DETERMINANTS OF HOME DELIVERY AMONG WOMEN AGED 15-24 YEARS IN THIRTEEN DISTRICTS OF TANZANIA

Florence Focus Kimario

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Public Health Research of the Nelson Mandela African Institution of Science and Technology

Arusha, Tanzania

March, 2020

ABSTRACT

Giving birth at health facilities in most of sub-Saharan African countries is still a challenge whereby more than 51% of first-time mothers gives birth at home. In Tanzania more than 37% of women still give birth at home and among them 33% are below 20 years of age. Studies on factors for home deliveries among women of reproductive age have been done in Tanzania and the recommended interventions were kept in place. However due to the unique needs of adolescent and young mothers there is a need of having current information on determinants of home deliveries among women aged 15-24 years. The objective of this study was to determine the factors of home deliveries among women aged 15-24 years in thirteen districts of Tanzania. This was a mixed method study combining quantitative secondary data analysis and qualitative primary data analysis. In secondary analysis we analyzed data collected from October to November 2011. This involved woman aged 15-24 years who gave birth one-year prior data collection in thirteen districts of Tanzania. In qualitative methods, we analyzed data from health care providers' key informants, and traditional birth attendants (TBA). Data were collected from February to April 2019 in Bagamoyo, Tandahimba, Magu, and Moshi Rural districts. The in-depth interviews from health care providers were based on antenatal care (ANC) delivery and postnatal care (PNC) utilization among women aged 15-24 years. Traditional Birth Attendants were asked if they still conduct home deliveries, reasons why women prefer to give birth at home and challenges they face during home delivery. A total of 409 adolescents and young women who delivered in one-year prior to data collection were included in the final analysis. A quarter of them give birth at home. Having at least four ANC visits (OR=0.23, 95% CI: 0.12-0.41, p<0.01 ref: never attended), planning place of delivery (OR=0.22, 95%CI: 0.14-0.36 P<0.01) and knowledge about the dangers signs during pregnancy (OR=0.36, 95% CI: 0.22-0.57, P<0.01) were significantly associated with the place of delivery. The study findings revealed that maternal educational, number of ANC visits, planned place of delivery and knowledge about pregnant danger signs were determinants associated with place of delivery among the women aged 15-24 years. It is important to consider these factors in programming of interventions to reduce maternal deaths.

Key words: Home delivery, Adolescents, Young women, Tanzania

DECLARATION

I, Florence Focus Kimario, I do hereby declare to the senate of Nelson Mandela African Institution of Science and Technology that this dissertation is my original work and that it has neither been submitted nor being concurrently for degree award in any other institution.

fkimario ---------- 27/3/2020

Florence Focus Kimario Date

CERTIFICATION

We hereby confirm that the dissertation entitled "determinants of home delivery among women aged 15-24 years in thirteen districts of Tanzania" submitted by Florence Focus Kimario to Nelson Mandela African Institution of Science and Technology, Tanzania in partial fulfilment of the requirements for the award of Master of Science degree in Public health research is an authentic work and has been done under our supervision

---

Dr. Mwifadhi Mrisho

Supervisor

27/3/2020

Date

STATEMENT OF COPYRIGHT

ACKNOWLEDGEMENTS

First, I thank Almighty God for guiding me throughout my coursework process, and during preparation of this dissertation. Undoubtedly, I saw him through the whole process.

I would like to express my appreciation to my supervisor for his assistance throughout the duration of the preparation of this dissertation. Special thanks to Dr. Abdullah Mkopi and Ms. Josephine Shabani for guiding me during data analysis. Another special thanks go to Charles Festo for his willingness, readiness and promptness on assisting me towards accomplishment of this dissertation. Thanks to Dr. Kafuruki Shubis for giving me both moral and academic support during my studies.

All staff of IHI, to mention few, Cecilia Francis, Perpetua Matozi and others, thank you very much for the support and guidance in every part of my studies and preparation of this dissertation.

I am indebted to AfDB for their financial support throughout my studies and research. I also wish to express my gratitude to Master of Science of Public Health Research fellows for their collaboration and support.

Thank you my husband Boniface Njau, as most of the time you took care of the children while I was busy with my studies and preparation of my dissertation. I also wish to extend a warm and loving thanks to my two loving children Nathan and Neriah who missed me so much during my studies, and to my mother and other relatives for their prayers. May the God bless you all, for helping me in various ways to accomplish this work.

DEDICATION

I would like to dedicate this dissertation to my husband, Boniface Njau, and to my lovely children, Nathan and Neriah.

LIST OF ABBREVIATIONS

AIDS	Acquired Immuno Deficiency Syndrome
ANC	Ante Natal Care
DRCHCo	Districts Reproductive and Child Health Coordinator
FeFo	Ferrous and Folic
GoT	Government of Tanzania
HIV	Human Immunodeficiency Virus
IHI	Ifakara Health Institute
ITN	Insecticide Treated Nets
LDs	Learning Districts
LW	Labor Ward
LLIN	Long Lasting Insecticide Treated Nets
MoHCDEC	Ministry of Health Community Development, Gender, Elderly and Children
NIMR	National Institute for Medical Research
NLDs	Non-Learning Districts
PMTCT	Prevention of Mother-To-Child Transmission (of HIV)
PNC	Postnatal Care
RCH	Reproductive and Child Health
TBA	Traditional Birth Attendant.
TT	Tetanus Toxoid
UNICEF	United Nations Children's Fund

WASH	Water, Sanitation and Hygiene
MNCH	Maternal, Newborn and Child Health

OPERATIONAL DEFINITIONS

Adolescent: In this study we define adolescent mother as a woman aged 15-19 years who gave birth one-year prior to data collection.

Young woman: In this study we define a young woman as a one aged 20-24 years, who gave birth one year prior to data collection

Active traditional birth attendant: In this study we define active traditional birth attendant as unskilled person in the community who escort women to the health facilities during labor pain and can assist delivery in case of emergency.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

CHAPTER ONE

INTRODUCTION

1.1 Background of the problem

Home delivery is a process of giving birth at home alone or with assistance of a close relative or traditional birth attendants. During home delivery process there are a lot of unexpected ill health outcomes including maternal severe bleeding, severe lacerations, sepsis which may results in death of both a mother and new born baby (Moinuddin *et al.*, 2017). Considering this factor, many countries encourage women to deliver at health facilities.

Most maternal deaths occur due to delays in obtaining adequate medical care and delays in obtaining obstetric emergency care. This problem can be categorized into three types delay model: (a) delay in the decision to seek care, (b) delay in arrival at health facility; and (c) delay in the provision of adequate care (Mbaruku *et al.*, 2009). Therefore, the most effective strategy to reduce maternal deaths for lower-income countries is to promote childbirth at health facilities with a strengthened referral pathways (Danforthet *et al.*, 2009).

According to UNICEF, sub Saharan Africa is the leading area with high annual maternal mortality rate (920/100 000 live birth) (Mpembeni *et al*., 2007). This is due to the fact that most of the African countries have not adequately addressed the challenge leading to high maternal mortality rate across the continent.

Sierra Leone is the leading country in Africa with high maternal mortality, standing at 1 360 deaths per 100 000 live births (Lawn *et al*., 2016). On the other hand, Uganda which is in East Africa shows remarkable achievements whereby maternal mortality rate dropped from 438 deaths per 100 000 live births (registered in 2011) to 336 deaths per 100 000 live births. (Serbanescu *et al*., 2017). Maternal mortality rate in Tanzania has remained high and stands at 556 per 100 000 live births (TDHS, 2016).

As far as the place of delivery is concerned, in Sierra Leone, more than half of pregnant women deliver at home despite laws prohibiting women from delivering at home (Kyokan *et al*., 2016). The reported proportions of women who delivered at health facilities in Uganda increased from 42% in 2006 to 57% in 2011 and stands at 74% in 2016 (UDHS, 2016). In Tanzania, the current data shows that more than half of all births occur in health facilities and

assisted by skilled health care providers (TDHS, 2016). However, the study conducted by Nelissen and colleagues (2013) indicated that more than 49% of pregnant women in Tanzania deliver at home (Nelissen *et al*., 2013).

Maternal at young age is among the risk factors for home delivery (Tsegay *et al.*, 2017) with prematurity of their reproductive organs being one of the unique barriers to safe delivery. Lopoo *et al*. (2011) highlighted barriers to health facility delivery among adolescents as (a) low level of antenatal knowledge, (b) lack of family care for the adolescents mothers, (c) lack of financial support or sources of income, (d) stigmatization in communities against adolescents pregnancies and (e) lack of decision making on issues related to child birth because of cultural regulations and community dynamics (Lopoo *et al.*, 2011).

1.2 Statement of the problem

Sustained Development Goal number 3 refers to reproductive, maternal, newborn and child health which estimated maternal death to be 216/100 000 live birth in developing countries (Gaffney *et al.*, 2014). Despite the global efforts of reducing maternal and newborn mortality rate, yet Tanzania has high maternal mortality rate and currently stands at 556 per 100 000 live births and, among these deaths, 18.5% are adolescent mothers (TDHS, 2016). Home delivery has been found to be among the contributing factors which increase maternal mortality rate. This reality has been supported by Nelissen and colleauges study which shows that more than 49% of pregnant women in Tanzania deliver at home (Nelissen *et al.*, 2013).

There is scarcity of data in Tanzania that explains determinants of home delivery among adolescent mothers. The study conducted by Mrisho *et al. (*2007) identified some of the risk factors for home delivery such as age, education, socio-economic status in the general population (Mrisho *et al.*, 2007). In other Sub Sahara African countries, a study conducted by Gyesaw *et al*. (2013) identified age, social economic status, education, and low knowledge on maternal health as risk factors for home deliveries among adolescent mothers (Gyesaw *et al.*, 2013). This study aimed at investigating the determinants of home delivery among adolescents and young mothers living in thirteen districts of Tanzania.

1.3 Rationale of the study

In Tanzania there are limited data which explains determinants of home delivery among women aged 15-24 years.

