UTILIZATION AND FACTORS AFFECTING DELIVERY IN HEALTH FACILITY AMONG RECENT DELIVERED WOMEN IN NKASI DISTRICT

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UTILIZATION AND FACTORS AFFECTING DELIVERY IN HEALTH FACILITY AMONG RECENT DELIVERED WOMEN IN NKASI DISTRICT

By

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A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences

November, 2012

CERTIFICATION

The undersigned certifies that he has read and hereby recommended for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled **Utilization and factors affecting delivery in Health facility among recent delivered Women in Nkasi District**, in a fulfillment of the requirements for the Degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences.

……

Dr. David Urassa

Supervisor

Date: …….

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AND

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Lastly, I thank the Almighty God for his blessings, protection and guidance throughout my study.

DEDICATION

This work is dedicated to my parents Esther and Samson. Special dedications to my beloved wife Flora, My lovely daughter Abigail Ndimyake who give me physical, social and psychological support during the course of study. I also thank them for the tolerance they incurred during my absence.

To, all I am grateful.

ABSTRACT

Background: High maternal mortality rate is one of the major public health concerns in developing countries including Tanzania. Most of the deaths are caused by factors attributed to pregnancy and childbirth. In Tanzania about 50% of women delivered in health facility with wide variation among regions being lowest in Rukwa(30%) and highest in Dar es Salaam(90%).

Objectives: The major purpose of the study was to determine factors that affect delivery in health facility among recent delivered women.

Materials and Methods: A cross sectional analytical study was carried out among women with children less than two years prior to survey in July 2012 in Nkasi district. Household survey using structured questionnaire was used to collect information. Data were analyzed using SPSS version 17.

Result: A total of 368 women were recruited into the study, whereby (87.6%) were below the age of 35 years, (91.6%) were married and (31.5%) were not able to read and write. Majority of respondent attended ANC (98.6%), but only 44.0% delivered in health facilities. Women with secondary education were six times more likely to deliver in health facility compared to those with no education (AOR=6.15,CI=1.105-34.232), where by those attended ANC more than four visit were two times more likely to deliver in health facility than those who attended less than that. (AOR=2.45,CI=1.500-4.156) and those living more than 5 kilometer were four times less likely to deliver in health facility compared to those living within 5 kilometer to health facility. (AOR=0.24,CI=0.130-0.43).

Conclusion: Maternal health services need to continuously sensitize to the community so that the number of pregnant mothers delivered in health facility increased to attain the National target and reduced maternal morbidity and mortality.

Recommendation: Based on these findings, increase the utilization of health facility for delivery by improving education among girls, increase accessibility to health facility and promote early booking and regular visits to ANC by women have been recommended.

Table of Contents

Title Page ..... **ii**
CERTIFICATION ..... **ii**
DECLERATIONAND COPYRIGHT ..... **iiiii**
ACKNOWLEDGEMENT ..... **iiv**
DEDICATION ..... **v**
ABSTRACT ..... **vi**
List of Abbreviation ..... **x**
Operational definitions of terms ..... **xi**
CHAPTER ONE: INTRODUCTION. **1**
1.1Background information 1
1.2 Problem statement 3
1.3 Study rationale 5
1.4 Study hypothesis 6
1.5 OBJECTIVES 7
1.5.1 Broad objective 7
1.5.2 Specific objectives; 7
CHAPTER TWO:LITERATURE REVIEW **8**
2.1 Overview of Global Maternal Mortality rate **8**
2.2 Causes of Maternal Mortality rate **8**
2.3 Factors affecting delivery in health facility **9**
2.4 Socio economic factors and delivery in health facility **9**
2.5 Health services factors and delivery in health facility **10**
2.6 Socio demographic factors and delivery in health facility. **11**
2.7 Antenatal clinic attendance and delivery in health facility **12**
2.8 Cultural factors and delivery in health facility. **13**
CHAPTER 3: METHODOLOGY 15
3.1 Study area 15
3.2 Study population 15
3.3 Study design 15
3.4 Sampling and Sample size. 16
3.5. Data collection tools and procedures 17
3.6 Pre testing of tools 17

3.7 Recruitment and training of research assistants 18
3.8 Data processes and analysis 18
3.9 Variables 19
CHAPTER FOUR: RESULTS **21**
4.1 Social demographic factors and delivery in health facility **21**
4.2 Utilization of reproductive and child health services **23**
4.3 Reasons for not delivered in health facility **25**
4.4 Proportion of women who attended antenatal clinic and delivered in health facilities **25**
4.5 Health services factors and place of delivery **26**
4.6 Social- economic status and delivered in health facility. **28**
4.7 Cultural factors and delivery in health facility **29**
CHAPTER FIVE: DISCUSSION **34**
5.1 Social demographic characteristics and delivery in health facility **34**
5.2 Proportion of women attending antenatal clinic and delivery in health facility **36**
5.3 Health service factors and health facility delivery **38**
5.4 Socio-economic status and delivery in health facility **39**
5.5 Social cultural factors and delivery in health facility **40**
5.6 Study limitations. **41**
CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS **42**
6.1 CONCLUSION 42
6.2 RECOMMENDATIONS 43
REFERENCES **44**

APPENDICES

APPENDIX 1: Informed consent, English version. 47
APPENDIX 2: Informed consent Swahili Version 50
Appendix 3: English version questionnaire 52
Appendix 4: Swahili version questionnaire 57

List of Abbreviation

AIDS	Acquired immune deficiency syndrome
ANC	Antenatal clinic
HF	Health facility
HIV	Human immune deficiency virus
IMR	Infant mortality rate
MMR	Maternal mortality rate
TBAs	Traditional birth attendants
TDHS	Tanzania demographic health survey
UNDP	United Nations development program
UNFPA	United Nations Population Fund
UNICEF	United Nations children's funds
WHO	World Health Organization

Operational definitions of terms

Maternal health refers to health of a woman during delivery, childbirth and post-partum period.

Utilization means the extent to which a given group of people uses particular service in a specific period of time.

Recent delivered women in this study means women who had a deliver within the period of 2 years during the period of data collection.

Maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Skilled attendants refer to people with midwifery skills (midwives, doctors and nurses with additional midwifery education) who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage or refer obstetric complications' (WHO).

CHAPTER ONE
INTRODUCTION

1.1 Background information

Maternal mortality rate remains to be challenging to health system Worldwide. The available information about the rates and trends in maternal mortality is essential for resource mobilization, and for planning and evaluation of progress towards Millennium Development Goal 5, the target for which is a 75% reduction in the maternal mortality ratio (MMR) from 1990 to 2015.(Hogan MC et al 2010)

Global initiatives to intensify policy intervention for maternal mortality began with the Safe Motherhood Initiative in 1987, a response to growing recognition that primary health-care programmes in many developing countries were not adequately focused on maternal health .The 1994 International Conference on Population and Development strengthened international commitment to reproductive health. The focus on maternal mortality was sharpened when reduction in maternal mortality became one of eight goals for development in the Millennium Declaration (Millennium Development Goal (Obaid TA, 2009).

The number of women dying due to pregnancy and childbirth has decreased by 34% from an estimated 546 000 in 1990 to 358 000 in 2008, Although the progress is notable, but the annual decline rate is less than half of what is needed to achieve the millennium development goals. To achievemillennium development goal the annual decline rate should be 5.5% instead of the current one of 2.3% in average.(WHO report 2010).

In Sub-Saharan Africa, where 1 in 22 women risks dying from maternal causes in her lifetime, the adjusted maternal mortality ratio (MMR) was 900 deaths per 100,000 live births in 2005 (WHO,2007).

Tanzania estimated maternal mortality rate in 2010 is 454/100,000 live births, The trend is improving somehow compared to 578 /100,000 live births in 2005 and 529/100,000 live births in 1999 (TDHS 2010). Even with this turnaround the challenges of reducing maternal mortality to the targeted levels under MDGs are enormous. Improvements have also been made in the proportion of births attended by skilled health personnel (41 per cent in 1999, 46 per cent in 2004 and 51 per cent in 2010), and births taking place in health facilities (44 per cent in 1999, 47 per cent in 2004 and 50 per cent in 2010).(TDHS 2010)

The slow progress in reducing maternal mortality in Tanzania is contributed to low health facilities delivery. (UNDP Report 2009)

More than 90% of pregnant mothers in Tanzania attend antenatal clinic at least once during their pregnancy period but less than a half of them delivered in health facilities (Mrisho M *et al*, 2007)

In Tanzania about 50% of women delivered in health facilities and 48% are delivered at home, there is an increase in health facilities delivery from 47% in 2004 to 50% in 2010 with marked variation among regions in mainland ranging from 30% in Rukwa to 90% percent in Dar es Salaam (TDHS, 2010).

The major perceived barriers to women access to health care services are lack of money(24%), distance to health facilities(19%),Not willing to go alone(11%) while only 2% of women cite obtaining permission as big problem(TDHS, 2010).

Several strategies have been done in our country to improve the access to maternal health care since the initiative of safe motherhood program in 1987, this initiatives has improved pregnant mother to access antenatal care and slightly improve delivery in health facilities, however there is higher difference among the regions despite the higher attendance of attendance of antenatal clinics in both regions.

1.2 Problem statement

Delivery in health facilities is still challenging in developing countries in which higher number of women attend antenatal clinic but about half of them they deliver home without assistance of skilled professional

Low delivery in health facilities as a result of many factors leads to high morbidity and maternal mortality therefore proper interventions must be taken to increase delivery in health facilities. Home delivery if not conducted by professionals increase the risk of transmission of HIV/AIDS to relatives or traditional birth attendants who conduct deliveries without protective equipment's

Several studies have been done Worldwide including Tanzania regarding factors affecting delivery in health facilities, The factors that have been studied include Socio demographic factors, socio economic factors, availability of health services, accessibility, behavior and attitudes of health care providers and socio cultural issues.(Mrisho et al 2007,Manuela D et al 2009, Bezant E 2008,Shankwaya S 2008, Magoma M 2010,Moore 2011).

