

**PRIMARY CAESAREAN DELIVERIES: PREVALENCE,
INDICATIONS AND MANAGEMENT OUTCOMES
AMONG PREGNANT WOMEN WHO DELIVER AT
IRINGA REGION REFERRAL HOSPITAL**

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**MASTER OF MEDICINE IN OBSTETRICS AND
GYNAECOLOGY**

THE UNIVERSITY OF DODOMA

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REFERRAL HOSPITAL**

BY

ERICK AUGUSTINO MBUNGA

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR AWARD OF THE MASTER OF
MEDICINE IN OBSTETRICS AND GYNECOLOGY OF THE
UNIVERSITY OF DODOMA**

THE UNIVERSITY OF DODOMA

OCTOBER, 2018

DECLARATION

AND

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I, **Erick AugustinoMbunga**, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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DEDICATION

This research report is dedicated to my mother AlexadriaKaberege, my late father Dustan Mbunga, my brother Dickson Mbunga and Dr Emmanuel Kusekwa for inspiration, love and support throughout my journey of studying and for making everything possible.

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dodoma dissertation entitled; **“Primary Caesarean Deliveries: Prevalence, Indications and Management Outcomes Among Pregnant Women who Deliver at Iringa Region Referral Hospital”**, in partial fulfilment of the requirements for the degree of master of medicine in obstetrics and gynecology of the University of Dodoma.

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Signature of supervisor..... Date.....

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Being not mentioned likewise, it does not mean that I do not appreciate and value your contribution, but rather you are a very important person in my life.

However, it should be noted that any shortcomings of this research entirely belong to me

ABSTRACT

Background: Primary caesarian section is an operation that is performed for the first time on a pregnant woman. Primary caesarean section is of particular interest because it has an influence on future modes of delivery and is of concern as to what was the indication for procedure in a woman who has never tried her pelvis for vaginal delivery.

Objectives: The study intended to determine; prevalence, indications, management outcomes of primary caesarean deliveries and association with some demographic characteristics among pregnant women who deliver at Iringa Region Referral Hospital, Southern Highlands of Tanzania.

Methods: It was an analytical cross section hospital based study with quantitative research approach. A purposive sampling technique was employed for achieving a sample size of 247 of primary caesarian deliveries. A structured questionnaire was the main data collection method and the Statistical Package for Service Solution (v. 23) software program was used for data entry and analysis.

Results: Prevalence rate of primary caesarean delivery was 247 (21.59%) out of 1144 deliveries during the study period. Findings revealed that the highest indication for caesarian section was fetal distress 79 (32.0%) followed by prolonged labor 65(25.1%). Maternal management outcomes revealed that 65 (26.3%) women experienced blood loss followed by 29 (11.7%) who experienced high body temperature. The new born management outcomes found that 128 (51.8%) were unable to breast feed and 95(38.5%) had low Apgar score. A logistic regression analysis revealed that women with primary and college/university education were more likely to undergo primary caesarian section ($P<0.05$).

Conclusion: There was high prevalence of primary caesarean section among prime and multiparous women which is beyond the recommended WHO threshold of 15%. Also, highest indication for primary c/s was fetal distress; highest complication for mother was significant blood loss and newborn management outcome was unable to breastfeed.

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LIST OF ABBREVIATIONS

AGOTA	Association of Gynecologist and Obstetricians of Tanzania
APGAR	Appearance, Pulse, Grimace, Activity, and Respiration
APH	Antepartum Hemorrhage
BOH	Bad obstetric History
CMQCC	California Maternal Quality Care Collaborative Toolkit
CS	Caesarean Section
GA	Gestational Age
IRRH	Iringa Regional Referral Hospital
LSCS	Lower segment caesarean section
MMR	Maternal Mortality Ratio
MOH	Ministry Of Health
MOHCDEC	Ministry Of Health Community Development Elderly And Children
NMR	Neonatal Mortality Rate
OR	Odds Ratio
PPH	Post-partum hemorrhage
PROM	Premature Rupture Of Membranes
SD	Standard Deviation
SMDG	Sustainable Millennium Development Goal
SPSS	Statistical Package for Social Solution
THDR	Tanzania Human Development Resource
UDOM	University Of Dodoma
USA	United States of America

WHO

World Health Organization

OPERATIONAL DEFINITION

Gestation	The state of being pregnant
Gestation period	Age of pregnancy in weeks
Gravida	Woman who is or has been pregnant, regardless of pregnancy outcome
Primigravida	The state of being pregnant for the first time
Multigravida	The state of being pregnant more than once
Parity	Refers to the number of times a woman has given birth
Primipara	Woman who has completed one pregnancy to the period of viability regardless of the number of infants delivered and regardless of the infant being live or stillborn
Multipara	Woman who has completed two or more pregnancies to the stage of viability
Postpartum haemorrhage	Blood loss following delivery which leads to hemodynamic instability in which a woman changed soaked pads more four times within six hours or transfused atleast one unit of blood.
Signs of wound infection	A state which the wound become swollen and produces pus
High body temperature	This is a condition of rise of body temperature more than twenty four hours post-delivery above 37.5 degrees of centigrade

CHAPTER ONE

INTRODUCTION

Caesarean section is the surgical procedure in which a fetus is derived through an incision in the mothers' abdomen and uterus. It's called a primary caesarian section when it's done for the first time on a pregnant woman (WHO, 2015). Primary caesarean section is of particular interest because it has an influence on future modes of delivery and is of concern as to what was the indication for procedure in a woman who has never tried her pelvis for vaginal delivery.

It's a global concern because caesarian births are increasing (World Health Organization Human Reproduction Programme, 2015) and has short and long term maternal and newborn risk (Bayou, Mashalla, & Thupayagale-Tshweneagae, 2016; Nilsen, Østbye, Daltveit, Mmbaga, & Sandøy, 2014). These include post-caesarean infection, dangerous bleeding, increased need for blood transfusion, breathing problems among newborns, long hospital stay, risk of problems for future pregnancies, risk of uterine rapture for the subsequent pregnancies and maternal and newborn deaths (WHO, 2015).