1.4 Objectives

1.4.1 General objective

The main objective of this study is to investigate main determinants of home delivery among women aged 15-24 years living in thirteen districts of Tanzania.

1.4.2 Specific objectives

(i) To determine proportion of home delivery among women aged 15-24 years in thirteen districts of Tanzania.

(ii) To determine factors that influence home delivery among women aged 15-24 years in thirteen districts of Tanzania.

1.5 Research questions

(i) What is the proportion of home delivery among women aged 15-24 years in thirteen districts of Tanzania?

(ii) What are the factors that influence home delivery among women aged 15-24 years in thirteen districts of Tanzania?

1.6 Hypothesis

(i) The proportion of home delivery is higher among women aged 15-24 years in thirteen districts of Tanzania.

(ii) There are multiple factors of home delivery among women aged 15-24 years in thirteen districts of Tanzania.

1.7 Significance of the study

The research findings are expected to provide better understanding on the determinants of home delivery among women aged 15-24 years and inform health care providers, general public and policy makers in the Ministry of Health, Community Development, Gender Elderly and Children, to come up with feasible interventions to address the observed challenges.

1.8 Delineation of the study

This study used quantitative and qualitative research methods. In-depth interviews with key informants were conducted to supplement existing quantitative data. Quantitative data were collected in thirteen districts of Tanzania.

The study interviewed only women who were breastfeeding, and it is possible that those who were not breastfeeding gave birth at home and lost their babies. The sample size for adolescents was too small resulting to additional of older age group in the analysis. Qualitative findings were limited to few districts such as Bagamoyo, Tandahimba, Magu and Moshi rural. Furthermore in-depth interview were not done with adolescents and young women.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

World Health Organization (WHO) reported that approximately 16 million girls aged 15 to 19 years become pregnant worldwide and, among them, 2.5 million girls of less than 16 years of age in developing countries give birth each year (Althabe *et al.,* 2015). UNICEF report shows 16% of world population is adolecents aged 10-19 years, and 23% of those lives in sub-Saharan Africa (Nations and Unicef, 2011). Furthermore, approximately 16 million children are born each year to young women aged 15-19 years world wide (Potts *et al.*, 2012). The prevalence of adolescent pregnancies differs across African countries, for instance in Ghana 12% of girls between 15 and 19 years are either pregnant or have a child (Konadu Gyesaw *et al.*, 2013). Whereas in Uganda 63% of women below 20 years of age give birth yearly (UDHS, 2016) and in Tanzania, adolescent pregnancy accounts for 27% of all pregnancies per year (TDHS, 2016).

Regarding the place of delivery in Tanzania, current data shows that 33% of adolescents births occur at home and assisted by either close relatives or traditional birth attendants (TDHS, 2016). The specific reasons for home delivery among adolescent mothers are yet to be known and this study will explore socio-demographic determinants of home delivery and utilization of health care services during pregnancy and delivery.

2.2 Socio-demographic determinants of home delivery among adolescent mothers

Socio-demographic factors such as age, marital status, level of education and social economic status have a great role to play regarding to the choices of place of delivery to most of pregnant women including adolescent mothers. A study conducted in China indicate that both economic status and level of education of pregnant women influenced the utilization of antenatal care services as well as place of delivery (Yuan *et al.*, 2015). This study show that women with low level of education and basic knowledge on maternal health did not prefer health facilities for delivery. These women were therefore at a high risk of death as they couldn't recognize pregnancy related danger signs (Yuan *et al.*, 2015). Furthermore, social demographic factors such as poverty have also been reported to be associated with the choices of place of delivery. Gurung and colleagues (2018) reported that age, economic status and education level of women had a significant role in determining the place of delivery. The

study also documented that women aged 30-49 years of age were less likely to have home delivery compared to women aged 15-19. Likewise, 50% of women in poorest societies preferred to have home delivery compared to 4.5% of women in richest family. The same paper documented that women with formal education were more likely to delivery in health facility as compared to women without education (Gurung *et al.*, 2018). The reported findings were in line with Mrisho and colleagues who added social cultural belief and distance from health facility as other determinants for home delivery (Mrisho *et al.*, 2007).

2.3 Utilization of preventive health care services during pregnant (ANC services)

In responding to Millennium Development Goals and the current Sustained Development Goals, most of African countries, including Tanzania, have set up preventive health care services aiming at reducing maternal mortality. To make that happen, early utilization of antenatal care services (ANC) for preventive measures is highly recommended to all women in reproductive age (Charlton *et al.*, 2017). More effort is required to make sure that there is a maximum utilization of ANC services among teenage mothers. This is due to the fact that they are at high risk of maternal death due to obstructed labor and prematurity of their reproductive organs (Ganchimeg *et al.*, 2014). Among the preventive health care services provided to all women in Tanzania during ANC period includes: health education, vaccination (tetanus toxoid), Iron and Folic acid supplementation, malaria prophylaxis, anti-helminthes, HIV counseling and testing to prevent mother to child HIV transmission and insecticide treated bed nets (Lawi *et al*., 2015).

Despite the fact that reproductive health services are for all women of reproductive age (14-49 years), yet adolescents' mothers have been neglected and deprived from preventive health care leading to early pregnancy and parenthood, high rate of HIV and STI's. Additionally, complications to newborn such as prematurity, anemia and mortality still remain higher among the adolescent as compared to other group (Morris *et al.*, 2015). According to Moris *et al*. (2015), stigma, social economic status and cultural beliefs were reported as strong predictors of underutilization of ANC services in adolescent mothers (Morris *et al.*, 2015). Shahabuddin *et al.* (2015) found that education level, place of residence and experience in giving birth to be strong predictors of utilization of ANC services. Women with primary, secondary or higher education were more likely to receive ANC services compared to those with no education. Likewise, adolescents residing in urban areas received more ANC services compared to those residing in rural (Shahabuddin *et al.* , 2015). However, Gross *et al*. (2012)

reported conflicting results which indicated that there was no significant difference between adolescents' mothers and adult women who visit ANC for first time. Adolescents' mothers hardly used ANC services due to their poor knowledge on the benefits of ANC, late recognition of pregnancy, social economic status, lack of decision making power and cultural factors (Gross *et al.* 2012).

2.4 Utilization of health care services during delivery and postnatal among teenage mothers

Postnatal period is a critical time in the life of a mother because a family is in joy of newborn arrival and have started to forget about the dangers which are still with mother and her newborn babies hence most of maternal and newborn deaths occurs during this period (WHO, 2010). WHO guidelines for postnatal services require mother and child to receive medical checkup within 24h of delivery to assess health status of mother and a newborn (Khaki, 2019). For mothers they need HIV testing, tetanus serum vaccine, health education and thorough checkup of reproductive system. While for the newborn they are supposed to receive first vaccination and proper checkup to determine if there is any abnormality (WHO, 2010).

In regards to utilization of health care services during delivery and postnatal, Singh and colleagues (2014) found that education and economic status of the family had significant contribution to the utilization of the named services. Similarly, woman's education increases the likelihood of utilization of all maternal care services, 23% of girls between 15–19 years of age from poor family receive postnatal services compared to 68% from rich families (Singh *et al.*, 2014).

A study conducted in Bhutan indicate that women with formal education were more likely to deliver in health facility compared to those without education. In addition, more than half of women in poorest society delivered at home while only 4.5% from the richest society delivered at home (Singh *et al.*, 2014). Javed *et al.* (2013) had also shown the same findings in regard to economic status of the family (Javed *et al.*, 2013). Likewise, Gurung and colleagues (2018) found that age was seen as a contributing factor for home delivery (Gurung *et al.*, 2018).

However, a study from Nepal had shown contradicting evidence that teenage mothers were more likely to deliver in the facility compared to non-teenager mothers. This study shows no

association between choice of place of delivery and husband education (Acharya *et al.*, 2017). Pfeiffer and Mwaipopo (2015) shows that women aged between 15–22 years of age preferred to deliver with assistance of TBA's than older women. Furthermore, most women were not comfortable to deliver in front of male health workers. Other problems reported included, lack of transport, congestion, lack of privacy in delivery room, lack of financial support from relatives and little knowledge on warning signs of true labor influenced the choice for place of delivery among young women (Pfeiffer *et al.*, 2015).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study design and source of data

This study used both primary and secondary data collected through a cross sectional survey. Secondary data was obtained from the evaluation of the interventions implemented by the government of Tanzania and UNICEF in Seven learning Districts. This data was collected by Ifakara Health Institute (IHI) from October to November 2011. The evaluated interventions included, training of health care providers, mother and care givers on Maternal, Newborn and Child Health (MNCH), Prevention of Mother to Child Transmission (PMTCT) and acute malnutrition; provision of supplies and equipment needed for vaccination activities and service deliveries; supplementation of vitamin A to children of 6-59 months and constructions of Water, Sanitation and Hygiene (WASH) infrastructures. The evaluation was designed to assess the effectiveness of the area- based programming approach and draw lessons learned for future programming. Qualitative data was collected in 2019 (as primary data) for this study from four districts to gain an understanding of underlying reasons for home delivery, opinions, and motivations as to supplement to the quantitative results.

3.1.1 Study area

The original evaluation study was conducted in 7 learning Districts (LDs) namely: Bagamoyo, Temeke, Hai, Siha, Magu, Makete and Mtwara rural. The six non learning districts included: Mkuranga, Kinondoni, Moshi rural, Misungwi, Njombe and Tandahimba. These districts were selected because UNICEF worked in these areas. For qualitative data collection, four districts were selected, two from LDs namely Magu and Bagamoyo districts and other two from NLDs namely Tandahimba and Moshi rural districts.

Magu is one of the districts in Mwanza region with an area of 1530 km square, and population of 229 759 where by female represent 51.1% of the total population (NBS, 2012). There are 49 health facilities which serve approximately 4689 people per facility.

Bagamoyo is among the districts in the coastal region. The district comprised of 331 740 population and among them 50.5% are female and has the area of 8463 km square (NBS, 2012). The area has 25 health facilities which serve approximately 13 270 population per health facility.

