, a study conducted in Tanzania reported that over half 58.9% of respondents were not aware of effects of malaria on a pregnant women. Knowledge on the effect of malaria to unborn baby among mothers was generally poor (33).

However, there was little information of knowledge on effects of malaria in pregnancy to mothers and unborn child among postpartum women as well as pregnant women. These poses pregnant women at greater risk of malaria infection and malaria consequences. Therefore the study was investigated the percentage of postpartum women with knowledge of effects of malaria during pregnancy to mothers and unborn child.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Overview

This chapter present methods that were used in the study, under the following headings: study area, study population, study design, sample size estimation, sampling technique, inclusion and exclusion criteria, data collection tool and procedures, study variables, data analysis, ethical issues and consideration, validity and reliability of the study, pre-testing and limitation of the study.

3.2 Study site

Tandahimba is one of the six districts of the Mtwara Region of Tanzania. It is bordered to the East with Mtwara district, to the south by Mozambique, to the west by Newala district and to the North by Lindi Region. The prevalence of malaria among underfive in Mtwara region stood at 14.8%, (8) Tandahimba being among of the top three districts across the region with high prevalence of malaria. Total population of Tandahimba district according to 2012 National census was 227,512. For provision of health services the district have 40 health facilities among of those there was 1 district hospital located in headquarter, 3 health centres and 36 dispensaries. However, only 33 health facilities provides antenatal care services (ANC) daily at district hospital, 3Health centres and 29 dispensaries.

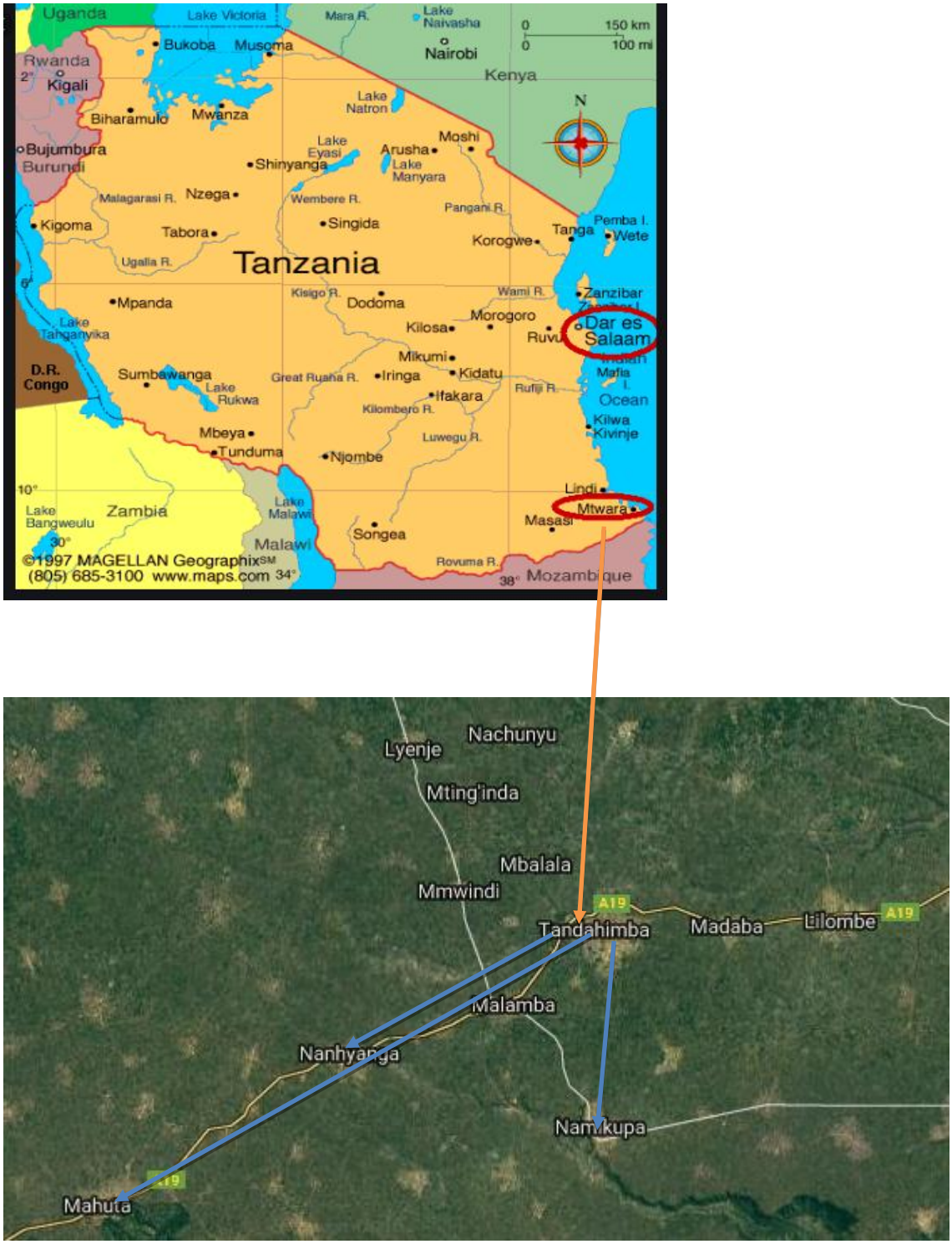


Figure 2: Map of Tanzania showing studied district in Mtwara Region.

Selected health facilities for this study

Study are

3.3 Study Design

A health facility based quantitative analytical cross sectional study was conducted in six selected RCH clinics of public health facilities from Tandahimba district in Mtwara region from June through September 2019.

3.4 Study population.

The target population was all pregnant women and the study population was all Postpartum women aged 15-49 who had just delivered within the past 10 weeks and those that delivered at home but visited health facilities for check-up at a randomly sampled public owned health facility in Tandahimba district.

Inclusion criteria.

Postpartum women with 1-28 days post-delivery attending ANC for her check-up or neonatal services at the selected health facilities. Postpartum women with RCH card for the current pregnancy.

Exclusion criteria.

Postpartum women with contraindications (allergic) to use sulphur medicines including SP. Also postpartum women on cotrimoxazole prophylaxis during their pregnancy because of increased risk of adverse drug reactions when taken together with SP

3.5 Sample size.

Postpartum women recruited in this study were 330 with 100% response rate. The estimation was from the sample size calculation. The formula of estimated sample size and the prevalence of IPTp3+ uptake was from household survey that was 26 % (8).

Sample size (n) = $\frac{Z^2\ P\ (100-P)}{E^2}$

Where

n=sample size required

z= standard normal deviation corresponding to 95% confidence interval which equals to 1.96

P= Proportional of pregnant women who received ≥ 3-doses of IPTp-SP =26 % (9)

E=margin of errors estimated to be 5%

Substituting the value:

Sample size (n) = $\frac{1.96^2*26(100-26)}{2.5}$ = 296

Adjusting for non-response which was set at 10%,

1/RR *n where by RR was response rate which was 90%

1/0.9*296=~330. Thus, a total of 330 postnatal mothers were interviewed

3.6 Sampling technique.

The researcher employed multistage sampling method. On the first stage, all health facilities with ANC services in Tandahimba district were listed and numbered consecutively in an excel sheet. Thereafter, numbers recorded in ascending order. In addition, a random number generator bearing the smallest and largest numbers as the minimum and maximum figures inserted into an excel document. After insertion process, a sampling with replacement formula was inserted in order to get representative numbers purely in a random fashion. From the numbers obtained, they were compared to the particular number of the facility. Thus, the random numbers generated from the excel program was used to select the facilities.

Since the number of deliveries differs for dissimilar health facilities, intentionally it was a plan to include facilities based on hospital, health centre and dispensary level, thus Tandahimba district hospital selected purposively. Two health centres were selected randomly from three health centres and 3 dispensaries were selected separately randomly from 28 dispensaries. Therefore, six (6) health facilities selected from 32 facilities in Tandahimba district by using a systematic random sampling method. On the second stage, the sample size for each facility was calculated by weighting the total sample size required. The relative proportion of postpartum women attended for PNC or neonatal care to each health facility were submitted by District Reproductive and Child Health coordinator (DRCHco) one week prior to data collection. This was two from dispensaries, six from health centres and fourteen from hospital level. This made the ratio of 2:6:14. Thus, among 330 postpartum women 39 were from dispensaries, 82 from health centres and 209 from district hospital respectively (16). Systematic sampling was employed to choose postpartum women, as they existed from selected health facilities at a specified interval by using the estimate of the average postnatal care attendance to calculate sampling interval. The random selection was done by entering all the names of women attended for postnatal care and neonatal services at a particular day in Excel spreadsheet and executed RAND () command. The postpartum women enrolled for each health facility was summarized below (Table 1).

Table 1: Postpartum women enrolled in the study.

