UPTAKE OF INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN PREGNANCY USING SULFADOXINE-PYRIMETHAMINE (IPTP-SP) IN MPANDA MUNICIPAL COUNCIL, KATAVI TANZANIA.

Benson Mringo, MD

Master of Public Health Dissertation

The Muhimbili University of Health and Allied Science

October, 2024.

The Muhimbili University of Health and Allied Science

School of Public Health and Social Sciences

UPTAKE OF INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN PREGNANCY USING SULFADOXINE-PYRIMETHAMINE (IPTP-SP) IN MPANDA MUNICIPAL COUNCIL, KATAVI TANZANIA

By

Benson Mringo

A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the Degree of Master of Public Health

The Muhimbili University of Health and Allied Sciences

October, 2024

CERTIFICATION

The undersigned certifies that she has read and hereby recommends for acceptance by the Muhimbili University of Health and Allied Sciences a titled **"Uptake of Intermittent preventive treatment of malaria in pregnancy using sulfadoxine-pyrimethamine (IPTP-SP) in Mpanda Municipal Council, Katavi, Tanzania"** in (partial) fulfilment of the requirement for the award of the degree of the Master of Public Health of Muhimbili University of Health and Allied Sciences.

_____

Prof. Billy Ngasala

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Benson Mringo**, 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**. …….

This dissertation is copyright material protected under the Berne Convention, the CopyrightAct 1999, and other international and national enactments, on that behalf, of intellectual property. It may not be reproduced by any means, in whole or in part, except for short extracts in fair dealing, for research or private study, critical scholarly review, or discoursewith an acknowledgment, without the written permission of the Directorate of PostgraduateStudies, on behalf of both the author and the Muhimbili University of Health and Allied Sciences.

ACKNOWLEDGMENT

I would like to begin by expressing my heartfelt appreciation to the Almighty God for His blessings and guidance throughout the course of my research, enabling me to successfully complete this project.

I am deeply grateful to my research supervisor, Prof. Billy Ngasala, whose unwavering guidance, expertise, and meticulous attention to details have been invaluable throughout thisresearch journey. From the initial stages of crafting the proposal to the final write-up, his passion and knowledge have inspired me to stay focused and dedicated.

I extend my sincere gratitude to my parents and my whole family for their unconditional love, prayers, care, and the sacrifices they have made to provide me with education and support my academic pursuits.

I would like to express my appreciation to my friends Jonathan Haule, and Joseph Joseph, for their continuous support and encouragement during the entire research project.

I would like to extend my sincere thanks to all the study participants for their valuable contributions and willingness to participate in this study

Lastly, but not least, I would like to acknowledge and thank all individuals who have contributed directly or indirectly to the completion of this research project. Your assistance and support have been instrumental, and I am truly grateful for your contributions.

DEDICATION

I dedicate this dissertation to my parents. Your unwavering love, encouragement, and beliefin me have been the driving force behind my journey and accomplishments. Your constant support and sacrifices have shaped me into the person I am today. Your guidance, wisdom,and belief in my abilities have been a constant source of inspiration. Thank you for instilling in me the values of perseverance, hard work, and determination. This dissertation is a testament to your unwavering support and the opportunities you have provided me throughout my academic journey.

And to my children, your presence in my life has been a continuous source of motivation and joy. You inspire me to strive for excellence and set a positive example. Your unwaveringbelief in me and the sacrifices you've made during this academic journey have not gone unnoticed. This dissertation is a token of my love and appreciation for your patience and understanding.

Thank you, both my parents and my children, for being my pillars of strength and for always believing in me. God bless each and every one of you.

ABSTRACT

Background

Intermittent preventive treatment consuming Sulphadoxine-Pyrimethamine (SP) has proven to reduce antagonistic outcomes of malaria during pregnancy to fetus and mother . Though SP-IPTp policy has been executed in Tanzania for the last 5 years using new guideline for ≥ 3 doses of Sulphadoxine-Pyrimethamine, coverage has continued to be low by 32%. A study in Mpanda Municipal Council, Tanzania, investigated issues poignant to uptake of SP-IPTp during pregnancy to support national and international efforts.

Materials and Methods

This cross-sectional quantitative study took place in Mpanda Municipal council with a total population of 245,764 in the Katavi region, involving 371 postnatal mothers in 3 Health Centres. The study utilized structured questionnaires that were administered face-to-face. The data were analyzed using SPSS version 22.0. For univariate analysis, descriptive statistics were used; for bivariate analysis, cross-tabulations were used to determine the relationships between variables. For multivariate analysis, multivariate logistic regression was employed.

Results

Of the surveyed postnatal women 112 (30 %) received three dosages of IPTp-SP while 128 (34 %) took less than three dosages of SP. The mean age was 27.34 ± 6.416 years, and 169 (45.6%) of the sample were aged between 25-34 years. The uptake of three doses of IPTp-SP was significantly associated with the gestation age at which she had the first dose (P = 0.003), interval duration between dosages of SP (P < 0.001), means of calculating the gestation age to use SP (P = 0.001) and knowledge of the minimum dosage of SP required during pregnancy (P<0.001). Those who took SP between 20 weeks to 24 weeks gestations had 2-fold likelyhood to receive three doses of SP during pregnancy (aOR=1.7, 95% CI 0.29-10.52)

Conclusion

This study has found low uptake of three doses of IPTp-SP in the study area. To increase coverage, regular supportive supervision on adherence to IPTp-SP policies

and guidelines is necessary. Gestational age at first ANC visit, frequency and distance from the health facility determines uptake of 3 dosages of IPTp-SP It is evident that efforts should be directed towards early and more frequent ANC visits and outreach services such as community IPTp for facilities located far from communities which required further research to create more evidence.

TABLE OF CONTENTS

CERTIFICATION i
DECLARATION AND COPYRIGHT ii
ACKNOWLEDGMENT iii
DEDICATION iv
ABSTRACT v
LIST OF TABLES x
LIST OF FIGURES xi
ABBREVIATION xi
OPERATIONAL DEFINITION OF TERMS xiii
CHAPTER ONE 1
1.0 INTRODUCTION 1
1.1 Background information 1
1.2 Problem Statement 3
1.3 Rationale 5
1.4 Research questions 6
1.4.1 Main research question 6
1.4.2 Specific research questions 6
1.5 Research objectives 6
1.5.1 Broad objective 6
1.5.2 Specific Objectives 6
1.6 Conceptual framework of factors affecting utilization of OPD healthcare services 7
CHAPTER TWO 9
2.0 LITERATURE REVIEW 9
2.1 Introduction 9
2.2 Socio-demographic predictors for poor uptake of IPTp3 among postnatal women 9
2.3 Obstetric characteristics that help in uptake of SP during pregnancy at ANC clinic 12
2.3.1 Number of ANC attendance 12
2.3.2 Gestation age at first ANC contacts 13

2.4 Facility associated factors linked to usage of SP among postnatal pregnant ladies appearing in ANC clinic 13
2.4.1 Availability of Sulphadoxine-Pyrimethamine (SP) 13
CHAPTER THREE 16
3.0 METHODOLOGY 16
3.1 Study design 16
3.2 Area of study 16
3.3 Study population 16
3.4 Sample size determination 17
3.5 Sampling technique 17
3.6 Criteria for Selection 18
3.6.1 Inclusion Criteria 18
3.6.2 Exclusion Criteria 18
3.7 Study variables and their measurements 18
3.7.1 Dependent variables 18
3.7.2 Independent variables 19
3.8 Research instruments 19
3.9 Data Collection Methods 20
3.9.1 Research assistant recruitment and training 20
3.9.2 Pre-test of data collection tool 20
3.10 Data analysis 20
3.11 Ethical Consideration 21
3.11.1 Confidentiality of respondent and data. 21
3.11.2 Study limitations and mitigation 22
3.12 Dissemination of the study findings 22
CHAPTER FOUR 24
4.0 RESULTS 24
4.1 Socio-demographic Information of Participants 24
4.2 Prevalence of IPTp-SP optimal uptake 25
4.3 Level of utilization, knowledge related and obstetric factors associated with IPTp-SP uptake 25

4.4 Health service delivery factors influencing the uptake of optimal 28
CHAPTER FIVE 31
5.0 DISCUSSION 31
5.1 Introduction 31
5.2 Socio demographic, knowledge related and obstetric determinants of optimal IPTp-SP uptake 31
5.3 Health service delivery predictors of optimal IPTp-SP uptake. 33
5.4 Study limitations and mitigations 33
CHAPTER SIX 35
6.0 CONCLUSION AND RECOMMENDATION 35
6.1 Conclusion 35
6.2 Recommendations 35
REFERENCES 37
APPENDIX 1: QUESTIONNAIRE (ENGLISH VERSION) 42
APPENDEX 2: SWAHILI VERSION 48
APPENDIX 3: INFORMED CONSENT; ENGLISH VERSION 55
APPENDIX 4 :RIDHAA YA KUSHIRIKI –SWAHILI VERSION 58
APPENDIX 5: CHILD ASSENT FORM; ENGLISH VERSION 61
APPENDIX 6 :KIBALI CHA USHIRIKI KWA MTOTO–SWAHILI VERSION 64
APPENDIX 7: ETHICAL CLEARANCE 67
APPENDIX 8: INTRODUCTION LETTER TO RAS 69
APPENDIX 9: INTRODUCTION LETTER FROM RAS TO COUNCIL 70
APPENDIX 10: INTRODUCTION LETTER FROM DED TO HEALTH FACILITIES 71
ApPENDIX 11: THE MAP OF KATAVI REGION 72

LIST OF TABLES

Table 1: Social demographic characteristics of the participants (n=371)..... 24
Table 2: Multivariate logistic analysis of level of utilization, obstetric and knowledge characteristics of women during pregnancy in Mpanda Municipal Council.26
Table 3; Multivariate logistic analysis on Health service characteristics associated with uptake of three doses of IPTp-SP 29

LIST OF FIGURES

Figure 1: Conceptual frame work …….. 8

Figure 2: Distribution of IPTp SP uptake levels against the drug's dosage. IPTp-SP intermittent preventive treatment of malaria in pregnancy with sulphadoxine pyrimethamine……25

ABBREVIATION

ANC	Antenatal Care
CHMT	Council Health Management Team
DOT	Direct Observation Therapy
IPT	Intermittent Preventive Treatment
IPTp	Intermittent preventive treatment in pregnancy
ITN	Insecticide treated nets
LBW	Low birth weight
MiP	Malaria in Pregnancy
RCH	Reproductive and Child Health
RHMT	Regional Health management Team
SP	Sulfadoxine- Pyrimethamine
TDHS	Tanzania Demographic and Health Survey
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

IPTp: Provision of ant-malaria medicine at a certain interval to destroy malaria parasite where by currently the drug used is Sulfadoxine-Pyrimethamine (SP).

DOT: The direct observation therapy of a pregnant woman as she agrees swallowing Sulfadoxine –Pyrimethamine at the Antenatal clinic under supervised by qualified health staff.

Uptake of IPTp; Implementation of the IPTp programme at Focused Antenatal care by qualified health service providers so that the pregnant woman swallow SP under direct observation therapy basing on the standardized time interval between the doses.

Antenatal care (ANC); Identified area at facility level that deals with the care of women during pregnancy, childbirth, and the recovering period following delivery.

Focused antenatal care (FANC); A new model of ANC developed by WHO, the model emphasises a minimum of 4 ANC visits (for uncomplicated pregnancies) that are spread out during the entire pregnancy period.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background information

Malaria in pregnancy is associated with maternal anaemia and adverse birth outcomes such as low birth weight, early neonatal deaths, preterm birth and still birth especially in for those who took less than three dosages of SP regimen in comparison to those who had 3 dosages and above of SP in sub-Saharan Africa including Tanzania(1). Most pregnant women who had less dosage have partial immunity towards malaria although it can result to maternal anaemia, low birthweight , preterm delivery and still birth (2).