Caesarean delivery is the most commonly performed operation nowadays because of its health potentials of being one among the life-saving obstetric procedures to both the mother and the fetus by preventing poor obstetric outcomes (WHO, 2015). In spite of the increased safety following introduction of good anesthesia, blood transfusion facilities, and antibiotic prophylaxis, the rate of caesarean section procedures has been dramatically increased with its indications being liberalized to include fetal distress, dystocia, placenta Previa, as well as Bad Obstetric History (BOH) (Bayou et al., 2016).

It is ethically and professionally known that, caesarean section is considered a safer alternative to prolonged and difficult vaginal operative delivery as it helps to reduce maternal and perinatal mortality and morbidity rates (Desai et al., 2013). As defined by WHO (WHO, 2015), caesarean section is a surgical procedure in which a fetus is delivered through an incision in the mother's abdomen and uterus.

There is a growing concern on the increasing percentages of the procedure globally against the World Health Organization recommended threshold of 15% as the risks and cost associated with caesarean deliveries are significant (WHO, 2015). Literature shows that, caesarean deliveries and maternal and neonatal outcomes are significantly positively associated (Bayou et al., 2016).

Despite the introduction and utilization of modern technology like biophysical profile, cardio topography, there is an increased caesarean section rate with numerous other medical, social, economic and medico-legal factors which are responsible for the alarmingly high rate of caesarean section all over the world (Desai et al., 2013). The WHO's recommendation is that caesarean including primary caesarean sections should be kept at less than 15% at population level (WHO, 2015).

Although there is improved antenatal care and antepartum fetal surveillance techniques, The use of classification methods like ten-group Robson classification which is currently widely used in other countries, rising rates of elective induction of labor, decline in operative vaginal deliveries, and vaginal breech deliveries, there is an increased number of women with pregnancies after 30 years with associated

medical complications who could in one way or another need an appropriate obstetric intervention (Desai, Leuva, Leuva, & Kanani, 2013).

Obstetric complication like Antepartum Hemorrhage (APH), mal-presentations, obstructed labor, are common in prime gravida but more in multigravida which must be seriously considered (Desai et al., 2013). Prime-gravida and multipara may still have cephalo-pelvic disproportion even after previous delivery of a full term-child vaginally because the fetus tends to increase in size with multiparity in which there must be a careful estimation of the fetal size and head size. In multiparous patients, mal-presentations are favored by a pendulous abdomen and lordosis of the lumbar spine and in all case that is usual for the head not to engage in the pelvis until the onset of labor (Litorp, Kidanto, Nystrom, Darj, & Essén, 2013).

It is a wrong belief amongst the public that once a mother delivers her child normally, all following deliveries will be normal. Such a belief makes multiparous mothers to rarely attend routine antenatal checkups. It is for this reason that attention has been directed to the indication for caesarean section in women who had previously delivered vaginally (Mazzoni et al., 2011). If the trend continues, it worsens the maternal and newborn complication and thus fails to achieve the Sustainable Development Goals 2030. Therefore, this study was designed to determine the Primary caesarean deliveries: prevalence, indications and management outcomes among pregnant women who deliver at Iringa Region Referral Hospital.

1.1 Statement of the problem

The rise of cesarean section rates in high and in middle as well as lower income countries has been described in the literature to exceed the World Health

Organization threshold of 15% (WHO, 2015). Moreover, the rates among African countries range from 0.6% - 18% (Worjolah, 2012). Tanzania as one among the developing countries cannot be excluded from the progressive burden of maternal and newborn morbidity and mortality rate. Maternal deaths in the country count a ratio of 578 per 100,000, representing 18% of all deaths of women with age 15-49 years. The main direct causes of maternal deaths have been discussed to be haemorrhage, infection, unsafe abortion, hypertensive disorders and obstructed labor (WHO, UNICEF, UNFPA, 2015). This has led to increased rates of CS rates in Tanzania too (Pembe et al, 2010) with the aim of reducing the mortality and morbidity due to direct causes. When medically justified, caesarean section can effectively prevent maternal and perinatal mortality and morbidity if it is appropriately opted; otherwise it can be associated with short and long-term risks, complications and costs which can affect the health of the woman, her child, and future pregnancies.

Despite the fact there are local and AGOTA recommendations used as guide line for C/section delivery, but they are not posted on the wall as a criteria used to opt for primary caesarean delivery and its benefits among prime-gravida and multiparous women due to the scarcity of locally available data in Tanzania. This study intends to determine prevalence, indications and management outcomes of primary caesarean deliveries among pregnant women who deliver at Iringa region referral hospital Tanzania because the trend of primary caesarean section to prime-gravida and multiparous women is progressively increasing.

1.2 Objectives

1.2.1 Broad objective

To determine prevalence indications and management outcomes of primary caesarean deliveries among pregnant women who deliver at Iringa region referral hospital Tanzania

1.2.2 Specific objectives

- i. To determine the prevalence of primary caesarean deliveries among prime and multiparous women at Iringa regional Referral hospital Tanzania.
- ii. To determine the indications of primary caesarean deliveries among prime and multiparous women at Iringa regional hospital Tanzania.
- iii. To determine the fetal and maternal management outcomes of primary caesarean deliveries among prime and multiparous women at Iringa regional hospital Tanzania.
- iv. To determine the association between mode of delivery and some demographic characteristics among prime and multiparous women at Iringa Regional Referral Hospital.

1.2.3 Research questions

- i. What is the prevalence of primary caesarean deliveries among prime and multiparous women at Iringa regional referral hospital Tanzania?
- ii. Which indications are used for caesarean deliveries among prime and multiparous women at Iringa region Referral Hospital Tanzania?
- iii. What are the fetal and maternal management outcomes of caesarean deliveries among prime and multiparous women at Iringa region Tanzania?

- iv. What is the association between mode of delivery and some demographic characteristics of the respondents?

1.3 Significance of the study

The study findings will help higher authorities including, policymakers, hospital administrators and other health stakeholders restructure and develop clinical guidelines to address the issue of increased prevalence rate of primary caesarean delivery. This will ultimately help to improve obstetric care services among prime and multiparous women. Moreover, the findings of the present study would help high authorities to develop long term strategies to address the issue of increased rate of multiparous women who undergo primary caesarean section.