Name of district	Name of health facility	Total no. of postnatal mothers attending RCH	Total number of women met inclusion criteria.	Total number of women enrolled
Tandahimba	Tandahimba Hosp.	584	322	209
	Mahuta H/C	202	90	60
	Namikupa H/C	107	33	22
	Mihumbwe Disp	90	32	21
	Kitama Disp	24	14	9
	Nanyanga Disp	30	15	9
	Total	1,037	506	330

3.7 Data collection instruments.

The researcher used a questionnaire as an instrument of data collection that comprised of a series of questions that were administered to participants. The questionnaire was prepared in English translated to Kiswahili language that was the best way of communication. The back translation (Kiswahili to English) was made to make sure the meaning and contents were maintained in Kiswahili version. The questionnaire was adopted from TDHS-MIS 2015/2016 and from other literature.

3.8 Pre-testing of data collection instrument.

The data collection tools were pretested in Newala district hospital in Newala district to 35 postnatal mothers in 1-28 days after delivery, which was 10% of the calculated sample size (330) and was not used for results of this study. The tools were then adjusted in order to fit the contents of this study also to ensure that questions were acceptable and captured reliable information and final Swahili version of the questionnaire was produced**.**

3.8 Data collection process

3.8.1 Recruitment of research assistants

The Principal Investigator collected the data with six research assistants (RAs) by asking respondents closed ended questions. Six research assistants were selected after being interviewed among of them 4 were females and 2 were males. A total number of fourteen health care providers from 2 health facilities were interviewed so as to have six research assistants both were familiar with RCH services and fluent in Swahili language.

3.8.2 Training of research assistants

A two-day orientation process was carried out prior to the commencement of actual data collection. Topics covered included familiarizing with objectives of the study, sampling process, administering the questionnaire with an emphasis on research ethics and informed consent procedures. Moreover, the RAs were oriented to the procedures to interact well with study participants and to handle well the study tools.

3.9 Variables

3.9.1 Dependent variables

Uptake of optimal (≥ 3) doses of SP for IPTp, this information was recorded from the ANC card of every postpartum women.

3.9.2 Independent variables

Sociodemographic characteristics (Age, marital status, education level, occupation and distance from home to facility level), Obstetric characteristics (Parity, gestation age at first ANC and number of ANC visits), as well as knowledge of postpartum women on effects of malaria in pregnancy to the mother and unborn child

3.10 Data management and analysis

3.10.1 Data quality

The principle investigator and research assistants collected data together for 5 days in Tandahimba hospital as one of the selected health facilities to safeguard the sampling and data collection techniques to the research assistants before distributing them to their respective selected health facilities. Principal investigator conducted regular monitoring and supervision to research assistants for selected health facilities by ensured quality sampling technique and data collection. Furthermore, everyday filled questionnaires collected by principal investigator from selected health facilities, checked for completeness and kept on lockable bag for confidentiality.

3.10.2 Data analysis

Data were entered, cleaned and analysed using SPSS version 22. Frequencies and their corresponding percentages or proportions were used to summarize categorical variables and define the proportional of postnatal mothers who received three or more doses of SP for IPTp. Continuous variables were summarized by measure of (mean) and standard deviation.

The binary outcome/dependent variable (Uptake of ≥ 3 of doses of SP for IPTp) was tested for association with predictors/independent variables; statistical significance was assessed by using the Chi square test a p value of < 0.05 was set as a level of significance at 95% confidence interval.

Multivariate logistic regression was performed to calculate adjusted odds ratio to identify the significant predictors influencing uptake of ≥3 doses of SP for IPTp while controlling for potential confounders, all variables of p value of 0.25 at bivariate level were added into the multivariate logistic regression model.

3.11 Ethical consideration.

The ethical clearance of conducting this study was obtained from Muhimbili University of Health and Allied Science (MUHAS) in the Directorate of Research and Publication. An introductory letter to data collectors were obtained from MUHAS. Permission to conduct the study was obtained from the District Medical Officer and facility incharges in the respective district. At the selected antenatal clinics with postnatal mothers on routine visits, brief introduction about the study, its content and importance were explained as well as asking for their cooperation. The facts included right to withdraw from participation at any point during research without and consequences and maintaining confidentiality by excluding respondent's names and identifiers in the data collection tools. Postnatal mothers enrolled as per sampling procedure and interviewed once they have consented.

CHAPTER FOUR

4.0 RESULTS

4.1 Background characteristics of the respondents

The study involved respondents 330 (participation rate =100% of the original estimated sample size of 330). Their age ranged from 15-49 years with a mean of 27 (SD=6.7) years. The majority 198 (60%) of the interviewed were aged 20-35, 80.3% reported that there were married, 67.9% had made ≥4 antenatal care visits and 27% booked early <12 weeks for ANC initiation. (Table 2).

Table 2: Distribution of respondents by background characteristics (N=330).

Variables	Number	Percentage
Age(years)		
<20	73	22.1
20-35	198	60.0
≥36	59	17.9
Marital status		
Married/Cohabiting	265	80.3
Single	42	12.7
Separated	15	4.5
Widow	8	2.5
Level of education		
No formal education/didn't complete primary education	66	20.0
Complete primary education	180	54.5
Didn't complete secondary education	23	7.0
Complete IV	53	16.1
College/university education	8	2.4
Occupation		
House wife	71	21.5
Farmer	201	60.9
Petty business/self employed	49	14.8
Employee(public/private)	9	2.8
Gravidity		
Primigravidae	101	30.6
Secundigravidae	88	26.7
Multigravidae	141	42.7
Parity		
1	108	32.7
≥2	222	67.3

4.2 Proportion of optimal doses (≥ 3) doses of SP-IPTp by selected health facilities.

The overall proportion of postnatal mothers who received optimal (≥3 doses) of SP-IPTp were 79.4%. The uptake of optimal (≥3 doses) of SP-IPTp by selected health facilities ranged from 62.5% to 90.9%. Despite of remarkably high uptake of SP for IPTp there were some facilities particularly Nahnyanga dispensary has low uptake of SP compared to national target 80% by 2015. (Table 4)

Table 3: Uptake of optimal (≥3 doses) of SP for IPTp by selected health facilities (N=330).

Facility	Frequency	Percentage
Tandahimba Hospital	107	81.7
Mahuta H/C	34	72.3
Namikupa H/C	37	88.1
Mihambwe Disp	47	90.4
Nanyanga Disp	20	62.5
Kitama Disp	18	69.2
Total	263	79.7

4.3 Association of socio demographic and obstetric characteristics with uptake of optimal doses of SP-IPTp.

Majority of respondents who took optimal dose of SP were from the age group 21-25 than other groups, 83.5% of respondents who were married/cohabiting took optimal doses of SP for intermittent preventive therapy during their period of pregnancy than other group. Majority (93.4%) of the respondents made ≥ 4 ANC visits and more have administered optimal dose of SP for IPTp than respondents attended less than four visits. Furthermore, about 94.9% of respondents who booked early (<12 weeks) for ANC initiation were administered optimal doses of SP for IPTp. Moreover, postpartum women who took < 30 minutes from home to nearest ANC have received optimal doses of SP for IPTp than (30-60) and more minutes. (Table 5)

Table 4: Association of socio-demographic and obstetric characteristics with uptake of optimal doses of SP-IPTp (N=330).

Variable	Less than 3 doses (%)	More than 3 (%)	P-value
Age (years)			
15-20	16 (21.3)	59 (78.9)	
21-25	16 (17.6)	75 (82.4)	
26-30	5 (10.2)	44 (89.8)	
31-35	14 (25.5)	41 (74.5)	0.34
36-40	12 (25.5)	35 (74.5)	
41-45	4 (33.3)	8 (66.7)	
46-50	0 (0)	1 (100)	
Marital status			
Single	8 (19.5)	33 (80.5)	
Married/cohabiting	44 (16.5	222 (83.5)	<0.001
Separated	8 (53.3)	7 (46.50	
Widow	7 (87.5)	1(12.5)	
Education status			
No formal education/ didn't complete primary education	16 (24.2)	50 (75.8)	
Complete primary education	36 (20.0)	144 (80.0)	
Didn't complete secondary education	7 (30.4)	16 (69.6)	0.12
Complete form IV	5 (9.4)	48 (90.6)	
College/ university	3 (37.5)	5 (62.5)	
Occupation			
House wife	13 (18.3)	58 (81.7)	
Farmer	43 (21.4)	158 (78.6)	0.93
Petty business/self employed	9 (18.4)	40 (81.6)	
Employee	2 (22.2)	7 (77.8)	
ANC visit for the first time			
Less than 12 weeks	5(5.6)	84 (94.4)	<0.001
More than 12 weeks	62 (25.7)	179 (74.3)	
Parity			
1	19 (17.6)	89 (82.4)	0.39
>1	48 (21.6)	174 (78.4)	
Number of ANC attended			
<4 visits	52 (50.5)	51 (49.5)	< 0.001
≥4 visits	15 (6.6)	212 (93.4)	
Distance(walking time from home to facility with ANC			
(< 30) minutes from home to nearest health facility	13 (10.3)	113 (89.7)	
(30-60) minutes from home to nearest health facility.	16 (11.8)	120 (88.2)	< 0.001
More than 60 minutes from home to health facility	38 (55.9)	30 (44.1)	

4.4 Association of knowledge on effects of malaria to mothers and unborn child with uptake of optimal doses of SP-IPTp.

There were six responses assessing the knowledge of pregnant women on effects of malaria in pregnancy to the mothers and unborn child. Table 6 shows knowledge of respondents on effects of malaria to mothers and unborn child. Majority (55.8%) knew malaria in pregnancy causes spontaneous abortion, about a quarter (28.5%) knew malaria could cause low birth weight (LBW). However, less than half of respondents (39.7%) knew malaria in pregnancy could cause anaemia during period of pregnancy.