Moreover, pregnant women with low or no coverage of SP-IPTp regimen have increased risk of getting malaria and develop severe symptoms in comparison to those with high coverage of SP-IPTp dose regimen in endemic regions such as Katavi (3,4). Tanzania upgraded its guidance on IPTp(5). Together with the updated WHO guidelines after finding that the three-dosages SP-IPTp regimen is ≥ two dosages SP- IPTp regimen, it has contributed to reduce the serious effects of severe malaria during pregnancy(6,7)**.** Uptake and adherence of SP-IPTp especially above three doses of SP during pregnancy in Tanzania have consistently remained low (8). A number of delivery consequence such as low birth weight, neonatal parasitaemia and intra uterine death have been linked with a minimal coverage. Little is known how big problem is in the community for women who had more than three dosages of SP-IPTp in comparison to those who had less than three dosages of SP-IPTp during pregnancy living in endemic region like Katavi. Moreover, number of anaemia cases during pregnancy and preterm birth have increased considerably among pregnant women who had less than three dosages of SP-IPTp(9)

The world malaria report emphasizes during pregnancy on the uptake of the SP, treated mosquito nets and successful case management of anaemia and malaria(10). Though a number of studies on effectiveness of treated mosquito nets and IRS, little is known on the occurrence of malaria parasitaemia among pregnant women and their neonate using SP as preventive therapy during pregnancy.

There are studies evaluating alternative drugs and strategies which may take longer before they influence policy changes in the country, meanwhile frequent evaluation should be conducted to assess the effectiveness of SP-IPTp on birth outcomes for both maternal and new-born(2,11,12). Moreover, knowledge-based characteristics such as basic knowledge on malaria disease, coverage by health insurance, use of malaria drugs and exposure to messages related to malaria in pregnancy contribute positively to adherence of usage of SP. On other hand, other facility related issues e.g. convenience of getting SP in the health-facility, attitude of the health care providers and time spent at facility level has a negative impact on ensuring consistency to ANC and uptake of IPTp(13).

In several studies determining birth outcomes in pregnant women taking ≥3 SP-IPTp according to the new guidelines, results indicated that early registration for prenatal care and ≥ four visits performed as well as other maternal factors influence good birth outcomes with fewer side effect due to malaria infection during pregnancy(2)(14). Reaching the aim (≥3 doses) established in the new policy is a massive challenge. Studies conducted in Tanzania, IPTp3+ coverage result was 6.03% in 2014 (15) and in Nyamagana and Ilemela district, Lake zone Tanzania IPTp3+ coverage result was ≥ 40% in 2016(16). While SP is administered in ANC prenatal exposure, with SP administered one month apart from 12 weeks of gestation age; there are no published data of malaria parasitaemia rate among pregnant women in endemic region like Katavi region who take three dosages of SP-IPTp in comparison to those who take minimal dosage of SP during pregnancy. Moreover, what factors influence consuming few dosages of SP during pregnancy in the community in high malaria transmission area such as Katavi aren't well documented

1.2 Problem Statement

Intermittent Preventive therapy in pregnancy has been one among the preventive measures undertaken by the government of Tanzania in preventing consequences of severe malaria in pregnant women and birth outcomes but it's uptake among pregnant women is low(16,17).Despite the efforts to increase the uptake of IPTp among pregnant women, still there is low uptake of IPTp among pregnant women. According to TDHS conducted in 2022 approximately 60.1% of women attended ANC clinics early enough to receive 2 doses of SP in Tanzania mainland. It has essentially decreased uptake from 87% to 60.1% for IPTp2 and from 70% to 32.6 % for IPTp3 in MIS 2017 and 2022 respectively(18). However, this is still a case because NMCP focuses on increasing uptake of IPTp 2 and IPTp3 among pregnant women up to 95% and 85% respectively by 2025(9)

Several factors from the facility and client perspective, including obstetric and sociodemographic factors, influence the use of ≥3 doses of SP-IPTp. These factors have been shown to be associated with uptake of up to the 3-dose regimen in sub-Saharan Africa. These include long distance from the health facility, stockout of SP in health facilities and inadequate knowledge about the importance of SP during pregnancy among pregnant women

Research studies from sub-Saharan Africa including Tanzania found that low birth weight, early neonatal death and anaemia in pregnancy are major outcomes of low uptake of IPTp during ANC (16).The government of Tanzania in collaboration with stakeholders have been giving health promotion messages. These messages emphasize on ANC booking and use of IPTp during pregnancy. Moreover, the involvement of CHW to track pregnant women who don't attend subsequently at ANC has helped aggregate the rate of IPTp uptake during pregnancy in villages.

Therefore, despite the efforts being kept by the government and other stakeholders in increasing the uptake of SP based on identified factors over the past five years, this research study aims at assessing why there is still low uptake of three doses of SP among pregnant women who attend ANC in Mpanda municipal, Katavi region. It aims to answer the questions such as: are there other factors which were missed

in the previous studies or are there factors that are more significant than others and are either ignored or approached in a less effective manner. Eventually informing the decision makers on the expansion of an intercession that would assist in boosting uptake of IPTp during pregnancy in order to evade the effect of malaria to a pregnant woman such as severe anaemia and low birth weight.

1.3 Rationale

Sustainable development goal number 3 focuses to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030. By 2030, ensure universal access to sexual and reproductive health-care services, including integrating preventive measures to all pregnant women against malaria and other infection disease that are detrimental to their health and the new-born. ANC services results revealed that the positivity rate of pregnant women attending ANC services was 2.4%(19).

This study was important to undertake because in rural setting, there has been a number of maternal birth outcomes among pregnant women who take Optimal doses of SP in comparison to those take suboptimal doses of SP ranging from giving birth to Low-birth weight children to stillbirth also maternal anemia and preterm birth.

Since it is important and vital for all pregnant women to get at least three doses of SP, the current intervention approaches and health infrastructure ensuring that happens needs to be evaluated regularly and well-studied continuously, also for those issues have been left behind can be addressed appropriately as soon as possible so that we can improve uptake of three doses or more of IPTp-SP among pregnant women based on the current demographics. This study aspired to evaluate current approaches and rationalize if there is a need of new approaches and new interventions that would improve programmatic approach in ensuring optimal uptake of IPTp among pregnant women in Mpanda Municipal Council.

Therefore, this study contributed information to policymakers and service providers about thegaps in uptake of three dosages of SP-IPTp during pregnancy and develop policies and services relevant to the culture of the people, their life experiences, and social circumstances. Additionally, this study provided information for future research which will further inform policy choices.

1.4 Research questions

1.4.1 Main research question

Which factors help uptake of Sulphadoxine-Pyrimethamine for the uptake of IPTp3 in Mpanda municipal council?

1.4.2 Specific research questions

1. What are socio-demographic predictors of poor uptake of IPTp3?
2. What is the prevalence of uptake of IPTp3 among postnatal women attending ANC?
3. What are facility factors that help the pregnant women to take IPTp3?
4. What are the obstetric characteristics that influence uptake of IPTp3?

1.5 Research objectives

1.5.1 Broad objective

To determine the prevalence and factors associated with uptake of 3 dosages of SP among pregnant women who attend ANC in Mpanda municipal council.

1.5.2 Specific Objectives

1. To determine socio-demographic predictors for poor uptake of IPTp3 among postnatal women attending ANC in Mpanda municipal council.
2. To establish the prevalence of IPTp SP optimal uptake among postnatal women attending ANC clinic in Mpanda municipal council.
3. To determine the obstetric characteristics that help in uptake of SP during pregnancy at ANC clinic in Mpanda municipal council.
4. To determine facility associated factors linked to usage of SP among postnatal pregnant ladies appearing in ANC clinic in Mpanda municipal council.

1.6 Conceptual framework of factors affecting utilization of OPD healthcare services

The conceptual framework as shown below describes how uptake of Sulphadoxine-Pyrimethamine (SP) dosage for intermittent preventive therapy among pregnant women depend on geographic accessibility factors to a health facility, health facility related factors, knowledge related factors, socio demographic factors and obstetrics characteristic of pregnant women related factors.

The conceptual framework as shown above describes how uptake of Sulphadoxine-Pyrimethamine (SP) dosage for intermittent preventive therapy among pregnant women depend on geographic accessibility factors to a health facility, health facility related factors, knowledge related factors, socio demographic factors and obstetrics characteristic of pregnant women related factors.

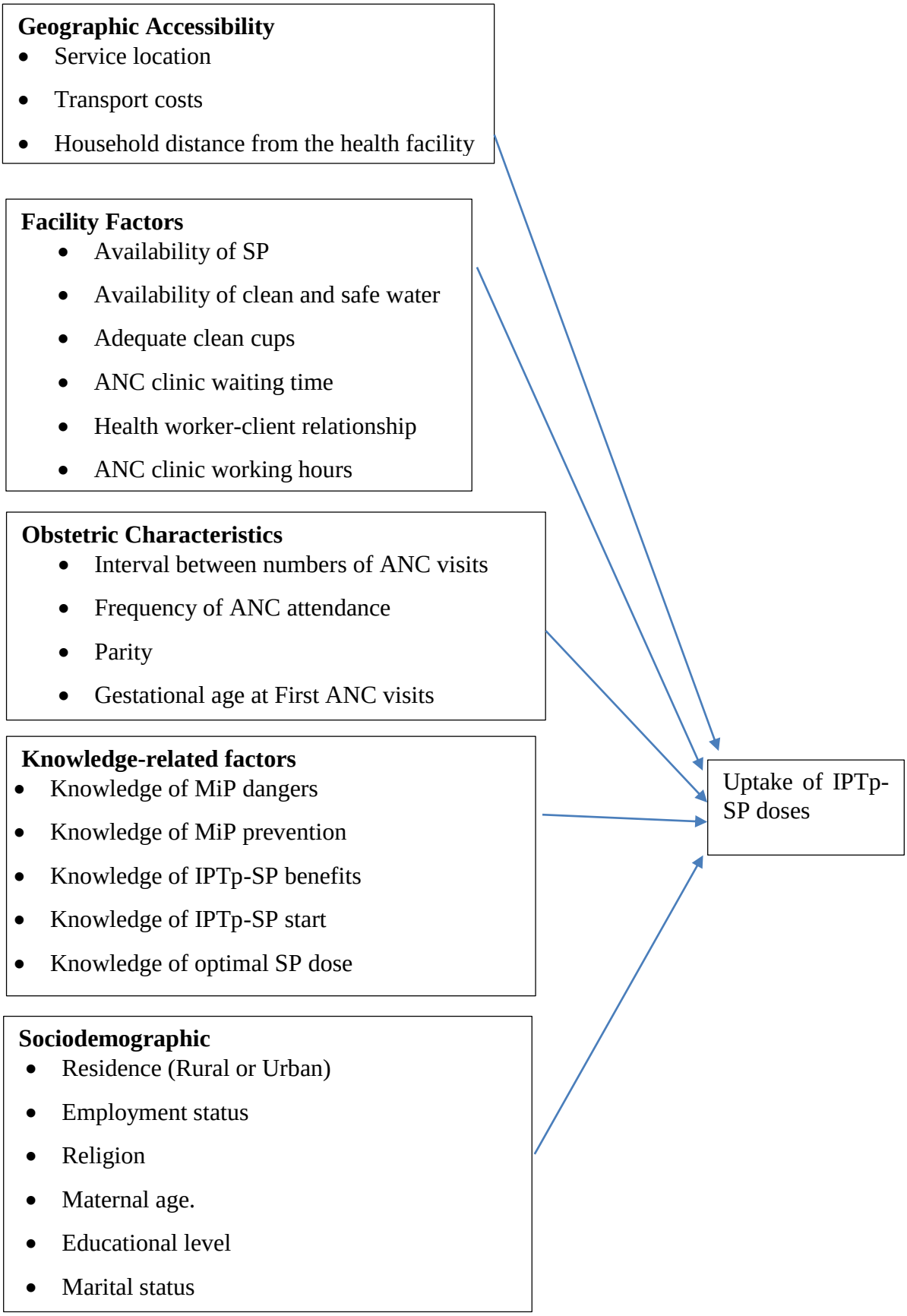


Figure 1: The figure above shows conceptual framework adopted from Murrray et al for predictors of up for prevention of malaria in Pregnancy(20)

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The primary objective of the literature search was to find studies on several factors associated with uptake of 3 dosages of IPTp among pregnant women from a global, African and Tanzanian perspective. The chapter is organized into sections according to research goals such as

1. Socio-demographic predictors for poor uptake of IPTp3 among postnatal women.
2. Obstetric characteristics that help in uptake of SP during pregnancy at ANC clinic
3. Facility associated factors linked to usage of SP among postnatal pregnant ladies appearing in ANC clinic

2.2 Socio-demographic predictors for poor uptake of IPTp3 among postnatal women

With considerations, the adherence rate to SP-IPTp could be contributed by social demographic factors such as age of a women, education level, and ethnicity. In a study done by Onoja et al, poor adherence of IPTp among pregnant women has been influenced by several factors such as availability of the drug, the type of the facility, the social economic class of the women in the respective study area (3). In another study done by Kanario in Eastern Nigeria , they suggested that the role of health workers in the prescription and administration of IPTp could be critical to patients' adherence to its use during pregnancy(11). Moreover in a study conducted in two regions of Uganda found that supply-side issues are likely to account for the majority of missed opportunities for the provision of IPTp among pregnant women attending ANC, however , to increase uptake of IPTp on the demand side, healthcare workers should reassure eligible pregnant women that SP-IPTp is safe(21).