It is argued that differential access to health care facilities between the rural-urban areas is an important factor for lower maternal healthcare services particularly for institutions delivery assistance by health personnel in rural areas.

In Tanzania about fifty percent of women deliver in health facilities with marked variation among regions in mainland ranging from thirty percent in Rukwa to ninety percent in Dar esSalaam.The major perceived barriers to women access to health care services are lack of money(24%), distance to health facilities(19%),Not willing to go alone(11%) while only 2% of women cite obtaining permission as big problem(TDHS 2010)

No study has been done in Rukwa region to explain why they have low prevalence of delivery in health facilities. This study is therefore meant to find out factors that hinder delivery in health facilities' and knowing these factors will help to improve delivery in health facilities at Nkasi district which is situated in Rukwa region.

Conceptual framework on factors that affect utilization of health facility for delivery.

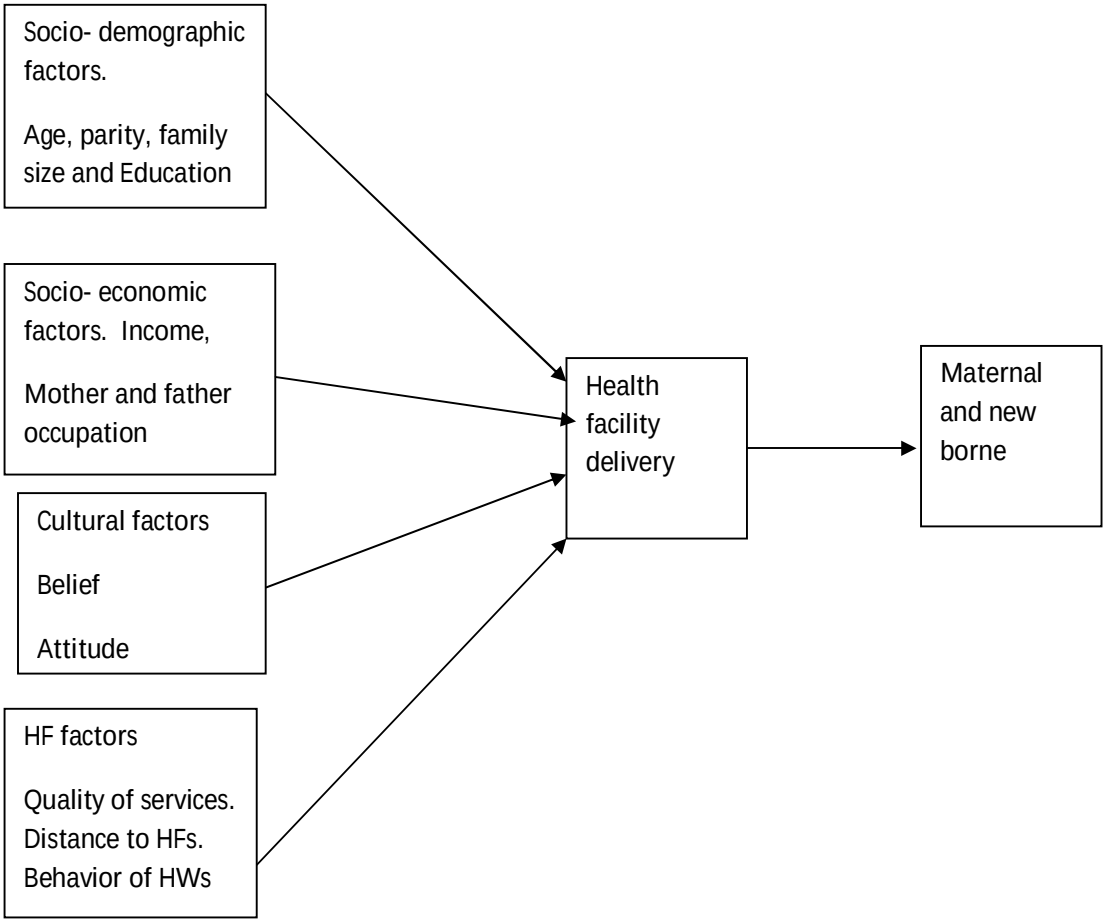


Figure 1: Conceptual framework that illustrates multiple factors that affect utilization of health facility for delivery among recent delivered women in Nkasi district.

On the left side of the framework are the health system factors such as behavior of health workers, distance to health facilities and quality of health services that determines women choices for the place of delivery. Other factors are socio economic factors, Socio demographic factors and cultural factors. All these factors predict utilization of health facility for delivery among pregnant mothers. On the right side of the figure are maternal and newborn outcome which determined by the women place of delivery.

1.3 Study rationale

Understanding factors that hinders delivery in health facilities are particularly important in order to narrow the existing gaps among regions and improve quality of health service delivered to pregnant mothers to reduce maternal morbidity, mortality and disabilities that are related to pregnancy and childbirth.The existence of gap among regions in health facilities delivery being very low in Rukwa region compared to other regions in Tanzania mainland necessitated the need to find out factors that have to be considered significant to improve delivery in health facilities in this region particularly Nkasi district.There has been lack of studies in this area.

The study aims at findings useful information that prevents women to deliver in health facilities while large number of them attend antenatal clinic at least once in their period of pregnancy and less than half deliver in health facilities. The information obtained will be useful for the community and decision makes at the district and regional level in planning, implementing and evaluating various interventions related to research findings to reduce maternal mortality rate and achieve millennium development goals.

1.4 Study hypothesis

Null: Social demographic factors have no influence on utilization of health facility by women as a place of delivery.

Alternative: Social demographic factors have an influence on utilization of health facility by women as a place of delivery

Null:Antenatal clinic attendance have no influence on utilization of health facility by women as a place of delivery

Alternative: Antenatal clinic attendances have an influence on utilization of health facility by women as a place of delivery.

Null: Socio economic factors have no influence on utilization of health facility by women as a place of delivery.

Alternative: Socio economic factors have an influence on utilization of health facility by women as a place of delivery.

Null: Health services factors have no influence on utilization of health facility by women as a place of delivery.

Alternative: Health services factors have an influence on utilization of health facility by women as a place of delivery.

Null: Cultural factors have no influence on utilization of health facility by women as a place of delivery.

Alternative: Cultural factors have an influence on utilization of health facility by women as a place of delivery.

1.5OBJECTIVES

Broad objective

To determine the level of utilization and factors that affects delivery in health facilityamong recent delivered women atNkasi district.

Specific objectives;

1. To determine socio demographic factors that affect delivery in health facilities among recent delivered women at Nkasi district.

2. To determine proportion of women attended antenatal clinic who delivered in health facilities among recent delivered women at Nkasi district.

3. To determine socio economic factors that affect delivery in health facilities among recent delivered women at Nkasi district.

4. To determine health services factors that affect delivery in health facilities among recent delivered womenatNkasi district.

5. To determine cultural factors that affect delivery in health facilities among recent delivered womenatNkasi district.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview of Global Maternal Mortality rate

Maternal mortality remains a major global public health concern more than twenty years afterthe international Safe Motherhood Initiative was launched. Each year, 358,000 women die worldwide from pregnancy-related causes, nearly all in Sub-Saharan Africa and Asia, and many women die from obstetric complications (WHO 2010).

In Sub-Saharan Africa, the adjusted maternal mortality ratio (MMR) was 900 deaths per 100,000 live births in 2005 (WHO,2007). The fifth Millennium Development Goal calls for a reduction in maternal mortality ratio by three quarter between 1990 and 2015 (United Nations 2007).

Although many effort have been done to reduce maternal death worldwide, more than half millions of women die each year as the result of childbirth and complications of pregnancy, and higher number of these death occurs in developing countries particularly sub Saharan Africa and Asia(WHO report 2005)

2.2 Causes of Maternal Mortality rate

The major causes of maternal deaths in Sub-Saharan Africa are mainly due tohemorrhage (34%); sepsis and infections, including HIV/AIDS (16%); hypertensive disorders of pregnancy (9%). Obstructedlabor(4%), Anemia(4%), Abortion(4%),Other causes 30% which include ectopic pregnancy, embolism and other indirect causes (United Nations 2007, UNICEF 2007).

Themajority of these complications ismanageable and could be addressed by a health professional during pregnancy when the women attending antenatal clinics, delivery, or post-partum through prompt referral and treatment of complications. Preventing unplanned pregnancies through contraceptive use alone could avert 25%

of maternal deaths; yet the level of contraceptive use in Tanzania remains low, at 34% among married women (TDHS 2010)

Tanzania maternal mortality rate in 2010 is 454/100,000 live births, the trend is improving somehow compared to 578 /100,000 live births in 2005. Even with this turnaround the challenges of reducing maternal mortality to the targeted levels under MDGs are enormous. (TDHS2010).

The slow progress in reducing maternal mortality in developing countries has been attributed partly to non-availability of services and partly due to poor utilization of services even when they are available (UNFPA 1994).