Table 5: Knowledge of postnatal mothers on the effects of malaria in pregnancy (N-330)

Knowledge on effects of malaria in pregnancy	Frequency	Percentage
Can cause anaemia	131	39.7
Can cause death	158	47.9
Can cause intrauterine foetal death	137	41.5
Can cause spontaneous abortion	184	55.8
Can cause prematurity	110	33.3
Can cause low birth weight (LBW)	94	28.5

4.5 Multivariate analysis on predictors of optimal uptake of (≥ 3) doses of SP-IPTp

Table 6 shows results on multivariate analysis of socio-demographic and obstetric characteristics of postpartum women associated with uptake of optimal (≥3) doses of SP-IPTp.

Findings revealed that postpartum women who lived with their spouse/partner were almost seven times higher odds to receive three or more doses compared to those who were (single/widow/divorced) (OR=8.59, 95%CI, 4.63-15.93). Postpartum women who visits ANC four or more were five times more likely to receive (≥3) doses of SP- IPTp compared to those who had less than four visits (OR=8.59, 95%CI,4.63-15.93). In addition postpartum with early booking at ANC clinic for first gestational age was more likely to receive optimal (≥3) doses of IPTp-SP compared to those who were booked late (OR=0.02, 95%CI, 0.21-0.86). Distance was approximated by walking time in minute for those postpartum women walking more than 60 minutes were less likely to receive optimal (≥3) doses of SP-IPTp compared to those who walking less than 30 minutes (OR= 2.07, 95%CI, 1.13-3.80).

After adjusting for confounding variables, predictors that remained to be significantly associated with the uptake of optimal (≥3) of SP for IPTp included married or living with a spouse/partner with [Adjusted Odds Ratio (AOR) =7.55, 95% CI, 3.79-15.05]. ANC contacts four or more visits [AOR=4.97, 95% CI, 2.46-10.03] and having walking < 30 minutes from home to nearest health facilities [AOR=2.52 95%CI, 1.24-5.12]

Table 6: Multivariate regression analysis on the predictors of optimal (≥3) doses of SP-IPTp among postpartum women (N =330).

Variables	Crude OR (95% CI	Adjusted OR (95% CI)
Age		
≥20 years	0.75 (0.40-1.41)	1.70 (0.63-4.65)
<20 years	1 Ref	1 Ref
Marital status		
Married/cohabiting	8.59 (4.63-15.93)	7.55 (3.79-15.05)
Single/widow/divorced	1 Ref	1 Ref
Education level		
Secondary/college	1.11 (0.60-2.09)	1.54 (0.55-4.37)
Non/primary	1 Ref	1 Ref
Occupation		
Employed/self/employed	0.69 (0.32-1.49)	1.25 (0.49-3.11)
Farmer/housewife	1 Ref	1 Ref
Parity		
1+	0.92 (0.51-1.65)	1.24 (0.49-3.11)
1	1 Ref	1 Ref
GA at 1st ANC booking (wks)		
<12 weeks	0.02 (0.21-0.86)	0.67 (0.30-1.52)
>12 weeks	1 Ref	1 Ref
Number of ANC visits		
>4	8.59 (4.63-15.93)	4.97 (2.46-10.03)
<4	1 Ref	1 Ref
Distance(walking) in min		
<30 minutes from home to ANC	2.07 (1.13-3.80)	2.52 (1.24-5.12)
(30-60) and more	1Ref	1 Ref

CHAPTER FIVE:

5.0 DISCUSSION

This study reported a higher proportion (79.7%) uptake of optimal ≥3 doses of SP-IPTp, as compared to that revealed from previous study [28]. The national target of three or more doses of SP was 100% (9). The difference might be due to the current study being in the Southern zone with high prevalence of malaria, therefore community perception and attitudes of pregnant women on the importance of adhering to malaria prevention/interventions increased. The coverage of 79.7% receiving at least three or more doses in this study was higher than the figure (8%) reported for IPTp3+ coverage in the 2016 Tanzania Demographic and Health Survey and higher than 26% of IPTp3+ coverage reported by TMIS in 2017 (9). The difference in the proportions of postpartum women who received optimal doses of SP differed. The observed difference uptake of SP-IPTp reported in this study (79.7%) and the national figure (26%), only highlight the different variations of uptake of optimal doses of SP-IPTp in Ghana. For instance, uptake of optimal SP-IPTp reported in this study falls in line with the findings of a similar study in Ghana that reported a high SP-IPTp uptake level of 71% [20], the prevalence of taking at least three doses of SP-IPTp during pregnancy reported in this study was slightly similar to that reported in Bukoba, Tanzania [26]. Although it differs greatly with the findings of the other, studies that reported lower prevalence for uptake of optimal doses of SP-IPTp [16, 17, 18 & 21]. the proportion of postpartum women who took one and two doses in this study were less as compared to that reported in the study done by Amon Exavery in six district, Tanzania (2). Those respondents who took less (20.3%) optimal doses of SP-IPTp, reported reasons were less attended ANC visits, late ANC initiation, swallowing SP at home without documenting in ANC cards, lack of water at facilities used for swallowing SP and low knowledge on effects of malaria to mothers and unborn child and shortage of SP in health facilities.

The univariate and multivariate models of this study reported that predictors that were significantly associated with uptake of optimal ≥3 doses of sulphadoxine pyrimethamine for IPTp among postpartum women in Tandahimba district were married/cohabiting with partners, early initiation of ANC, distance from home to nearest health facility with ANC and ANC four or more visits. These findings were similar from other studies such as a study conducted in private health facilities in Tema Metropolis, Ghana reported that respondents who attended ANC >5 visits increased their uptake by 83% compared to those who attended <5 visits [35]. Moreover, another study conducted in Zomba district, Malawi reported that receipt of at least

three doses of SP was higher among pregnant women making four or more ANC clinic visits than those making three or less visits (16). In addition, the study conducted in Kenya and Mali reported that distance from a hospital or health facilities was cited as a problem mainly because of lack of transport and money for attending ANC visits [30]. Other studies were from Senegal, reported that women attended four antenatal visits or more were more likely to use optimal malaria preventive methods during pregnancy [17]. However, the findings were dissimilar to those of studies that found having placental malaria, having higher education level [21,28] and parity being significant predictors for uptake of optimal doses of SP-IPTp. The possible reasons behind these differences in findings might be differences in socio demographic, geographical locations and obstetric characteristics of study populations.

More than 56% of respondents in this study had knowledge of malaria in pregnancy can cause spontaneous abortion, 39.7 can cause anaemia and about 29% knew malaria can cause low birth weight, these results showed that most respondents had low knowledge on effects of malaria to mothers and unborn child. This study results was different from a study conducted in Sunyani Ghana reported more than 70% had good knowledge of IPTp. However the knowledge of the women on effects of malaria to mothers and unborn child was low (20). This was consistent with the current study. This low knowledge on effects of malaria in pregnancy has serious consequences on both the mother and unborn child. In addition, the association between apparent knowledge of the effects of malaria in pregnancy and uptake of IPTp was not significant in this study and previous studies.

Early first ANC was essential on administered optimal doses of SP. This was because a woman making early first ANC visit was more likely to receive more doses of SP if backed with frequent ANC visits and was delivered with the SP at the facility. This study found that majority of the women made their first ANC visit at a median gestational age of 15 weeks, which was comparable to findings in Zomba district, Malawi where the median gestational age at first ANC was 16 weeks [16]. This implies that women in Tandahimba attend antenatal clinics at an early gestational age but this did not make a significant difference on SP uptake. This was similar to findings by a study in Senegal that found that early gestation at booking was not associated with IPTp uptake among pregnant women [17].

5.4. Limitation and mitigation

Our findings might be limited considering the, information on the number of SP for IPTp received by pregnant women retrieved from the MCH cards it was possible that not the entire dose of SP given to pregnant women swallowed, as some women did not consume SP as a directly observed therapy (DOT). In addition, findings of this study should not be generalized to all health facilities in Tandahimba district as the study focused in rural settings in which the picture could be different in urban settings.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS.

6.1 Conclusion

Malaria in pregnancy continued to pose a major public health problem in low and middle countries included Tanzania. In addition, there were numbers of evidenced-based interventions for preventing malaria in pregnancy and one of them was IPTp-SP. This study reported that uptake of optimal doses of sulphadoxine pyrimethamine for intermittent preventive treatment during pregnancy predicted by ANC attendance four or more visits, having married/cohabiting with spouse/partner and distance (minutes) from home to nearest health facility.

6.2 Recommendation

Advocacy and sensitization for ANC visits for pregnant women, construction of health facility near community residence and importance of swallowing SP infront of health care providers should be strengthened through all stakeholders (MoHCDGEC, CHMT, community and USAID Boresha Afya) working in Tandahimba district for improving higher uptake of optimal SP-IPTp. Further studies are required to explore the facility and providers factors that might influence uptake of SP for IPTp.