Tandahimba district is in Mtwara region. This district has an area of 2049 km square with a total population of 227 514. It is represented of 54% of the female population (NBS, 2012). The district has 35 health facilities which saves approximately 6501 people per health facility.

Moshi rural is one of the seven districts in Kilimanjaro region. The district has a total of 31 administrative wards, populated with 446 737 people, among them 51.6% are female (NBS, 2012). Moshi rural has 89 health facilities which serve approximately 5020 population per health facility.

3.1.2 Data collection technique and tools

A structured questionnaire was administered with women of reproductive age who had a child under two years during the household survey. The tools captured socio-demographic characteristics of mothers, maternal health, utilization of ANC and postnatal services, place of delivery, hand washing and hygiene practices and management of household drinking water. An interview guide was used to conduct In-depth interview with key informants during qualitative component. Health care providers were interviewed at health facilities while traditional birth attendants were interviewed at their homes. The interview guide captured socio demographic profile of respondents, perception and reasons for home deliveries. All data collection tools were reviewed and translated to Swahili prior to data collection.

3.1.3 Sample size and sampling approach

The sample size for the household survey was calculated to detect 10% difference in the primary outcomes (ownership of drinking water source, use of bed nets, stunting in children 0-59 months and exclusive breast-feeding) post intervention. Using 80% statistical power and 95% confidence level, a minimum of 364 households were required per district (4732 households in total for control and intervention sites). A two stage sampling procedure was used to recruit study participants with enumeration areas being the primary sampling unit.

In-depth interviews were conducted during qualitative work to explore health care workers experiences and roles in maternal health care. District Reproductive and Child Health Coordinator (DRCHCo), a nurse

working within the Reproductive and child Health (RCH) unit and in charge of Labor ward (LW) from the eight facilities (4 districts hospitals and 4 dispensaries/health centers) were interviewed. In addition, eight

traditional birth attendants were interviewed from the four study districts. Health care providers were purposively sampled and a snowball technique was used for recruitment of

TBAs with the help of DRCHCo.

3.1.4 Fig 2: Learning and non-learning districts where data were collected between October and November 2011

Variable definitions

Independent variables

Important demographic characteristics such as maternal age, education, utilization of ANC services was explored in relation to the outcome variables.

Dependent variables

Home delivery, a binary variable representing whether or not adolescents or young mother's delivery (Table 1 summarizes).

Table 1: Describe dependent and independent variables used in study

Variable	Definitions
Dependent variable	
Home delivery	Categorical variable representing whether or not delivered at home
Independent variables	
Age	Categorical maternal age (15-19, 20-24 years)
Education	Maternal highest level of formal education (None, primary and completed form 4 or higher)
Occupational	Maternal occupation (Peasant, Housewives)
Utilization of ANC services	Gestational age at 1st visit, Number of ANC visits Informed about danger signs
Delivery services	Maternal plan of delivery planned place of delivery
Postnatal services	Postnatal checkup soon after delivery

3.2 Data management and analysis

A total of 4368 households were visited in both control and intervention sites of which 2019 had women of reproductive age (15-49 years). Out of 2019 households, 113 had adolescent's mothers and 296 had young women (20-24 years) with a complete data on utilization of ANC and delivery characteristics which were included in the final analysis. By definition, adolescents mother are aged below 20 years, however the cut-off point was extended to 24 years as the sample size was too small for generating a meaningful conclusion.

Statistical analysis was done using Stata version 13 with all p-values being 2-sided and $p<0.05$ considered as statistically significant. Maternal characteristics; age, education, utilization of ANC services were compared across the reported place of birth of adolescent mothers. Descriptive analysis and univariate logistic regression was performed with place of delivery, coded as "1" if the women deliver at home and "0" if a woman deliver at health facility as an outcome variable. Predictor variables explored included: maternal age, education, utilization of ANC, Delivery and postnatal services.

Qualitative data analysis was done using thematic analysis framework involving six main steps namely familiarization of the data, generating initial codes, searching for themes, defining and naming themes and producing the report as proposed by Braun and Clarke (2006).

3.3 Ethical consideration

This study received ethical approval from Ifakara Health Institute review board (IHI/IRB/No: 10-2019). Furthermore, the team paid courtesy visit to district administration prior to data collection. Individual written informed consent was obtained from each participant during field work and confidentiality of all study participants were observed.

3.4 Dissemination of the results

Research findings will be shared at various levels including respective study communities through emails to DRCHCo. The dissertation work will be published in scientific peer review journals.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Characteristics of participants

4.1.1 Socio-demographic characteristics

A total of 409 adolescent mothers and young women, 17 health care providers and 8 active traditional birth attendants were included in the analysis. Nearly three quarter 72.5% (296) of interviewed mothers aged between 20-24 years while 27.5% (113) aged below 19 years. Eight out of every ten mother interviewed had primary education while 17.2 % reached secondary or higher level of education. Table 2 summarizes the results.

Table 2: Social demographic characteristics of study participants among women delivered one-year prior data collection in 13 districts of Tanzania (N= 409)

Variable	N	%
Age in years		
≤ 19	113	27.52
20-24	296	72.48
Level of education		
Primary school	337	82.80
Secondary school	70	17.20
Occupation		
Peasants	347	85.26
Housewives	60	14.74

4.1.2 ANC visits characteristics of participants

Antenatal care (ANC) is aimed at reducing morbidity and mortality risks for the mother and the child during pregnancy, at delivery and during the postnatal period. Women who gave birth in the one years preceding the survey were asked if they obtained antenatal care during pregnancy for their most recent live birth. Of 409 women, 84.52% (344) attended at least one ANC visit and 59.8% attended four or more visits. Out of 344 women who attended at least one visit, only 36.34% (125) started ANC visit during the first trimester as recommended by WHO (refer to Table 3).

Table 3: ANC visits and characteristics of study participants among women delivered one-year prior to data collection in 13 districts of Tanzania (N= 409)

Variable	N	%
Attended at Least One ANC		
Yes	344	84.52
Gestational age at first ANC visit		
First trimester	125	36.34
Second trimester	207	60.17
Third trimester	12	3.49
Number of ANC visits		
1-3 visit	138	40.23
4 + visits	205	59.77
ANC services received		
Informed about danger signs	243	70.64

4.1.3 Delivery characteristics of study participants

Access to proper medical care and hygienic conditions during delivery reduce the risk of complications and infections for mother and the baby. Overall, 24.1% (98) of adolescent women give birth at home. When stratified by age group, 20.4% of those below 19 years give birth at home while 25.3% of 20-24 years old delivered at home. Among all 409 women interviewed, 63.9% planned for a place of delivery of which 96.2% (250) planned to give birth at health facilities. Surprisingly, some of the women who planned to give birth at health facility 4% (10) gave birth at home. Seventy percent those planned to give birth at actual home, did so as shown in Table 4.

Table 4: Delivery characteristics of study participants among women who delivered one-year prior to data collection in thirteen districts of Tanzania (N= 409)

Variable	N	%
Planned for delivery		
Yes	260	63.88
Planned for a place of delivery		
Health facility	250	96.15
Home	10	3.85
Actual place of delivery after plan		
Health facility delivery	221	88.40
Home delivery	7	70.00
Who helped during delivery		
Health care provider	297	72.97
Traditional birth attendant	60	14.74
Relative	50	12.29
Received postnatal checkup soon after delivery		
Yes	175	43.21
No	189	46.67
Don't know	41	10.12

4.2 Prevalence of home delivery

The prevalence of home delivery among 409 women aged 15-24 years living in thirteen districts of Tanzania were 24.1% (98). Among them adolescents $\leq$19 years who delivered at home were 23.47% (23) and young women aged 20-24 years who delivered at home were 76.53 (75).

4.3 Determinants for home deliveries

In Association between socio-demographic, ANC visits and home delivery, bivariate analyses indicates that women who attained a secondary education or higher were less likely to give birth at home when compared to those with primary education (OR=0.75; 95% CI: 0.42-1.34, P=0.336). Number of ANC visit, planning place of delivery and knowledge about the dangers signs during pregnancy were significantly associated with place of delivery. Individuals with four or more ANC visit were 0.23 times less likely to give birth at home when compared to those never attended any ANC visit please see Table 5:

Table 5: Association between socio-demographic characteristics, ANC and home delivery among women aged 15-24 years in thirteen districts of Tanzania (N=409)

	Home delivery				
Variable	**N**	**n**	**%**	**OR(95% CI)**	**P value**
Age (in years)					
15-19	112	23	20.5	1	
20-24	295	75	25.4	0.75(0.45-1.29)	0.304
Education					
Primary education	337	78	23.2	1	
Secondary education	70	20	28.6	1.33(0.75-2.37)	0.335
Occupation					
Peasants	347	75	21.6	1	
House wives	60	23	38.3	0.44(0.25-0.79)	0.006
Attended ANC at least once					
Yes	344	66	19.1	1	
No	34	13	38.2	0.38(0.18-0.80)	0.011
Don't know	29	19	65.5	0.12(0.06-0.28)	<0.001
Number of ANC visits					
0 Visit	67	32	47.8	1	
1-3 Visits	135	31	23.0	0.32(0.17-0.61)	<0.01
4+ visits	205	35	17.1	0.23(0.12-0.41)	<0.01
Gestational age at first ANC visits					
First trimester	124	21	16.9	1	
Second trimester	205	43	21.0	1.30(0.73-2.32)	0.375
Third trimester	11	2	18.2	1.01(0.22-5.41)	0.916
Planned for delivery					
No	147	62	42.2	1	
Yes	260	36	13.9	0.22(0.14-0.36)	<0.01
Planned place of delivery					
HF delivery	250	29	11.6	1	
Home delivery	10	7	70.0	0.06(0.01-0.23)	<0.001
Informed about danger signs					
No	164	58	35.4	1	
Yes	243	40	16.5	0.36(0.22-0.57)	<0.01

4.4 Qualitative results

A list of all women delivered in health facilities and at home was obtained from District Reproduction and Child Health Coordinator (DRCHCo) in each of the four selected districts. The summary and description of the respondents are explained in Table 6 below.