2.3 Factors affecting delivery in health facility

The number of births attended by skilled health personnel in the country has increased from 41 per cent in 1999,to 51 per cent in 2010, and births taking place in health facilities have increased by three percent from 47 per cent in 2004 and 50 per cent in 2010.(TDHS 2010)

Several studies have been conducted Worldwide on the factors affecting delivery in health facilities and the following was observed, The issues of risk and vulnerability, such as lack of money, lack of transport, sudden onset of labour, short labour, staff attitudes, lack of privacy,geographical location, perception of poor quality of health services, tradition, cultures and the pattern of decision-making power within the household were perceived as key determinants of the place of delivery(Mrisho M et al 2007, Magoma M 2010, Zulfiqur et al 2009)

2.4 Socio economic factors and delivery in health facility

House hold financial capacity is one of the major factors in the determination of place of delivery, and this depends on mother occupation and husband occupation.Women who are working and earning money may be able, to save and decide to spend it on a facility delivery.Several studiesfind that farming women are less likely to have skilled attendance at delivery than women in other occupations (Addai I 2000). This may be due to limited financial resources and health services in rural areas. Wives of husbands with higher status occupations could be more able to

use facilities for delivery. High status occupations are associated with greater wealth, making it easier for the family to pay costs associated with skilled delivery care. A limited ability to pay and high hospital costs have been identified as the major barriers for the rural poor wishing to access health care, due to economic difficulties in rural areas women are not able to afford costs related to deliveries even if the services in some places are free of charge they unable to pay for transport in case of referral or the facility is away from home. (WHO 2007,Mrisho et al 2007). High socio economic status is associated with delivery in health facility and sometimes is confounding with level of education as those with higher education have better jobs and earning higher, so women are encouraged to participate to income generating activities in order to rise their economic status.

2.5 Health services factors and delivery in health facility

Unreliable transport is also a barrier to access skilled delivery in rural areas, failure to plan in advance for transport cause higher number of women to deliver in their homes even if they had planned to deliver in health facilities(Mrisho et al 2007,Magoma M 2010). Similar findings have been documented by study done at Nepal where by women who planned to deliver in health facilities 18% delivered in home due to lack of transport (Bolam et al 1998). In a rural Tanzania for instance 84% of a woman who give birth at homes are intended to deliver in health facility but due to transport problem and long distance to health facilities they end up delivering home (Bicego et al 1995)

Inadequate knowledge and skills for health workers on management of obstetrics cases can be the barrier for delivery in health facilities, several study found that health workers tend to unnecessary refer pregnant mother to higher level because they don't know to use partogram which monitor the progress of labour and the woman end up deliver normally. This woman will never come back to that facility due to unnecessary referral to other health facility.(Shankwaya S 2008)

Lack of privacy is also documented as a barrier for delivery in health facilities because some older women they don't want to be attended by younger mid wives at health facilities who they think there are like their daughter or younger women they

fair to be attended by male health workers during delivery. In other health facilities there is no special room for delivery; women are just delivering in OPD. This condition hinders women to deliver in health facilities (Mrisho et al 2007,Shankwaya S 2008)

Health provider behavior and attitudes are also determinant factor for a choice of place of delivery for pregnant mother, some of the health workers are very rude, using abusive language and refusing to assist the patients, these attitudes prevent the women to deliver in health facilities however positives attitudes of health workers attract women to deliver in health facilities. For example in a study conducted by Mrisho, one women during focused group discussion said *"When I went to the health facility (X) for delivery, I was impressed by the midwife who cared for me somuch. She was so human, polite and sympathetic"*.(Mrisho et al 2008). This encourages the women to deliver in health facilities.Improves skills and knowledge among health providers and increase access of health services in rural areas will increase access to pregnant mother to deliver in health facility.

2.6 Socio demographic factors and delivery in health facility.

Mother's literacy level is also important determinant of place of delivery as those with non-formal education tend to deliver at home, and those educated tend to give birth's in health facilities. Study conducted in Nepal show that there is relationship between education and place of deliver as those with poor education are more like to deliver at home compared to educated women who tends to deliver at health facilities (Belam et al 2006). Another study from Cambodia noted that women who attend at least seven years of school are six times more likely to deliver in health facilities compared to those who did not attended (Yanagasawa et al 2006). The same findings obtained in a study conducted in Kenya and concluded that community based antenatal education might be targeted at poorly educated mother to enable them make informed decision about the place of delivery.It has also been suggested that there may be community effects of education, with more highly educated communities organizing themselves and demanding better public services and higher position for health on the political agenda (Grosse RN 1999). In contrast, better awareness of poor quality in many facilities and higher confidence in self-care may

delay care seeking among educated women. Education is likely to be associated with wealth and even residence. (Bolam et al 2006).

The age and parity are also determinants for the place of delivery, Study done in Zambia shows that 55% of women delivery in health facilities is younger and out of that 65% are those having the first baby. Women with 35 years and above with more than five children tend to deliver home because they consider themselves as having experience so they don't need assistance from skilled workers. This is evidenced by study conducted by Mrisho in southern part of Tanzania and study conducted in Nepal both documented that multi para and older women tend to deliver home than young women. These young women they have no experience in child births and they tend to fear complications related to pregnancy and child birth (Shankwaya S 2008, Mrisho et al 2007, Bolam et al 1998)

Several literatures shows that level of education were strongly associated with delivery in health facility where by more educated women tends to deliver in health facility compared to non-educated, therefore increased enrollment of girls to secondary education and above could help to improve delivery in health facility.

2.7 Antenatal clinic attendance and delivery in health facility

Insufficient counseling during antenatal visit is another factor for low delivery in health facility, minimal time used by health workers for counseling pregnant mothers during antenatal clinic is the missed opportunity to educate women importance of health facilities delivery.Also information that all pregnancy carry risk and labour complications are unpredictable are not communicated during antenatal clinic visit .In some places provider are not informing pregnant mothers the meaning of expected date of deliver as the result they interpretation as the exactly date of deliver and when the labour pain start early before that date they end up delivering in their homes even if they were interested to deliver in health facilities. According to Pembe and Urassa majority of women who attendedantenatal clinic they had low awareness about the danger signs of obstetric complications. These lacks of adequate information about danger signs and complication related to delivery are the factors for low delivery in health facilities. (Pembe A, 2010,Magoma M 2010)

Pregnant mothers are encouraged to attend antenatal clinic at least four visit according to WHO recommendations as they received more information on the status of their pregnancy which in turn informs their decisions on the place to deliver.

2.8 Cultural factors and delivery in health facility.

Perceived quality of care, which only partly overlaps with medical quality of care, is thought to be an important influence on health care-seeking and place of delivery. Assessment of quality of services is largely depends on personal experience with health system. (DuongD,2004). Elements such as less waiting times, satisfaction with the service received – including staff friendliness, availability of supplies and waiting times are perceived as good quality. In many cases, the medical 'culture' may clash with the woman's, for example, when family members are not allowed to be present, supine birthing position is imposed or privacy not respected; this may lead to perceptionsof poor quality (Thaddeus S 1994). Some studies mention that women report better quality of care in private facilitiesbut that cost deters them from using those services.(Meskon N 2003, Mrisho M 2007).

Perceived interpersonal quality of care overlaps to someextent with traditional beliefs and possibly sometimeswith ethnic discrimination. The Concern about quality of services sometimes interactswith other barriers, for example with distance or cost.

Perceived quality of services plays a major role in choice of place of delivery. In some areas women decided to go to private health facilities, where they pay instead of going to government health facilities which are closer to their homes and services are provided free.(Mrisho M 2007)

Community beliefs on health facilities delivery are important on the choice of place of delivery. In other places they believe that normal delivery should be conducted at home and delivery at health facilities are beneficial for those with complications only (women identified with problems and risk factors during antenatal clinic).

The availability of delivery assistance by TBAs has beenreported to be associated with non-utilization of a healthfacility for delivery in rural areas, Study conducted in northern part of Tanzania shows that traditional births attendants are the ones who determine the place of delivery among Masai tribe and they also arrange for the kind of diet required by the women after deliver, in order to improve health facilities

deliveries TBAs must be involved, well informed and full participated.(Shankwaya S 2008, Magoma M 2010)

They believe that TBAs and relatives are affordable and able to meet their expectation during delivery and postpartum period, these services cannot provide at health facilities(Magoma M, 2010).Another findings by Mrisho in Tanzania shows that labour is kept secret because any complications develops it means the women is adulterous and remedy for that is to mention all men have slept with her(Mrisho M 2007).In Zambia it is believed that placenta must be buried in certain manner for a women to continue bearing children,this is contrarily to health facilities where placenta is burned by incinerator (Shankwaya S 2008).

Different ethnicities have different cultural values and these cultural values may prevent women to access health facility for delivery. Knowing these values and addressing them in the community could improve delivery in health facilities.

CHAPTER THREE

METHODOLOGY

3.1 Study area

The study was conducted in Nkasi District which is among three districts of Rukwa Region. It is located on the South West Part of Tanzania between Lake Tanganyika and Lake Rukwa and lies between longitude 30^{o} 20'-31^{o} 30' East of Prime Meridian and Latitude 6^{o} 58'-8^{o} 17" South of the Equator.

The District population was estimated to be 301,000 in 2010 (NBS 2010), with annual growing rate of 4. 7%.The district has 5 divisions,17 wards, 90 villages and 762 hamletsThe main economic activities which people are; agriculture (81%), Livestock keeping (2 %), Fishing (6.2%), office work (1.9%), business (4.6%) and other elementary occupation (3.6 %).

The district have one district designated hospital, seven health Centre and thirty nine dispensaries. In year 2011 Maternal Mortality rate was 66/ 100,000 live births and Under-fives Mortality rate was 90/ 1000 live births the trend is somehow improved compared to 2010 where by Maternal Mortality rate was 173/100,000 And Under-fiveMortality rate was 164/100,0000.

Nkasi district was selected for this study because is one of the district in Rukwa region and is located in poor remote areas in which huge number of peoples leaves in rural areas and many women delivered home.

3.2 Study population

Approximately 59,987 women of the reproductive age, having delivered within two years prior to data collection were eligible to take part in the study.

3.3 Study design

This research used analytical cross section study to collect information that aimed at addressing the objective of the study.