REFERENCES

1. World Health Organization. World malaria Report
2. Exavery A, Mbaruku G, Mbuyita S, Makemba A, Kinyonge IP, Kweka H. Factors affecting uptake of optimal doses of sulphadoxine-pyrimethamine for intermittent preventive treatment of malaria in pregnancy in six districts of Tanzania. Malar J. 2014;13(1).
3. Guyatt HL, Snow RW: Malaria in pregnancy as an indirect cause of infant mortality in sub-Saharan Africa. Trans R Soc Trop Med Hyg 2001, 95:569–576.
4. Dellicour S, Tatem AJ, Guerra CA, Snow RW, Ter Kuile FO. Quantifying the number of pregnancies at risk of malaria in 2007: A demographic study. PLoS Med. 2010;7(1):1–10.
5. Guyatt HL, Snow RW: Impact of malaria during pregnancy on low birth weight in sub-Saharan Africa. Clin Microbiol Rev 2004, 17:760–769.
6. World Health Organization. Global Malaria Programme. Malaria: Global Fund proposal development 2011.
7. Initiative M. PRESIDENT' S MALARIA INITIATIVE TANZANIA Malaria Operational Plan FY 2018. 2018;
8. Survey H, Survey MI, Findings K. Demographic and Health Survey and Malaria Indicator Survey Key Findings Tanzania. Tanzania Demogr Heal Surv Malar Indic Surv [Internet]. 2016;1–21. Available from: https://www.dhsprogram.com/pubs/pdf/SR233/SR233.pdf
9. MoHCDGEC (Tanzania Mainland), MoH (Zanzibar), NBS, OCGS, ICF. Tanzania Malaria Indicator Survey 2017. 2017;
10. De Beaudrap P, Turyakira E, White LJ et al. Impact of malaria during pregnancy on pregnancy outcomes in a Ugandan prospective cohort with intensive malaria screening and prompt treatment. Malaria Journal. 2013; 12: 139. PubMed | Google Scholar

11. Mahande AM, Mahande MJ. Prevalence of parasitic infections and associations with pregnancy complications and outcomes in northern Tanzania : a registry-based cross-sectional study. BMC Infect Dis [Internet]. 2016;1–9. Available from: http://dx.doi.org/10.1186/s12879-016-1413-6

12. Roll Back Malaria Partnership: Eliminating Malaria: learning from the past, looking ahead 2011

13. Doku DT, Zankawah MM, Boateng A, Gyamfi A. Factors influencing dropout rate of intermittent preventive treatment of malaria during pregnancy. BMC Res Notes. 2016;1–7.

14. WHO. Updated WHO Policy Recommendation (October 2012) Intermittent Preventive Treatment of malaria in pregnancy using Sulfadoxine- Pyrimethamine (IPTp-SP). Glob Malar Program. 2012;

15. Malaria in pregnancy. Training Manuel for Health Providers 2005.

16. Azizi SC, Chongwe G, Chipukuma H, Jacobs C, Zgambo J, Michelo C. Uptake of intermittent preventive treatment for malaria during pregnancy with Sulphadoxine-Pyrimethamine (IPTp-SP) among postpartum women in Zomba District, Malawi: A cross-sectional study. BMC Pregnancy Childbirth. 2018;18(1):1–13.

17. Ahouidi A, Sarr M, Mboup S, Abdou M, Mbengue S, Bei AK, et al. Factors influencing the use of malaria prevention strategies by women in Senegal : a cross-sectional study Factors influencing the use of malaria prevention strategies by women in Senegal : a cross - sectional study. 2017;

18. Fondjo LA, Sarbeng K, Arthur SN, Addai-Mensah O, Annani-Akollor ME, Anto EO, et al. Regular Antenatal Attendance and Education Influence the Uptake of Intermittent Preventive Treatment of Malaria in Pregnancy: A Cross-Sectional Study at the University Hospital, Kumasi, Ghana. J Trop Med. 2018;2018:1–8.

19. Rassi C, Graham K, King R, Ssekitooleko J, Mufubenga P, Gudoi SS. Assessing demand-side barriers to uptake of intermittent preventive treatment for malaria in pregnancy: a qualitative study in two regions of Uganda. Malar J. 2016;

20. Issah K, Bachan EG, Maya ET, Apanga PA, Noora CL, Ibrahim H. Factors influencing uptake of intermittent preventive treatment of malaria in pregnancy using sulphadoxine pyrimethamine in Sunyani Municipality, Ghana. Pan Afr Med J. 2017;28:1–12.

21. Arnaldo P, Vallbona ER, Langa JS, Salvador C, Guetens P, Chiheb D, et al. Uptake of intermittent preventive treatment and pregnancy outcomes : health facilities and community surveys in Chókwè district , southern Mozambique. Malar J [Internet]. 2018;1–13. Available from: https://doi.org/10.1186/s12936-018-2255-z

22. Ameh S, Owoaje E, Oyo-ita A, Kabiru CW, Akpet OEO, Etokidem A. Barriers to and determinants of the use of intermittent preventive treatment of malaria in pregnancy in Cross River State , Nigeria : a cross-sectional study. BMC Pregnancy Childbirth [Internet]. 2016;1–9. Available from: http://dx.doi.org/10.1186/s12884-016-0883-2

23. Hill J, Kayentao K, Achieng F, Diarra S, Dellicour S, Diawara SI, et al. Access and use of interventions to prevent and treat malaria among pregnant women in Kenya and Mali: A qualitative study. PLoS One. 2015;10(3):1–23.

24. Stephen AA, Wurapa F, Afari EA, Sackey SO, Malm KL, Nyarko M. Supplement article Factors influencing utilization of intermittent preventive treatment for pregnancy in the Gushegu. 2016;25(Supp 1):6–9.

25. Kibusi SM, Kimunai E, Hines CS. Predictors for uptake of intermittent preventive treatment of malaria in pregnancy (IPTp) in Tanzania. BMC Public Health [Internet]. 2015;1–8. Available from: http://dx.doi.org/10.1186/s12889-015-1905-0

26. Protas J, Tarimo D, Moshiro C. Determinants of timely uptake of ITN and SP (IPT) and pregnancy time protected against malaria in Bukoba, Tanzania. BMC Res Notes. 2016;9(1):1–8.

27. Okethwangu D, Opigo J, Atugonza S, Kizza CT, Nabatanzi M, Biribawa C, et al. Factors associated with uptake of optimal doses of intermittent preventive treatment for malaria among pregnant women in Uganda : analysis of data from the Uganda Demographic and Health Survey , 2016. Malar J [Internet]. 2019;1–8. Available from: https://doi.org/10.1186/s12936-019-2883-y

28. Mpogoro FJ, Matovelo D, Dosani A, Ngallaba S, Mugono M, Mazigo HD. Uptake of intermittent preventive treatment with sulphadoxine-pyrimethamine for malaria during pregnancy and pregnancy outcomes: A cross-sectional study in Geita district, North-Western Tanzania. Malar J. 2014;

29. Odjidja EN, Duric P. Evaluation of demand and supply predictors of uptake of intermittent preventive treatment for malaria in pregnancy in Malawi. 2017;8(20):20. Available from: www.malariaworld.org.

30. Hill J, Kayentao K, Achieng F, Diarra S, Dellicour S, Diawara SI, et al. Access and use of interventions to prevent and treat malaria among pregnant women in Kenya and Mali: A qualitative study. PLoS One. 2015;10(3):1–23.

31. Buh A, Kota K, Bishwajit G, Yaya S. Prevalence and Associated Factors of Taking Intermittent Preventive Treatment in Pregnancy in Sierra Leone. Trop Med Infect Dis. 2019;4(1):32.

32. Kearns A., Hurst T., Caglia J. LA. Focused antenatal care in Tanzania. Women Heal Initiate. 2014;

33. Rumisha SF, Zinga MM, Fahey CA, Wei D, Bwana VM, Mlozi MRS, et al. Accessibility , availability and utilisation of malaria interventions among women of reproductive age in Kilosa district in central Tanzania. 2014;1–10.

34. Kassoum K, Garner P, Anne Maria van E, Inbarani N, Cally R, Abdunoor M, et al. Intermittent Preventive Therapy for Malaria During Pregnancy Using 2 vs 3 or More Doses of Sulfadoxine-Pyrimethamine and Risk of Low Birth Weight in Africa: Systematic Review and Meta-analysis. JAMA. 2015;309(6):594–604.

18. Henry M, Florey L, Youll S, Gutman JR. An analysis of country adoption and implementation of the 2012 WHO recommendations for intermittent preventive treatment for pregnant women in sub-Saharan Africa 11 Medical and Health Sciences 1117 Public Health and Health Services. Malar J [Internet]. 2018;17(1):1–10. Available from: https://doi.org/10.1186/s12936-018-2512-1

23. Mubyazi GM, Bloch P, Magnussen P, Olsen ØE, Byskov J, Hansen KS. Women's experiences and views about costs of seeking malaria chemoprevention and other antenatal services : a qualitative study from two districts in rural Tanzania. 2010; 1–13.