Table 6: Summary of women aged 15-19 years showing trends of facility and home deliveries in 4 districts of Tanzania, year 2017 and 2018

Districts	Year 2017		Year -2018	
	Facility deliveries	Home deliveries	Facility deliveries	Home deliveries
Bagamoyo	620	53	856	60
Tandahimba	1894	269	2012	287
Magu	2044	124	2753	41
Moshi rural	698	76	665	71

Majority of respondents interviewed were nurses aged between 25-59 years. With regards to the TBA, they were in the age range between 57 and 90 years. Four DRCHCo had a complete record of women aged 15-24 years with history of facility and home deliveries for the year 2017. These records show that there was an increase in facility deliveries. Respondents mentioned that home deliveries were assisted by close relatives but not traditional birth attendants. Moreover, it was also reported that almost all home deliveries were from women aged from women aged 20-24 years.

4.4.1 Utilization of antenatal care services among teenage mothers

Health care providers acknowledged receiving adolescent pregnant women at their clinics to access ANC services. It was also reported that the number of ANC visits had increased due to the improve in knowledge. The following are typical recorded statements: *"The number of adolescent mothers who come for ANC services has increased because of education we give to the community on maternal health"* (Nurse- Kilomo).

Another recorded statements are: *"They do increase because now days women know importance of ANC, and giving them bed nets motivate them to come" (Nurse- Magu)* and in-depth interview revealed that: *"Adolescents usually are brought by their teachers or parents*

for confirmation of pregnancy, then from there we start ANC and inform them about the schedule for the follow up" (Nurse- Magu).

4.4.2 Utilization of delivery services among adolescents mothers

Almost all informants in this qualitative study mentioned that adolescent mothers utilize health facilities for delivery services. This is due to the fact that they understand the importance of giving birth at the health facility. Although the respondents acknowledged that they had no report of getting birth before arrival, few of adolescent women reportedly attending to the health facility when they were at second stage of labor, The following are typical recorded statements from KI, In-depth interview: *"We do not get birth before arrival (BBA) from adolescents because they are attended early before their expected date of delivery (EDD) and therefore most of them come before labor, but with adult women it is common to get BBAs"* (Nurse-Kibosho).

Another in-depth interview with KI She reported that: *"Now days in our facility we do conduct delivery for the first time mothers and adolescents because we have theatre, in case of emergency we can perform caesarian section" (Nurse-Kahangara, Magu)* and another from Tandahimba reported that: *"Health facility delivery is increasing because we provide education on importance of a facility delivery" (Nurse-Tandahimba).*

4.4.3 Utilization of postnatal services among adolescents mothers

Majority of key informants reported that adolescent mothers do not comply with postnatal care services. It was reported that the adolescent mothers do not understand the importance of PNC. The following are typical recorded statement: *"…with PNC the visits at day 7, 28th or 42nd are not properly followed by these young women. Majority might not show up at all and among few who return they appear at eleventh hour"* (Nurse-Tandahimba).

4.4.4 Barriers on adolescent mothers in utilization of ANC, delivery and PNC services

Majority of respondents reported that adolescent faced some challenges in using delivery services. These challenges included personal, system, policy and health care provider's attitudes.

With regards to personal challenges, adolescents' mothers reported that they were stigmatized in using delivery services. Respondents said that adolescent mothers were feeling shy to stay long in waiting area. It was also reported that maternal young age could lead to the delay in

starting ANC as well as in reporting labor pain and also fail to comply with attendance of postnatal checkups. Lack of support from partner was also mentioned as another challenges. It was also reported that young women are not feeling good when they are questioned by health care providers as stated: ***"****If she is not married, she will feel shy to use ANC and PNC, because she afraid to be called adulterer and prostitute"* (Nurse- Magu).

Another recorded statement were: *"No challenges but it happens to be surprised with their age and yet they are pregnant. These girls do not feel good when a heath care provider ask her about the pregnancy"* (Nurse-Bagamoyo).

Another in-depth interview with KI from Kahe reported that:

> *In our health facility we do not have any challenge, if there is, could be a personal challenge. For example, if the adolescent girl does not get someone to escort her to the health facility, their parents can decide on their behalf when/where to go for ANC or Delivery* (Nurse-Kahe, Moshi Rural).

With regards to the system challenges, the respondents mentioned that there was shortage of staff, hospital equipment and old delivery rooms with lack of privacy. The following are typical recorded statements: *"There are challenges like shortage of hospital equipment such as gloves, or cord clumps, shortage of midwives in our health centers, and the situation of delivery rooms are not conducive for girls since they prefer modern infrastructure"* (Nurse-Bagamoyo).

With regards to the policy challenges, there was a slogan which states that "bring your partner with you when attending ANC." This slogan leads to young girls either not to attend or can delay to use ANC services. Majority of these young women are in the age group between 15-19 years. These are mainly students and not married but there are few married by old men who normally refuse to escort them to the clinic. The following are typical statement which were recorded from KI: *"The slogan that if you come for ANC clinic, bring your husband or partner. Most men refuse to escort their wives to the clinic because of the gap between their ages. This makes a young woman delay to start clinic"* (Nurse-Nanyanga, Tandahimba).

Another recorded statement was:

> *This issue of asking women to be escorted by their partners when they start ANC is not practical in our place, because most girls are not married, so this is like a punishment to the household as it is not implemented on timely manner* (Nurse-Kahe, Moshi Rural).

With regards to the health care provider's attitudes, the respondents mentioned that some of the providers use harsh language which act as a barrier to the adolescent to use the health facility for ANC, delivery and postnatal services. The following are recorded statement from KI: *"There is a challenge related to the health care providers. For example, they differ in characters since they are human beings. Sometimes someone can talk something which can offend girls"* (Nurse-Bagamoyo).

Another KI reported that: *"No challenges but one happens to be surprised concerning their age and yet they are pregnant. These girls do not feel good when a heath care provider ask her about how they got pregnancy"* (Nurse - Bagamoyo).

During In-depth interview with KI from Kahangara, she reported that:

> *Language is another barrier limiting girls from using health facilities. Most of health care providers have no good language to invite their clients to these health facilities. In this facility we usually get patients coming from extremely far areas. When you ask the reasons for not using the nearby facility, they would always say that providers in other health facility are not using polite language when they interact with their clients. As health care providers, we need to change our attitude because education about the importance of facility delivery will not help if we still use abusive languages* (Nurse-Kahangara, Magu).

Respondents mentioned other factors such as poor roads and lack of transport which might contribute to the reasons for adolescent mothers to fail utilizing reproductive and child health services, The following are recorded statement: *"We get women who delay coming to the hospital during labor pain or give birth on the way to hospital because of poor infrastructure and transportation"* (Nurse-Kahangara, Magu).

The following are the key informant responses on the reported challenges which hinders adolescent mothers to utilize services, the following were recorded statement from KI: *"……Stigma from the family members and partners who impregnated the young woman.*

The young woman does not have any power or cannot decide anything. For example, she cannot decide when to start clinic and where to go for delivery" (Nurse - Moshi rural).

Another statement which were recorded from KI are:

> *Majority of young women especially under 20 years cannot understand why they should use RCH services. They do not have husbands to support them in terms of food, for example when we talk about nutrition issues they cannot afford to feed themselves hence they need support, they are just carrying pregnancy but they cannot provide support for their pregnancies* (Nurse-Tandahimba).

4.4.5 Traditional birth attendants' opinions

With regards to the interview with traditional birth attendants, majority reported that they were currently not performing delivery services because the government has banned them from supporting women to deliver at home. However, tradition birth attendants reported to have conducted deliveries in case of emergency only as they cannot let baby or mother die while they were around. It was reported that some women preferred home deliveries due to poverty as it was difficult to get money to deliver at health facility. In addition, women preferred home delivery because they just wanted to show their strength. Other factor mentioned for delivering at home were poor transport in hard to reach areas especially during rain seasons and the trust put on the TBA.

The following are typical statement which were recorded:

> *Sometimes women are advised to deliver at district or regional hospitals when they go to the clinic for ANC services. However, due to lack of money they wait for labor pain and ask for assistance, when I look at the card it shows that they were supposed to give birth at hospital* (TBA Number 1, Moshi).

Another statements which were recorded are: *"Back then there were no cars or hospitals, but now we do have good hospitals and transport is easy hence when they come, I do instruct them to go to the hospital"* (TBA Number 1, Bagamoyo).

One of TBA in Magu district reported that: *"In our place we have this traditional belief that if a woman give birth at home is a strong woman"* (TBA Number 1, Magu).

4.4.6 Key informants' suggestion

Health care providers were asked to give their suggestions in areas with high number of adolescent pregnancies and how to correct that. Among the solution put forward by HCP included reducing child marriage, formation of youth clubs among the girls in schools and establishing a mobile health services in schools. The following suggestions were therefore put forward: *"In order to eradicate adolescent pregnancies, early child marriages must be eradicated in the first place"* (Nurse-Nanyanga, Tandahimba)

Another suggestions were: *"There should be the formation of reproductive health youth clubs among young girls in schools so that they can talk about reproductive health openly, this will help to reduce unwanted pregnancies among themselves."* (Nurse-Bagamoyo) and *"I think we should have a mobile health services whereby health care providers visit young women in schools and talk with them about the consequences of early pregnancies and how to avoid it, it can be useful for sure"* (Nurse - Magu).

4.5 Discussion

This study aimed at determining factors associated with home delivery among women aged 15-24 years from thirteen districts of Tanzania mainland. Majority of respondents were young women aged 20-24 years. Overall, one third of participants gave birth at home, which is in line with the 2015/2016 Tanzania demographic health survey (TDHS, 2016). Results from this study suggest maternal age is associated with home deliveries with more matured women being more likely to give birth at home This is similar to the results of a study conducted in Kenya which shows that the older woman had higher chances of delivery at home compared to newly young mothers (Moindi *et al.*, 2015). However, another study done in rural Tanzania had shown younger women were more likely to give birth at home compared to adult women (Pfeiffer *et al.*, 2015).