The study will also help nurses, clinicians/physicians to be aware of management outcomes that can be resulted from primary caesarean deliveries and sound clinical decisions and judgments and understand how to manage prime and multiparous who develop maternal complications after caesarean deliveries. Moreover this study will add knowledge to the existing obstetrics and gynecology literatures.

Little had been discussed on the prevalence, indication of primary CS on maternal and neonatal outcomes among multiparous women in Tanzania. The 2010 Tanzania Demographic and Health Survey (TDHS) showed that CS was more common in women living in urban compared to rural areas due to better health services allocated in town (Desai et al., 2013).

CHAPTER TWO

LITERATURE REVIEW

Literature Review

Prevalence of primary cesarean deliveries among prime and multiparous women

The total worldwide rates of CS were 15%, encompasses of 21.1% in high income countries, middle countries rates were 14.3% and in low income countries, the rate of CS was 2% (Landon, 2004).

American College of Obstetricians and Gynecologists conducted a study and concluded that Cesarean delivery rates in the United States were at the highest levels ever, with more than 1.3 million cesarean deliveries (32.9% of all births) performed in 2009.

In a similar study done in Southern Africa the rate was higher as 14.5%, Northern Africa being 7.6%, Western Africa 1.9%, Central Africa 1.8% and Eastern Africa was 2.3% (Landon, 2004). A study conducted by Boyle, Reddy and Landy, (2009) revealed that the primary caesarean delivery rate was 30.8% for Primeparous women and 11.5% for multiparous women.

A study from Nigeria on vaginal birth after one previous CS in a tertiary institution showed that there was a continuous rise in CS rates (9.4% to 34.6%) though no evidences were revealed on the effect of primary CS on maternal and neonatal outcomes among multiparous women (Litorp, Kidanto, Nystrom, Darj, &Essén 2013).

On the other hand, in Kilimanjaro region in the Northern Zone of Tanzania, the CS level was more than double of the national level and increased from 7.5% in 2005 to 11% in 2010. Increased levels of CS up to 49% were seen at some Tanzanian hospitals. (Nyamtema et al., 2016).

Indications of primary caesarean deliveries among prime and multiparous women

The discussed points among the contributing medical factors were increasing maternal age, increased body mass index of the pregnant mothers additional to changes in obstetric practice and technology. Among non-medical factors for rise of CS were the requests by the pregnant mothers and improper organization of maternity care (Shaikh, Mehmood, & Shaikh, 2010). It has also been an economic burden to the families of those mothers and health facilities involved in conducting those procedures (Abdallah, 2010). This implies that there should be an attempt to avoid further unnecessary increase in CS rates by any means.

A study conducted by Festin et al on women who underwent primary caesarean section in South East Asian countries concluded that the indications for caesarean sections were cephalopelvic disproportion (6.3%), abnormal presentations (4.7%) and fetal distress (3.3%). A study conducted by Geissbuehler and Eberhard on women who had caesarean section in Switzerland, (2002) concluded that fear of pain was expressed by 39.8% of women.

A study conducted by CMQCC (2010) concluded that the medical indications that account for the majority of primary cesarean deliveries are labor complications that is, either dystocia or failure to progress in labor and these indications not only

account for most of the rise in rates over the past decade but are also responsible for 80 to 90 percent of the variation in first-birth cesarean delivery rates among hospitals and providers. Seventy percent of all CS were emergency operations while elective caesarean section was performed in 30% (Worjolah et al., 2012).

Boyle, Reddy and Landy, (2009) conducted a study and revealed that the most common indications for primary cesarean delivery were failure to progress (35.4%), non-reassuring fetal heart rate tracing (27.3%), and fetal mal-presentations (18.5%), although frequencies for each indication varied by parity.

A study which was done on fetal outcome in primary caesarean section in multiparous women by Emma L Barber et al concluded that primary caesarean births accounted for 50% of the increase in caesarean rate and by Thompson (2002), on women who underwent caesarean section in UK, concluded that 7.3% of all primary caesarean sections were performed at maternal request. The other main indications of primary C/S include fetal distress (35%) and pre-eclampsia (14%) Saha L & Chowdhury SB.

Fetal and maternal management outcomes of caesarean deliveries among prime and multiparous women

Perinatal mortality was found to be 4%. Most of the patients (69%) were discharged from hospital within 8 days of operation (ACOG, 2009).

In Kilimanjaro region in the Northern Zone of Tanzania study done by (Nyamtema et al., 2016) observed negative effects, such as increased levels of uterine rupture, while the impact of this intervention in improvements in the stillbirth rate and

maternal mortality ratio were not seen (Nyamtema et al., 2016). The majority of the babies were born with good APGAR score (88%) (Worjolah et al., 2012). This was comparable to a study done in India at Gandhi hospital on Primary caesarian section which showed that, Neonates delivered in second stage by cesarean section had good APGAR in 73.33% compare to 93.4% of neonates delivered in first stage cesarean section (Shobha, 2016).