24. Hanson C, Cox J, Mbaruku G, Manzi F, Gabrysch S, Schellenberg D, et al. Maternal mortality and distance to facility-based obstetric care in rural southern Tanzania: A secondary analysis of cross-sectional census data in 226 000 households. Lancet Glob Heal [Internet]. 2015;3(7):e387–95. Available from: http://dx.doi.org/10.1016/S2214-109X(15)00048-0

25. Nkoka O, Chuang TW, Chen YH. Association between timing and number of antenatal care visits on uptake of intermittent preventive treatment for malaria during pregnancy among Malawian women. Malar J [Internet]. 2018;17(1):1–11. Available from: https://doi.org/10.1186/s12936-018-2360-z

27. Makemba A, Mbaruku G, Kinyonge IP, Kweka H, Exavery A, Mbuyita S. Factors affecting uptake of optimal doses of sulphadoxine-pyrimethamine for intermittent preventive treatment of malaria in pregnancy in six districts of Tanzania. Malar J. 2014;13(1):1–9.

29. Rumisha SF, Zinga MM, Fahey CA, Wei D, Bwana VM, Mlozi MRS, et al. Accessibility , availability and utilisation of malaria interventions among women of reproductive age in Kilosa district in central Tanzania. 2014;1–10.

36. Waller A, Bryant J, Cameron E, Galal M, Quay J, Sanson-Fisher R. Women's perceptions of antenatal care: Are we following guideline recommended care? BMC Pregnancy Childbirth [Internet]. 2016;16(1):1–10. Available from: http://dx.doi.org/10.1186/s12884-016-0984-y

37. 27. Djimde A, Traore B, Doumbo S, Traore MS, Ongoiba A, Doumtabe D. Superiority of 3 Over 2 Doses of Intermittent Preventive Treatment With Sulfadoxine-Pyrimethamine for the Prevention of Malaria During Pregnancy in Mali : A Randomized Controlled Trial. 2011;53:215–23.

29. Moya-alvarez V, Abellana R, Cot M. Pregnancy-associated malaria and malaria in infants : an old problem with present consequences. 2014;

30. Sohail M, Shakeel S, Kumari S et al. Prevalence of Malaria Infection and Risk Factors Associated with Anaemia among Pregnant Women in Semiurban Community of Hazaribag, Jharkhand, India. BioMed Research International. 2015; 2015: 740512. PubMed | Google Scholar

APPENDICES:

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES.

Topic: Predictors of optimal uptake of sulphadoxine-pyrimethamine for intermittent preventive therapy during pregnancy in Tandahimba district.

APPENDIX 1: QUESTIONNAIRERS FOR ANC CLIENTS -ENGLISH VERSION

Introduction

We are healthcare workers from Muhimbili University of Health and Allied sciences; we are here to collect information on intermittent preventive therapy for pregnant women (IPTp) use. This information will be used for research purpose and its outcome is expected to be used as basis of improving IPT use among pregnant women. We therefore request your participation in this interview**.**

Instruction

Please follow instructions under each section before interviewing the respondents. All the instructions written in italics. Fill in the correct answer for questions 1 -5 in this section. For the rest of other questions (unless shown) circle the number of the corresponding response. Note: Do not read the responses for the respondent to choose the right answer. Read the question and wait for the response.

Identification

Q1.Questionnaire number----------

Q2.Name of the District----------

Q3.Name of the facility----------

Q4.Level of facility----------

Socio-demographic characteristics with optimal (≥3) doses of SP for IPTp

Q5.When were you born? [……] Age in years [.....**....]**

Q6 what is your marital Status? [ ]

1) Married
2) Widow
3) Divorced
4) Single
5) Co-habiting

Q7. Highest level of education attained [ ]

1) No formal education/didn't complete primary education
2) Completed Primary education
3) Didn't complete secondary education
4) Complete secondary education IV
5) Completed secondary education VI
6) College/university

Q8. Occupation, which is the main source of income? [ ]

1) Housewife/depend on my husband
2) Farmer
3) Petty business/self employed
4) Employee (public/private)

Obstetrics characteristics with optimal (≥3) doses of SP for IPTp

Q9.Parity :(Number of times a pregnant woman has delivered) *(Confirm from the MCH card)*
[ ]

Q10.Gestation age (wks.) at first ANC visit *(record from MCH card)* [ ]

Q11.Total number of routine ANC visit *(Confirm on the MCH)* [ ]

Q12..Number of SP doses given/taken for IPTp during ANC contacts *(record from MCH card)*
[ ]

Knowledge on ANC services with optimal (≥3) doses of SP for IPTp.

Q13.How long (walking time in minutes) from your home to the closest health facility with the ANC services..... *(Fill in the blanks for the mentioned response)*

Q14.When is it recommended for a pregnant woman to start seeking ANC services?

1) Once discovered pregnant
2) At 16 weeks
3) At 20 weeks
4) >20weeks
5) About to deliver
6) Others specify……..

Q15.What is the recommended interval time (weeks) between one ANC visits and another?

1) 2weeks
2) 4weeks
3) 8weeeks
4) >8weeks
5) Don't know

Q16.Who advised you to seek ANC services?

(*Read Q and mention more than one response*)

1) Self-initiative
   (i) Yes [ ] (ii) No [ ]
2) Husband/Spouse
   (i) Yes (ii) No [ ]
3) Relatives
   (i) Yes (ii) No [ ]
4) Heard from the radio/television/read the newspapers
   (i) Yes (ii) No [ ]
5) Health facilities /ANC services
   (i) Yes [ ] (ii) No [ ]

Q17.What services are you expecting to receive during routine ANC visits at the Health facility?

(*Read Q and mention more response)*

1) IPTP-SP for prevention of malaria
   (i) Yes [ ] (ii) No [ ]

2) Haematinics

(i) Yes (ii) No [ ]

3) Tetanus Toxoid (TT)

(i) Yes (ii) No [ ]

4) Testing HIV status

(i) Yes (ii) No [ ]

5) Knowing the status of the baby

(i) Yes (ii) No [ ]

6) Testing for malaria

(i) Yes (ii) No [ ]

7) Testing for Haemoglobin level

(i) Yes (ii) No [ ]

8) Don't know

(i) Yes [ ] (ii) No [ ]

9) Others specify----------[**]**

Knowledge of pregnant women on IPTp and other malaria prevention methods (read options and circle the mentioned response)

Q18. Have you ever heard of any preventive measure of malaria during pregnancy?

1) Yes

2) No (*If No, go to Q20*)

Q 19.Where did you hear about prevention of malaria in pregnancy? *(Mention multiple response)*

1) Antenatal Clinic

i) Yes [ ] (ii) No [ ]

2) Television

i) Yes [ ] (ii) [ ]

3) Radio

(i) Yes [ ] (ii) No [ ]

4) Leaflets

(i) Yes [ ] (ii) No [ ]

5) Relatives/friends

(i) Yes [ ] (ii) No [ ]

Q20.What methods can you use to prevent malaria during pregnancy *(Read the Q and mention multiple response)*

1) Use of drugs (IPT) for malaria prevention

(i) Yes [ ] ii) No [ ]

2) Use of LLIN for malaria prevention

(i) Yes [ ] ii) No [ ]

3) Use of mosquito repellent for malaria prevention

(i) Yes [ ] ii) No [ ]

4) Wearing of protective clothing

(i) Yes [ ] ii) No [ ]

5) Spray insecticides inside the house

(i) Yes [ ] ii) No [ ]

6) Drain stagnant water

i) Yes [ ] ii) No [ ]

7) Clear grass and bushes around the home

i) Yes [ ] ii) No [ ]

8) Others specify……

Q21.What drug was used for malaria prevention during pregnancy at ANC clinic?
(*Read Q and mention correct response).*

1) SP (Sulfadoxine Pyrimethamine)

(i) Yes [ ] (ii) No [ ]

2) Metakelfin

(i) Yes [ ] (ii) No [ ]

3) ALU

(i) Yes [ ] (ii) No [ ]

4) Duo-cotexcin

(i) Yes [ ] (ii) No [ ]

5) Others specify……..

(From Q 22-25 read Q and circle correct response)

Q22.What is the minimum doses of SP is required during pregnancy

1) One
2) Two
3) Three 4) More than three.

Q23. How many doses of SP recommended for you to take during your entire pregnancy?

1) One
2) Two
3) Three
4) Three and above
5) Don't know

Q24. When is the recommended gestation age for the first dose of SP for IPTp ?

1) As early as possible after 12 weeks
2) 20-24weeks
3) 28-32weeeks
4) >32weeks
5) Others specify……

Q25.What is the time interval between one dose of SP and the next dose

1) 2weeks
2) 4weeks
3) 8weeks and above
4) Don't know

Q26. Where is the recommended place for SP to be swallowed?

(*Read Q and answer multiple response*)

1) In front of ANC provider
   (i) Yes [ ] (ii) No [ ]
2) At home
   (i) Yes [ ] (ii) No [ ]
3) Anywhere in the hospital
   (i) Yes [ ] (ii) No [ ]
4) Don't know
   (i) Yes [ ] (ii) No [ ]
5) Other specify----------

Q27. During which period of pregnancy (GA in weeks) is SP not allowed to be taken?