3.4 Sampling and Sample size.

Sampling technique

Due to a wide area of the targeted study, multistage cluster sampling technique was used to select sample units from the sample population as follows:

First stage

The sampling frame consists of 17 wards in which four wards were selected randomly. The selected wards were Kipili, Swaila, Nkandasi and Isale.

Second stage

From each selected Ward two villages were selected randomly. The selected villages from each ward were as follows:

Kipili- Kipili and Katongo

Swaila- Milundikwa and Tambaruka

Nkandasi- Itindi and Sintali

Isale- Ipande and Isale

Third stage

From each selected village all household with women who have children less than 2 years was eligible for the study

Sample size

The sample size for the recent delivered women was obtained by the following formula;

$$n = \frac{z^2 p(100-p)}{\varepsilon^2}$$

Where

n=Number of recent delivered women recruited for the study.

P=Proportional of health facilities delivery in the district which was estimated at 30%.

Z= The level of statistical significant set up at the level of 95% confidence interval.

ε=Maximum likely error between the means which was estimated at 6%.

Using the above formula, the estimated sample size of the study were 224 recent delivered women. By multiplying by the design factor which was 1.5, the numbers of women recruited for study were 336. Due to non-responder ten percent of calculated sample size was added, therefore the minimum numbers of recent delivered women recruited for the study were 368.

3.5. Data collection tools and procedures

Household survey using structured questionnaire were used for interview. Both closed ended and open ended questions were utilized for data collection.

The questionnaires include items for socio demographic characteristics, antenatal care, socio economic factors, health system factors and cultural factors. In case of more than one delivery questions were focus on the last delivery.

The women were asked for consent to be interviewed with assurance of non-retribution for not participating. Those unwilling to participate were allowed to be excluded in interview but no anyone refused. Data were collected on daily basis from morning to evening including weekends for the period of two weeks.

The English version interview questions were translated into Swahili to obtain data from the study participants and to ensure they understand the contents properly.

On daily bases the researcher was countercheck for accuracy and completeness of the filled questionnaire and all completed questionnaires were given number after completing the work.

3.6 Pre testing of tools

The Swahili version questionnaire was developed by the investigator and pre tested in the field to know if it is clear understood by the recent delivered women.

After pretest some questions were slightly adjusted for better understand by respondents without changing the meaning.

3.7 Recruitment and training of research assistants

Two research assistants were recruited and trained by the researcher for two days on how to use the research instrument and the easier way to collect data from respondents.

This was important to them to be familiarizing with the research and give them enough experience in collecting information in the field. The research assistants were all nurses, one with previous experience in similar research.

3.8 Data processes and analysis

Filled-in questionnaires were checked for completeness and consistency of the responses. Open ended questions were post-coded and entered on the questionnaire. Data entry was done using statistical package for social sciences (SPSS) version 17.

Editing of the data occurred after data entry by running frequencies and checking for out of range responses. Cross tabulation used check the significant of association between independent variable and the outcome. Association between independent variable and dependent variable was considered significant if P-value is less than 0.05.

Chi-squared test was used to determine associations between independent variables and the outcome.Logistic regression was used to determine independent predictors for utilization of health services for childbirth. Odds ratios (OR) were reported together with their 95% confidence intervals (CI).

The wealth index was constructed using household assets and principal component analysis. Assets information was collected using structured questionnaire during the survey and covers information on household ownership of number of items ranging from television, radio, bicycle, motorbike, phone, refrigerator, car, and possession of house and farm. Wealth index was constructed into five quintiles, the lowest, second, middle, high and higher. These indicates there socio economic status the lowest, second, middle, high and higher respectively.

3.9 Variables

Dependent variables

Delivery in health facility is dependent variables and measured as the proportional of women with children less than two years attended antenatal clinic and proportional of pregnant mothers who delivery in health facility at a particular point of time. Women with children less than 2 years were asked for attended antenatal clinic attendance, frequency of visit and asked on the place deliver their last baby.

Independent variables

The independent variables in this study are socio demographic characteristics like age, religion, education Level, marital status, parity, and head of household, size of the family, women occupation and husband occupation. Socio economic factors was assessed using household assets and arranged into five quintiles from the lowest, low, middle ,high and higher which represent their socio economic status respectively. Health factors variable like behavior of health works,shortage of drugs, medical supplies and equipment and distance to health facility. Other variables are traditional beliefs, perception of health services delivered and means of transport.

3.10 Ethical consideration

Research clearance was sought from Muhimbili University of Health and Allied Sciences directorate of research and publications committee.

Permission was also granted from Nkasi district executive director, wards leader and villages leaders. During field work, information sheets about the study in Swahili were given out, explaining why it was carried out, by whom, and what it would involve. In the household survey, the consent from the participant was sought before starting the interview and thanks them at the end of the interview. Participant was allowed to withdraw from interview at any time she want.

Confidentiality of all study participants was assured. Everybody was informed that no names or direct identification made to the questionnaire except numerical identification number was used for follow up.Before interview, study respondents were requested to participate voluntarily. Respondents were also told the aim of the

study to know the problem that lead to higher maternal and newborn mortality, Identified gap will help to improve maternal and child in that area.

CHAPTER FOUR

RESULTS

This study was carried out in four randomly selected wards, Kipili Swaila, Nkandasi and Isale of Nkasi district council in Rukwa Region. A total of 368 Women with children less than two years old were recruited and participated in the study.

The minimum age of respondents was 15 years while the maximum age was 46 years with mean age of 26.5 (SD= 6.3) years. The majority of the respondent 318 (87.6%) were mothers aged between 15 and 34 years, where by 5 respondent they didn't know their age and only 2 respondents were aged above 46 years. 337(91.6%) of respondents were married and only 20 (5.4%) were single. More than two third,225(61.1%) of the respondents attained primary school, while about one third 116(31.5%) they never went to school and only 16 (4.1%) attained secondary school Education.

4.1 Social demographic factors and delivery in health facility

Although delivery in health facilities depends on social demographic characteristics, like occupation of the respondent, parity, family size and age of the respondent, in this study there were no statistically significant between delivery in health facility and these characteristics. On the other hand religion, marital status and education of the respondent were highly associated with delivery in health facility (P-value of 0.025, 0.01 and 0.01 respectively), where by more than eight percent of women with secondary education delivered in health facilities compared with non-educated women.

Table 1: Social demographic characteristics and delivery in health facility (n=368)

Characteristics	HF delivery (%)	Home delivery	χ^2(P-Value)
Age of respondents			
15-24	75 (46)	88(54)	
25-34	69 (44.5)	86(55.5)	1.76 (0.623)
35-44	15 (34.9)	28(65.1)	
45-54	1 (50)	1(50)	
Education of respondents	40(34.5)	76(65.5)	
No formal education	4(36.4)	7(63.6)	17.26(0.01)
Adult education	104(46.2)	121(53.8)	
Primary education	14(87.5)	2(12.5)	
Secondary education			
Religion			
Muslim	1(33.3)	2(66.7)	
Christian	158(45.8)	187(54.2)	7.42 (0.025)
Others	3(15)	17(85.0)	
Marital status			
Married	139(41.2)	198(58.8)	12.51(0.01)
Others	23(74.2)	8(25.8)	
Parity			
1	70(52.2)	64(47.8)	
2-4	40(39.2)	62(60.8)	5.78(0.056)
4 and above	52(39.4)	80(60.6)	
Head of household			
Yourself	13(59.1)	9(40.9)	
Husband	133(40.9)	192(59.1)	12.11(0.02)
Others	16(76.2)	5(23.8)	

Table 1: Socio demographic characteristics and delivery in health facility (Continue)

Characteristics	HF delivery (%)	Home deliver (%)	χ^2 (P-Value)
Family size			
Less than 3	34(21.0)	42(20.4)	
4-6	77(44.5)	97(47.1)	0.05(0.975)
7 and more	51(31.5)	67(32.5)	
Occupation of respondents			
House wife	4(44.4)	5(55.6)	
Peasant	148(43.5)	192(56.5)	
Pastoralist	0(0)	3(100)	5.22(0.266)
Self employed	9(60)	6(40)	
Employed by Government	1(100)	0(0)	
Husband Occupation			
Peasant	120(40.8)	174(59.2)	
Pastoralist	12(40.0)	18(60.0)	8.34(0.039)
Self employed	4(44.4)	5(55.6)	
Employed by Government	8(88.8)	1(11.1)	

4.2 Utilization of reproductive and child health services

Among 368 respondents, 363 (98.6%) had attended antenatal clinic (ANC) at least once during the period of pregnancies. Out of 363 0f women attended antenatal clinic more than half 195 (52.9%) attended less than four visits and 167 (47.1%) attended more than four visits. Only 5 (1.4%) of respondents they never attended antenatal clinic and the reasons behind were; two third, 3 (60%) they didn't see any

importance of attending antenatal clinic while, 2 (40%) the health facilities were too far from their settlement. (Table 2)

Table 2: Antenatal clinic attendance (n=368)

Number of visits	Number	Percentage
None	5	1.4
1	18	4.9
2-3	178	48.4
4	132	35.9
More than 4	35	9.5
Total	**368**	**100**

On one hand, Out of 368 women with children less than 2 years, 162 (44.0%) had skilled worker deliveries in health facilities and 206 (56.0%) deliveries were conducted by unskilled personnel 123 (33.4%) deliveries conducted by Traditional birth attendants and 82 (22.3%) occurred athome without any assistance of skilled personnel while only one delivery occurs on the way to health facility. All women who had never attended antenatal clinic delivered at home.

Table 3: Distribution of respondents by place of delivery (n=368)

Place of delivery	Number	Percentage
Health facility	162	44.0
TBAs home	123	33.4
Home	82	22.3
On the way	1	0.3
Total	**368**	**100**

4.3 Reasons for not delivered in health facility

202 (99.5%) of respondents who had delivered without assistance of skilled attendants they intended to deliver in health facilities except only four who delivered home.