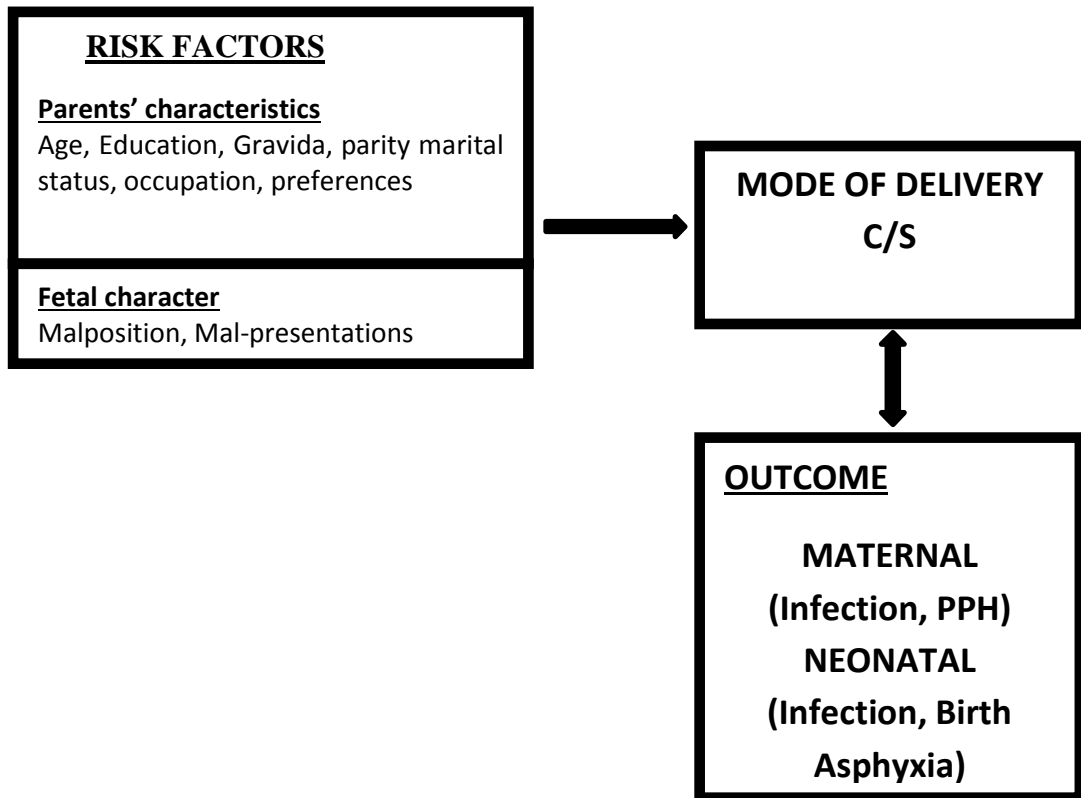
Association between mode of delivery and some demographic characteristics among prime and multiparous women

Tanzania has major unmet obstetric needs in its regions, especially in rural areas. One study identified the trends in and socio-demographic factors associated with primary CS at a large Tanzanian hospital found to be the reasons of low national primary CS level due to poor access of surgical procedures despite of the need. Some studies conducted in Tanzania had a low national level of primary CS over the last decade, estimated to be 3% in 2004 to 5% in 2010 but with large regional differences (Nyamtema et al., 2016). Other study that was conducted in Bertha Gxowa hospital in South Africa by Inyangu-Otu found other demographic variables to be associated with caesarian section rates were increase in parity and increase in body mass index (Inyangu-Out et al., 2014). In study done by Khan in Bangladesh found that the average annual rate of increase in CS was higher among women of higher age, urban areas and relatively high socio-economic status with higher education and those women who regularly accessed antenatal services (Khan et al., 2016).

2.2 Conceptual model

After an in-depth literature review, the conceptualization of the idea under study was developed as depicted in the following conceptual model. The model has independent variables (Socio-demographic characteristics) which can directly predict maternal (infection, post-partum hemorrhage) and neonatal (infection, birth asphyxia) outcomes. These dependent (outcome) variables can also be predicted by the mode of delivery as an intermediate (controlling) variable. The concept gives a picture that, if the predictors and intermediate variables are well monitored and controlled, maternal and neonatal bad outcomes can be reduced. List of variables including Risk factors which have been divided into parent characteristics (Age, Education, gravidity, parity, marital status, occupation, preferences of delivery mode), Fetal characteristics, (malposition, mal-presentation).

Figure 1.1: Conceptual mode



CHAPTER THREE

METHODS AND MATERIALS

3.1 StudyArea

This study was done at Iringa region at Iringa Regional Referral Hospital. The region is one of Tanzania's 31 administrative regions with a total population of 941,238 as per 2012 census. It has one Regional Referral Hospital which provides health services (outpatient, inpatient, ante-natal, post-natal and emergency obstetric services) and receives referral from the entire region. The Hospital capacity is 445 beds out of which 377 beds are currently active while the department of obstetrics and gynaecology has 72 beds distributed in 4 wards of which labour wards has 12 beds and others are in antenatal, postnatal and gynaecological wards (Hospital based statistics, 2017). The department of obstetrics and gynaecology has 1 specialist, 1 medical doctor, 2 assistant medical officers, students/residents and 51 nurses of which 14 are midwives in the labour wards. Furthermore, there is neonatal resuscitation which contains ambubags, penguins, suction machines, oxygen concentrator and radiant warmer.

According to the Hospital based statistics of 2017, there were 50394 patient/clients attended for various health needs of which 5979 were pregnant women whereby 3500 (58.54%) delivered by caesarean section and 2479 (41.46%) spontaneous vaginal delivery. Moreover, complication of the entire deliveries were eclampsia (25%), PPH (20.8%), and unsafe abortion (12.5%) to mention a few (Hospital based statistics, 2017).

3.2 Study Approach

The current study employed a quantitative approach. This design helped the researcher get the clearly picture on the existing phenomena about the rate of caesarean section and its associated maternal and fetal management outcome among primigravida and multiparous women in Iringa Region Referral Hospital.

3.3 Study design

The current study employed Analytical cross-section (hospital based) study. The design helped the researcher to collect data at single point in time in order to get a clear picture of the phenomena of interest (exposure and outcome). The study was done from February to April 2018.

3.4 Target/study population

The study involved all prime and multipara women attending at Iringa Regional Referral Hospital and who were available during the study time. The population has been selected because they are prone to primary caesarean section within the region that their prevalence has not well been established due to the scarcity of locally available published data.

3.5 Inclusion criteria

The study included all prime and multipara women who delivered at Iringa Regional referral hospital from February to April 2018.

3.6 Exclusion criteria

The study excluded women with Previous LSCS and those who were found to be critically ill.

3.7 Sampling method

Purposive sampling method employed to select the region, hospital, postnatal ward and convenience sampling method was used to select study respondents.

3.8 Sample size calculation

A prevalence which was used in this study is 18% obtained from the study done by Becher et al., (2013) on the indication for caesarean section in St. Joseph Medical Hospital Moshi, Tanzania. Kish and Leslie formula (1965) was used to calculate a minimum sample size of the study.

$$n = \frac{Z^2 P (1-P)}{E^2}$$

Whereby: n - is the minimum sample

P - Prevalence from previous related study (18% = 0.18).

E – Desired precision (set at 0.05)

Z - Standard normal deviation that correspond to the 95% CI (Z = 1.96)

E - Standard Error = 5% ($p \leq 0.05$)

From the formulae above, **227** respondents were supposed to be in this study, but this study adopted a sample size of **247** due the availability of the study respondents and duration of the study.