This study also found maternal education was also associated with home delivery. The higher level of woman educated was associated with reduced chances of home delivery compared to those who had low education. Moindi and his colleagues in Kenya also found very similar results which shows that the higher a woman educated is a protective factor against home delivery (Moindi *et al.*, 2015). The number of ANC visit was strongly associated with a place of delivery. Women who had four or more ANC visits were less likely to give birth at home compared to those who had never attended ANC clinics. These results are in line with

Gyesaw *et al.* (2013) which shows that number of ANC visits were strong indicators for a choice of place of delivery. This study also revealed that women who attended ANC 1-3 visits had a strong odds of giving birth at home compared to those who had 4 or more visits (Gyesaw *et al.,* 2013). Furthermore, a study conducted in northern Ethiopia had shown strong association between place of delivery and number of ANC visits, plan for a place of delivery, and knowledge of pregnancy and danger signs (Tsegay *et al.,* 2017).

Data from in- depth Interview revealed that personal challenges, lack of support from partner to be among the reasons for poor ANC uptakes as well as home delivery which was in line with Gross *et al.* (2012). Poor infrastructure and privacy within the facility settings have been reported as barriers for facility delivery. This was also in line with a results which were reported by Pfeiffer *et al.* (2015), that young girls prefer to give birth in a privacy environment and were not comfortable to give birth in front of male health workers (Pfeiffer *et al.,* 2015).

Moreover, the study also revealed that traditional birth attendants have stopped to assist women during home delivery. The TBA have now been reported to encourage and assist women to go to the facility well in advance, similar to what was reported by Costanze and Rosemarie study in 2013 (Constanze *et al.,* 2013). Equally, health facility challenges such as shortage of staff, shortage of hospital equipment and lack of privacy were reported as discouraging factors of health facility delivery. This results are also in line with a study done by Costanze and Rosemarie (2013).

In this study challenges of health care provider were also mentioned. These included their attitudes towards adolescent pregnancies, utilization of ANC and deliveries services among adolescents and young mothers which could motivate or hinder the utilization of the services. This is similar to what was reported by Mrisho and his colleagues in southern Tanzania who reported that use of abusive language and lack of tolerance among health care providers are strong reasons for home delivery (Mrisho *et al.,* 2007).

This study suggests exploration of the effectiveness of community education on improving maternal healthcare and what should be done to address some of the community norms, infrastructures and privacy in facility settings.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The current study identified maternal education and number of ANC visits, planned place of delivery and knowledge about pregnant danger signs as predicators for place of delivery. Furthermore, lack of maternal education, negative emotions towards ANC attendance by young mothers, partners support, and healthcare providers' attitudes towards early pregnant women were reported as factors for poor uptake of ANC services and home delivery. It is important to consider these factor in programming of interventions to reduce maternal deaths and barriers for accessing quality maternal health care at the health system and societal level.

5.2 Recommendations

Since the needs for women aged 15-24 mothers and adult mothers differ in many ways the government should tackle health system challenges. This will involve increasing the number of health care providers who can provide an appropriate knowledge on friendly care to youths, especially on the reproductive services. Likewise, the government should reconstructs labor wards to provide privacy and should also retrain health care providers on how to deal with young mothers.

Furthermore, young women should be provided with proper maternal health education in primary and secondary schools as well as in the community. Health information given to the community members should also include message that will cater for their partners to attend ANC. We recommend further study which will interview adolescents and young mothers in Tanzania.

REFERENCES

Althabe, F., Moore, J., Gibbons, L., Berrueta, M., Goudar, S., Chomba, E., . . . Pasha, O. (2015). Adverse maternal and perinatal outcomes in adolescent pregnancies: The Global Network's Maternal Newborn Health Registry study. *Reproductive Health*, 12(2), S8.

Charlton, B., Corliss, H., Missmer, S., Frazier, A., Rosario, M., Kahn, J., & Austin, S. (2011). Reproductive health screening disparities and sexual orientation in a cohort study of US adolescent and young adult females. *Journal of Adolescent Health*, 49(5), 505-510.

Constanze, P., & Rosemarie, M. (2013). Delivering at home or in a health facility? health-seeking behaviour of women and the role of traditional birth attendants in Tanzania. *BMC Pregnancy and Childbirth*, *13*, 55. https://doi.org/10.1186/1471-2393-13-55

Danforth, E., Kruk, M., Rockers, P., Mbaruku, G., & Galea, S. (2009). *Household Decision-making about Delivery in Health Facilities: Evidence from Tanzania*. *27*(5), 696–703.

Ganchimeg, T., Ota, E., Morisaki, N., Laopaiboon, M., Lumbiganon, P., Zhang, J... & Vogel, J. (2014). Pregnancy and childbirth outcomes among adolescent mothers: a W orld H ealth O rganization multicountry study*: An International Journal of Obstetrics & Gynaecology*, *121*, 40-48.

Gaffney, O. (2014). Sustainable development goals: Improving human and planetary wellbeing. *Global Change*, *82*, 20-3.

Gross, K., Alba, S., Glass, T., Schellenberg, J., & Obrist, B. (2012). Timing of antenatal care for adolescent and adult pregnant women in south-eastern Tanzania. *BMC Pregnancy and Childbirth*, *12*. https://doi.org/10.1186/1471-2393-12-16

Gurung, M., Pelzom, D., Wangdi, S., Tshomo, T., Lethro, P., & Dema, T. (2018). Factors associated with delivery at home in Bhutan: findings from the National Health Survey 2012. *WHO South East Asia Journal of Public Health,* 7(1), 36-42. doi:10.4103/2224-3151.228426

Javed, S., Anjum, M., Imran, W., Haider, A., Shiraz, A., Shaheen, F., & ul Husnain, M.

(2013). Correlates of preferences for home or hospital confinement in Pakistan: evidence from a national survey. *BMC Pregnancy and Childbirth,* 13(1), 137.

Khaki, J. (2019). Factors associated with the utilization of postnatal care services among Malawian women. *Malawi Medical Journal, 31*(1), 2-11.

Gyesaw, N., & Ankomah, A. (2013). Experiences of pregnancy and motherhood among teenage mothers in a suburb of Accra, Ghana: A qualitative study. *International Journal of Women's Health*, *5*(1), 773–780. https://doi.org/10.2147/IJWH.S51528

Kyokan, M., Whitney-Long, M., Kuteh, M., & Raven, J. (2016). Community-based birth waiting homes in Northern Sierra Leone: Factors influencing women's use. Midwifery, 39, 49-56.

Lawi, J., Mirambo, M., Magoma, M., Mushi, M., Jaka, H., Gumodoka, B., & Mshana, S. (2015). Sero-conversion rate of Syphilis and HIV among pregnant women attending antenatal clinic in Tanzania: a need for re-screening at delivery. *BMC Pregnancy and Childbirth,* 15(1), 3.

Lawn, J., Blencowe, H., Kinney, M., Bianchi, F & Graham, W. (2016) Evidence to inform the future for maternal and new born health. *Best practice & research Clinical obstetrics & gynaecology,* 36, 169-183. ISSN 1521-6934 DOI: https://doi.org/10.1016/j.bpobgyn.2016.07.004

Lopoo, L. (2011). Labor and delivery complications among teenage mothers. Biodemography and Social Biology, 57(2), 200-220.

Mbaruku, G., van Roosmalen, J., Kimondo, I., Bilango, F., & Bergström, S. (2009). Perinatal audit using the 3-delays model in western Tanzania. *International Journal of Gynecology and Obstetrics*, *106*(1), 85–88. https://doi.org/10.1016/j.ijgo.2009.04.008

Moindi, R., Ngari, M., Nyambati, V., & Mbakaya, C. (2016). Why mothers still deliver at home: Understanding factors associated with home deliveries and cultural practices in rural coastal Kenya, a cross-section study Global health. *BMC Public Health*, *16*(1), 1–8. https://doi.org/10.1186/s12889-016-2780-z

Moinuddin, M., Christou, A., Hoque, D., Tahsina, T., Salam, S., Billah, S., … Arifeen.,

(2017). Birth preparedness and complication readiness (BPCR) among pregnant women in hard-to-reach areas in Bangladesh. *PLoS one*, *12*(12), 1–19. https://doi.org/10.1371/journal.pone.0189365

Morris, J., & Rushwan, H. (2015). Adolescent sexual and reproductive health: The global challenges. *International Journal of Gynecology & Obstetrics,* 131, S40-S42.

Mpembeni, R., Killewo, J., Leshabari, M., Massawe, S., Jahn, A., Mushi, D., & Mwakipa, H. (2007). Use pattern of maternal health services and determinants of skilled care during delivery in Southern Tanzania: Implications for achievement of MDG-5 targets. *BMC Pregnancy and Childbirth*, *7*, 1–7. https://doi.org/10.1186/1471-2393-7-29

Mrisho, M., Schellenberg, J., Mushi, A., Obrist, B., Mshinda, H., Tanner, M., & Schellenberg, D. (2007). Factors affecting home delivery in rural Tanzania. *Tropical Medicine and International Health*, *12*(7), 862–872. https://doi.org/10.1111/j.1365-3156.2007.01855.x

Nelissen, E., Mduma, E., Ersdal, H., Evjen-Olsen, B., van Roosmalen, J., & Stekelenburg, J. (2013). Maternal near miss and mortality in a rural referral hospital in northern Tanzania: a cross-sectional study. *BMC Pregnancy and Childbirth*, *13*(1), 141.

Pfeiffer, C., & Mwaipopo, R. (2015). *Delivering at home or in a health facility ? health-seeking behaviour of women and the role of traditional birth attendants in Tanzania*.

Serbanescu, F., Goldberg, H., Danel, I., Wuhib, T., Marum, L., Obiero, W., … Conlon, C. (2017). Rapid reduction of maternal mortality in Uganda and Zambia through the saving mothers, giving life initiative: Results of year 1 evaluation. *BMC Pregnancy and Childbirth*, *17*(1), 1–14. https://doi.org/10.1186/s12884-017-1222-y

Singh, P., Rai, R., Alagarajan, M., & Singh, L. (2012). Determinants of maternity care services utilization among married adolescents in rural India. *PloS one,* 7(2), e31666.