Reasons given by respondents 79 (39.1%) of the respondents they deliver in other places because they failed to afford the transportation cost to health facilities and 68(34%) was due to long distance from home to health facilities. Others response were as follows; 22(10.9%) poor services at health facility, 14(6.9%) unfriendly services due to bad behavior of healthcare provider, 13(6.4%) presence of traditional birth attendants, and only one had no anybody to escort her to health facility.

Table 4: Reasons for Unskilled assistance in delivery among women who intended to deliver at HF (n=202)

Reason	Frequency	Percentage
Lack of transport	79	39.1
Long distance to health facility	68	34
Poor health services	22	10.9
Negative attitude of health worker	14	6.9
Presence of TBAs	13	6.4
Negative belief on modern medicine	5	2.5
Lack of escort	1	0.5
Total	**202**	**100**

4.4Proportion of women who attended antenatal clinic and delivered in healthfacilities

Out of 363 women attended antenatal clinic, 162 (44.6%) delivered in health facilities and 5 (100%) of women who had never attended antenatal clinic at least once they all deliver without assistance of skilled personnel. The association between antenatal clinic visits and delivery in health facilities is significant as women who

attends antenatal clinic are more likely to deliver in health facilities compared to those who do not attend.

Table 5: Proportion of women who attended ANC and delivered in health facilities(n=368)

ANC attendants	HF delivery	Home delivery	X^2(P-Value)
Yes	162(44.6)	201(55.4)	
No	0(0.0)	5(100)	3.986(0.046)
Total	**162**	**206**	
1-3	65(33.3)	130(66.7)	
4 and above	94(56.3)	73(43.7)	19.244(0.000)
Total	**159**	**203**	

4.5Health services factors and place of delivery

Regarding the time taken to reach health facility more than two third of the respondents 259 (70.3%) spent one hour or less to reach health facility, that means they lived less than five kilometers from health facility and about one third of the women (29.6%) spent more than one hour to reach health facility that means they lived more than fivekilometers from health facility. There is strong association between delivery in health facilities with the distance as women who lived more than 5 kilometers from health facilities tend to deliver in other places 74 (67.9%) compared to those who lived within 5 kilometer from health facility 132 (51.0%).

Table 6: Distance from home and delivery in health facilities (n=368)

Distance	HF delivery	Home delivery	X^2 (P-Value)
0-5 Km	127(49.0)	132 (51.0)	
Over 5 Km	35 (21.6)	74 (67.9)	8.92 (0.002)
Total	**162**	**206**	**368**

More than half 187(50.8%) of the women are not satisfied with the services provided at health facilities while approximately half 181 (49.2%) of the respondents are satisfied withthe services provided at health facilities .The main reasons for not satisfied with the services at health facilities were; shortage of medicines and supplies 122 (65.2%), bad behaviorof health workers 45 (24.1), Charged for RCH services including normal deliveries 10 (5.3%). Other reasons were as follows; Shortage of staff 3(1.6%), Lack of privacy 3(1.6%), Poor services at health facilities 2(1.1%) and long waiting time 1 (0.5%).

Table 7: Reasons for poor satisfaction with services at health facilities (n=187)

Reasons	Number	Percentage
Shortage of medicine and supplies	122	65.2
Bad behavior of health workers	45	24.1
Charged for RCH services	10	5.3
Shortage of staff	3	1.6
Lack of privacy	3	1.6
Poor services at health facilities	2	1.1
TBAs competent than health workers Long waiting time	1	0.5
	1	0.5
Total	**187**	**100**

Reasons for not delivering in health facilities

Reasons given by respondents on why women are not delivering in health facilities, 102 (27.7%) were sudden onset of labour, 82(22.3%) presence of TBAs who are competent and provide friendly services, 81(22%) were due to long walking distance to health facilities, 46(12.5%) Negative attitude of health workers to pregnant mothers and 23(6.3%) of the women they don't know why women are not delivering in health facility. Other reasons are indicated in the table below.

Table 8: Reasons for not delivering in health facility among recent delivered women (n=368)

Reasons	Number	Percentage
Sudden onset of labour	102	27.7
Presence of TBAs	82	22.3
Health facility too far	81	22.0
Negative attitude of health workers	46	12.5
Don't know	23	6.3
Shortage of staff	13	3.2
Poor services	10	2.7
Negligence of women	3	0.8
High cost of services	3	0.8
Home delivery is safe	2	0.5
Long waiting time	1	0.3
Lack of Education	1	0.3
Fear of operation	1	0.3
Total	**368**	**100**

4.6Social- economic status and delivered in health facility.

Socio economic status was classified according to wealth index using principal component analysis where by women were categorized into five quintiles from lowest, second, middle, high and higher which indicates their social economic status

respectively as shown in table 10 below. There were strong association between the place of delivered and socio economic status of household(P value less than 0.001) Although 48(50.5%) of women who can afford the cost of transport when referred to other health facility delivered in health facility compared to 114 (41.8%) of who cannot afford delivered in health facility, the difference was not statistically significant.

Table 9: Socio economic characteristics and delivery in health facility (n=368)

Characteristic	**HF delivery (%)**	**Home delivery (%)**	**X^2(P-Value)**
Socio economic status			
Lowest	30(18.5)	21(10.2)	
Second	27(16.7)	69(33.5)	
Middle	42(25.6)	31(15)	20.458(0.000)
High	28(17.3)	43(20.9)	
Higher	35(21.6)	42(20.4)	
Total	**162**	**206**	

Among 368 respondents, 273(74.2) said they are not able to afford the cost of transportation when referred to another health facilities for further management and 159(58.2%) were those who delivered home. The difference of delivery in health facility among those who can afford the cost of transportation and those who cannot afford is not statistically significant.

4.7Cultural factors and delivery in health facility

The larger proportion of the respondents 359 (97.6%) reported that there is no any cultural issue concerning delivery or any traditional medicinethat must be taken before or after delivery. Only 9 (2.4%) of the respondents reported that traditionally women before delivery must take traditional medicine to enhance the process of delivery and they were given by traditional birth attendants. 82(22.3%) of

respondents said availability of traditional birth attendants in their areas whom they believed are capable of conducting delivery makes them to deliver at home.

Table 10: Factors associated with health facility delivery

Covariate	OR	95%CI	P-value
Education of respondents			
No formal education	Reference		
Adult education	8.144	1.809-36.668	0.06
Primary education	12.250	1.788-83.946	0.011
Secondary education	13.300	2.879-61.438	0.001
Religion			
Muslim	Reference		
Christian	0.353	0.24-5.231	0.449
Others	0.209	0.60-0.726	0.014
Marital status			
Married	0.244	0.106-0.562	0.01
Others	Reference		
Head of household			
Yourself	Reference		
Husband	0.480	0.199-1.154	0.101
Others	2.215	0.594-8.256	0.236
Husband occupation			
Peasant	Reference		
Pastoralist	11.60	1.432-93.956	0.022
Self employed	12.00	1.325-108.674	0.027
Employed by government	10.0	0.855-117.017	0.67
Distance to HF			
0-5 Km	Reference		
Over 5 Km	0.492	0.307-0.787	0.03

Table 10: Factors associated with health facility delivery (Continue)

Covariate	OR	95% CI	p-value
ANC visit			
1-3	Reference		
4 and above	2.575	1.681-3.946	0.000
Socio economic status			
Lowest	Reference		
Second	3.651	1.789-7.451	0.000
Middle	1.054	0.510-2.178	0.886
High	2.194	1.219-4.576	0.036
Higher	1.714	0.838-3.507	0.140

Associations that found to be significant in the bivariate analysis at a p-value <0.05 were included in the multivariate analysis to determine which factors best explained or predicted delivery in health facility.

Included variables were marital status, religion, head of house hold, husband occupation, woman education level, frequency of antenatal clinic attendance, distance from home to health facility and socio economic factors

After controlling for other factors, marital status, religion, head of household and husband occupation were not found to be significant and were excluded in the subsequent steps of analysis.

Table 11: Multivariate analysis of the predictors of delivery in health facility

Covariate	AOR	95%CI	P-value
Education of respondents	Reference		
No formal education	6.848	1.195-39.241	0.031
Adult education	5.374	0.541-53.781	0.151
Primary education	6.149	1.105-34.232	0.038
Secondary education			
Religion			
Muslim	Reference		
Christian	1.126	0.053-24.106	0.940
Others	0.374	0.085-1.652	0.195
Marital status			
Married	Reference		
Others	0.119	0.007-2.091	0.119
Head of household			
Yourself	Reference		
Husband	0.311	0.022-4.294	0.383
Others	0.283	0.27-2.908	0.288
Husband occupation			
Peasant	Reference		
Pastoralist	7.831	0.709-86.511	0.093
Self employed	6.237	0.482-80.678	0.161
Employed by government	10.573	0.585-190.980	0.110
Distance to HF			
O- 5km	Reference		
Over 5 Km	0.237	0.1300-0.432	0.000

Table 11:Multivariate analysis of the predictor of delivery in health facility (Continue)

Covariate	OR	95% CI	p-value
ANC visit			
1-3	Reference		
4 and above	2.497	1.500-4.156	0.000
Socio economic status			
Lowest	Reference		
Second	0.485	0.200-1.179	0.110
Middle	2.276	1.073-4.828	0.032
High	0.373	0.171-0.130	0.013
Higher	0.955	0.438-2.081	0.908

CHAPTER FIVE
DISCUSSION

Utilization of maternal health services in this study included women attending antenatal clinic and delivery in health facilities or assisted by trained health worker. The study also investigate on factors that affect positively or negatively delivery in health facilities among women with children less than 2 years, these factors were socio demographic characteristics, Health facility factors; socio economic factors and cultural factors.