Low coverage of intermittent prophylaxis in Tanzania may be due to pregnant women's lack of understanding of the effects of malaria on the fetus and the unavailability of

Sulphadoxine-Pyrimethamine (SP) at the facility level. A suitable schedule depends on the woman's gestational age and individual needs. For women whose pregnancy progresses normally, WHO currently recommends the following schedule of at least eight antenatal care visits. Pregnant women recommended swallowing SP at ANC under Direct Observation Therapy (DOT). However, some facility follows recommendation others not which contributes to little acceptance of SP-IPTp. In a study steered in Malawi, only 29.8% received 3 or more dosages(22).

Stock out of free SP, poor supervision of SP ingestion by Direct Observed Treatment among those who obtained SP from ANC clinics and lack of autonomy in the household to receive Sulphadoxine-Pyrimethamine (SP) may predict the uptake of SP-IPTp as seen in a study-conducted Nigeria(23). However, it noted that pregnant women did not have the autonomy or freedom to receive SP-IPTp during ANC without consulting a household member. Consequently, the uptake of SP-IPTp was low in the facilities with stock out of free SP and inadequate supervision of administration and swallowing of SP tablets by Direct Observation Treatment (DOT).

In a study of accessing prenatal care, use of prenatal care, local cultural norms and practices pose significant barriers to women's access to antenatal care services in some, but not all, of the countries studied, with variation large differences within and between countries.(23)

In a study conducted in Tanzania, it was found that the optimal IPTp coverage increased in the if sustainability was ensured for women receiving only one dose. Improve health services, especially antenatal care, to ensure better counseling services on the dangers of MiP for pregnant women, the right time to start antenatal care and formal education beyond primary school is needed (24).

The ANC contact schedule is flexible so that pregnant women always receive IPTp-SP when eligible, in addition to ITN and effective case management, starting as early as possible in the second trimester of pregnancy. The period from 13 to 20 weeks is a critical period for irreversible negative consequences of MiP, when parasite density is highest and malaria prevention is of great benefit. For effective MiP programming,

contact the provider early in the second trimester (between 13 and 16 weeks) to ensure timely access to the first dose of IPTp-SP for maximum impact.(25).

The affiliation between timing and number of antenatal care contacts in intermittent malaria preexposure prophylaxis during pregnancy in Malawi was closely linked to number of ANC visits during pregnancy and transport. Of the 6,549 women enrolled, 1,981 had proper dosage of SP-IPTP. Although little exposure to antenatal care, early initiation of prenatal care increases o IPTp uptake. Pregnant ladies started prenatal care in early days of pregnancy nourished compared who started treatment late. The effect of number of prenatal visits on IPTp use was significant in married women, and timing of first prenatal visit was only associated with IPTp use in rural women (26). Additionally, a study conducted in Tanzania, with 530 recruited mothers, showed an overall SP-IPTp use rate of 96% and the use of two SP-IPTp 86%.Use the first dose promptly as planned by scheduling an early prenatal visit and having the medication available at the facility(15).

Three doses regime of IPTp-SP provide sufficient protection against re-infection later in the third trimester, which is the very important period for rapid fetal growth compared to when two doses is used(27).

Married pregnant women discuss health concerns with their husbands, and husbands tend to accompany pregnant women to prenatal care services for education and testing.At health facilities, service providers encourage men to participate and encourage couples to attend together. The use of antenatal care services, including intermittent prophylactic treatment, is more likely among couples than among pregnant women without a husband(28). This is confirmed by a study conducted in Malawi, where of 6,549 women included, 1,981 followed the instructions given by their nurse during ANC.

Despite exposure to prenatal care, early initiation of prenatal care increases the likelihood that these women will take the recommended dose of IPTp. Women who started ANC treatment in the first and second trimesters were more likely to take the recommended dose of SP-IPTp than women who started treatment late(8).

There is evidence of effectiveness of SP-IPTp among pregnant women on birth outcomes and new-borns taking three doses and above during pregnancy in comparison to those who take less than three doses of IPTp. It has lowered the rate of malaria infection for women during pregnancy and their child(3).

2.3 Obstetric characteristics that help in uptake of SP during pregnancy at ANC clinic

2.3.1 Number of ANC attendance

Factors influencing malaria prophylaxis during pregnancy depend on the individual's investment in their health. Education, infant and young child development as well as knowledge of the importance of SP-IPTp for the fetus will encourage Pregnant women have regular prenatal checkups and swallow SP as recommended by health care providers(14). It was found that among women who attended antenatal care >4 times, their knowledge about malaria during pregnancy and their knowledge about intermittent malaria prophylaxis during pregnancy were improved and got them to test positive by taking the optimal dose of Sulphadoxine-Pyrimethamine (SP). This means that pregnant women regularly participate in ANC, interacting with health care providers by informing them about the effects of the disease during pregnancy. Emphasizing on the importance of intermittent malaria prophylaxis during pregnancy, encourage them to participate in antenatal care and influence the implementation of prenatal preventive measures.

It also depends on willingness and ability to use resources for seeking health services. In Tanzania and most of African countries, ANC services are free which made pregnant women to attend at facility from their home, as they demand. However, pregnant women especially with less than 18 years and those who are residing in rural areas are not attending at ANC services as recommended and finally they succumb burden of malaria during pregnancy. Surveys in southern Mozambique reported that ≥3 doses were 46.6%. Low SP-IPTp uptake was associated with non-institutional deliveries, first ANC contacts after 28 weeks, low awareness of SP-IPTp and having no or only primary education. The overall prevalence of maternal malaria was 16.8% and was higher among pregnant women from rural areas compared to those from urban areas. Younger

age < 20 years old and living at rural areas were predictors of maternal malaria(29). Ongoing campaigns aiming to increase the use of malaria prevention strategies during pregnancy should particularly target rural populations, increasing IPTp‐SP knowledge, stimulate early contacts to ANC, improve access to health services and the quality of the service provided

In addition, prevalence and Associated Factors of Taking Intermittent Preventive Treatment in Pregnancy in Sierra Leone reported that prevalence of taking at least three or more doses was 93.24%, education, parity and antenatal care use were significant predictors of SP-IPTp. In comparison, the positive linkage between frequency of SP uptake was true for women in rural areas only(8). The uptake of SP is widespread with the prevalence being relatively huge in the town areas. Based on findings, promoting adequate antenatal care visits in West Africa.

2.3.2 Gestation age at first ANC contacts

The recent WHO policy on administration of IPTp-SP at 13 weeks of pregnancy may present a challenge to providers who are not accustomed confirming early second-trimester gestation. Majority of women, the uterus is palpable abdominally at 13 weeks and beyond. Pregnancy tests, if available and affordable confirmed pregnancy and correlated with information from the history and physical exam. Ultrasound can be superior to dating by last menstrual period or physical examination, depending on clinical circumstances, but dating precision decreases with gestational age. WHO now recommends one obstetric ultrasound scan before 24 weeks gestation to estimate gestational age and to identify multiple pregnancies and foetal anomalies (30).

2.4 Facility associated factors linked to usage of SP among postnatal pregnant ladies appearing in ANC clinic

2.4.1 Availability of Sulphadoxine-Pyrimethamine (SP)

Sulphadoxine-Pyrimethamine (SP) a drug used for malaria prevention during pregnancy, its availability particularly in ANC determines its usage in Tanzania. However, their rates of use in most districts are tremendously low as compared to NMCP strategic plan 2014-2020 target. Monitoring Compliance and Acceptability of

Intermittent Preventive Treatment of Malaria using Sulfadoxine Pyrimethamine after Ten Years of Implementation in Tanzania results revealed that 63% were not willing to take SP during pregnancy while 91% would only take it if they tested positive for malaria during antennal visits. In addition, 63% of the interviewed women did not know the recommended dose of SP required during pregnancy, despite the fact that 82% of the women were aware of the adverse effect of malaria during pregnancy. It also found that SP was not administered under direct observed therapy in 86% of women(1). However, positive correlation between drug uptake and drug availability revealed and consequently, unavailability of Sulphadoxine-Pyrimethamine medicines in ANC is the major reason hindering the implementation of IPTp-SP.

In addition, study done in Malawi, results reported that, women who attended rural health facilities were less likely to complete the recommended doses of SP as per index pregnancy. This finding is similar to study conducted in Geita, Tanzania(20). and Nigeria(31) This observation might either indicate that rural health facilities had lower stock levels of SP than urban health facilities due to the fact that rural health facilities faces challenge of transporting commodities from central levels to facility also rural health facilities have inadequate skilled health care providers which leads to high clients to staff ratio and subsequently long facility hours. This could prompt some pregnant women not make further ANC contacts (27).

DOT practice

In 2013, Tanzania adopted new SP-IPTp policy as recommended by WHO. SP- IPTp ideally administered as directly observed therapy (DOT), given either on empty stomach or with food. Folic acid at a daily dose equal or above 5 mg should not give together with SP as this counteracts its efficacy as an antimalarial and also

Sulphadoxine-Pyrimethamine (SP) should not be administer to women receiving co-trimoxazole prophylaxis. However, a study conducted in Tanzania results revealed that SP not administered under direct observed therapy in 86% of women(32) and there was positive correlation between SP availability and IPTp uptake. In addition, a study conducted in Zomba district, Malawi results revealed that there was low utilization of at least three doses(12). In addition, use of SP was lowest along the Lake Zone region, report suggested that SP-IPTp use among pregnant women adherence were poor despite

utilization of Direct Observed Therapy. This means that health care providers, ANC clinics and organizations should find strategy for increasing uptake of SP-IPTp .

Knowledge related factors

Since the adaption of new SP-IPTp policy, there has been a series of knowledge related activities among pregnant women. From the lessons they receive during ANC to the focused sessions they have when they are with the nurse , still uptake of consequent dosage of among pregnant women is low(33). This can be attributed by lack of knowledge of the dangers of malaria in pregnancy, methods in which pregnant women can use to prevent themselves during pregnancy not well explained to them(34). In some case it has been shown they do not understand the actual benefit of the drug since there are other who do not use the drug and they have a healthy child(35). In sub-Saharan Africa there are communities who do not understand the importance of IPTp.(20)

Service location

Due to the geographical setup of some health facilities, some pregnant women fail to attend on monthly bases during pregnancy. In some instances, when a health facility is more than five kilometre from the household , most pregnant women tend to have on one visit (28). They visit when they will be registering themselves only and eventually, they will return when they are about to give birth. Distance from the health stand to be a barrier to optimal uptake of IPTp-SP during pregnancy(36). With only two visits during pregnancy, it is difficulty to attain optimal dosages of SP. This has also been contributed by the transport costs which most pregnant women cannot afford. Most of the household where these pregnant women are located in the rural areas and approximately five kilometre from the health facilities(34).

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 Study design

The design of the study was analytical cross-sectional study using quantitative approach. The advantage of a cross-sectional study design was its convenience in terms of cost and time in data collection, as well as allowed the researcher to compare multiple variables simultaneously. The main drawback of this study design however, is that it did not allow the establishment of a cause-effect relationship.

3.2 Area of study

This study was conducted in Mpanda Municipal Council. Mpanda Municipal Council is among the five administrative districts of Katavi Region located in the southern west highlands. Mpanda municipal council lies between latitude 6° 20’ 37.64" South of the equator and between longitude 31° 04' 10.24" East of Greenwich. From DHIS2 2023 data, its estimated pregnant women’s population was 10,693(18).

The reason for choosing Mpanda Municipal council was that the information needed were available due to presence of health facilities offering reproductive and child health services such as ante-natal clinic. The prevalence of malaria in Mpanda is 8% while only 8% of women during pregnancy received three or more dosages of SP(18). It is among the districts with the lowest uptake of IPTp among pregnant women. Moreover, is among the malaria endemic area. This study was conducted at three health centres where Basic Maternal and Obstetrics Care services are provided in Mpanda Municipal Council.