3.9 Independent variable

These include primary caesarian deliveries, education level, marital status, age, parity and occupation.

3.10 Outcome variables

Maternal outcomes were significant blood loss (PPH), signs of wound infection, foul smelling of vaginal discharge and high body temperature.

Neonatal outcomes were low Apgar score (birth asphyxia), high body temperature (sepsis) and inability to breast feed.

Other covariates were, culture, ethnicity, alcohol use, Medical condition, and duration of the caesarean section.

3.11 Data collection method

3.11.1 Questionnaires

The instrument comprised of the respondents' demographic characteristics (8 questions), health status of the mother (3 questions), and the status of caesarean section usage (10 questions) and management outcome of caesarean section among prime and multiparous women (9 questions). The questionnaires were distributed to the participants after all the necessary information given through verbal and written consent obtained subsequently. Participants were allowed to complete the questionnaire on their own and then return them to researcher. Training was done to a research assistant before data collection.

3.11.2 Documentary review

Prime and multiparous inpatient files/records, RCH card number 4 (where the amount of blood lost during c/s is recorded) were used to gather information on PPH and sepsis (to be checked in temperature recording charts) among prime and multiparous women while Apgar score chart and temperature recording charts were used to gather and measure birth asphyxia and sepsis among the newborn.

3.12 Validity

The pilot study helped the researcher to check the clarity of instructions, sequencing, and layout of issues. It was also used to assess suitability and consistency of instruments as well as to get feedback from the sample respondents. The pilot study involved 20 respondents who were nearby hospital. All questionnaires were written in English and Swahili.

3.13 Reliability

Reliability of the study was achieved by the use of test-retest of the tools which generated high reliability.

3.14 Data processing and analysis

Data analysis was performed using Statistical Product of Service Solution (SPSS v.23) software. Descriptive analysis was used to analyze demographic characteristics of the respondents. Chi-square test was employed to analyze categorical variables in order to test their relationships with the outcome of interests. Regression analysis was used to determine the association between preferred mode of delivery and demographic characteristics adjusted for other factors. A 95% confidence interval for the association between preferred mode of delivery and demographic characteristics was used in which significance level < 0.05 was considered significant.

3.15 Ethical considerations

The ethical approval was obtained from UDOM Research and Ethics Committee prior to commencement of the study. The permission to conduct the study was obtained from Iringa Regional Referral Hospital administrative authority and obstetrics and gynecology department. The informed consent was obtained from each respondent after being fully explained about the objectives of the study.

Participation was on voluntary basis. The confidentiality was assured as the interviews conducted in private rooms to ensure privacy.

CHAPTER FOUR

RESULTS/ FINDINGS

Overview

This chapter presents the results of the study in line with the study objectives and research questions. The chapter is divided into five sections. Section one presents socio-demographic characteristics of the respondents such as age, education, marital status and occupation. Other sections present prevalence of caesarean section, indications for caesarean section, maternal and newborn management outcomes and ultimately the association between some demographic characteristic with preferred mode of delivery.

The current study included a total of 247 respondents with the response rate of 100%. The observed mean age of the respondents was 27 (SD = 6.2) while the maximum age was 45 years and the minimum was 16 years. In addition to that, it was observed that the mean gravidity of the respondents was 2 (SD = 1.5), with a maximum gravidity of 8 and 1 being the minimum gravidity. The study findings revealed that majority of the respondents (88.7%) were aged between 19 – 39 years followed by those aged below 18 years (9.7%) and (1.6%) of the respondents were aged above 40 years. Moreover the study findings indicate that 82 (33.2%) of the respondents had college/university education followed by primary education 81(32.8%), 53 (21.5%) secondary education and those who did not attend any level of formal education 31 (12.6%). Furthermore, most respondents 197 (79.8%) were married while 50 (20.2%) respondents were single. Many respondents 111 (44.9%) were housewife, 96 (38.9%) had self-employment and only 40 (16.2%) were employed (Table 4.1).

4.1 Demographic characteristics

Table 4.1: Demographic Characteristics of the Respondents (N=247)

VARIABLE	FREQUENCY	PERCENTAGE (%)
AGE GROUPS		
≤ 18	24	9.7
19 – 39	219	88.7
≥ 40	4	1.6
EDUCATION LEVEL		
No formal education	31	12.6
Primary education	81	32.8
Secondary education	53	21.5
College/University	82	33.2
MARITAL STATUS		
Single	50	20.2
Married	197	79.8
OCCUPATIONAL STATUS		
Employed	40	16.2
Self employed	96	38.9
Housewife	111	44.9

Source: field data 2018

4.2 Prevalence of primary caesarian deliveries among prime and multiparous women

Concerning the prevalence of primary caesarian deliveries among prime and multiparous women, the result which was obtained during the study period indicated that, out of 1144 deliveries 247(21.59%) of the deliveries were primary caesarean deliveries. Basing on parity, this finding implies that most of respondents who underwent primary caesarean delivery were multiparous followed by

primeparous. The observed mean parity was 2 (SD = 1.4 0) with a maximum parity of 8 and 1. Table 4.2summerises the findings.

4.3 Prevalence of primary caesarian deliveries among prime and multiparous women

Table 4.2: Shows the prevalence of None Primary CS and Primary CSDeliveries N=1144

Category	Frequency	Percentage
Deliveries other than primary CS	897	78.40%
Primary CS	247	21.6
Total	1144	100%

Source; Field data 2018

Also, findings from the study area reveled that out of 247 respondents who delivered by primary caesarean delivery, 115 (46.6%) were primeparous women and 132 (53.4%) were multiparous women. Figure 4.1