5.1 Social demographic characteristics and delivery in health facility

Several studies show that women age, marital status, parity, level of education, family size, women occupation, husband occupation and head of household can influence the choice for place of delivery. Study in Kenya shows that women with more than one child and older were more likely to deliver at home compared to young women and with single parity, The same finding with the study done in Zambia where by 55% of women delivering in health facilities are young and 65% are those having their first baby (Shankwaya S 2008). In this study although about 52% of the women having their first baby delivered in health facilities compared to 48% of multiparous women, the difference is not statically significant. The same happen to the age of respondent, in which the finding show there is no relationship between maternal age and delivery in health facility, similarly in Uganda study after multivariate analysis the results showed that age, parity of the mother were not significant influence the place of delivery when compared with father's occupation.

Maternal education is the most important determinants for health services use (Ensor and Cooper 2004),it is argued that better educated women are more aware of health problems, know more about the availability of health care services, and use this information more effectively to maintain or achieve good health status. Various studies noted that more educated women are more likely to use skilled birth attendants than not educated women. A study in Bangladesh found that 74% of women with more than ten years of education used skilled birth attendants during delivery compared to 18% who are un educated (Anwar et al 2007). Yanagisawa in

Rural Cambodia also found the same where by women who at least seven years of school attendance being six times more likely to deliver babies at health facility than those who did not attend school (Yanagisawa 2006).

In this study 87.5% of the women with secondary education delivered in health facilities compared with 34.4% of the women who had never went to school, Further findings shows that after adjusted for confounders by multivariate analysis women with secondary education are six times more likely to deliver in health facilities compared to un educated women (AOR=6.149, 95%CI=1.105-34.232).

The findings were consistency with other studies done in different areas, study done by Mrisho in Southern Tanzania showed that mothers with primary and higher education were more likely to deliver in health facilities compared to un educated mothers, Also Lwelamira found that women with higher education in Bahi district they tend to deliver in health facility compared with those with primary or formal education (Mrisho et al 2007,Lwelamira J 2012)

Marital status may influence the choice of delivery place, probably via its influence on female autonomy and status or through financial resources. Single or divorced women may be poorer but enjoy greater autonomy than those currently married.
In this study findings show that married women were four times less likely to deliver in health facility than single mothers(OR=0.244,95%CI=0.106-0.562), Similar findings have been found by the study done in Botswana on the factors associated with non-use of maternal health services in which married women utilizes less health facility during delivered.(Letamo G et al 2003), this might be due to, Young single mothers may be cared for by their natal family, which may encourage skilled attendance, especially for a first birth and on other hand married women cannot decide on their own to seek care, but have to seek permission from a husband or mother-in-law and majority of them they lack power of controlling resources.
Wives of husbands with higher status occupations could be more able to use facilities for delivery. High status occupations are associated with greater wealth, making it easier for the family to pay costs associated with skilled delivery care.(Gabrysch & Campbell 2009).

Several studies find that higher status occupation of the husband is associated with skilled attendance at delivery. This study found that women with husband employed by government 88.9% delivered in health facilities and women married by pastoralist are eleven times more likely to deliver in health facilities compared to those married to peasants (OR=11.6, 95%CI=1.325-108.674). The same finding by Addai that farming women were less likely to have skilled attendance during delivery than other Occupation (Addai I 2000)

Women who are working and earning money may be able to save and decide to spend it on a facility delivery. In many studies women occupation is associated with place of deliver in which those with higher income are more likely to deliver in health facility compared to those of low income and sometimes it's confounding with the level of education.

In this study the difference between women occupation and delivery in health facility was not statistically significant.

5.2 Proportion of women attending antenatal clinic and delivery in health facility

Antenatal care (ANC) services provide opportunities for health workers to promote a specific place of deliver or give women information on the status of their pregnancy, which in turn informs their decisions on where to deliver. Risk assessment during ANC may explicitly recommend a place of delivery, for instance to deliver in a hospital for a twin pregnancy. Under normal circumstances, WHO recommends that pregnant mother without any complications have at least four antenatal care clinics to provide sufficient information of her own health and developing embryo. Early booking of antenatal care is important as its provides health worker with the opportunity of early detection of maternal problem and corrective measure taken immediately to get rid of them for benefit of mother and fetus.

In this study 363 (98.6%) women attended antenatal clinic at least once, this proportion is slightly higher than that of national estimate of 96% (TDHS 2010). Forty seven percent of the women who delivered within two years prior to data collection made four or more antenatal care visit, this proportion is four percent more compared to national level of forty three percent. (TDHS 2010).

The study also found that 162 (44.6%) of women attended antenatal clinic delivered in health facilities while 5 (100%) of those who had never attended antenatal clinic delivered home, Although percentage of delivery in health facility is lower than that of national level of fifty percent (TDHS 2010), After adjusted for other variables in multivariate analysis, the relationship between place of delivery and frequency of antenatal visit was strong significant as those who attended antenatal clinic at least four visit were two times more likely to deliver in health facility compared to those who attended antenatal clinic less than four times.(AOR=2.497, 95% CI=1.500-4.156, P value <0.001). The findings correlate with the study done in Rwanda where by the odds of delivering at health for women who attended ANC more than four visits were higher than those who attended only once (OR=3.63, 95%CI: 2.76-4.76)(Umurungi Y,2010).

Yanagisawa et al in Cambodia found that antenatal care was a positive determinant of facility delivery only for women who attended the service four times or more (Yanagisawa et al 2006). This might be due to the fact that during antenatal clinic visits, especially if started early, women are provided with health education and information about the benefits of delivering in health facility.

Home delivery was 206 (56.0%) which is not very high compared to study conducted in Ethiopia where by 76.4% of the deliveries assisted by untrained traditional birth attendants or by relative (Nigussie et al 2004). Out of 206 mothers who delivered at home, 202 (98.1%) were intended to deliver in health facilities and the main reasons for delivering the place where they deliver were, Lack of transport to health facility, Long distance to health facility, poor services in health facility, Negative attitude of health workers and availability of traditional birth attendants in their place to whom they thought were competent. Similarly finding had been reported by the study done in rural northern part of Tanzania in which more than ninety percent of women attending antennal clinic but less than half of them delivered in health facility (Magoma et al 2010).

5.3 Health service factors and health facility delivery

Distance is one of the determinants for place of delivery among pregnant mothers especially in rural areas where by health facilities are scarcely distributed. It is irrelevant to have health facility which is well equipped and properly staffed but not accessed by the women for delivery due to long walking distance. Ensor and Cooper noted that the use of health services decline with distance. Several study have been done in developing countries and found close relationship between distance and delivery in health facility, in this study 259(70.3%) of women lived within 5 kilometers from health facility and 127(49.0%) of them delivered in health facility while those lived far away from health facility over two third 74(67.9%) delivered home. Those who lived more than 5km from health facility were four times less likely to utilize health facility during childbirth compared to those lived within 5KMS.(OR=0.237, 95%CI=0.1300-0.432, P value < 0.001).

The preventive effect of distance in delivering at health facility is stronger when combined with lack of transport and poor roads. This study had found that 147(73.1%) of women who gave birth at home intended to deliver at health facility but due to long distance and lack of transport problem they delivered at home. Similar finding found by Mrisho in which 84% of women who gave birth at home, intended to deliver in health facility and ended deliver home due to long distance and problem of transport (Mrisho et al 2007).

In Nepal study found that women living more than one hour away from health facility are eight times less likely to use health facility during delivery (Wagle et al 2004)

Although70% of women lived closer to health facilities only 44.0% deliver in health facility; this means there were other factors which hinders delivery in health facility apart from distance. Health facility might be physically accessible by pregnant mothers but if human resource, drugs and medical equipment are not available women are not likely to deliver in health facility.

Human resources for health is still challenging in developing countries including Tanzania where by only 35% of required health workers are in place with deficit of

65% of health staff. Apart from deficit, there is mal distribution of the available with skilled staff more in urban area and rural area remained with few and unskilled staff. The study has found that 33(17.3%) of women who intended to deliver at health facility they gave birth home due poor services and unfriendly services at health facility. A study by Sara Shankwaya in Zambia found that 32% of women said they would not deliver in health facility because of shortage of staff (Shankwaya S 2008). Shortage of staff discourages women to use health facility for delivery.

On the other hand, even if competent staffs are available, they cannot use their skills without medical supplies and equipment's. The study found that 122 (65.2%) Of the women were not satisfied with the services at health facilities due to shortage of medical equipment, drugs and supplies.

In a qualitative study by Mrisho in southern Tanzania some women ended up delivering at home due to inadequate of essential drugs and supplies in public health facility and forced to purchase it for delivery. One women during group focus discussion said she heard from the radio that delivery in government health facilities are free of charge but when you went there your asked to buy everything(Mrisho 2007). In Uganda due to inadequate drugs, Medical equipment and supplies, despite of good policies and efforts, the use of health facility for delivery did not rise (Kyomuhendo 2003).

5.4 Socio-economic status and delivery in health facility

House hold financial capacity is one of the major factors in the determination of place of delivery, and this depends on mother occupation and husband occupation. Wives of husbands with higher status occupations could be more able to use facilities for delivery. High status occupations are associated with greater wealth, making it easier for the family to pay costs associated with skilled delivery care (Gabrysch & Campbell 2009).