3.3 Study population

The intended people included postnatal females 15-49 years old attending Reproductive and Child health clinic. This group had experienced the recommended period of IPTp uptake by WHO (more than 12 weeks of gestational age). Relevance: Given that IPTp uptake is advised for the period above 12 weeks of gestational age to the point of delivery, the study population was relevant to the research questions. Therefore, postnatal women aged 15-49 years old attending ANC were likely to have taken three or more dosage of sulphadoxine pyrimethamine and also included women aged 15-18

years old (minors) because Katavi is among the region with 45% prevalence of adolescent pregnancies among adolescent aged 15-19 years, highest in the country(37). Accessibility: Because postnatal women aged 15-49 years old visited postnatal-natal clinic to open the RCH cards for their new-born. This study was conducted in the postnatal clinic at Mpanda Municipal Council and all eligible women who attended postnatal clinic during the data collection period were invited to participate in the study.

3.4 Sample size determination

Postnatal women included in the study was 371. This estimation was from the sample size calculation using Cochran's (1977) formula for categorical data. The sample size was based on optimal prevalence of IPTp3 uptake of 32% as per the 2022 Demographic Health survey.(18)

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

Where,

n=Sample size required

P= Proportional of pregnant women who received ≥ 3-doses of IPTp-SP =32 % (38)

E=margin of errors estimated to be 5%

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

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

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

1/0.9*296 ~371

Thus, the postnatal women that were recruited for interview in this study was 371.

3.5 Sampling technique

Mpanda District Council was conveniently selected for the assessment of RCH healthcare service utilization among women. A multistage sampling technique was used to select the respondents, involving three stages.

First stage, among 8 health facilities in Mpanda Municipal council,3 health facilities were purposeful sampled to participate in the study.

The second stage, out of the three health facilities , 371 women were randomly selected to participate in the study. Simple random sampling for interviewing in daily basis. The

postnatal care registry at each chosen health facility was utilized to choose the study participants using a simple random sampling procedure. The process began by identifying from the clinic registry. Average number of participants for interviewing per day was obtained by dividing total sample size taken at the facility to the number of days we spent at that particular health facility. Clients who meet criteria were accounted and copied in small pieces of paper. Later, we used lottery method to pick that piece of paper until sample size for that day reached, after that selected clients using registration number were interviewed at the exit point after receiving RCH services.

3.6 Criteria for Selection

3.6.1 Inclusion Criteria

All postnatal women aged 15-49 years attending RCH clinic in those selected health centres in Mpanda District Council, who provided consent and given assent to participate in the study, were included in the study.

3.6.2 Exclusion Criteria

Individuals who were severely ill, mentally incapacitated, or unwilling to provide consent wereexcluded from participation in this study. Postnatal women who were sensitive to Sulphadoxine-Pyrimethamine (SP).Postnatal women infected with HIV/AIDS and currently using or have used Co-trimoxazole prophylaxis. Post-natal women less than 18 years old whose parents won't sign the assent form permitting their children to participate in the study.

3.7 Study variables and their measurements

3.7.1 Dependent variables

The dependent variable was Uptake of dosages of SP-IPTp during pregnancy. The responses were coded as "once" if the respondent has one dose of SP during pregnancy, "Twice" if the respondent has two dosages of SP during pregnancy, "thrice" if the respondent has three dosages of SP during pregnancy and "more than three" if the respondent had more than three dosages of SP during pregnancy.

3.7.2 Independent variables

The independent variables in this study included socio-economic and demographic variables along with perception towards uptake of three dosages of IPTp-SP. Social demographic factors included the education level and woman's occupation. Socio-economic variables encompassed income and health insurance status. Descriptive and inferential statistics were employed to analyze all these variables. Other variables were marital status, age in complete years, and education level.

3.8 Research instruments

The questionnaire was divided into four sections: sociodemographic characteristics and socioeconomic factors affecting the uptake of IPTp-SP, level of utilization of IPTp-SP and factors related to it, factors that help pregnant women to access ANC services for SP-IPTp uptake, and the practice of direct observed therapy for IPTp-SP.

Section A of the questionnaire included variables that described the socioeconomic and demographic characteristics of the respondents (post-natal women). These variables encompassed age of respondents, occupation, marital status, level of education, and marital status

Section B covered information about factors on the level of utilization of IPTp, including questions that evaluated gestation age of starting taking SP, frequency of taking SP, and number of minimum doses of SP taken during pregnancy.

Section C contained questions aimed at assessing the factors that help pregnant women to access ANC services for IPTp-SP uptake in Mpanda Municipal Council, Katavi region.

Section D contained questions aimed at assessing availability of SP, clean and safe water and drinking cups during ANC clinic in Mpanda Municipal Council, Katavi region

The questionnaire was initially created in English and later translated into the interviewees' native language, Swahili.

3.9 Data Collection Methods

3.9.1 Research assistant recruitment and training

Three data collectors were recruited as research assistants for this study. They underwent training on the tools and data collection processes to ensure consistency and accuracy. Both the research assistants and the principal investigator were fluent in the local languages spoken in the study area. This linguistic proficiency facilitated effective communication with the respondents during data collection.

3.9.2 Pre-test of data collection tool

The research instrument was piloted in two health centers of Mpanda municipal council which were not selected for the actual study. This pilot phase allowed for testing the questionnaire and identifying any necessary modifications before the final version was released. The questionnaire was designed and incorporated into a Kobo toolbox, which facilitated the data collection process and reduced the need for manual hard copies.

Before contacting health centers, both during the pilot data collection and the main data collection process, the principal investigator and research assistants introduced themselves to the Regional Administrative Secretary (RAS) and to the Mpanda municipal Councils, health facility in charges of all three health facilities. This ensured cooperation and support from local authorities.

At each health facility, the investigator introduced themselves and obtained informed consent from the respondent before proceeding with the interview. It was important to prioritize ethical considerations and ensure that participants understood the purpose of the study and their rights.Data collection commenced in January 2024 and continued throughout to February 2024.

3.10 Data analysis

Prior to analysis, the data was entered, cleaned, and checked for missing information using the IBM USA-developed Statistical Package for Social Sciences (SPSS) version 25.0. Socio- demographic characteristics were analyzed using descriptive statistics, which indicated frequencies and percentages. The prevalence and magnitude of the selected variables were recorded in charts.

Descriptive statistics were employed to factors associated with uptake of 3 dosages of SP among the respondents.

In order to assess the relationship between socioeconomic and demographic variables and the uptake of 3 dosages of SP, the Pearson chi-square test was employed. The purpose was to identify variables among the respondents that had a P-value below 0.05, indicating potential associations. These variables were considered for inclusion in a multinomial logistic regression analysis.

Additionally, a multivariate logistic regression analysis was conducted to investigate the relationships and potential predictors of uptake of 3 dosages of IPTp-SP among the respondent. For avariable to be deemed statistically significant, it needed to have a significance level of 0.05 and an odds ratio (OR) greater than 1.

3.11 Ethical Consideration

The ethical approval for this study was sought from the Institutional Review Board (IRB) of Muhimbili University of Health and Allied Sciences (MUHAS). Approval letters were also requested from the district and municipal medical officers at the respective administrative territories to conduct the study.

Prior to commencing the study in each village, a courtesy call was made to the health facility Incharge of each respective health facility to seek their approval.

Written informed consent and assent was obtained from each respondent, and for those who were unableto read or write, verbal consent was provided after explaining the study objectives. The interviews began only after obtaining consent ro assent from the guardian.

In cases where respondents were unable to provide consent for any reason, verbal consent to participate was sought from their guardians. The respective guardians were involved inresponding on behalf of these individuals.

3.11.1 Confidentiality of respondent and data.

The signed consent forms were collected from each participant, and all data was strictly anonymized during the analysis and writing-up stages. Permission was sought from the municipal executive directors through the offices of the municipal medical officers of Mpanda municipality, respectively, before the study commenced. A courtesy call was

made to the medical officer in charge of each health facility, and the principal investigator introduced himself to the village executive office.

The study participants were provided with relevant information about the study's goal and research process through a patient information sheet. Informed written consent was obtained from the study participants regarding their participation.

Participants were informed that they had the freedom to refuse or withdraw from the study at any time, both before and during the study. Information security measures were implemented to protect the confidentiality of survey respondents. It was ensured that no harm would come to any individual during or after the study. The study was conducted solely for the benefit of the participants, and it was carried out at a free and convenient time for the respondents.

3.11.2 Study limitations and mitigation

1. One of the study's shortcomings was that most data were collected based on self-report,which had the potential to cause over or underestimation of certain variables. To mitigate the bias that could arise due to recall bias, the research team applied probing techniques to facilitate the documentation of accurate and valid information from eachparticipant during the interview.
2. Another limitation was related to the fact that this study was cross-sectional, and therefore, only correlations could be established, and no cause-effect relationships could be determined since the exposure and outcome measures were collected simultaneously. This was mitigated by controlling for potential confounding variablesduring analysis, either by adjusting for them in the statistical model or by matching participants on those variables.

3.12 Dissemination of the study findings

The report from this study will be made public, and copies of it will be given to the pertinent MUHAS departments, the Katavi Region's office of the Region Medical Officer, and the DMO of the Mpanda Municipal council. In addition, the study findings

will be used to produce an article manuscript for submission to a reputable journal for publication.

Furthermore, the findings from this study will be presented to the MUHAS Annual Scientific Conferences.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic Information of Participants

Descriptive characteristics of the study sample, comprising of 371 post-natal women, are displayed in Table 1.No respondent declined to provide consent or assent for participating in the study,and hence data were gathered from 371 respondents, giving a response rate of 100%. Out of the 371 participants, 331 (89.2%) were married and 36 (9.7%) were single.The mean age was 27.34 ± 6.416 years, and 169 (45.6%) of the sample were aged between 25-34 years. Most respondents were housewives 166 (44.7%) and completed primary school education (around 56.9%).

Table 1: **Social demographic characteristics of the participants (n=371)**

Maternal Age (years) mean (± SD)	27.34± 6.416	
Characteristics	**n**	**%**
Age Category		
<18 years	8	2.2
18-24 years	138	37.2
25- 34 years	169	45.6
> 35 years	56	15.1
Occupation		
No employment	166	44.7
Farmer	124	33.4
Self employed	74	19.9
Employee(Public/Private)	7	1.9
Marital Status		
Married	331	89.2
Widow	2	0.5
Divorced	2	0.5
Single	36	9.7
Education Level		
No formal education	47	12.7
Primary School Education	211	56.9
Secondary School Education	68	18.3
Completed Advanced Secondary school Education	2	0.5
Not complete Secondary School Education	28	7.5
College/University	15	4
Religion		
Christian	310	83.6
Muslim	61	16.4

4.2 Prevalence of IPTp-SP optimal uptake

Of the surveyed postnatal women 112 (30 %) received three dosages of IPTp-SP while 128 (34 %) took less than three dosages of SP. The median IPTp-SP dosage was 3 (IQR= 2). Among respondents (131,35 %) received three doses of IPTp-SP. Fig 2

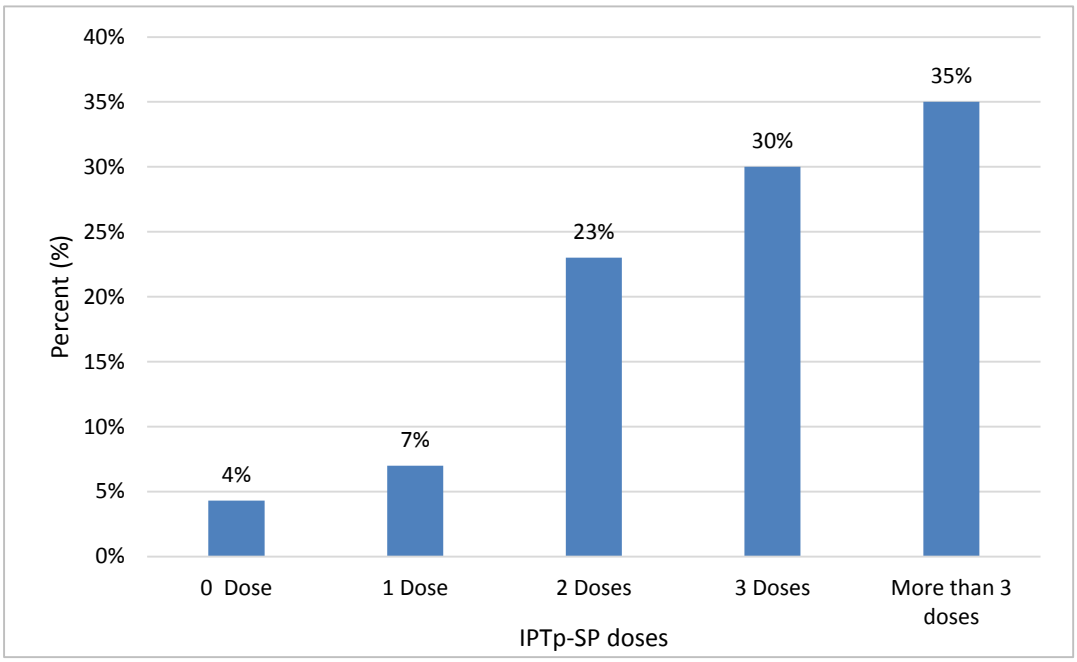


Figure 2: Distribution of IPTp SP uptake levels against the drug's dosage. IPTp-SP intermittent preventive treatment of malaria in pregnancy with sulphadoxine pyrimethamine

4.3 Level of utilization of IPTp, knowledge related and obstetric factors associated with IPTp-SP uptake

The study compared characteristics of women who received 3 doses of IPTp-SP to those who did not receive three dosages. Table 2 shows the distribution of IPTp-SP uptake against the level of utilization, obstetric and knowledge characteristics of women during pregnancy.