(*Read Q and circle correct response*)

1) 12 weeks and below
2) 24-36weeks
3) Above 36 weeks
4) Don't know

Availability of sulphadoxine-pyrimethamine, water and cups with uptake of optimal (≥3) doses of SP for IPTp (read options and put tick to provided box)

Q34. Do you usually swallow SP in front of service provider at ANC?

1. Yes to all the visits [ ]
2. No to some visits [ ]
3. No to all the visits [ ] (*if no go to Q 39)*

Q35.How many times did you swallow SP at ANC?

1) Once
2) Twice
3) Thrice

4) Four times

5) Five times

6) Can't remember

Q36. If yes, where did you get the water to take the medicine?

1) Bought water at the ANC

(i) Yes [ ] (ii) No [ ]

2) Fetched water from portable bucket with tape

(i) Yes [ ] (ii) [ ]

3) Bought water at the health facility

(i) Yes [ ] (ii) No [ ]

4) Had my own water

(i) Yes [ ] (ii) No [ ]

5) Other specify……

Q37.If no to some visits to Q 34, what were the reasons for not swallowing SP in front of service provider

1. There was no tape water at ANC

(i) Yes [ ] (ii) No [ ]

2. There was no enough cups to use tape water at ANC

(i) Yes [ ] (ii) No [ ]

3. I was hungry/had not eaten yet

(i) Yes [ ] (ii) No [ ]

4. There was no medicine at the facility

(i) Yes [ ] (ii) No [ ]

5. I don't know

(i) Yes [ ] (ii) No [ ]

6. Other specify……

Knowledge on effects of malaria in pregnancy and unborn

Q38. Do you think that SP is effective in preventing malaria in pregnancy?

1. Yes (*If yes, go to question42*)
2. No
3. I don't know

Q39. If no to Q40, What reasons make you think SP is not effective in IPT?

(*Read Q and mention correct response)*

1. It has shown resistance in treating malaria

   (i) Yes [ ] (ii) No [ ]

2. It is no longer used for Malaria treatment

   (i) Yes [ ] (ii) No [ ]

3. It has side effect to my baby

   (i) Yes [ ] (ii) No [ ]

4. I don't know

   (i) Yes [ ] (ii) No [ ]

5. Other (Specify)……

Q40. What do you think can be the effects of malaria during pregnancy?

(*Mention more than one response)*

1) Can cause anaemia

   (i) Yes [ ] (ii) No [ ]

2) Can cause death

   (i) Yes [ ] (ii) No [ ]

3) Can cause spontaneous abortion

   (i) Yes [ ] (ii) No [ ]

4) Can cause intrauterine foetal death

   (i) Yes [ ] (ii) No [ ]

5) Can cause prematurity

   (i) Yes [ ] (ii) No [ ]

6) Can cause low birth weight

   (i) Yes [ ] (ii) No [ ]

7) I don't know

   (i) Yes [ ] (ii) No [ ]

8) Others specify----------

Q41.Knowledge score on IPTp-SP……

1) Knowledgeable [ ]
2) Unknowledgeable [ ]

DODOSO KWA MAMA MJAMZITO

APPENDEX 2: SWAHILI VERSION
UTAMBULISHO

UTANGULIZI: Sisi ni wafanyakazi wa afya kutoka Chuo Kikuu Cha Afya na Tiba cha Muhimbili; tupo hapa kwa ajili ya kukusanya taarifa zinazohusiana na matumizi ya IPT, taarifa hizi zitatumika kwa ajili ya utafiti tu na matokeo ya utafiti huu yanatarajiwa kutumika kuboresha huduma hizi za IPT kwa wajawazito. Kwa hiyo tunaomba muda na ushiriakiano wako kwa kushiriki katika usahili huu.

SEHEMU YA 1: UTAMBULISHO NA TAARIFA BINAFSI ZA MSHIRIKI

MAELEKEZO: Tafadhali fuata maelekezo katika kila kipengele kabla ya kufanya usahili. Andika jibu sahihi kwenye visanduku kwa swali la 1- 5 kwa kipengele hiki. Kwa maswali yaliyobaki, zungushia namba ya jibu tajwa . Zingatia: Usisome majibu kwa msahiliwa kuchagua lililo sahihi bali soma swali kisha subiri upate jibu na kisha zungushia namba ya jibu tajwa.

1. Nambari ya dodoso…….
2. Jina la Wilaya……..
3. Jina la kituo……
4. Kiwango cha kituo……
5. Umezaliwa mwaka gani…….miaka (miaka) [ ]
6. Hali ya ndoa …….

1) Umeolewa [ ] 2) Umepewa talaka [ ]
3) Hujaolewa [ ] 4) Mmetengana [ ] 5) Mjane [ ].

7. Kiwango chako cha juu cha elimu ni kipi?.....

1) Sijaenda/ sijamaliza shule ya msingi [ ] 4) Nimemaliza sekondari kidato cha IV [ ]
2) Nimemaliza shule ya msingi [ ] 5) Nimemaliza sekondari kidato cha VI [ ]
3) Sijamaliza sekondari [ ] 6) Elimu ya juu /chuo kikuu [ ]

8. Je unafanya kazi gani unayoitegemea sana kukuingizia kipato? (*Jaza jibu moja sahihi*)

1) Mama wa nyumbani/namtegemea mume [ ] 2) Mkulima [ ]
3) Mfanyabiashara/Nimeajiajiri [ ] 4) Nimeajiriwa (serikalini/binafsi) [ ]

9. Rekodi umri wa mimba ulioandikwa kwenye kadi ya kliniki pindi anaanza kliniki……..
10. Mtoto uliyenae alikuwa wa mimba ya ngapi?..... [ ]

1) Ya 1 [ ] 2) Ya 2 [ ] 3) ya 3 [ ] 4) Ya 4 [ ] 5) Zaidi ya 4 [ ]

11. Ni mara ngapi umewahi kujifungua……

12. Mara ya kwanza kuhudhuria kliniki ya wajawazito mimba ilikuwa na umri gani?……..

1) chini ya 1 [ ] 2)1-3 [ ] 3) 4-5 [ ] 4) 6-9 [ ](*Jaza toka kwenye kadi ya RCH4).*

13. Ni mara ngapi ulihudhuria kiliniki katika mimba yako ya mwisho (*Hakiki kwenye kadi ya mama RCH 4)*

1) Moja [ ] 2) Mbili [ ]

3) Tatu [ ] 4) Nne [ ] 5) Zaidi ya nne [ ]

14. Idadi ya dozi za SP ulizopewa ……. (*Rekodi toka kwenye kadi RCH4)*

1) Chini ya 3 [ ] 2) ≥Tatu [ ]

SEHEMU YA 2: UPATIKANAJI NA UFAHAMU JUU YA HUDUMA ZITOLEWAZO KLINIKI.*(Soma vipengele na zungushia namba ya jibu/majibu tajwa na fata maelekezo kwa maswali yenye maelezo kwenye mabano)*

15. Muda wa kutembea kwa dakika kutoka unapoishi mpaka kituo cha karibu cha afya chenye huduma za kliniki kwa ajili ya mama wajawazito----------

1) Chini ya dakika 30 [ ] 2) Dakika 30-60 [ ] 3) Zaidi ya dakika 60 [ ]

16. Kwa hudhurio la kwanza huwa unatumia kwa kadri masaa mangapi kupata huduma za kliniki (kuanzia unapofika kliniki mpaka unapoondoka kwenye kituo)……...

1) Saa 1 [ ] 2) Masaa 2 [ ] 3) Masaa 3 [ ] 4) Zaidi ya masaa 3[ ]

17. Nani alikushauri kutafuta huduma ya mama mjamzito (*Zungushia yote yanayokubalika*)

1) Mimi Binafsi [ ] 2) Mume wangu/mwenza [ ]

3) Mama mkwe [ ] 4) Nilisikia kwenye redio/television/magazeti [ ]

5) Majirani [ ] 6) hospitali/ Kituo cha Afya/ Zahanati [ ]

18 .Je ni kipindi gani mama mjamzito anashauriwa kuanza kliniki ya mama wajawazito?