Several studies found that women with higher socio economic status were associated with skilled attendance during delivery. This study found that women with middle socio economic status were two times more likely to deliver in health facility

compared to those with lowest socio economic status. (AOR=2.276, 95%CI=1.073-4.828,). Similar finding with the study done by Mrisho whereby least poor women were more likely to deliver in health facility than poorest (RR=1.07, 95%CI=1.03-1.43). The study conducted by Lwelamira in Bahi district in Tanzania also has similar findings where by the odds of delivery in health facility was higher in women with high income group compared to those with lower income group(OR=2.3 CI=1.23-3.97) (Lwelamira J 2012). In Rwanda study reported that socioeconomic status of household was stronger predictor of woman decision to deliver at health facility where by probability of poor to deliver at home where much higher than wealthier (OR=4.37,CI=3.43-5.56) (Urumungi Y, 2010)

5.5 Social cultural factors and delivery in health facility

Social cultural factor primarily influence the women decision making whether to seek care or not rather than affecting women to reach health facility. Many studies reported some traditional belief that affect the choice for place of delivery, A study in northern part of Tanzania found that women belief that normal delivery should be conducted at home and delivery at health facilities are beneficial for those with complications only (Magoma 2010).

In this study 82 (22.3%) responded that presence of TBAs in their area makes women to deliver at home, they believe that they are capable of conducting delivery. This is similar to the findings obtained by Magoma that traditional births attendants are the ones who determine the place of delivery among Masai tribe and they also arrange for the kind of diet required by the women after deliver (Magoma M 2010).

In contrary to other studies done Tanzania by Mrisho were by labour was kept secret because any complications develops it means the women is adulterous and remedy for that is to mention all men have slept with her(Mrisho M 2007) and Zambia where by community believed that placenta must be buried in certain manner for a women to continue bearing children,this is contrarily to health facilities where placenta is burned by incinerator (Shankwaya S 2008), In this study, no any traditional belief found that hinders delivery in health facility.

5.6 Study limitations.

There is a possibility of recall bias in the study, some of the respondents were unable to recall well the various information concerning antenatal clinic visits so MCH card were used to get the real information.

The questionnaire were administered by health workers in the field area, there may be some chances of reporting wrong data to please the researcher. The magnitude of these chances of biases could not be directly and easily established.

CHAPTER SIX
CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Maternal health care services provided by well trained and equipped health workers is widely recognized as an important protective factor against maternal and new borne morbidity and mortality. In Nkasi district the proportion of women attended antenatal clinic at least once is higher (98.6%) however delivery in health facility was still low (44.0%) compared to National target of 80%, the findings was higher compare to findings by Tanzania demographic survey of 2010 which was 30% for Rukwa region.

The results from both bivariate and multivariate logistic regression analysis confirmed the strong significant the association between women education, distance to health facility and frequency of antenatal care visit with delivery in health facility.
Delivery in health facility increased with increase the level of education and by increased the number of antenatal care visits, but decreased as the distance between health facility and home increases.

In this study, age of the woman, marital status, parity and head of household had no significant association with delivery in health facility.
Maternal health services need to continuously sensitize the community so that the number of pregnant mother delivered in health facility increased to attain the National target.

6.2 RECOMMENDATIONS

Based on the results of this study, the following recommendations are made:

- Improving education among girls, especially beyond primary school needs to be strong encouraged by the Government as education has an impact on the women decision on the place of delivery.
- Strengthen the effort to improve accessibility of health facilities in the rural areas by increasing the number of health facilities as well as transport.
- Early booking of antenatal care clinic and completion of more than four visits need to be promoted at community level as those attending antenatal clinic early acquire enough information about safe delivery and majority of those attending more than four visit ending up deliver in health facility.
- A qualitative study approach using in depth interview or focus group discussions need to be conducted and should involve health provider to have deeper understand of factors affecting delivery in health facility.

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APPENDICES

APPENDIX 1: Informed consent, English version.

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS,MUHAS

CONSENT FORM.

ID-No:

Consent to participate in the study

Greetings, I ……. From Muhimbili University and Allied sciences am working on this research project …… As one of the workers in such units, I would like to talk to you about this issue.

Purpose of the study

The purpose of the study is to collect information on utilization and factors that affect delivery in health facilities among recent delivered women in Nkasi district. You are being asked to participate in this study because you have particular knowledge and experiences that may be important to the study.

What participation Involves

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

1. You will sit with a trained interview and answer questions about utilization and factors affecting delivery in health facilities. Your comments will be acted upon to improve the situation in this area.
2. You will be interviewed only once for approximately 20-30 minutes in a private setting.
3. No identifying information will be collected from you during this interview, except your age, marital status and level of education.

Confidentiality

I assure you that all information collected from you will be confidential. Only individuals working with me in this research will have access to the information. We

will be compiling a report, which will contain your responses without any reference to individuals. We will not put your name or other identifying information on the records of information you provided. You may refuse to answer any particular question and may stop the 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 the 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 penalty or loss of any benefits to which you are otherwise entitled.

Benefits

The information you provided will help to find out factors that affect delivery in health facilities in Nkasi district and we hope to communicate findings to decision marker at the district and region level to plan and implement interventions that will help to improve this condition.

In Case of Injury

We do not anticipate that any harm will occur to you or your family as a result of participation in this study.

Who to contact

If you ever have questions about this study, you should contact Principal Investigator, **Gwamaka Samson**, Muhimbili University of Health and Allied Sciences (MUHAS), P.O. Box 65001, Dar es Salaam.

If you have questions about your right as a participant, you may call **Prof. Aboud M**, Chairman of the College Reasearch and Publications Committee, P.O. Box 65001, Dar es Salaam. Tel: 2150302-6 and **Dr David P. Urassa** who is the supervisor of this study.

Signature:

Agreement of the Participant

Do you agree?

Yes ☐

No ☐

I …….. have read and understood the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participants ……..

Signature of research assistant……..

Date of signed consent …….

APPENDIX 2: Informed consent Swahili Version

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS

FOMU YA RIDHAA

Namba ya utambulisho

Ridhaa ya kushiriki katika utafiti huu

Habari! Jina langu naitwa…… kutoka chuo kikuu cha Muhimbili, nafanya kazi katika mradi huu wa utafiti wenye lengo la kujua sababu zinazofanya wakina mama kutojifungulia kwenye vituo vya kutolea huduma za afya wilaya ya Nkasi.

Malengo ya Utafiti

Utafiti huu una lengo la kukusanya taarifa juu ya matumizi na sababu zinazofanya wakina mama kutojifungulia kwenye vituo vya kutolea huduma za afya kwa wanawake waliojifungua siku za karibuni.Unaombwa kushiriki katika utafiti huu kwa sababu una uelewa wa kutosha ambao unaweza kuwa muhimu katika utafiti huu.

Ushiriki

Ukikubali kushiriki katika utafiti huu yafuatayo yatatokea

Utakaa na mtafiti aliyepewa mafunzo ya jinsi ya kuhoji na kujibu maswali yahusuyo sababu zinazofanya wanawake kutojifungulia katika vituo vya kutolea huduma za Afya. Mapendekezo yako yatasaidia kuboresha hali iliyopo.

Utahojiwa mara moja tu kwa muda usiozidi dakika 30

Hakuna taarifa zozote za utambulisho zitakazokusanywa wakati wa usaili isipokuwa umri, hali ya ndoayako na kiwango cha Elimu.

Usiri

Nakuhakikishia kwamba taarifa zote zitakazokusanywa kutoka kwako zitakua ni siri,Ni watu wanaofanya kazi katika utafiti huu tu ndio wanaweza kuziona taarifa

hizi. Hatutaweka jina lako au taarifa yoyote ya utambulisho kwenye kumbukumbu za taarifa utakazotoa.

Haki ya kujitoa na mmbadala wowote

Ushiriki katika utafiti huu ni haki yako,kama utachagua kutoshiriki au utaamua kusimamisha kushiriki hutapata madhara yoyote. Unaweza kusimamisha kushiriki katikautafiti huu muda wowote hata kama ulisharidhia kushiriki.Kukataa kushiriki au kujitoa kushiriki katika utafiti hakutasababisha adhabu yoyote au upotevu wa faida yoyote unayotakiwa kupata.

Faida

Taarifa unazotupa zitatusaidia kujua sababu zinazofanya wakina mama kutojifungulia kwenye vituo vya kutolea huduma za Afya wilaya ya Nkasi.Na matokeo ya utafiti yatapelekwa kwa viongozi wa Wilaya na Mkoani ili wawezi kupanga mipango ya jinsi ya kuboresha hali hii.

Endapo utadhurika

Hatutegemei madhara yoyote kutokea kwa kushiriki kwako katika utafiti huu.

Watu wa kuwasiliana nao

Kama una maswali katika utafiti huu unaweza kuwasiliana na Mratibu Mkuu wa mradi **Gwamaka Samson**,chuo kikuu cha Muhimbili, S.L.P 65001, Dar es Salaam.

Kama utakua na maswali yoyote kuhusu haki zako kama mshiriki unaweza kupiga simu kwa **Prof.M. Aboud** ambaye ni Mwenyekiti wa kamati ya chuo ya utafiti na machapisho, S.L.P 65001 Dar es Salaam, simu namba: 2150302-6. Na **Dr David.P. Urassa** ambaye ni msimamizi wa utafiti huu.

Sahihi

Unakubaki?

Ndiyo

Hapana

Mimi …….. nimesoma / nimeielewa fomu hii na maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki ……

Sahihi ya mtafiti msaidizi ……..

Tarehe ya makubaliano …….

Appendix 3: English version questionnaire

HOUSEHOLD SURVEY QUISTIONNAIRE FOR MOTHER WHO DELIVERED WITHIN THE LAST 2 YEARS

Screening question. Ask if there is any woman in the house hold who delivered within the last 2 years. If yes continue with the interview, if no thanks her and go to another house hold.

Interview No……

Name of the village……

Date of the interview…….