Pearson Chi-square and Fisher's Exact text results show that uptake of three dosage of IPTp-SP uptake was significantly associated with the gestation age at which she had the first dose ($P = 0.003$), interval duration between dosages of SP ($P < 0.001$), means of calculating the gestation age to use SP ($P = 0.001$) and knowledge of the minimum dosage of SP required during pregnancy ($P<0.001$) (Table 2).

Table 2: Multivariate logistic analysis of level of utilization of IPTp3, obstetric and knowledge characteristics of women during pregnancy in Mpanda Municipal Council.

	Uptake of 3 Dosages of IPTp-SP		
Independent Variable	**3 Dosages N=353 n (%)**	**P.Value**	**cOR , 95% CI**
Gestation Age during the First Dose of SP			
First trimester	5 (1.3)	0.315	0.248, 0.016-3.78
Second trimester	324 (87.3)	0.003	0.145, 0.04-0.521
Third trimester	24 (6.4)		
Fourth trimester	18 (4.9)		
Knowledge on the gestation age			
UPT	5 (1.3)		
LMNP	2 (0.5)	0.0001	
Healthcare Provider	363 (97.8)		
USS	1(0.3)		
Experience of swallowing SP			
Yes	353 (95.1)	0.653	0.42, 0.01-14.94
No	18 (4.9)		
Awareness of Interval Duration between SP doses			
2 weeks	1(0.3)	0.993	
3 weeks	34 (9.2)		
4 weeks	279 (75.2)	0.0001	0.181,0.78-0.42
More than 4 weeks	57 (15.4)		
Awareness of Duration to use SP during pregnancy			
Less than 32 weeks	2(0.5)		
Up to 32 weeks	83 (22.4)	0.001	0.131, 0.042-0.412
Up to 36 weeks	53 (14.2)		
Up to delivery	36 (9.7)	0.03	0.193,0.043-0.856
Unaware	197 (53.1)		
Awareness of Minimum dose of SP during pregnancy			
One dose	5 (1.3)	0.669	1.668, 0.16-17.42
Two doses	16 (4.3)	0.001	14.483, 3.101-67.6
Three doses	43 (11.6)	0.12	
More than three doses	75(20.2)	0.319	0.549,0.17-1.79

Unaware	232(62.5)	0.0001	
Awareness of Gestation Age for the first dose of SP			
As early as possible after 12 weeks	129 (34.8)	0.447	1.343,0.6-2.9
Table 2(continued)			
20-24weeks	10 (2.7)	0.542	1.7,0.29-10.52
28-32weeeks	1 (0.3)	0.993	
>32weeks	2 (0.5)		
Unaware	229 (61.7)		
Reported Hindrances from taking SP			
HIV Positive women using CPZ	16(4.3)	0.244	0.357,0.063-2.018
Vomiting	63 (17.0)	0.18	0.6,0.28-1.26
Diarrhea	11(3)	0.438	0.496,0.084-2.922
Unaware	281 (75.7)		
Awareness of effects of malaria in Pregnancy			
Anaemia	2 (0.5)	0.988	
Death	114(30.7)	0.982	0.992, 0.497-1.980
Abortion	84(22.6)	0.233	1.548,0.767-3.125
Intrauterine fetal death	28 (7.5)	0.888	0.924,0.307-2.781
Prematurity	16 (4.3)	0.969	1.029,0.244-4.352
Low birthweight	10(2.7)	0.957	
Unaware	117(31.5)		

In multivariable logistic regression analysis, uptake of three dosages of IPTp-SP among pregnant was linked to pregnant women who has the first dose in the second trimester compared to those women who had the first dose after the second trimester (cOR = 0.15, 95% CI 0.04-0.521). Gestation age at which one starts taking SP and the use of LNMP as method of calculating the gestation age during ANC visit remained significant factors in relation to uptake of three doses of IPTp when others were constant (P = 0.003), (P < 0.001) respectively.

Women who had history of swallowing SP in their previous pregnancy were 96% more likely to get three dosages of IPTp-SP during their pregnancy. Those who took SP between 20 weeks to 24 weeks gestations had 2-fold likely to receive three doses of SP during pregnancy (aOR=1.7, 95% CI 0.29-10.52). There was likely hood of achieving three doses of IPTp-SP during pregnancy if a pregnant woman could get a

minimum of two doses of SP (cOR=14.483,95% CI 3.101-67.6) and at the same time if a woman had no clear understanding on the time period of using SP during pregnancy they would less likely take three doses of SP even upon delivery (cOR= 0.193, 95% CI 0.043-0.856) Some of the side effects of SP during pregnancy such as vomiting (cOR=0.6, 95% CI 0.28-1.26) and diarrhoea (cOR=0.496,95% CI 0.084-2.922) affected negatively pregnant women and hindered them from taking three doses of IPTp-SP during pregnancy. Seroconverted Pregnant women who took Cotrimoxazole did not take SP due to effects of drug interactions. Most women had an understanding about the effect of malaria in their pregnancy and those which history of abortion (cOR=1.548, 95% CI 0.767-3.125)and delivered premature children (cOR=1.029, 95% CI 0.244-4.352) were more likely to take three doses of IPTp-SP during their pregnancy

4.4 Health service delivery factors influencing the uptake of 3 doses of SP

This study compared the health service characteristic with the outcome of IPTp-SP uptake. From Table 3, higher proportion of women who received three doses of IPTp-SP stayed took less than 30 minutes (42%) to reach the health facility compared to those who took more than 30 minutes (22.9%). There was a significant association between number of ANC contacts and uptake of three dosages of IPTp-SP (P=0.0001).For pregnant women who had received SP dose during ANC clinic and drank it in the presence of healthcare worker were likely to get three dosages of SP compared to women who had the dose at home (P<0.001)

There was no significant association between uptake of three doses of IPTp-SP and clean and safe water provision (P = 0.27), provision of clean cups (P = 0.47), and ANC clinic waiting time (P = 0.313) (Table 3).

Table 3: **Multivariate logistic analysis on Health service characteristics associated with uptake of three doses of IPTp-SP**

	Uptake of 3 Dosages of IPTp-SP		
Independent Variable	**3 Dosages N=353 n (%)**	**P.Value**	**cOR ,95% CI**
Time taken to travel to the health facility			
Less than 30 minutes	156 (42)	0.164	0.577,0.26-1.25
30 minutes	130 (35)	0.216	0.61,0.279-1.335
More than 30 minutes	85 (22.9)		
Times spent at the ANC Clinic			
Less than 30 minutes	17(4.6)	0.514	1.604, 0.388 - 6.623
30 minutes	122(32.9)	0.313	1.422, 0.718-2.815
More than 30 minutes	232(62.5)		
Health seeking behavior			
Self-Initiative	181(48.8)	0.997	
Husband/Spouse	149(40.2)	0.997	
Relatives	16 (4.3)	0.997	
Community healthcare workers	20(5.4)	0.997	
Mass Media	5(1.3)		
Number of ANC contacts			
Once	4(1.1)	0.0001	
Twice	22 (5.9)		
Thrice	66 (17.8)		
Four	110 (29.6)		
More than four times	169 (45.6)		
DOT Practice			
Yes	177 (47.7)	<0.0001	0.03, 0.008-0.107
In some ANC contacts	157 (42.3)	0.067	0.351, 0.114-1.078
No	37 (10)		
Table 3 (continued) Availability of Drinking water			
Yes	283(76.3)		
No	88(23.7)	0.274	
Availability of cups at ANC Clinic			
No	8 (2.2)	0.474	
Yes	363 (97.8)		

Multivariate analysis of health service predictors of 3 dosages of IPTp-SP uptake demonstrated that shorter waiting period during ANC clinic(cOR = 1.6 95% CI 0.388 - 6.623) had a positive effect on uptake of three dosages of IPTp-SP among pregnant

women. Distance from the health facility (cOR = 0.61, 95% CI 0.279-1.335) and directly observed therapy practice (cOR= 0.03, 95% CI 0.008-0.107)during ANC clinic had significant effect on uptake of three doses of IPTp-SP among pregnant women.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

IPTp-SP optimal uptake in the study area approaches the national target of 85% though still far from universality. This high optimal IPTp-SP uptake is consistent with studies in Ghana and Sierra Leone. However, studies in Uganda, Kenya and Malawi that investigated IPTp-SP optimization found low uptake levels. The high IPTp-SP uptake prevalence could be attributable to sustained efforts by the Tanzanian government and development partners towards eliminating malaria in pregnancy (MiP) and continued investment in maternal health. For instance, maternal health care services including IPTp-SP are free. There is continuous capacity building of health workers on MiP management and prevention also expand a network of health facilities national wide. Also, MiP prevention messaging is being implemented. Uptake of three doses of IPTp-SP in this study is higher compared to 32% reported in the 2022 national malaria survey [21]. Scale up of MiP preventive strategies could account for this. Besides, this may indicate geographical variations in the intervention uptake across the country. Different study methodologies could also explain the difference. For example, the survey sampled respondents from the entire country while this study drew its sample from one district council.

5.2 Socio demographic, knowledge related and obstetric determinants of optimal IPTp‑SP uptake

In this study, late ANC initiators were less likely to receive three doses of IPTp-SP. Similarly, in Tanzania first ANC booking before 17 weeks' gestation age increased the odds of receiving three doses of IPTp-SP. Consistently, two studies in Zambia and Ghana reported ANC start date as a significant predictor of optimal IPT-SP uptake [24, 31]. However, a different study in Tanzania found no relationship between ANC initiation and IPTp-SP dosage [32] though it used a smaller sample size of 138. In line with other studies in Uganda, Tanzania, Malawi, Sierra Leone and Ghana, this study found that ≥ 4 ANC visits predicts optimal IPTp-SP uptake [17–20, 23, 24, 30]. The WHO calls for integration of IPTp-SP with initiatives for promoting focused ANC services [8]. Therefore, early ANC initiators are likely to achieve adequate visits, maximizing their contacts with health workers hence increased health education and

SP administration. Evidently, pregnant women should be urged to initiate ANC visits earliest in the first trimester and adhere to all scheduled visits. Apparently, adequate ANC visits do not necessarily guarantee optimal IPTp-SP uptake. One-third of women with ≥ 4 visits in this study received sub-optimal IPTp-SP, possibly due to health service delivery deficiencies such as ANC waiting time and distance from the health facility.

IPTp-SP optimization could be realized when pregnant women are adequately and properly informed of the intervention. In Kenya, Cameroon, Zambia and Ghana maternal knowledge of IPTp-SP positively influenced the intervention's maximum uptake. Similarly, this study found that women who understood IPTp-SP benefits and knew the recommended SP doses were more likely to receive optimal dosage. Good maternal knowledge of IPTp-SP empowers women to develop positive attitudes and perceptions towards adequate intervention uptake. Number of ANC contacts was significant before adjusting for other covariates. The findings from this study show as it does in Ghana that married women have higher odds of taking three doses of IPTp-SP [35]. Though it did not consider IPTp-SP optimization, a different study in Kenya had similar findings [36]. Possibly, married women get financial and psychosocial support from their spouses towards ANC attendance. As evidenced by a study in Bungoma East district of Kenya, women who received support from their partners were more likely to receive > 1 SP dose [37]. It could also be that unmarried women get stigmatized for getting pregnant out of matrimony hence a need for their social protection. Though no significant association, younger women, those with low education, the unemployed, rural residents and primiparous women had higher proportions of sub-optimal IPTp-SP uptake. As the unmarried, these are likely to be the 20.4% who received sub-optimal intervention. These women may lack adequate access to information and communication channels used for IPTp-SP promotion. Thus, mapping out these vulnerable women and using trained community health promoters to visit them, offer comprehensive MiP health education and encourage adequate ANC attendance is imperative. Information, education and communication materials developed in local dialect could buttress the above strategy. It may be desirable to facilitate peer education on MiP prevention among these vulnerable women. This study reinforces that women's perceived benefits of IPTp-SP uptake outweigh their experience of the drug's side effects. Thus, they should continue being

educated that use of SP during pregnancy is safe and beneficial regardless of its side effects.