Shahabuddin, A., Delvaux, T., Abouchadi, S., Sarker, M., & De Brouwere, V. (2015). Utilization of maternal health services among adolescent women in Bangladesh: A scoping review of the literature. *Tropical Medicine & International Health,* 20(7), 822-829.

Tsegay, R., Aregay, A., Kidanu, K., Alemayehu, M., & Yohannes, G. (2017). Determinant factors of home delivery among women in Northern Ethiopia: a case control study. *BMC Public Health*, *17*(1), 1–8. https://doi.org/10.1186/s12889-017-4159-1

Uganda Bureau of Statistics (UBOS) and ICF. (2017). Uganda demographic and health survey 2016: key indicators report. *Kampala, Uganda*.

United Republic of Tanzania. (2016). *Tanzania National Demographic Survey*.

UNICEF Staff. (2011). *The state of the world's children 2011-executive summary: Adolescence an age of opportunity*. UNICEF.

Yuan, B., Qian, X., & Thomsen, S. (2013). Disadvantaged populations in maternal health in China who and why? *Glob Health Action, 6*, 19542. doi: 10.3402/gha.v6i0.19542

APPENDICES

Appendix 1: Consent Swahili

FOMU YA TAARIFA NA RIDHAA YA MSHIRIKI

(INFORMATION SHEET AND CONSENT TO PARTICIPANT IN RESEARCH)

Sababu zinazowafanya mabinti kujifungulia majumbani Tanzania vijijini (Determinants of home delivery among teenage mothers in rural Tanzania)

Mkoa …….

Wilaya ……..

Tarehe ……

Salaam,

Naitwa……Ni mwanafunzi wa chuo kikuu cha Nelson Mandela, Arusha Tanzania tunashirikiana na Taasisi ya Afya ya Ifakara nachukulia masomo ya afya ya jamii pamoja na utafiti.

Napenda kukualika kwa ajili ya kushiriki katika utafiti unaohusu sababu zinazofanya mabinti kujifungulia nyumbani. Imeonekana kwamba kujifungulia nyumbani ni moja ya sababu za msingi zinazoongeza vifo vitokanavyo na uzazi katika inchi nyingi za kiafrika. Zaidi ya hapo mabinti wa miaka 15-19 wameonyesha kuzalia Zaidi nyumbani kwa sababu ya umri wao kuwa mdogo, elimu ndogo ya afya ya uzazi, matumizi madogo ya huduma za afya wakati wa ujauzito na wapo hatarini kufa katika kipindi cha siku 42 tangu kujifungua kutokana na kutokujua hatari ya kipindi husika. Vifo vitokanavyo na uzazi nchini Tanzania ni 556/100000 na kati ya vifo vyote asilimia 18.5 inachangiwa na vifo vitokanavyo na mimba za utotoni.

Hakuna faida ya moja kwa moja unaposhiriki katika utafiti huu, matokeo ya utafiti yatasaidia wizara ya afya kuelewa Zaidi sababu zinazowafanya watoto wenye mimba za utotoni kujifungulia nyumbani,ili waweze kuja na utaratibu utakaowezesha mabinti hawa kujifungulia vituo vya tiba na hivyo kupunguza vifo vitokanavyo na uzazi katika kundi hili.

Mahojiano yetu yanatarajia kuchukua dakika 30 mpaka 45, taarifa itakayopatikana kutoka kwako itakuwa ni siri na itatumika kwa utafiti huu tu. Msimamizi wangu atakuwa na uwezo wa kuona hizi taarifa, majibu hayatatolewa kwa mtu mmoja mmoja bali yatatolewa kwa ujumla ili kuondoa uwezekano wa kutambulika.

CONSENT

Mimi …….nimepewa taarifa kuhusu utafiti unaohusu sababu za mabinti wa miaka 15-19 kujifungulia majumbani. Unaosimamiwa na mtafiti mwanafunzi Florence Focus Kimario anaesimamiwa na Dr. Mwifadhi Mrisho. Naelewa dhumuni la utafiti uliotajwa hapo juu. Nimepewa nafasi ya kuuliza maswali kuhusu huu utafiti na nimejibiwa kwa usahihi kamili.

Ninathibitisha kwamba kushiriki kwangu kwenye utafiti huu ni kwa kujitolea na naweza kujiondoa wakati wowote.

Nimejulishwa kwamba hakuna malipo au faida yoyote nitakayopatiwa kwa kushiriki utafiti huu. Mtafiti ni mwanafunzi.

Kama utkuwa na maswali Zaidi kuhusiana na utafiti huu naelewa kwamba nitaweza kuwasiliana na mtafiti kupitia

+**255754500930** au nitawasiliana kwa barua pepe kimariof@nm-aist.ac.tz au fkimario@ihi.or.tz and pia naweza kuwasiliana na msimamizi wa utafiti huu kupitia simu: +**255655766675** au barua pepe: mmrisho@ihi.or.tz. Utafiti huu umepitishwa katika bodi ya maadili ya Ifakara Health Institute.

Iwapo kutakuwa na ulazima wa kuwasiliana na bodi ya maadili, Taasisi ya afya Ifakara P.O.Box 78373 Dar es Salaal au nitawasiliana na: Fakih Bakar: 0713 545802.

_____

Sahihi ya anaedahiliwa Tarehe_____

_____ _____

Sahihi ya shahidi Tarehe

Appendix 2: Information sheet and consent to participant in research

INFORMATION SHEET AND CONSENT TO PARTICIPANT IN RESEARCH

Determinants of home delivery among teenage mothers in rural Tanzania

Region …….

District……..

Date ……

Greetings,

My name is ……I am student at Nelson Mandela Institute of Science and Technology in collaboration with Ifakara Health Institute taking masters in science Public Health Research,

Have invited you to participate in a study on **determinants of home delivery among teenage mothers in rural Tanzania**. Home delivery have been seen as a key risk factor for increase of maternal mortality in many African countries. Furthermore teenage has been showing a contributing to home delivery due to young age, low knowledge on maternal health, low utilization of antenatal care services (ANC),they are prone to die during postnatal period due to low knowledge on danger period of postnatal.in Tanzania maternal death is 556/100,000 where by 18.5% of those death are contributed from teenager mothers.

This study will provide no direct benefits to participant. The results of the study will give a better understanding to ministry of health on **determinants of home delivery among teenage mothers** so that they can come out with feasible intervention to address challenges, hence reduction of maternal mortality rate by 18.5%.

The expectation of in depth interview will take 30 to 45 minutes. Information that will be obtained from you will remain confidential and will only be used in this study. Supervisor will have access to the data and during analysis, results will be coded so that your answers and results are not linked to your name.

CONSENT

I …….. Have been informed about the study entitled “determinants of home delivery among teenage mothers in rural Tanzania” by researcher Florence Focus Kimario, supervised by Dr. Mwifadhi Mrisho.

I understand the purpose of the study “**Determinants of home delivery among teenage mothers in rural Tanzania”** I have given an opportunity to ask questions about the study and have had them answered correctly.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any point.

I have been informed that there will be no payment or any direct benefits. The researcher is a student.

If I have any further questions/concerns related to the study I understand that I may contact the researcher through +**255754500930** or kimariof@nm-aist.ac.tz or fkimario@ihi.or.tz and supervisor +**255655766675** or mmrisho@ihi.or.tz.

This study has been ethically reviewed and approved by the Ifakara Institute Review Board.

_____

Signature of Participant Date

_____ _____

Signature of Witness Date

Appendix 3: Dodoso la wafanyakazi wa afya

DODOSO LA WAFANYAKAZI WA AFYA.

Naitwa Florence Focus Kimario, ni mwanafunzi wa chuo Kikuu cha Nelson Mandela Arusha, Tanzania kwa ushirikiano na Taasisi ya afya ya Ifakara, nipo hapa kutafuta taarifa zinazohusu kujua sababu gani zinawafanya mabinti wadogo wajifungulie nyumbani katika wilaya hii.

Hii taarifa itasaidia wizara ya afya kuelewa kwa undani sababu za mabinti kujifungulia nyumbani badala ya hospitali, hivyo itasaidia kutafuta mkakati wa kurekebisha hali hiyo itakayosaidia kupunguza vifo vitokanavyo na uzazi kwa mabinti wenye umri kati ya miaka 15-19

UTANGULIZI

Jina/Namba ya utambulisho…… Wilaya ……

Kata …… Kijiji …….

Kazi …… Umri …….

Jinsia …….. Namba ya simu ……

Barua pepe …….

SN	OBJECTIVES	QUESTIONS
1	KUELEWA MATUMIZI YA HUDUMA CLINIKI YA AFYA YA UZAZI (RCH) KATIKA MABINTI WALIO NA MIMBA ZA UTOTONI.	1. Je wasichana wenye umri kati ya miaka 15-19 wanatumia huduma zenu za RCH (Delivery, ANC and PNC)?
		2. Matumizi yao yakoje? Yanaongezeka? Yanapungua kila mwaka? (Hususan ktka miaka 5 iliyopita) (dadisi kwanini yanaongezeka/kwa nini yanapungua?
		3. Kuna vikwazo vyovyote wanavyokumbana navyo? Ni vipi hivyo?

		4. Je kuna mazingira chanya yanayofanya wasichana wenye umri 15-19 wavutike tutumia vituo vya tiba kwa ajili ya (Delivery, ANC and PNC)? Ni yapi hayo?
		5. Iwapo hawatumii vituo vya tiba, wanapata wapi huduma za RCH (Delivery, ANC and PNC)?
2	KUELEWA MATUMIZI YA HUDUMA ZA AFYA WAKATI WA KUJIFUNGUA NA BAADA YA KUJIFUNGUA	1. Matumizi ya huduma za kujifungua yapoje kati ya mabinti wa umri wa miaka 15-19 (dadisi: yanaongezeka? Yanapungua? kwanini yanaongezeka/kwa nini yanapungua?
		2. Matumizi ya huduma za ANC zipoje katika mabinti wa miaka 15-19?
		3. Matumizi ya huduma za afya baada ya mama kujifungua yapoje kwa mabinti wa miaka 15-19?
		4. Watoa huduma za afya wana mtazamo gani kwenye swala la mimba za utotoni?
		5. Watoa huduma za afya wanalichukuliaje swala la matumizi ya ANC na PCN kwa mabinti wadogo?
		6. Mambo gani yanazuia mabinti kutumia huduma za ANC na PNC?
		7. Kuna uhusiano wowote kati ya matumizi ya huduma za ANC na mahali pa kujifunguli kati ya mabinti?