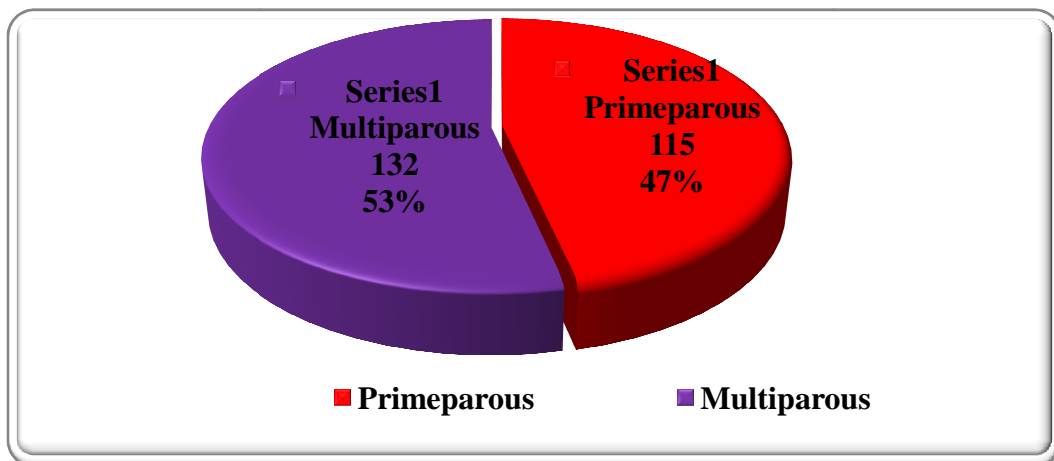


Figure 4.1: Prevalence of caesarian delivery among prime and multiparous women (N=247)

Source: Field data 2018

4.4 Indication of Caesarean Section

The study also looked at the indication for caesarian section as documented in the case files. Findings in Table 4.5 show that the highest reported indication for caesarian section was fetal distress, followed by prolonged labor, obstructed labor, malposition and others which constitutes 32%, 25.1%, 20.2%, 13.4% and 9.3% respectively. Table 4.3 summarises the findings.

Table 4.3: Indication of Caesarian Section (N=247)

Indicators	Frequency	Percent (%)
Fetal distress	79	32
Obstructed labor	50	20.2
Malposition	33	13.4
Prolonged labor	62	25.1
Others	23	9.3
Total	247	100

Source: Field data, 2018

4.5 Maternal and newborn management immediate outcomes/Complications of Primary Caesarean Deliveries

Basing on the aspect of maternal management outcomes findings in Table 4.4 show that most of post caesarian delivery women 65 (26.3%) developed significant blood loss, 29 (11.7%), developed high body temperature, and 12 (4.9%) experienced foul smell vaginal discharges while the minority 8 (3.2%) had signs of wound infection (swelling/abscess). Table 4.4 summarises the findings.

Table 4.4: Maternal management outcomes of Primary Caesarean Deliveries within 7 days (N=247)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Significant Blood Loss per vagina		
Yes	65	26.3
No	182	73.7
Signs of wound infection		
Yes	8	3.2
No	239	96.8
Foul smelling Vaginal Discharge		
Yes	12	4.9
No	235	95.1
High Body Temperature		
Yes	29	11.7
No	218	88.3

Source: field data 2018

Moreover, the majority of the new-born 128 (51.8%) in table 4.5 were reported to be unable to breastfeed after caesarean section while 28 (11.3%) had high body temperature and 95 (38.5%) had low Apgar score after delivery. Table 4.5 summerises the findings.

Table 4.5: Newborn management outcomes for live babies within days of Hospital stay.

Variable	Frequency	Percent
Low Apgar Score		
Yes	95	38.5
No	152	61.5
Ability To Breastfeed		
Yes	119	48.2
No	128	51.8
High Body Temperature		
Yes	28	11.3
No	219	88.7

Source: field data 2018

4.6 Factors associated with the mode of delivery among prime and multiparous women

Regarding the factors associated with the mode of delivery among prime and multiparous women, multiparous women who had primary education were 2.446 more likely to undergo caesarean delivery as compared to those who had no formal education when adjusted with other factors (p-value <0.05; CI: 1.028; 5.820). Furthermore, prime and multiparous women with college and University education were observed to be 3.026 more likely to undergo caesarean delivery against those with no formal education when adjusted with other factors (p-value <0.05; CI: 1.065, 6.130). Also, factors like occupation status and advice from husband were observed to be less likely associated with the preferences of prime and multiparous women to deliver by caesarean section when adjusted with other factors (p-value >0.05). Table 4.6 summarises the findings.

Table 4.6: Factors associated with the mode of delivery among prime and multiparous women (N = 247)

VARIABLE	OR	P-VALUE	CI 95%		AOR	P-VALUE	CI 95%	
			LOWER	UPPER			LOWER	UPPER
EDUCATION LEVEL								
None	(Ref)				(Ref)			
Primary education	2.364	0.048	1.006	5.554	2.446	0.043	1.028	5.820
Secondary education	1.429	0.434	0.584	3.493	1.656	0.292	0.647	4.237
College/university	2.243	0.000	0.005	0.113	3.026	0.024	1.065	6.130
OCCUPATIONAL STATUS								
Employed	(Ref)				(Ref)			
Self employed	2.460	0.037	1.056	5.732	0.921	0.886	0.296	2.859
Housewife	3.908	0.001	1.703	8.967	1.382	0.580	0.440	4.336
HUSBAND ADVICE								
Yes	(Ref)				(Ref)			
No	1.727	0.040	1.026	2.909	1.543	0.196	0.799	2.977

Source: field data 2018

CHAPTER FIVE

DISCUSSION OF THE RESULTS

5.1 Demographic Characteristics of the Respondents

The findings presented in chapter four indicated the vast numbers of post-caesarean women were observed having the age ranging between 19 – 39 years with average mean age of 27 years old. This concurs with WHO (WHO, 2015) that defined this age group to be sexually active and thus more reproductive and prone to maternal and newborn management outcomes than other age groups. Therefore, it was more likely to observe a large number of this highly reproductive age group in the current study as the prominent one at Iringa region due to age distribution as evidenced by national statistics (NBS, 2011).

Many women who underwent caesarean had college education level with the implication that they were more educated as compared to the none educated ones. This indicates that, education level of an individual was observed to influence prime and multiparous women in selecting the mode of delivery in which, it was found that the more an individual had advanced in their academic status the more they preferred caesarean section as their mode of delivery. The reason was cosmetic, fear of labour pains and perineal injury during delivery. This concurs with the study done in Jordan by (Am et al., 2017) that showed similar finding as highly educated women tend to be older than low educated women, because usually they get married and pregnant at an older age, hence prone to primary CS.