1) Mama anapojigundua kuwa ni mjamzito [ ] 2) Katika wiki ya 16 (miezi 4) [ ]

3) Katika wiki ya 20 (miezi 5) [ ] 4) >20wiki (miezi 5) [ ]

5) Unapokaribia kujifungua [ ] 6) Sijui [ ]

19. Je huwa inashauriwa kuhudhuria kliniki kila baada ya wiki ngapi?

1) Wiki 2 [ ] 2) Wiki 4 [ ]

3) Wiki 8 [ ] 4) >wiki 8 [ ]

5) Sijui [ ]

20. Je ni huduma gani uliopata katika kituo cha kutolea huduma wakati wa mahudhurio ya kliniki ya mama wajawazito *(Soma swali kisha zungushia namba ya jibu tajwa)*

1) IPTp-SP kwa ajili ya kuzuia malaria [ ] 2) Dawa/vidonge vya kuongeza damu [ ]

3) Chanjo ya pepopunda [ ] 4) Kupima maambukizi ya virusi vya ukimwi [ ]

5) Kufahamu hali ya mtoto [ ] 6) Kupima malaria [ ]

7) Kujua wingi wa damu [ ] 8) Sijui [ ]

9) Nyingine taja……

SEHEMU YA 3: UFAHAMU WA WAMAMA WAJAWAZITO JUU YA IPTp NA NJIA NYINGINE ZA KUZUIA MALARIA *(Soma vipengele kisha zungushia jibu tajwa)*

21. Umeshawahi kusikia kuhusu njia za kujikinga na malaria wakati wa ujauzito?

1. Ndiyo [ ]

2. Hapana [ ] (*kama jibu ni 2, Nenda Q 23*)

22. Ulisikia wapi kuhusu kinga ya malaria kwa wajawazito?

1) Kliniki ya wajawazito [ ] 2) Marafiki/Ndugu [ ]

3) Kwenye runinga [ ] 4) Sikumbuki [ ]

5) Kwenye redio [ ] 6) vipeperushi [ ]

7) Nyingine (taja)……..

23.Njia gani unaweza kuzitumia kujikinga na malaria wakati wa ujauzito *(Soma swali kisha zungushia namba ya majibu tajwa)*

1) Kumeza dawa [ ] 2) Kutumia neti iliyo na kinga [ ]

3) Kutumia dawa ya mbu [ ]

4) Kuvaa nguo inayofunika mwili mzima hasa wakati wa usiku [ ]

5) Kupulizia dawa ya kuua wadudu ndani ya nyumba [ ]

6) kuondoa maji yanayotuama [ ]

7) kufyeka majani kuzunguka nyumba [ ]

24. Dawa gani inatolewa kliniki kama kinga ya malaria kwa wajawazito?

1) SP (Sulfadoxine Pyrimethamine) [ ]

2) Dawa nyingine za malaria zaidi ya SP [ ]

3) Sifahamu [ ]

25. Kiwango cha chini cha dozi ya SP ambacho mama mjamzito alitakiwa kupewa.

1) Dozi moja [ ] 2) Dozi mbili [ ]

3) Dozi tatu [ ] 4) Zaidi ya dozi tatu [ ]

5) Sijui [ ]

26. Ni dozi ngapi za SP mama anatakiwa ameze wakati wa kipindi chote cha ujauzito wake?

1) Moja [ ] 2) Mbili [ ]

3) Tatu [ ] 4) Zaidi ya mara tatu [ ]

5) Sijui [ ]

27. Dozi ya kwanza ya IPTp-SP inashauriwa itolewe wakati gani wa umri wa mimba?

1) <wiki 12 [ ] 2) Mapema iwezekanavyo baada ya wiki 12 [ ]

3) 20-24wiki [ ] 4) 28-32wiki [ ]

5) >32 [ ] 6) Sijui [ ]

28. Dozi moja ya SP na nyingine zinatakiwa zipishane kwa muda gani?

1) Wiki 2 [ ] 2) Wiki 4 [ ]

3) Wiki 8 na zaidi [ ] 4) Sijui [ ]

29. Mpaka muda gani dozi ya SP inaweza kupewa wakati wa ujauzito

1) Mpaka wiki 32 [ ] 2) Mpaka wiki 36 [ ]

3) Mpaka wakati wa kujifungua [ ] 4) Sijui [ ]

30. Dozi ya SP inatakiwa imezewe sehemu gani?

1) Mbele ya mtoa huduma [ ] 2) Nyumbani [ ]

3) Sehemu yoyote ya hospitali [ ] 4) Sijui [ ]

5) Nyingine taja ----------

31. Ni katika umri gani wa ujauzito dozi ya SP haitakiwi kumezwa?

1) < wiki 12 [ ] 2) Wiki 24-36 [ ]

3) >wiki 36 [ ] 4) Sijui [ ]

SEHEMU D: UPATIKANAJI WA DAWA (SP), MAJI KITUONI NA VIKOMBE VYENYE UWIANO WA WATEJA WA KLINIKI (KUMEZA DAWA MBELE YA MTOA HUDUMA).

34. Kwa mahudhurio yako ya kiliniki huwa unapewa vidonge vya SP mbele ya mtoa huduma?

1. Ndio katika mahudhurio yote [ ]
2. Hapana kwa baadhi ya mahudhurio [ ]
3. Hapana kwa mahudhurio yote [ ] (*Kama jibu ni 3 nenda Na.39*)

35. Je, ni mara ngapi ulimeza dawa ya SP katika kipindi chako cha ujauzito?

1. Moja [ ]
2. Mbili [ ]
3. Tatu [ ]
4. Zaidi ya tatu [ ]
5. Sikumbuki [ ]

36. Kama jibu ni ndio kwa Na.34 ulipata wapi maji ya kumeza dawa ya SP kituoni?

1) Ulinunua kliniki [ ]
2) Ulichota ndani kwenye ndoo inayotiririsha maji [ ]
3) Ulinunua dukani nje ya kituo [ ]
4) Ulitoka nayo Nyumbani [ ]
5) Ulichukua dawa kwenda kumezea nyumbani [ ]
6) Nyingine taja……

37. Kama jibu ni hapana kwa baadhi ya mahudhurio kwa swali la 34, sababu zipi zilifanya usimeze dawa ya fansida mbele ya mtoa huduma?

1. Hakukuwa na maji yanayotiririka toka kwenye ndoo ya kumezea SP [ ]
2. Hakukuwa na vikombe vya kutosha kumezea SP [ ]
3. Sikumeza SP kwa kuwa nilikuwa sijanywa chai [ ]
4. Hakukuwa na dawa kliniki [ ]
5. Sijui
6. Nyingine fafanua ……..

38. Kama jibu ni ndio vidonge vya SP vilikuwa vingapi?

1. Moja [ ] 3) Tatu [ ]
7) Mbili [ ] 4) Zaidi ya tatu [ ]

39. Je unadhani SP inafaa kukinga malaria wakati wa ujauzito?

1) Ndio [ ] *(kama ndio nenda Q41)*

2) Hapana [ ]

40. Ni sababu gani zinakufanya ufikirie vidonge vya SP havifai kutumika kwa ajili ya kujikinga na malaria kwa wajawazito ?

1) SP imeonyesha usugu kwa kutibu malaria [ ] 2) Haitumiki tena kutibu malaria [ ]

3) Ina madhara kwa mtoto wangu [ ] 4) Sijui [ ]

5) Nyingine(taja)……..

41. Unafikiria ni madhara gani yanayotokana na kupata malaria wakati wa ujauzito (*zungushia namba ya majibu tajwa*)

1) Anemia [ ] 2) Kifo [ ]

3) Mimba kuharibika [ ] 4) Mtoto kufia tumboni [ ]

5) kuzaa mtoto kabla siku zake hazijafikia [ ] 6) kuzaa mtoto mwenye uzito mdogo [ ]

7) Sijui [ ] 8) Nyingine taja……

42. Idadi ya maswali yaliyojibiwa kwa usahihi juu ya uelewa wa madhara yanayotokana na kupata malaria wakati wa ujauzito kwa mama na kwa mtoto ambae hajazaliwa……

Maelezo kupitia kadi ya mama mjamzito

APPENDIX 3: INFORMED CONSENT; ENGLISH VERSION
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES DIRECTORATE OF RESEARCH AND PUBLICATIONS

ID-NO: HD/MUH/T.574/2018

Consent to participate in this study

Greetings: My name is ……. from Muhimbili University of Health and Allied Science, Dar es Salaam. Currently, I pursue a study to determine predictors that help pregnant women access and use of Sulphadoxine-Pyrimethamine for the SP-IPTP among postnatal women in Tandahimba district.

Purpose of the study

This study aims to collect information on predictors that help pregnant women on access and use of Sulfadoxine- Pyrimethamine for malaria prevention among postnatal women in Tandahimba district. You asked to participate in this study as a stakeholder and a resident from the study site. We believe you have knowledge and experience that is important in this study.

What participation involves

If you agree to participate in this study, the following will occur

1. You will be interviewed with a questionnaire and you will be required to provide the responses at your best knowledge as guided by the interviewer.
2. It will take sometimes to fill the questionnaire. After you have completed to respond to the questions, the interviewer will thank you for your participation and that will be the end of your interview
3. You will be interviewed only once for approximate 30minutes in private setting where you will be free to talk.

Confidentiality

I assure you that all the information collected from you will confidently kept.Only people working in this research will have access to the information. We will ensure that any information included in the report does not identify you as respondent. We will not put your name or other identifying information on the records of the information provided.

Risk

No any risk foreseen in this study, but at any moment, if the question makes you feel uncomfortable you may refuse to answer that particular question and you may stop interview at any time.

Right to withdraw and alternatives

Taking part in this study is completely your choice. If you choose not to participate in this study or if you decide to stop, participating in the study you will not get any harm. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdraw from the study will not involve loss of any benefit to which you are otherwise entitled.