5.3 Health service delivery predictors of optimal IPTp‑SP uptake.

Health service delivery dynamics are critical to appropriate IPTp-SP uptake [26]. Previous studies have argued that sub-optimal IPTp-SP dosage was mainly due to health system gaps [25–27]. In this study, DOT SP administration at ANC clinic determined uptake of three doses of IPTp-SP. Health workers administer SP to eligible pregnant women and offer health education during ANC attendance. Ever missing to administer SP can create a sense of mistrust among women concerning the drug's continued availability. Thus, subsequent ANC visits may be missed leading to suboptimal IPTp-SP uptake. Besides, late ANC initiators who qualify for only three SP doses may receive sub-optimal dosage if they miss any dose. Inconsistent SP administration could be attributed to erratic drug supply. In Ghana, distance from a health facility was found to be a barrier to realizing high IPTp-SP uptake. Also, health workers' inadequacies to offer intensive IPTp-SP education due to high ANC clinic workload could contribute to the inconsistency.

5.4 Study limitations and mitigations

The study used a cross-sectional design to identify factors associated with uptake of three dosages of SP among pregnant women who attend ANC. This design cannot be employed to show causal inferences. However, multivariate logistic regression was used to establish the prevalence odds ratio (odds ratio) to quantify the causal inferences. However, the temporal dimension remains a gap for future longitudinal design.

This study employed a cross-sectional study design whose weakness is the impossibility to infer causation. Only women with live birth were included, missing an opportunity to study those with still birth. Responses were self-reported hence the possibility of recall bias. However, this was minimized by verification of some responses using ANC clinic attendance booklets. It was also minimized by excluding respondents with live birth beyond one year before the study. Health service delivery factors were not studied from health workers' perspectives. Nonetheless, this study was household-based and used documented evidence to validate some variables. Household-based approach provided a chance to study participants who would have

been missed had it been hospital-based due to poor care seeking behaviour among some women.

This study employed a convenient sampling technique, limiting the findings generalizability. A large sample size was collected to enhance the representation of the population.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This study has found low uptake of three doses of IPTp-SP in the study area compared to the national target. To improve this, regular supportive supervision on adherence to IPTp-SP policies and guidelines is necessary. Gestational age at first ANC visit, frequency and distance from the health facility determines uptake of 3 dosages of IPTp-SP. It is evident that efforts should be directed towards early and more frequent ANC visits and outreach services such as community IPTp for facilities located far from communities. This study demonstrates that awareness and knowledge of pregnant women on MiP preventive interventions through intensive, targeted health education and other behaviour change communication strategies is paramount to IPTp-SP optimization. Consequently, it is necessary to develop and implement a comprehensive MiP health education strategy including messages on early ANC attendance, adequate ANC visits, adherence to all ANC visits, MiP dangers, MiP prevention, IPTp-SP start date, IPTp-SP benefits and optimal IPTp-SP dosage. To strengthen service delivery, it is critical for health facilities to stock adequate SP drugs and health workers should consistently administer the drugs DOT. Future studies considering larger samples and health workers' perspectives of the health system delivery factors are recommended.

6.2 Recommendations

There is need to strengthen ANC services especially at lower-level health facilities, including early ANC attendance, of at least four ANC visits and leveraging increased ANC attendance and implementation of community IPTp to increase demand for IPTp-SP services.

Factors associated with uptake of IPTp-SP varied across various sectors. Therefore, sector-wide approaches, including female education, poverty eradication, involving women in decision-making about seeking their own healthcare and engaging religious institutions in malaria control efforts are needed to scale-up IPTp-SP uptake

There is need for implementation research to understand implementation challenges that explain the poor uptake of three doses of IPTp-SP at lower-level health facilities and among younger women.

REFERENCES

1. Andronescu LR, Sharma A, Peterson I, Kachingwe M, Kachepa W, Liang Y, et al. The Effect of Intermittent Preventive Treatment of Malaria During Pregnancy and Placental Malaria on Infant Risk of Malaria. J Infect Dis. 2022;225(2):248–56.
2. Kakuru A, Jagannathan P, Kajubi R, Ochieng T, Ochokoru H, Nakalembe M, et al. Impact of intermittent preventive treatment of malaria in pregnancy with dihydroartemisinin-piperaquine versus sulfadoxine-pyrimethamine on the incidence of malaria in infancy: A randomized controlled trial. BMC Med. 2020;18(1):1–11.
3. Onoja H, Nduka FO, Abah AE. Effectiveness and compliance to the use of sulphadoxine-pyrimethamine as a prophylaxis for malaria among pregnant women in Port Harcourt, Rivers State, Nigeria. Afr Health Sci. 2022;22(2):187–93.
4. Hill J, Dellicour S, Bruce J, Ouma P, Smedley J, Otieno P, et al. Effectiveness of Antenatal Clinics to Deliver Intermittent Preventive Treatment and Insecticide Treated Nets for the Control of Malaria in Pregnancy in Kenya. PLoS One. 2013;8(6).
5. MoHCDGEC. Antenatal Care Guidelines. Minist Heal Community Dev Gender, Elder Child. 2018;(11):1–46.
6. 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
7. Fernandes S, Sicuri E, Kayentao K, van Eijk AM, Hill J, Webster J, et al. Cost-ffectiveness of two versus three or more doses of intermittent preventive treatment for malaria during pregnancy in sub-Saharan Africa: A modelling study of meta-analysis and cost data. Lancet Glob Heal [Internet]. 2015;3(3):e143–53. Available from: http://dx.doi.org/10.1016/S2214-109X(14)70385-7
8. Mushi V, Mbotwa CH, Zacharia A, Ambrose T, Moshi F V. Predictors for the uptake of optimal doses of sulfadoxine-pyrimethamine for intermittent

preventive treatment of malaria during pregnancy in Tanzania: further analysis of the data of the 2015–2016 Tanzania demographic and health survey and malaria indicat. Malar J [Internet]. 2021;20(1):1–9. Available from: https://doi.org/10.1186/s12936-021-03616-2

9. National Malaria Control Program. The United Republic of Tanzania. 2022;(255):1–16.
10. WHO. Who Guidelines for a. 2021;(June):2019. Available from: http://www.ghbook.ir/index.php?name=ﯼاه ﻩنارﺳ و گـنﻩرف 37=egap&05631=di_koob&enilnodaer=ksat&koobd_moc=noitpo&ذ ویﺭ ن&chkh ashk=ED9C9491B4&Itemid=218&lang=fa&tmpl=component
11. Onyebuchi AK, Lawani LO, Iyoke CA, Onoh CR, Okeke NE. Adherence to intermittent preventive treatment for malaria with sulphadoxine-pyrimethamine and outcome of pregnancy among parturients in South East Nigeria. Patient Prefer Adherence. 2014;8:447–52.
12. Yu V. 乳鼠心肌提取 HHS Public Access. Curr Opin Hematol. 2016;173(3)(1):665–76.
13. Savic RM, Jagannathan P, Kajubi R, Huang L, Zhang N, Were M, et al. Intermittent Preventive Treatment for Malaria in Pregnancy: Optimization of Target Concentrations of Dihydroartemisinin-Piperaquine. Clin Infect Dis. 2018;67(7):1079–88.
14. Chua CLL, Hasang W, Rogerson SJ, Teo A. Poor Birth Outcomes in Malaria in Pregnancy: Recent Insights Into Mechanisms and Prevention Approaches. Front Immunol. 2021;12(March):1–11.
15. 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.
16. Mchwampaka WM, Tarimo D, Chacky F, Mohamed A, Kishimba R, Samwel A. Factors affecting uptake of ≥ 3 doses of Sulfadoxine-Pyrimethamine for malaria prevention in pregnancy in selected health facilities, Arusha region, Tanzania. BMC Pregnancy Childbirth. 2019;19(1):1–8.
17. Papers L. G Uidelines for the R Evision of N Ational By. 2007;(December).
18. Ministry of Health (MoH) [Tanzania Mainland], Ministry of Health (MoH) [Zanzibar], National Bureau of Statistics (NBS), Office of the Chief

Government Statistician (OCGS) and I. Demographic and Health Survey and Malaria Indicator Survey. Tanzania Demogr Heal Surv Malar Indic Surv 2022 Key Indic Report. 2022;1–23.

19. Ministry of Health Community Development Gender Elderly and Children (MoHCDGEC). DHIS2. DHIS2. Available from: https://dhis.moh.go.tz/api/apps/Dhis2-landing-page/index.html#/
20. Mutanyi JA, Onguru DO, Ogolla SO, Adipo LB. Determinants of the uptake of intermittent preventive treatment of malaria in pregnancy with sulphadoxine pyrimethamine in Sabatia Sub County, Western Kenya. Infect Dis Poverty [Internet]. 2021;10(1):1–13. Available from: https://doi.org/10.1186/s40249-021-00887-4
21. 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;15(1):1–14.
22. 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.
23. Hill J, Hoyt J, van Eijk AM, D'Mello-Guyett L, ter Kuile FO, Steketee R, et al. Factors Affecting the Delivery, Access, and Use of Interventions to Prevent Malaria in Pregnancy in Sub-Saharan Africa: A Systematic Review and Meta-Analysis. PLoS Med. 2013;
24. 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).
25. Manual R. Prevention and Control of Malaria in Pregnancy. 2018;
26. 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. 2015;3(7):e387–95.

27. Ayubu MB, Kidima WB. Monitoring Compliance and Acceptability of Intermittent Preventive Treatment of Malaria Using Sulfadoxine Pyrimethamine after Ten Years of Implementation in Tanzania. Malar Res Treat. 2017;2017:1–5.
28. Darteh EKM, Dickson KS, Ahinkorah BO, Owusu BA, Okyere J, Salihu T, et al. Factors influencing the uptake of intermittent preventive treatment among pregnant women in sub-Saharan Africa: a multilevel analysis. Arch Public Heal. 2021;79(1):1–9.
29. Roman E, Andrejko K, Wolf K, Henry M, Youll S, Florey L, et al. Determinants of uptake of intermittent preventive treatment during pregnancy: a review. Malar J [Internet]. 2019;18(1):1–9. Available from: https://doi.org/10.1186/s12936-019-3004-7
30. World Health Organization. World Malaria Report. Vol. WHO/HTM/GM, World Health. 2022. 238 p.
31. Peter A. Effect of intermittent preventive treatment of malaria on the outcome of pregnancy among women attending antenatal clinic of a new Nigerian teaching hospital, Ado-Ekiti. Niger Med J. 2013;54(3):170.
32. Chacky F, Runge M, Rumisha SF, MacHafuko P, Chaki P, Massaga JJ, et al. Nationwide school malaria parasitaemia survey in public primary schools, the United Republic of Tanzania 11 Medical and Health Sciences 1117 Public Health and Health Services. Malar J [Internet]. 2018;17(1):1–16. Available from: https://doi.org/10.1186/s12936-018-2601-1
33. Dube B, Mberikunashe J, Dhliwayo P, Tangwena A, Shambira G, Chimusoro A, et al. How far is the journey before malaria is knocked out malaria in Zimbabwe: Results of the malaria indicator survey 2016. Malar J [Internet]. 2019;18(1):1–10. Available from: https://doi.org/10.1186/s12936-019-2801-3
34. Diengou NH, Cumber SN, Nkfusai CN, Mbinyui MS, Viyoff VZ, Bede F, et al. Factors associated with the uptake of intermittent preventive treatment of malaria in pregnancy in the Bamenda health districts, Cameroon. Pan Afr Med J. 2020;35:42.
35. Mwandagalirwa MK, Levitz L, Thwai KL, Parr JB, Goel V, Janko M, et al. Individual and household characteristics of persons with Plasmodium falciparum malaria in sites with varying endemicities in Kinshasa Province,

Democratic Republic of the Congo. Malar J. 2017;16(1):1–12.