Regarding marital status, the current study has showed that high number of those who underwent C/S were married. This implies that, male involvement in

reproductive health is being practiced. As stated and insisted in many literature(August et al., 2015; Bitew, Awoke, & Chekol, 2016; CK Bhusal, 2015) that both male and females must be involved and participate in various reproductive health services and programs as well as responsibility for pregnancy decision making, care, birth preparedness and the choice of preferred mode of delivery.

5.2 Prevalence of primary caesarian deliveries among prime and multiparous women

Parity of an individual has been describes by WHO (WHO, 2015) to be very much associated with number of caesarean deliveries. It has been reported by Suresh & Suresh, (2017) that primigravida women are more prone to primary caesarean deliveries and their associated management outcomes as compared to multigravida women because locally used protocols, unsatisfactory staff motivation, inadequate capacities to handle cases among young doctors, midwives and availability of medical supplies and equipment. This is contrary to what has been observed in the current study in which multiparous women who underwent caesarean section were found to be 53% as compared to primigravida women. This was consistent with the findings by Rao et al., (2013) and Chauhan et al., (2017) who found high prevalence of caesarean deliveries among multiparous women as compared to primeparous. This trend could be attributed to some factors such as education level.

5.3 Indications of Primary caesarean deliveries among Primigravida and Multigravida women at Iringa Regional Referral Hospital

The current study found that, many primary caesarean deliveries in the study area were attributed to a number of factors; these included fetal distress, prolonged

labour, fetal malposition, big babies with the highest magnitude in that order. This is in line with other literature(American College of Obstetricians and Gynecologists, 2018; Rodriguez, Say, Abdulcadir, & Hindin, 2017) noted factors like multiple pregnancy, previous caesarean delivery, pinched umbilical cords, placenta previa, large babies and intrauterine growth retardation as among the contributing indicators of increased primary caesarean rates. This current rise of CS rate may also mean increased indications in the future also could be attributed to the low clinical skill by young doctors and midwives for vaginal delivery. It is therefore, very meaningful to initiate problem solving interventions including utilization of formal caesarean section indication guidelines as stated by Association of Gynecologist and Obstetricians of Tanzania and local guidelines which will help control the increased rate of caesarean deliveries.

5.4 Maternal and Newborn management outcomes of primary caesarean deliveries among primigravida and multigravida women at Iringa Regional Referral Hospital

American College of Obstetricians and Gynecologists (American College of Obstetricians and Gynecologists, 2018), Betran et al., (Betran, Torloni, Zhang, & Gülmezoglu, 2016) and Mazzoni et al., (Mazzoni et al., 2011), stated that, the most maternal complications from primary caesarean deliveries included puerperal infection, significant blood loss, injury to the bowel or bladder, reaction to anesthetic drugs while the newborn complications, birth asphyxia, infection, inability to breastfeed, poor APGAR scores and aspiration pneumonia were observed as the complications of the primary caesarean deliveries. These complications may be due

to maternal advanced age, poor availability and accessibility of ANC and family planning methods.

The above findings support the current study and do not differ with those discussed by previous studies (Shobha, 2016).

The maternal complications which were observed within the 7 days showed the majority had significant blood loss 26.3% while the lesser complication was sign of wound infection 3.2%. Furthermore, the newborn complications which were encountered in this study were; Low Apgar Score, inability to breastfeed and high body temperature with the majority having inability to breastfeed 48% while the lesser proportion had high body temperature 11.3%. Therefore, from this point of view the noted reasons for all these complications included illiteracy, advanced age, poverty, ignorance and lack of knowledge about the availability of ANC and family planning methods. This can imply that, indications of performing primary caesarean section were not well defined by health practitioners as the existing formal caesarean section classification guidelines (AGOTA and Local guidelines).

5.5 Association between mode of delivery and demographic characteristics among prime and multiparous women at Iringa Regional Referral Hospital.

Becher & Stokke, (2013); Mohamed, (2009); Nilsen et al., 2014; Rodriguez et al., (2017) found that, the selection of mode of delivery among pregnant women has much significant association with the demographic characteristics of an individual. A study done in Ethiopia by Bayou et al., (2016) found that, CS has been more

frequent amongst nulliparous women, older women, women with high-risk pregnancy and women with better educational and economic status.

These findings are in agreement with the current study which showed that there was an association between demographic variables and the preferred mode of delivery among primiparous and multiparous women. Education level of an individual was observed to influence primiparous and multiparous women to select the mode of delivery in which, it was found that the more an individual had advanced in their academic status the more they preferred caesarean section as their mode of delivery. The reasons were found to be cosmetic, fear of labour pains and perineal injury during delivery.

Other demographic characteristics like age and parity were found not to be associated with the preferred mode of delivery. From these findings, it can clearly be concluded that caesarean section was most prominent among the educated women as they were observed to be purely affected by fashion (cosmetic ideation) and role modeling media events or life styles. This could even make it easy to their husband's advice and make decision on what mode of delivery to be selected for their wives.

It can be argued in the current study that, if health education programs on the advantages and disadvantages of caesarean section is not delivered to these groups, the incidence and prevalence of it will continue to raise beyond the WHO recommended threshold of caesarean section rate of below 15% (WHO, 2015).

5.6 Strength of the study

The data presented here were primarily collected through direct observation and examination by the researcher hence it appears to be of greater validity.

5.7 Limitations of the study

- This study was only confined to one localized area which is Iringa Regional Referral Hospital, a call is made for further research to be conducted in a wide area throughout the country and across regions so as to be able for generalization.
- A sample studied in this study is hardly to generalize for the entire population within the country, it is therefore suggested that other studies to come recruit more sample size so as to be able to generalize the findings for a large population.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The prevalence of primary caesarean section in the current study was 21.59% at IRRH. The findings also showed that the leading indication of primary caesarean were fetal distress, prolonged labour, obstructed labour, malposition, and others in that order.

The maternal complications which were found in this study were; significant blood loss, high body temperature, foul smelling vaginal discharge, and wound infection in that order. While the newborn complications were; inability to breastfeed, low Apgar score, and high body temperature consecutively. Furthermore, the demographic factor which were identified to increase the rate of primary caesarean delivery among primiparous and multiparous was education level, among others.