Appendix 4: In-depth in interview guide for health care provider (focal person RCH)

IN-DEPTH INTERVIEW GUIDE FOR HEALTH CARE PROVIDER (FOCAL PERSON RCH)

I am Florence Focus Kimario, student at Nelson Mandela Institute of Science and Technology collaboration with Ifakara Health Institute, here by to seek information about determinants of home delivery among teenage mothers in this district.

This information will provide better understanding to Ministry of Health on determinants of home delivery among teenage mothers in rural Tanzania. The results will help ministry of health to come out with feasible interventions on how to reduce home .This interventions will assist on reduction of maternal mortality which are contributed from teenage mothers.

INTRODUCTION

Name/ID No ……. District…….

Ward…….. Village……..

Title …… Age……

Sex…… Mobile no…….

Email address…….

1. To understand the utilization pattern of preventive health care services during pregnancy among teenage mothers in Tanzania.
2. To understand the utilization pattern of health care services during delivery and postnatal among teenage mothers in Tanzania.

S/N	Objectives	Questions
1	To assess the utilization of preventive health care services during pregnancy among teenage mothers in Tanzania.	1. Do girls between 15-19 years utilize ANC and PNC services? 2. How is it within past 5years? Is it increasing or decreasing? 3. Is there any limitations which hinder them

		to utilize these services? What are those limitations? 4. Is there any positive motivation which makes girls aged 15-19 years to utilize your services (ANC and PNC)? MENTION THEM 5. In case they do not utilize health facilities where do they get RCH services? (ANC, Delivery and PNC)
2	To assess the utilization pattern of health care services during delivery and postnatal among teenage mothers in Tanzania.	1. What is the utilization pattern of delivery services among teenage mothers? 2. What is the utilization pattern of ANC among teenage mothers? 3. What is the utilization pattern of postnatal services among teenage mothers? 4. What's are Health care providers attitudes towards teenage pregnancy? 5. What's are Attitudes of health care providers towards teenage utilization of prevention of ANC and PNC? 6. What are the factors which hinder teenage mothers to utilize ANC and postnatal services? 7. Is there any relationship between utilization of ANC and place of delivery among teenager?

Appendix 5: Dodoso la wakunga wa jadi

DODOSO KWA WAKUNGA WA JADI

Naitwa Florence Focus Kimario, ni mwanafunzi wa chuo cha nelson Mandela institute of science and technology kwa ushirikiano na ifakara health institute, nipo hapa kutafuta taarifa zinazohusu ni sababu gani mabinti wadogo wanajifungulia nyumbani katika wilaya hii.

Hii taarifa itasaidia wizara ya afya kuelewa kwa undani sababu za mabinti kujifungulia nyumbani badala ya hospitali,hivyo wataona njia ya kurekebisha hiyo hali kwa kutuga sheria ndogondogo,na hizo sheria zitasaidia kupunguza vifo vitokanavyo na uzazi kwa mabinti.

UTANGULIZI

Jina/Namba ya utambulisho…… Wilaya ……

Kata …… Kijiji …….

Kazi …… Umri …….

Jinsia …….. Namba ya simu ……

Barua pepe …….

1. Mabinti wangapi wanaojifungulia kwako kwa siku/wiki/mwezi?
2. Nini sababu ya wao kujifungulia nyumbani?
3. Unazuiaje maambukizi ya ukimwi kutoka kwa mama kwenda kwa mtoto?
4. Ni matatizo gani ya kiafya yanawapata mabinti wakati wa kujifungua?
5. Nini kifanyike ili kupunguza vifo vya kina mama hasa watoto?
6. Kwa nini kina mabinti wanajifungulia nyumbani?
7. Nini kifanyike ili kuwafanya mabinti wenye mimba wajifungulie vituo vya afya?
8. Unapata msaada wowote unaposaidia kina mama wakijifungulia nyumbani? Kama upi?
9. Unategemea msaada gani wakati wa kusindikiza mjamzito hospitalini?

Appendix 6: In-depth interview guide for traditional birth attendants

INDEPTH INTERVIEW GUIDE FOR TRADITIONAL BIRTH ATTENDANTS

I am Florence Focus Kimario, student at Nelson Mandela Institute of Science and Technology collaboration with Ifakara Health Institute, here by to seek information about determinants of home delivery among teenage mothers in this district.

This information will provide better understanding to Ministry of Health on determinants of home delivery among teenage mothers in rural Tanzania.

The results will help ministry of health to come out with feasible interventions on how to reduce home .This interventions will assist on reduction of maternal mortality which are contributed from teenage mothers.

INTRODUCTION

Name/ID No ……. District…….

Ward…….. Village……..

Title …… Age……

Sex…… Mobile no…….

Email address…….

SN	OBJECTIVES	QUESTIONS
1	Determinants of home delivery among teenage mothers in rural Tanzania.	1. How many teenager comes to you for delivery per day/week/months?
		2. What are the reasons for these teenagers to seek delivery care from you?
		3. How do you prevent mother to child transmission of HIV during delivery?
		4. What are the common ill-health outcome which teenager mothers face during delivery?
		5. What should be done to reduce maternal mortality especially among the teenagers?
		6. Why do women deliver at home?

		7. What should be done to make teenager/ mother to deliver at health facility?
		8. Do you get any support by helping mothers to deliver at home? What support do you get?
		9. What support will you require to escort women deliver at health facility?

Appendix 7. Schedule of activities

Research work was involve the following summarized information in Table below.

Table: Schedule of research activities

						2018				2019		
	Activity	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**
1	Literature review											
2	Data collection											
3	Data processing and interpretation											
4	Publication											
5	Dissertation Write-up and Submission											

Appendix 8: Ethical clearance

IFAKARA HEALTH INSTITUTE
research | training | services

INSTITUTIONAL REVIEW BOARD
P O BOX 78373 DAR ES SALAAM, TANZANIA
Tel +255 (0) 22 2774714, Fax: + 255 (0) 22 2771714 Email: irb@ihi.or.tz

9th February, 2019

National Institute for Medical Research
P O Box 9653
Dar Es Salaam
Email; headquarters@nimr.or.tz

Florence Focus Kimario,
Ifakara Health Institute,
P O Box 74,
Bagamoyo.

IHI/IRB/No: 10 - 2019

INSTITUTIONAL CLEARANCE CERTIFICATE FOR CONDUCTING HEALTH RESEARCH

On 1st February 2019, the Ifakara Health Institute Review Board (IHI-IRB) reviewed the study titled: ***"Determinants of Home Delivery among Teenage Mothers in Rural Tanzania"*** Submitted by Principal Investigator: Kimario Florence Focus.

The study has been approved for implementation after IRB consensus. This certificate thus indicates that; the above-mentioned study has been granted an Institutional Ethics Clearance to be conducted in (Magu, Tandahimba, Bagamoyo and Moshi) Tanzania.

The following documents were reviewed and approved:

1. Study Protocol
2. Informed Consent Forms English and Kiswahili versions
3. Data collection tools in English and Swahili
4. Budget and budget justification
5. Investigators' CVs

The Principal Investigator of the study must ensure that, the following conditions are fulfilled during or after the implementation of the study:

1. PI should submit a six month progress report and the final report at the end of the project
2. Any amendment, which will be done after the approval of the protocol, must be communicated as soon as possible to the IRB for another approval
3. All research must stop after the project expiration date, unless there is prior information and justification to the IRB
4. There should be plans to give feedback to the community on the findings
5. Any publication needs to pass through the IRB
6. The approval is valid until 1st February 2020.

The IRB reserves the right to undertake field inspections to check on the protocol compliance

Deputy IRB Chairperson
Dr. Ahmed M. Abdallah

IRB Secretary
Dr. Mwifadhi Mrisho

Appendix 9: Districts approval documents

HALMASHAURI YA WILAYA YA BAGAMOYO

Tel. 023 2440008
Fax: 023 2440338

Ofisi ya Mganga Mkuu (W)
S. L.P. 29
BAGAMOYO
28/02/2019

KUMB Na. HWB/M.10/53/114

Mkuu wa Chuo
Taasisi ya Afya Ifakara (I.H.I.)
S.L.P 74,
BAGAMOYO

YAH: KIBALI CHA KUFANYA MAFUNZO KWA VITENDO MWANACHUO FLORENCE FOCUS KIMARIO

Tafadhali husika na mada tajwa hapo juu, pia rejea barua yako ya tarehe 14/02/2019.

Ofisi ya Mganga Mkuu Wilaya imekubali kutoa kibali cha kufanya mafunzo kwa vitendo mwanachuo aitwaye **Florence Focus Kimario** ambaye anasoma Shahada ya Uzamili katika Sayansi ya Afya ya Jamii.

Kwa barua hii, ninampa kibali cha kufanya utafiti katika Wilaya ya Bagamoyo.

Nikutakie utekelezaji mwema

Veronica Shegwando
Kny: MGANGA MKUU (W)
BAGAMOYO

MGANGA MKUU (W)
S. L. P. 29
BAGAMOYO

Nakala: Mganga Mfawidhi
Hospitali ya Wilaya
BAGAMOYO

Watendaji Kata Wote
Kata za Kiromo na Yombo
BAGAMOYO

Florence Focus Kimario

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

HALMASHAURI YA WILAYA YA MAGU
(Barua zote zipelekwe kwa Mkurugenzi Mtendaji Wilaya)

MKOA WA MWANZA
Simu:- 028 – 2530002
FaxNo.:-028 – 2530199

Sanduku la Posta 200
MAGU.