1. How old are you? ……

Date of birth/ years

2. Do you know to write and read?

1. Yes

2. No

3. If yes, what is the level of education that you have attained?

1. No formal education

2. Adult education

3.Primary education

4. Secondary education

5. Collage education

6. Other specify …….

4. What is your religion?

1. Muslim

2. Christian

3. Other specify ……

5. To which tribe do you belong? …….

6. What is your marital status?

1. Single

2. Married

3. Divorce

4. Widow

5. Separated

7. What is your occupation?

1. House wife
2. Peasant
3. Pastoralist
4. Self employed
5. Employed by Government
6. Other specify…….

8. What is your husband's Occupation?

1. Peasant
2. Pastoralist
3. Self employed
4. Employed by Government
5. Other specify ……

9 .How many children did you give birth? ……

10. How many people are living with you in your house hold? ……

11. Who is the head of the house hold?

1. Yourself
2. Your husband
3. Other specify ……..

12. When did you have your last birth? …….

13. Have you ever attended Antenatal clinic in your last pregnancy?

1. Yes
2. No (If no skip to question 15)

14. If yes, how many times did you attended in the last pregnancy? ……

15. If no why?

1. I didn't see any importance of antenatal clinic
2. Long distance to health facility from home.
3. High cost of services.
4. Bad behavior of health workers
5. Other specify …….

16. Where did you deliver your last baby?

1. Own home
2. TBA's home
3. Health facility
4. Other specify ……

17. Was that the place you intended to deliver?
    1. Yes (if yes skip to question number 20)
    2. No

18. If no where did you intended to deliver?
    1. Own home
    2. TBA's home
    3. Health facility
    4. Other specify ……

19. What are the reasons that made you to deliver the place you had delivered?
    1. Lack of transport to health facility
    2. Long distance to health facility
    3. Sudden onset of labour
    4. Bad behavior of health workers
    5. Poor belief to modern medicine
    6. Other specify …….

20. Does the household own which of the following?
    1. Radio
    2. Television
    3. Fridge
    4. Phone
    5. Bicycle
    6. Motor bike
    7. Car
    8. Farm
    9. House

21. What is the means of transport when a pregnant mother referred to district hospital?
    1. Own transport

2. Public transport

3. Ambulance

4. Other specify ……..

22. Are you able to afford the cost of transport when referred to another health facility?

1. Yes

2. No

23. If yes what will you do to get money to reach a required health facility?

1. Borrowed money from neighbor/ friend

2. Sell property

3. Sell a piece of land

4. Refuse referral

24. On average how far is the health facility from your home?

1. Kilometers…….. 2. Hours ……..

25. Are you happy with the services provided at your health facility?

1. Yes (If yes skip to question 27)

2. No

26. If no, what things make you unhappy with the services provided at your facilities?

1. No drugs and supplies

2. Bad behavior of health workers

3. Lack of privacy

4. Other specify …….

27. What makes women not deliver in the nearby health facility?

1. Sudden onset of labour

2. Bad behavior of health workers

3. Long distance to health facility

4. Presence of TBA's

5. Other specify …….

28. Is there any traditional habit in your community that should be done before delivery?

……

……
……

29. Is there any traditional issue that prevents women to deliver in health facilities at community?

……
……
……

30. What is your recommendation for improving services in your health facility?

1. Increase number of health workers
2. Improve availability of drugs and supplies
3. The health workers should respect the women
4. We need ambulance
5. Other specify ……..

Appendix 4: Swahili version questionnaire

DODOSO KWA AKINA MAMA WENYE WATOTO CHINI YA MIAKA MIWILI

Utangulizi: Asante kwa kukubali kuongea nami kwa siku ya leo, Nitapenda kukuuliza maswali machache juu ya masuala ya ujauzito na kujifungua.

Swali la mchujo; Je mama umewahi kujifungua katika kipindi cha miaka miwili iliyopita? Kama ndiyo endelea kumhoji na kama hapana mshukuru na nenda kaya nyingine.

Dodoso namba……

Jina la kijiji …….

Tarehe ya mahojiano ……..

1. Je una miaka mingapi? .....

   Tarehe ya kuzaliwa/ miaka

2. Je unafahamu kusoma na kuandika?

   1. Ndiyo

      2. Hapana

3. Kama ndiyo ni kiwango gani cha juu cha elimu uliyonayo?

1. Sijasoma madarasani
2. Elimu ya watu wazima
3. Elimu ya Msingi
4. Elimu ya sekondari
5. Zaidi ya Elimu ya sekondari (chuo)

4. Je wewe ni muumini wa dhehebu gani?

   1. Muislamu
   2. Mkristo
   3. Mengineyo (Taja)…….

5. Wewe ni kabila gani? …….

6. Ni ipi hadhi yako ya ndoa kwa sasa?

   1. Sijaolewa
   2. Nimeolewa

3. Mtaliki
4. Mjane
5. Mmetengana

7. Wewe unafanya shughuli gani?
    1. Mama wa nyumbani
    2. Mkulima
    3. Mfugaji
    4. Nimejiajiri mwenyewe
    5. Nimeajiriwa na serikali
    6. Nyinginezo taja

8. Mume wako anafanya shughuli gani?
    1. Mkulima
    2. Mfugaji
    3. Nimejiajiri mwenyewe
    4. Nimeajiriwa na serikali
    5. Nyinginezo taja ……

9. Umeshawahi kuzaa mara ngapi? ……..

10. Ni watu wangapi mnaishi nao kwenye kaya yenu? ……

11. Nani Mkuu wa kaya yenu?
    1. Wewe mwenyewe
    2. Mumeo
    3. Mwingine (mtaje) ……

12. Mara ya mwisho umejifungua lini? …….

13. Je umewahi kuhudhuria kliniki wakati wa ujauzito wako wa mwisho?
    1. Ndiyo
    2. Hapana (kama hapana nenda swali namba 15)

14. Kama ndiyo, Ni mara ngapi ulihudhuria kliniki wakati wa ujauzito wako wa mwisho?.....

15. Kama hapana ni kwanini hukuhudhuria kliniki?
    1. Sikujua umuhimu wa kuhudhuria kliniki
    2. Kituo cha Afya kipo mbali kutoka nyumbani kwangu.
    3. Gharama kubwa za matibabu

4. Tabia mbaya za watumishi wa Afya
5. Sababu nyingine (Taja) ……..

16. Je umejifungulia wapi mtoto wako wa mwisho?
    1. Nyumbani kwangu
    2. Nyumbani kwa mkunga wa jadi
    3. Kituo cha Afya
    4. Sehemu nyingine (Taja)……..

17. Je ni mahali hapo ndipo ulipokusudia kujifungulia?
    1. Ndiyo (Kama ndiyo nenda swali la 20)
    2. Hapana

18. Kama hapana ni mahali gani ulikusudia kujifungulia?
    1. Nyumbani kwangu
    2. Nyumbani kwa mkunga wa jadi
    3. Kituo cha Afya
    4. Sehemu nyingine (Taja)……..

19. Je ni sababu zipi zilikufanya ujifungulie sehemu uliyojifungulia?
    1. Uchungu ulianza ghafla
    2. Kituo cha Afya kipo mbali kutoka nyumbani kwangu.
    3. Gharama kubwa za matibabu
    4. Tabia mbaya za watumishi wa Afya
    5. Siamini kama huduma za afya ni bora
    6. Sababu nyingine ……

20. Je kaya hii ina miliki chochote katika zifuatazo? Weka alama ya vema

1. Radio
2. Television
3. Simu
4. Friji
5. Baiskeli
6. Pikipiki
7. Gari
8. Shamba
9. Nyumba

21. Mama mjamzito anapopewa rufaa kwenda sehemu nyingine mnatumia usafiri gani?

1. Usafiri binafsi
2. Usafiri wa jumuiya
3. Gari la wagonjwa
4. Usafiri mwingine (Taja) ……..

22. Je una mudu gharama za usafiri unapopewa rufaa kwenda sehemu nyingine?

1. Ndiyo
2. Hapana

23. Kama hapana, unafanyaje ili upate fedha za kwenda mahali ulipopewa rufaa?

1. Naazima fedha toka kwa jirani / rafiki
2. Nauza vitu
3. Nauza kipande cha Ardhi
4. Sitoenda nilipopangiwa kwenda.

24. Kwa wastani kuna umbali gani toka nyumbani kwako kwenda kituo cha Afya?

1. Kilometa……. 2. Masaa ……

25. Je unaridhika na huduma za Afya katika kituo chako cha Afya ?

1. Ndiyo (kama ndiyo nenda swali la 27+)
2. Hapana

26. Kama hapana ni kitu gani kinakufanya usiridhike na huduma za Afya katika kituo chako?

1. Upungufu wa dawa na vitendanishi.
2. Tabia mbaya ya watoa huduma
3. Hakuna usiri (privacy)
4. Sababu nyingine zitaje …….

27. Je ni kwanini akina mama wengi hawajifungulii kwenye vituo vya Afya?

1. Uchungu wa ghafla
2. Tabia mbaya ya watoa huduma za Afya
3. Umbali toka nyumbani mpaka kituoni
4. Uwepo wa Wakunga wa jadi
5. Sababu nyingine taja ……..

28. Je kuna utaratibu wowote wa kimila ambao ni muhimu kufanyika kabla hajaenda kujifungua?……

29. Je kuna sababu zozote za kimila zinazofanya wanawake wasijifungulie kwenye vituo vya Afya ? …….

30. Una maoni gani ili kuboresha huduma za Afya kwenye kituo chako cha Afya?

1. Kuongeza idadi ya watumishi
2. Kuongeza idadi ya dawa na vitendanishi
3. Watumishi wa Afya wanatakiwa kuheshimu akina mama.
4. Tunahitaji gari la wagonjwa
5. Nyingine (Taja) ……..