36. Kibusi SM, Kimunai E, Hines CS. Predictors for uptake of intermittent preventive treatment of malaria in pregnancy (IPTp) in Tanzania. BMC Public Health. 2015;15(1):1–8.
37. Mpimbi SJ, Mmbaga M, El-Khatib Z, Boltena MT, Tukay SM. Individual and Social Level Factors Influencing Repeated Pregnancy among Unmarried Adolescent Mothers in Katavi Region—Tanzania: A Qualitative Study. Children. 2022;9(10):1–10.
38. ICF. Togo Malaria Indicator Survey 2017 . 2018;

Appendices

Appendix 1: Questionnaire (English version)

RESEARCH TITLE : UPTAKE OF INTERMITTENT PREVENTING TREATMENT WITH SULPHADOXINE-PYRIMETHAMINE DURING PREGNANCY IN MPANDA MUNICIPAL COUNCIL, TANZANIA

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 uptake of 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.

Date of interview…… Time start……

Name of interviewer…….

ID number----------.Name of the District----------

Name of the facility----------Level of facility----------

SECTIONA: BACKGROUND CHARACTERISTICS

Qn1 .What is your age?..... (Complete age)

Qn2. What is your occupation?

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

Qn3. What is your marital Status?

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

Qn4. What is your highest level of education?

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

Qn5. What is your religion?

1. Muslim
2. TGA
3. R.C
4. Others……

SECTION B: LEVEL OF UTILIZATION OF IPTp FACTORS

Qn6. Have you swallowed SP before?

1. Yes
2. No

Qn7. What is the number of times you have swallowed it?

1. Once
2. Twice
3. Thrice

Qn.8 At what stage of your pregnancy did you swallow first dose?

1. First trimester
2. Second trimester
3. Third trimester

Qn9. What is the interval of the first dose and second dose?

1. Two weeks

2. Three weeks
3. Four weeks
4. More than four weeks

Qn10. What period, can SP give during pregnancy?

1. Up to 32 weeks
2. Up to 36 weeks
3. Up to delivery

Qn11. What are the minimum doses of SP required during pregnancy?

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

SECTION C: FACTORS THAT HELP PREGNANT WOMEN TO ACCESS ANC SERVICES FOR SP-IPTp UPTAKE.

Qn12. What minutes of time takes you from household to the closet health facility?

1. ……(Fill blanks for the mentioned response)

Qn13. Have you ever used ANC services? (If yes, go to Qn. 14 if No go to ANC card)

1. Yes
2. No

Qn14. How many hours do you spend on average at ANC services?

1. …….(fill the blanks for the mentioned responses)

Qn15. Who advise you to seek ANC services?

1. Self-initiative
2. Husband/spouse
3. Relatives
4. Heard from facility
5. Neighbors
6. Mass media/ Local radio, Television/ newspapers.

Qn16. What period recommended for a pregnant woman to start seeking ANC services?

1. Any time once discovered she is pregnant
2. At 16 weeks
3. At 20 weeks
4. More than 20 weeks
5. When about to deliver
6. Don't know

Qn17. What is the number of contacts to ANC you have made?

1. Once
2. Twice
3. Thrice
4. Fourth
5. More than four

QN18. What is the interval between ANC contacts in weeks?

1. Two weeks
2. Three weeks
3. Four weeks
4. More than Four weeks

Qn19. 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. Don't know

Qn20. What help you understand recommended gestation age for the first dose of SP for IPTp?

1. UPT
2. LNMP
3. Health care provider
4. Using Ultrasound
5. Others mention…….

Qn21. Did health care providers counsel you on the effect of malaria in your pregnancy and unborn child?

1. Yes
2. No

Qn22. What do you think can be the effects of malaria during pregnancy?

3. Can cause anaemia
4. Can cause death
5. Can cause spontaneous abortion
6. Can cause intrauterine foetal death
7. Can cause prematurity
8. Can cause low birth weight.

SECTION D: AVAILABILITY OF SP, WATER AND ADEQUATE CUPS (DOT PRACTICE)

Qn23. On your knowledge what are condition that can hinder a pregnant woman from taking SP?

1. HIV positive woman who is using cotrimoxazole and or reactions such as itching
2. Vomiting
3. Diarrhoea
4. Don't know

Qn24. Have you ever given SP by service provider during the previous ANC contacts?

1. Yes (if response is yes go to Q26)
2. No

Qn25.If no to Q24 what were the reasons given by the service provider for not giving SP. (after this go toQ30)

1. There was no medicine at health facility
2. I had no money to buy the medicine
3. This is my first ANC visit
4. Don't know
5. Others specify----------

Qn26. Do you usually swallow SP in front of service provider at ANC?

1. Yes, to all the contacts
2. No to some contacts
3. No to all the contacts (if no go to Qn.29)

Q27.How many times did you swallow SP at ANC contacts? (Compare with ANC contacts)

1. Once
2. Twice
3. Thrice
4. More than three

Q28. Were you serve with free, clean water to take the medicine?

1. Yes (go to Q 32)
2. No

Qn29. If no, how did you get water to swallow medicines?

1. Bought water at ANC/ facility
2. Fetched water from facility tank
3. Had my own water from home
4. Others specify…….

Qn30.If no/no to some contacts to Qn26, what were the reasons for not swallowing SP in front of service provider

1. There was no clean water at ANC
2. 2There was no enough cups to use at ANC
3. I was hungry/had not eaten yet
4. There was no medicine at the facility
5. Others specify ……

Qn31. If yes to question 26/ 27 how many tablets were they?

1. One
2. Two
3. Three
4. > three

Qn32. Is there adequate cups used for swallowing SP at facility level?

1. Yes
2. No

Qn34. What information present from ANC cards? Fill the blanks…….

ANC contacts	**SP-IPTp dose**	**Gestational age weeks**
First		
Second		
Third		
Fourth		

Time the interview ended----------

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

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.

Tarehe ya usaili……

Muda wa kuanza……

Jina la Msaili……

Nambari ya dodoso----------

Jina la Wilaya----------

Jina la kituo ----------.

Kiwango cha kituo ----------

SEHEMU A: TAARIFA BINAFSI ZA MSHIRIKI

Na1.Una miaka mingapi ---------- Umri (miaka)

Na2. Je unafanya kazi gani inayokuingizia kipato?

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

Na3. Ni ipi hali ya ndoa yako?

1) Nimeolewa
2) Mjane
3) Tumetalakiana
4) Sijaolewa
5) Ninaishi tu na mwanaume

Na4. Je, Kiwango chako cha elimu ya juu ni kipi?

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

Na5. Je, dhehebu unaloabudu ni lipi?

1. Uisilamu
2. Urokole
3. Ukiristu
4. Nyingine taja

SEHEMU B: UPATIKANAJI NA MATUMIZI YA KINGA YA IPT KWA WAJAWAZITO.

Na 6. Ulimeza dawa ya SP kipindi cha ujauzito uliopita?

1. Ndio
2. Hapana

Na 7. Ulimeza mara ngapi?

1. Moja
2. Mbili
3. Tatu

Na 8. Kipindi gani cha mimba ulimeza dozi ya kwanza?

1. Ndani ya miezi 3 ya mimba
2. Ndani ya miezi 6 ya mimba
3. Ndani ya miezi 9 ya mimba

Na 9. Dozi moja ya SP na nyingine zinatakiwa zipishane katika muda gani?

1. Wiki mbili
2. Wiki tatu
3. Wiki nne
4. Zaidi ya wiki nne

Na 10. Ni hadi muda gani dawa ya SP inatolewa katika kipindi chote cha ujauzito?

1. Mpaka wiki 32
2. Mpaka wiki 36
3. Mpaka wakati wa kujifungua
4. Sijui

Na 11. Kiwango gani cha chini cha dozi za SP ambazo ulitakiwa kupewa wakati wa ujauzito?

1. Dozi moja
2. Dozi mbili
3. Dozi tatu
4. Zaidi ya dozi 3
5. Sijui

SEHEMU C: SABABU ZINAZOMSAIDIA MAMA MJAMZITO KWENDA KUPATA HUDUMA KLINIKI NA KUMEZA DAWA YA FANSIDA KWA AJILI YA MATIBABU NA KINGA DHIDI YA MALARIA WAKATI WA UJAUZITO.

Na 12. Unatumia dakika ngapi kutembea toka nyumbani kwako mpaka kituo cha karibu cha Afya chenye huduma ya kliniki kwa ajili ya mama wajawazito……..(Jaza sehemu zilizo wazi kwa majibu tajwa)

Na13. Je, umeshawahi kwenda kliniki katika kipindi chako cha ujauzito (Kama jibu ndiyo nenda swali 14, kama hapana nenda kwenye kadi ya mama)

1. Ndiyo
2. Hapana

Na14. Huwa unatumia masaa mangapi kupata huduma za kliniki? (Kuanzia unapofika kliniki mpaka unaondoka kwenye kituo)…….

Na15. Nani alikushauri kutafuta huduma ya mama mjamzito katika vituo vya kutolea huduma?

1. Mimi Binafsi
2. Mume wangu/mwenza
3. Ndugu
4. Nilisikia kwenye zahanati/kituo cha Afya/ hospitali
5. Majirani
6. Nilishaurwa hospitali

Na16. Je ni kipindi gani ukiwa na ujauzito unashauriwa kuanza kwa mara ya kwanza huduma za kliniki za mama mjamzito?

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

Na17. Je, umehudhuria mara ngapi kliniki katika ujauzito uliopita?

1. Mara moja
2. Mara mbili
3. Mara tatu
4. Mara nne
5. Zaidi ya mara nne

Na18. Je, hudhurio moja na jingine vinatakiwa kupishana kwa wiki ngapi?

1. Wiki mbili
2. Wiki tatu
3. Wiki nne
4. Zaidi ya wiki nne

Na19. Je, dozi ya kwanza ya SP inashauriwa umeze mimba ikiwa na umri gani?

1. Mapema kabla ya wiki 12
2. Mapema iwezekanavyo baada ya wiki 12
3. Kati ya wiki 20-24
4. Kati ya wiki 28-32
5. Zaidi ya wiki 32
6. Sijui

Na20. Je unatumia mbinu gani katika kutambua umri wa mimba ili ukameze dozi ya kwanza ya SP?

1. Kipimo cha mimba (UPT)
2. Kumbukumbu ya mara ya mwisho kuona siku yako ya hedhi (LNMP)
3. Kupitia mtaalum aliyopo kliniki
4. Kwa uchunguzi wa Ultrasound

5. Nyinginezo …….Taja

Na21. Je, watumishi wanaofanya kazi kliniki hutoa elimu juu ya madahara ya ugonjwa wa malaria katika afya yako na mtoto aliopo tumboni?

1. Ndio
2. 2.Hapana

Na22. Kwa uelewa wako unafikiri ni madhara gani yatokanayo na ugonjwa wa malaria pindi ukiwa na ujauzito?

1) kuwa na upungufu wa damu mwilini (Anemia)
2) Kifo
3) Mimba kuharibika
4) Mtoto kufia tumboni
5) Mtoto kutokukuwa vizuri (IUGR)
6) kujifungua mtoto kabla siku zake hazijafika
7) Kujifungua mtoto mwenye uzito mdogo
8) Sijui
9) Nyingine taja……..

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

Na23. Kwa uelewa wako ni sababu zipi zinazomfanya mama mjamzito asipewe dawa ya fansida na mtoa huduma?

1. Mwenye maambukizi ambaye anatumia septrine,/kama anawashwa akitumia fansida.
2. Unatapika
3. unaharisha
4. Hujala chochote
5. Hujui

Na24.Je, ulishawahi meza dawa ya fansida mbele ya mtoa huduma kliniki katika kipindi chote cha ujauzito wako?

1. Ndio
2. Hapana

Na25. Kama jibu ni hapana, Sababu zipi zilisababisha usipewe dawa ya fansida?

1. Hakukuwa na dawa kiliniki
2. Dawa ilikuwa inauzwa
3. Sikuwa na hela ya kununua dawa
4. Nilikataa sioni umuhimu wa kumeza
5. Nyingine taja……

Na26. Kwa mahudhurio yako ya kiliniki huwa unapewa vidonge vya Fansida 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.29)**

Na27. Je, ni mara ngapi ulimeza dawa ya fansida katika kipindi chako cha ujauzito?

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

Na 28. Je, ulimeza dawa kituoni kwa maji yaliyopatikana kiliniki?