Kumb. Na. MDC/S.10/21/VOL.XVII/135

13.03.2019

Mkuu wa Kitengo cha Mafunzo,
Taasisi ya Afya Ifakara,
S.L.P. 74,
BAGAMOYO.

YAH: RUHUSA YA KUFANYA UTAFITI MWANACHUO
FLORENCE FOCUS CHUO CHA TAASISI YA AFYA IFAKARA

Tafadhali husika na somo hilo hapo juu, pia rejea barua yako yenye Kumb. Na. IHI/TC/BAG/2019/006 ya 14/02/2019.

Napenda kukuarifu kuwa, ombi lako la kufanya utafiti kuhusu "Determinates of Home Delivery among teenage mothers in Rural Tanzania" katika Halmashauri yetu ya Wilaya ya Magu limekubaliwa.

Anapaswa kuripoti kwa Mganga Mkuu wa Wilaya ambae atamsaidia na kumpangia majukumu. Anatakiwa kuzingatia maadili ya taaluma na sheria, kanuni na taratibu za Utumishi wa Umma muda wote awapo kwenye mafunzo.

Aidha anapaswa kuvaa kitambulisho cha Chuo muda wote.

Katika Utumishi wa Umma.

Sililo P. Buthoke,
KNY: MKURUGENZI MTENDAJI (W)

KNY MKURUGENZI MTENDAJI
HALMASHAURI YA WILAYA YA MAGU

Nakala:
Mganga Mkuu (W),
Magu.
Florence Focus,
Mwanachuo.

(55)

HALMASHAURI YA WILAYA YA MOSHI
(*Barua zote ziandikwe kwa Mkurugenzi Mtendaji*)

MKOA WA KILIMANJARO **S.L.P. 3003,**
Simu 2755172/2751865 Fax. 2754305 **MOSHI.**

Kumb. Na: MDC/E.10/16/VOL.X/38 22/03/2019

- Afisa ~~Mtendaji~~ Afya, Wilaya,
- Mtu anayeangalia afya ya uzazi, ngazi ya Wilaya na;

Wakunga wa jadi,
MOSHI

Arone DHS.
(22/3/2019)

YAH: UTAMBULISHO WA NDUGU FLORENCE FOCUS KIMARIO

Mtajwa hapo juu ni mwanafunzi kutoka Ifakara Health Institute - Bagamoyo. Mwanafunzi huyu anafanya utafiti wa kimasomo katika Ofisi yako ikiwa ni sehemu ya mafunzo yake.

Kwa barua hii namtambulisha kwako ili aweze kufanya utafiti (Research) Kata ya Ofisi yako.

Hivyo unaombwa umpe ushirikiano ili aweze kufanikisha utafiti wake.

Nakutakia kazi njema.

Kimaro J. William
Kny: MKURUGENZI MTENDAJI
HALMASHAURI YA WILAYA
MOSHI

Kny. Mkurugenzi Mtendaji
Halmashauri ya Wilaya
Moshi

Nakala : - Ndugu Florence Focus Kimario,
S.L.P 74,
Bagamoyo. - kwa taarifa

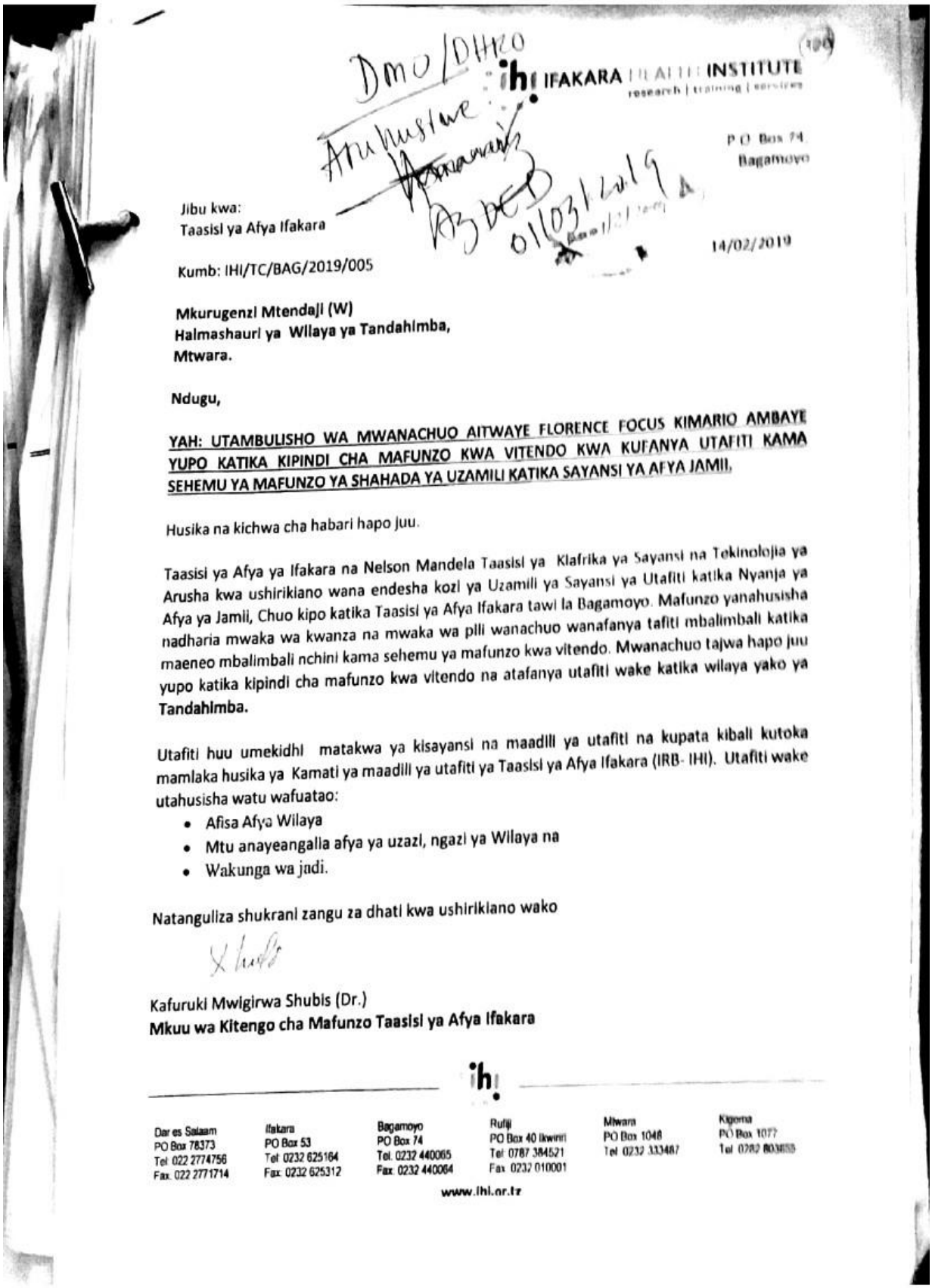
- Mganga Mkuu wa wilaya, - Kwa taarifa.
Halmashauri (W) Moshi.

DRCHco

✓ Dr i/c Kibosho Hospital Tafadhali mpokee na mpe Ushirikiano.
26/3/2019

FYA

✓ Tabibu i/c Kaloleni Mpokee



DMO/DHHZO
Arukusiwe
01/03/2019

ihi IFAKARA HEALTH INSTITUTE
research | training | services

P.O. Box 74
Bagamoyo

Jibu kwa:
Taasisi ya Afya Ifakara

14/02/2019

Kumb: IHI/TC/BAG/2019/005

Mkurugenzi Mtendaji (W)
Halmashauri ya Wilaya ya Tandahimba,
Mtwara.

Ndugu,

YAH: UTAMBULISHO WA MWANACHUO AITWAYE FLORENCE FOCUS KIMARIO AMBAYE YUPO KATIKA KIPINDI CHA MAFUNZO KWA VITENDO KWA KUFANYA UTAFITI KAMA SEHEMU YA MAFUNZO YA SHAHADA YA UZAMILI KATIKA SAYANSI YA AFYA JAMII.

Husika na kichwa cha habari hapo juu.

Taasisi ya Afya ya Ifakara na Nelson Mandela Taasisi ya Klafrika ya Sayansi na Tekinolojia ya Arusha kwa ushirikiano wana endesha kozi ya Uzamili ya Sayansi ya Utafiti katika Nyanja ya Afya ya Jamii, Chuo kipo katika Taasisi ya Afya Ifakara tawi la Bagamoyo. Mafunzo yanahusisha nadharia mwaka wa kwanza na mwaka wa pili wanachuo wanafanya tafiti mbalimbali katika maeneo mbalimbali nchini kama sehemu ya mafunzo kwa vitendo. Mwanachuo tajwa hapo juu yupo katika kipindi cha mafunzo kwa vitendo na atafanya utafiti wake katika wilaya yako ya **Tandahimba.**

Utafiti huu umekidhi matakwa ya kisayansi na maadili ya utafiti na kupata kibali kutoka mamlaka husika ya Kamati ya maadili ya utafiti ya Taasisi ya Afya Ifakara (IRB- IHI). Utafiti wake utahusisha watu wafuatao:

- Afisa Afya Wilaya
- Mtu anayeangalia afya ya uzazi, ngazi ya Wilaya na
- Wakunga wa jadi.

Natanguliza shukrani zangu za dhati kwa ushirikiano wako

Kafuruki Mwigirwa Shubis (Dr.)
Mkuu wa Kitengo cha Mafunzo Taasisi ya Afya Ifakara

Dar es Salaam
PO Box 78373
Tel: 022 2774756
Fax: 022 2771714

Ifakara
PO Box 53
Tel: 0232 625164
Fax: 0232 625312

Bagamoyo
PO Box 74
Tel: 0232 440065
Fax: 0232 440064

Rufiji
PO Box 40 Ikwiriri
Tel: 0787 384521
Fax: 0232 010001

Mtwara
PO Box 1048
Tel: 0232 333487

Kigoma
PO Box 1077
Tel: 0282 803855

www.ihi.or.tz