Benefits

The information you provide will help to increase our understanding on the coverage and predictors of the uptake of 3 or more doses of IPTp. It will help policy maker and other health official at every level to improve or otherwise rectify logistics and circumstances in favour of service utilizer's. There are no direct benefits; however, individual benefit will be obtain through intervention programs that conducted in this particular area.

Compensation

There will be no compensation of time spent during the interview; however, your participation is highly appreciated.

Whom to contact

If you have any question about this study, please do not hesitate to contact

DR.GENCHWELE MAKENGE, The principal investigator, Muhimbili University, P.O.BOX 65001.Dar es salaam. Phone number 0682510450

Director of Research and Publications/Chairman of the MUHAS Research and Publications committee, PROFESSOR SAID ABOOD, P.O.BOX 65001.Dar es salaam. Phone number 0754301692

DR. DONAT TARIMO, The Supervisor of this study, MUHAS, P.O.BOX 65001.Dar es salaam. Phone number 0784496718.

SIGNATURE

Do you agree to participate and answer questions in this study?

Participants agree ( )

Participants disagree ( )

I----------have read/understood the contents in this form. My questions have answered. I agree to participate in this study

Signature of participants----------

Signature of Witness (if participant cannot read) ----------

Signature of research assistance----------

Date of signed consent----------

APPENDIX 4: RIDHAA YA KUSHIRIKI –SWAHILI VERSION
CHUO KIKUU CHA SAYANSI ZA AFYA MUHIMBILI-KURUGENZI YA UTAFITI NA MACHAPISHO

Namba ya Utambulisho……. /……. /…….

Ridhaa ya kushiriki katika utafiti huu

Habari! Jina langu naitwa ……natoka Chuo Kikuu cha Sayansi za Afya Muhimbili, Dar es salaam.Tunafanya utafiti Kutambua sababu zinazohitajika kusaidia upatikanaji na matumizi ya dozi tatu au zaidi ya dawa ya Fansida kwa ajili ya kinga ya malaria kwa wajawazito katika halmashauri ya wilaya ya Tandahimba.

Malengo ya utafiti

Utafiti huu una lengo la kukusanya taarifa zitakazoelezea sababu zinazopelekea kutumia dozi tatu au zaidi ya dawa ya Fansida kwa ajili ya kinga ya malaria kwa wamama wajawazito. Hivyo unaombwa kushiriki katika utafiti huu ukiwa miongoni mwa jamii inayokaa katika halmashauri hii. Tunaamini una uelewa na uzoefu unaoweza kutusaidi katika utafiti huu .

Ushiriki unahusisha nini?

Ukikubali kushiriki katika utafiti huu yafutayo yatatokea

1. Mtafiti aliyepewa mafunzo atakuuliza maswali na utatakiwa kujibu kwa ufahamu wako kwa kuzingatia maelekezo yatakayotolewa
2. Itachukua muda mchache kujaza dodoso hilo. Baada ya kumaliza kujibu maswali, mtafiti atakushukuru na huo ndio utakuwa mwisho wa mahojiano.
3. Utahojiwa mara moja tu kwa takribani dakika 30 kwenye sehemu ya faragha.

Usiri

Nakuhakikishia kwamba taarifa zote zitakazokusanywa kutoka kwako zitakuwa ni siri. Watu wanaofanya kazi katika utafiti huu tu ndio wanaweza kuziona taarifa hizi,tunakuhakikishia ya kwamba taarifa zitakazojumuishwa kwenye ripoti yetu hazitakuwa zinatoa utambulisho wako. Hatutaweka jina lako au taarifa yoyote ya utambulisho kwenye kumbukumbu ya taarifa utakazotupatia.

Madhara

Hamna madhara yeyote yanayotegemewa kutokana na kujumuika kwako katika utafiti huu.baadhi ya maswali yanaweza kukufanya usijisikie vizuri hivyo unaweza kukataa kujibu swali lolote na unaweza kusimamisha usaili wakati wowote.

Haki ya kujitoa na mbadala wowote

Ushiriki wako katika utafiti huu ni wa hiari. Kama utachagua kutoshiriki au utaamua kusimamisha ushiriki wako hautapata madhara yeyote.unaweza kusimamisha ushiriki katika muda wowote hata kama ulisharidhia kushiriki.Kukataa kushiriki au kujitoa katika utafiti hakukufanyi upoteze stahili yeyote unayotakiwa kupata.

Faida

Taarifa utakayotupatia ni muhimu sana na yenye thamani kwa kuwa itasaidia kuongeza uelewa wetu kuhusu ufahamu, wa sababu zinazohusishwa na matumizi ya kinga ya malaria kwa wajawazito kwa kutumia dozi tatu au zaidi za Fansida. Pia taarifa utakayotupatia itasaidia kuandaa mpango na mikakati ya kuboresha mahudhurio kliniki.hakutakuwa na faida ya moja kwa moja kutokana na ushiriki wako katika utafiti huu,ila faida binafsi itapatikana kupitia mipango itakayoendeshwa baadae katika maeneo yenu.

Fidia ya muda

Hakutakuwa na fidia ya muda uliotumika wakati wa kufanya mahojiano au majadiliano katika utafiti huu, ijapokuwa ushiriki wako katiaka utafiti huu utashukuriwa na kutathiminiwa.

Watu wa kuwasiliana nao

Kama una maswali katika utafiti huu usisite kuwasiliana

DR.GENCHWELE MAKENGE Mratibu mkuu wa utafiti, Chuo Kikuu Cha Afya Muhimbili, S.L.P. 65001.Dar es salaam. Namba ya simu O682510450

Mkurugenzi wa Tafiti na Machapisho,Chuo Kikuu Cha Afya Muhimbili, PROFESSOR SAID ABOOD, S.l.P 65001, Dar es salaam Dar es salaam. Namba ya simu 0754301692

DR.DONAT TARIMO, The Supervisor of this study, MUHAS, P.O.BOX 65001.Dar es salaam. Namba ya simu 0784496718.

SAHIHI

Unakubali kushiriki na kujibu maswali ya tafiti hii
Mshiriki amekubali ( )

Mshirika amekataa ( )

Mimi_____ _____nimesoma nimeilewa hii fomu,maswali yangu yamejibiwa .nakubali kushiriki katika utafiti huu.

Sahihi ya Mshiriki _____

Sahihi ya shahidi(kama hawezi kusoma na kuandika) _____

Sahihi ya mtafiti msaidizi _____

Tarehe ya kusaini fomu ya ridhaa----------

APPENDIX 5: APPROVAL ETHICAL CLEARANCE

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz

Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. DA.287/298/01A/ 02nd August, 2019

Dr. Genchwele Makenge,
Master of Public Health,
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED: "PREDICTORS OF ACCESS AND USE OF SULPHADOXIDE PYMETHAMINE FOR INTERMITTENT PREVENTIVE THERAPY AMONG PREGNANT WOMEN IN TANDAHIMBA DISTRICT "

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from **02st August, 2019 to 01st August 2020.** In case you do not complete data analysis and dissertation report writing by **01st August, 2020,** you will have to apply for renewal of ethical clearance prior to the expiry date.

Dr. Emmanuel Balandya
ACTING: DIRECTOR OF POSTGRADUATE STUDIES

Muhimbili University of Health and Allied Sciences
DIRECTOR
Postgraduate
S.
P. Box 65001

cc: Director of Research and Publications
cc: Dean, School of Public Health and Social Sciences, **MUHAS**

APPENDIX 6: INTRODUCTION LETTER

HALMASHAURI YA WILAYA YA TANDAHIMBA

(*Barua zote zitumwe kwa Mkurugenzi Mtendaji*)

MKOA WA MTWARA
Simu Na. 0232410030
Fax Na. 023 2410030
Baruapepeded@tandahimba.go.tz
(*Unapojibu tafadhali taja*)

Ofisi ya Mkurugenzi Mtendaji (w),
idara ya Afya
S.L.P 03,
TANDAHIMBA

DED TANDAHIMBA
S. L. P 3
Tandahimba

05/8/2019

KWA WAKUU WA VITUO VYA
TANDAHIMBA ,MAHUTA ,NAMIKUPA
KITAMA ,MIHAMBWE NA
NANYANGA.

YAH: KUMTAMBULISHA DAKTARI GENCHWELE MAKENGE.

Kichwa cha habari hapo juu chahusika,

Napenda kumtambulisha kwenu **daktari Genchwele Makenge** ambaye ni mwanafunzi wa shahada ya uzamili katika afya ya jamii (public health) katika chuo kikuu cha afya na sayansi shirikishi cha muhimbili.

Mwanafunzi huyu anatarajia kufanya utafiti juu ya viashiria vya upatikanaji na matumizi ya SP kama kinga ya tahadhari kwa vipindi wakati wa ujauzito katika vituo tajwa hapo juu.
Kwa barua hii naomba wakuu wa vituo vya kutolea huduma za afya tajwa hapojuu kumpa ushirikiano wa karibu ili kufanikisha utafiti wake.

Nawatakia kazi njema,

S.L.P 03
TANDAHIMBA

.....

Dr. Silas Sembiko
KNY: MKURUGENZI MTENDAJI (W)
TANDAHIMBA

Nakala: Mkurugenzi mtendaji (W) Kwa taarifa
Tandahimba