1. Ndio (**Nenda Na.31**)
2. Hapana

Na 29. Kama hapana kwa Na.28 ulipata wapi maji ya kumeza dawa ya fansida kituoni?

1. Ulinunua kliniki
2. Ulichota nje kwenye tenki kituoni
3. Yanauzwa kliniki/kituoni
4. Ulitoka nayo Nyumbani
5. Ulichukua dawa kwenda kumezea nyumbani
6. Nyingine taja

Na30. Kama jibu ni hapana/hapana kwa baadhi ya mahudhurio kwa swali la 24, sababu zipi zilifanya usimeze dawa ya fansida mbele ya mtoa huduma?

1. Hakukuwa na maji safi ya kumezea katika kituo cha Afya
2. Hakukuwa na vikombe safi vya kutuma kliniki
3. Nilipewa dawa nikamezee nyumbani
4. Sijui

5. Nyingine fafanua……..

Na31. Kama jibu ni ndio vidonge vya fansida vilikuwa vingapi?

1. Moja
2. Mbili
3. Tatu
4. Zaidi ya tatu

Na32. Je, kwa kuhudhuria kwako kiliniki, vikombe vinavyotumika katika kumeza dawa ya fansida vinatosha?

1. Ndio
2. Hapana

Na33. Maelezo kupitia kadi ya mama mjamzito

Hudhurio la kliniki	Dose ya fansida aliyopewa	Umri wa mimba
Kwanza		
Pili		
Tatu		
Nne		
Zaidi ya nne		

Muda wa kumaliza mahojiano……...

APPENDIX 3: INFORMED CONSENT; ENGLISH VERSION

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF RESEARCH AND PUBLICATIONS
ID-NO: HD/MUH/T.460/2021

Consent to participate in this study

Greetings: My name is **……** from Muhimbili University of Health and Allied Science, Dar es Salaam. Currently, I pursue to assess the uptake of Sulphadoxine-Pyrimethamine for the SP-IPTP among postnatal women in Mpanda Municipal Council, .

Purpose of the study

This study aims to collect information on predictors that help pregnant women on uptake and use of Sulfadoxine- Pyrimethamine for malaria prevention among postnatal women in Mpanda Municipal Council. 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 be 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 favor of service utilizers. There are no direct benefits; however, individual benefit will be obtained 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.BENSON BRYCESON MRINGO, The principal investigator, Muhimbili University, P.O.BOX 65001.Dar es salaam. Phone number +255 769 066 979

Director of Research and Publications/Chairman of the MUHAS Research and Publications committee, P.O.BOX 65001.Dar es salaam

PROFESSOR BILLY NGASALA, The Supervisor of this study, MUHAS, P.O.BOX 65001.Dar es salaam. Phone number 0754 316 359

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 : HD/MUH/T.460/2021

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 Manispaa ya Mpanda .

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

DKT. BENSON BRYCESON MRINGO Mratibu mkuu wa utafiti, Chuo Kikuu Cha Afya Muhimbili, S.L.P. 65001.Dar es salaam. Namba ya simu +255 769 066 979

Mkurugenzi wa Tafiti na Machapisho, Chuo Kikuu Cha Afya Muhimbili, S.l.P 65001, Dar es salaam Dar es salaam.

PROFESA BILLY NGASALA, Msimamizi wa Utafiti, MUHAS, P.O.BOX 65001.Dar es salaam. Namba ya simu 0754 316 359

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: CHILD ASSENT FORM; ENGLISH VERSION

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES DIRECTORATE OF RESEARCH AND PUBLICATIONS

ID-NO: HD/MUH/T.460/2021

Assent form to participate in this study

Greetings: My name is ……. from Muhimbili University of Health and Allied Science, Dar es Salaam. Currently, I pursue to assess the uptake of Sulphadoxine-Pyrimethamine for the SP-IPTP among postnatal women in Mpanda Municipal Council, .

Purpose of the study

This study aims to collect information on predictors that help pregnant women on uptake and use of Sulfadoxine- Pyrimethamine for malaria prevention among postnatal women in Mpanda Municipal Council. Your child is asked to participate in this study as a stakeholder and a resident from the study site. We believe the child has knowledge and experience that is important in this study.

What participation involves

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

1. The child 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 the child 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. The child 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 be 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 the child feel uncomfortable, she 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 a choice. If you choose for a child 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 favor of service utilizers. There are no direct benefits; however, individual benefit will be obtained 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.BENSON BRYCESON MRINGO, The principal investigator, Muhimbili University, P.O.BOX 65001.Dar es salaam. Phone number +255 769 066 979

Director of Research and Publications/Chairman of the MUHAS Research and Publications committee, P.O.BOX 65001.Dar es salaam

PROFESSOR BILLY NGASALA, The Supervisor of this study, MUHAS, P.O.BOX 65001.Dar es salaam. Phone number 0754 316 359

SIGNATURE

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

Parent/ Guardian agree ( )

Parent/ Guardian disagree ( )

I ……. have been informed that my parent(s)/ guardians have given permission for me to participate, if I want to, in a study assessing the uptake of Sulphadoxine-Pyrimethamine for the SP-IPTP among postnatal women in Mpanda Municipal Council. My participation in this project is voluntary and I have been told that I may stop my participation in this study at any time. If I choose not to participate, it will not affect my clinic activities in any way.

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

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

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

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

APPENDIX 6 : KIBALI CHA USHIRIKI KWA MTOTO–SWAHILI VERSION

CHUO KIKUU CHA SAYANSI ZA AFYA MUHIMBILI-KURUGENZI YA UTAFITI NA MACHAPISHO

Namba ya Utambulisho : HD/MUH/T.460/2021

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 Manispaa ya Mpanda .

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

DKT. BENSON BRYCESON MRINGO Mratibu mkuu wa utafiti, Chuo Kikuu Cha Afya Muhimbili, S.L.P. 65001.Dar es salaam. Namba ya simu +255 769 066 979

Mkurugenzi wa Tafiti na Machapisho, Chuo Kikuu Cha Afya Muhimbili, S.l.P 65001, Dar es salaam Dar es salaam.

PROFESA BILLY NGASALA, Msimamizi wa Utafiti, MUHAS, P.O.BOX 65001.Dar es salaam. Namba ya simu; 0754 316 359

SAHIHI

Je unakubali mtoto wako kushiriki na kujibu maswali ya tafiti hii

Mzazi/Mlezi amekubali ( )

Mzazi/Mlezi amekataa ( )

Mimi ……., nimefahamishwa na walezi/wazazi wametoa idhini ya mimi kushiriki, Kama ninataka tu, kushiriki kwenye utafiti unaojihusisha na 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 manispaa ya Mpanda. Ushiriki wangu kwenye utafiti huu ni wakujitolea na nimelezwa ninaweza kusitisha ushiriki wangu wakati wowote.Kama nikichagua kutishiriki haitaadhiri matibabu yangu kwa namna yeyote ile

Sahihi ya Mshiriki _____

Sahihi ya shahidi(kama hawezi kusoma na kuandika) _____

Sahihi ya mtafiti msaidizi _____

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

APPENDIX 7: ETHICAL CLEARANCE

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/2022 Date: 07/02/2024

MUHAS-REC-02-2024-2022
BENSON BRYCESON MRINGO
SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: UPTAKE OF INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN PREGNANCY USING SULFADOXINE-PYRIMETHAMINE (IPTP-SP) MPANDA MUNICIPAL COUNCIL, KATAVI TANZANIA

Reference is made to the above heading,

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 07/02/2024
EXPIRATION DATE OF APPROVAL: 07/02/2025

STUDY DESCRIPTION:
Purpose:

The Purpose of this cross-sectional study is to assess factors associated with uptake of three doses of SP among pregnant women who attend ANC in Mpanda municipal, Katavi region

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014554.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain Data Transfer Agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain Material Transfer Agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country.
8. Apply for and obtain permission to publish the results from National Institute for Medical Research. The application should be before submitting to a publisher and not concurrently through the email publications@nimr.or.tz.
9. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
10. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
11. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research, Publications & Innovations
Box 65001

Dr. Nahya Salim Masoud,
CHAIRPERSON, MUHAS RESEARCH AND ETHICS COMMITTE

APPENDIX 8: INTRODUCTION LETTER TO RAS

UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.460/2021 19th February, 2024

The Regional Administrative Secretary,
P.O. Box 235,
MPANDA-KATAVI

Re: INTRODUCTION LETTER

The bearer of this letter is Benson Bryceson Mringo (HD/MUH/T.460/2021), a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing Master of Public Health.

As part of his studies he intends to do a study titled: **"Uptake of Intermittent Preventive Treatment of Malaria in Pregnancy Using Sulfadoxine-Pyrimethamine (IPTP-SP), Mpanda Municipal Council, Katavi-Tanzania."**

The research has been approved by the Chairman of University Senate.

Kindly provide him with the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.

Ms. Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES

c.c. Benson Bryceson Mringo

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz

APPENDIX 9: INTRODUCTION LETTER FROM RAS TO COUNCIL

JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA.

MKOA WA KATAVI
Telegraphic: "REGCOM"
Simu. No:*025-2957103*
Fax No. 025-2957108
Email:ras.katavi@tamisemi.go.tz



OFISI YA MKUU WA MKOA,
P. O. Box 235,
MPANDA - KATAVI
29/02/2024

KUMB.NA.AB.309/366/01/60

MKURUGENZI,
HALMASHAURI YA MANISPAA,
S.L.P 216,
MPANDA.

YAH: <u>BARUA YA UTAMBULISHO KWA DKT. BENSON BRYCESON MRINGO</u>

Tafadhali husika na somo tajwa hapo juu.

2. Mtajwa hapo juu ni Mwanafunzi wa Chuo Kikuu cha Tiba cha Muhimbili **(Reg Na. HD/MUH/T.460/2021**) akisomea Shada ya Uzamili katika eneo la Afya ya Jamii (Masters of Public Health).

3. Ili kukamilisha masomo yake anatarajia kufanya utafiti katika eneo la matumizi ya vidonge kinga vya Malaria kwa kina mama wajawazito ***"Uptake of Intermittent Preventive Treatment of Malaria in Pregnancy Using Sulfadoxine-Pyrimethamine (IPTP-SP), Mpanda Municipal Council, Katavi-Tanzania"***

4. Utafiti huu umepata kibali kutoka Baraza la Chuo Kikuu Muhimbili.

5. Tafadhali mpokeeni na kumpa ushirikiano.

Dkt Jonathan E. Budenu
Kny: <u>KATIBU TAWALA MKOA</u>
<u>KATAVI.</u>

APPENDIX 10: INTRODUCTION LETTER FROM DED TO HEALTH FACILITIES

JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA

HALMASHAURI YA MANISPAA MPANDA

Kumb.Na.KTV/MMC/H.10/18/20 06/3/2024

Mganga Mfawidhi,
Hospitali ya Manispaa,
S. L. P. 216,
MPANDA.

Waganga Wafawidhi,
Vituo vya Afya na zahanati,
Halmashauri ya Manispaa,
S. L. P. 216,
MPANDA.

YAH: KUMTAMBULISHA NDUGU BENSON BRYSON MRINGO

Tafadhali rejea somo tajwa hapo juu.

Ofisi ya Mkugenzi wa Manispaa ya Mpanda imepokea barua ya tarehe 29/02/2024 yenye Kumbu Na. AB.309/366/01/60 ikieleza juu ya mtajwa hapo juu ambaye ni mwanafunzi anayefanya utafiti juu ya **Uptake of intermittent Preventive Treatment of Malaria in Pregnancy Using Salfadoxine -Pyrimethamine (IPTP-SP).**

Kwa barua hii naomba apokelewe na apewe ushirikiano muda wote atakapo fanya kazi.

Nawasilisha.

Dkt. Limbu Mazoya
KAIMU MKUU WA DIVISHENI YA AFYA
USTAWI WA JAMII NA LISHE
MANISPAA YA MPANDA

KNY: MGANGA MKUU
HALMASHAURI YA MANISPAA
MPANDA

Barua zote zitumwe kwa Mkurugenzi wa Manispaa ya Mpanda – S.L.P 216, 19 barabara ya Bomani, 50182 Mpanda CBD , katavi , Simu : +255 252957128, Nukushi: +255 25 29357129 Baruapepe: md@mpandamc.go.tz. Tovuti: www.mpandamc.go.tz

ApPENDIX 11: THE MAP OF KATAVI REGION