6.2 Recommendations

Basing to the findings of the current study, it is recommended that;

- There should be an innovative educational program on job trainings, seminars or workshops among healthcare providers to orient them on the recommended criteria used for the indication of caesarean section to be aware of them on indications of primary caesarean deliveries so as to lower prevalence. This could be achieved by proper adherence to AGOTA and local guidelines on caesarean section. This will lower the caesarean deliveries and their associated complications which poses the burden.

- Generally, if these issues are not adequately addressed both locally and country-wide, the burden of increased caesarean delivery rate and its associated maternal and newborn negative health impact will become worse.

6.3 Suggestions for further research

- The current study focused and included only primeparous and multiparous women, further studies can include all pregnant women in order to have inclusive information on the management outcomes resulting from obstetric interventions like caesarean sections. This will also enable to make conclusive concept on the maternal and newborn effects of caesarean section against spontaneous vaginal delivery.

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APPENDICES

Appendix A: Questionnaire for mothers (English Version)

I am **Erick AugustinoMbunga**, a student pursuing Master of Science in Medicine of the University of Dodoma 2015 - 16. The broad objective of the current study is to determine primary caesarean deliveries; indication and management outcomes among prime and multiparous women at Iringa region Referral Hospital Tanzania

A success to this study depends much on your fully participation by giving out accurate information as well as appropriate answers to the questions that are going to be asked to you. Participation in this study is not by force and thus you are free to decide whether to participate or not. All information will be kept confidential and will only be used for research purposes only and no other wise

Thank you in advance for your cooperation. Please confirm your participation by signing below.

SignatureDate.....

PART A: MOTHER’S DEMOGRAPHIC INFORMATION

- 1. Age in years.....
- 2. Number of pregnancies.....
- 3. Parity.....
- 4. Number of children.....
- 5. Age of the last kid.....

Put a sign of (v) where appropriate

6. Education level

- i. None []
- ii. Primary []
- iii. Secondary []
- iv. College/University []

7. Marital status

- i. Single []
- ii. Married []
- iii. Separated []
- iv. Divorce []
- v. Widow []

8. Occupation

- i. Employed []
- ii. Not employed []
- iii. Home mother []

PART B: MOTHER’S HEALTH STATUS

Put a sign of (√) where appropriate

- 9. Do you have any health problems?
 - a) Yes []
 - b) No []
- 10. What type of health problems do you have?

- a) Circulatory system.... **Yes** [] **No** []
- b) Respiratory system.... **Yes** [] **No** []
- c) Urinary system.... **Yes** [] **No** []

11. Did you attend any of the Antenatal Care services (ANC) before delivery?

- a) Yes
- b) No

PART C: THE STATUS OF CAESAREAN SECTION SERVICE USAGE

Put a sign of (√) where appropriate

12. How many pregnancies have you ever delivered by caesarean section?

- a) One []

13. What are the factors, which led you to deliver by caesarean section?

- a) Fetal distress
- b) Obstructed labor
- c) Fetal malposition/presentation
- d) Prolonged labor

14. Where did you deliver by caesarean section?

- a) Governmental hospital []
- b) Private hospital []

15. Who advised you to deliver by caesarean section?(you can respond more than once)

- a) Mothers own request
- b) Health practitioner
- c) Relatives

16. In your opinion, was the advice that you had/given appropriate?

- a) Yes []
- b) No []

17. Have you ever discussed with doctor/nurse about the mode of delivery for the coming pregnancies?

- a) Yes []
- b) No []

18. Did caesarean delivery cost you anything?

a) Yes []

b) No []

19. Have you ever given an opportunity to give advice about the mode of delivery?

a) Yes []

b) No []

20. Have you ever had any complications from caesarean delivery?

a) Yes []

b) No []

21. If you were given an opportunity to select the mode of delivery for the coming pregnancies, which one would you select?

a) Caesarean section []

b) Spontaneous Vaginal delivery []

PART D: MANAGEMENT STATUS AFTER CAESAREAN SECTION

Put a sign of (√) where appropriate

22. How was the newborn baby's health condition after caesarean section within 7 days.?

a) Good []

b) Worse []

c) Died []

23. Did the newborn baby helped to breath after caesarean section?

a) Yes []

b) No []

24. Was the newborn baby able to breastfeed after caesarean section?

a) Yes []

b) No []

25. Did the newborn baby have periodic high body temperature within 7 days. Post caesarean section?

a) Yes []

b) No []

26. How was your health condition within 7 days post caesarean section?

a) Good []

b) Worse []

27. Did you experience significant blood loss soon post caesarean delivery?

a) Yes []

b) No []

28. Did you experience any signs of wound infection (swellings/abscess) on the wound post caesarean section?

a) Yes []

b) No []

29. Did you experience any /bad smell vaginally discharges within 7 days. post caesarean section?

a) Yes []

b) No []

30. Did you experience periodic high body temperature within 7 days post caesarean section?

a) Yes []

b) No []

THE END

THANK YOU FOR YOUR COOPERATION

Appendix B: Questionnaire for mothers (Swahili Version)

Naitwa **Erick Augustino Mbunga**, mwanafunzi washahadaya zamili katika chuokikuu cha Dodoma 2015 - 16. Nafanya utafiti juu ya Kuenea, viashiria/vigezo namatokeo kwa akina mama nawatoto baada ekujifungua kwani jaya upasuaji katika hospitali ya rufaa ya Mkoawa Iringa iliyoko Halmashauri ya wilaya Iringa Mjini.

Ili utafiti huu ufanikiwe, unategemea sana ushirikina ushirikiano wakokwako taarifa za ukweli namajibu yauhakika juu yamaswali utakayoulizwa. Ushiriki wakokatika utafiti huu ni wahari. Taarifa zote zitakazokusanywa zitakuwa katika hali ya usirimku bwana vile zitatumika kwa ajili ya utafiti huu nasivinevyo.

Ahsantekwa kukubalikushirikiana nami.

Tafadhali naomba uthibitisha kushiriki katika utafiti huu kwakuweka sahihi yakohapachini.

Sahihi Tarehe.....

SEHEMU A: TAARIFA BINAFSI ZA MAMA

1. Umriwamhusika.....
2. Idadiyamimba.....
3. Idadiya vizazi.....
4. Idadiyawatotoulionao.....
5. Umriwamtowamwisho.....

Wekaalamayavema (v) mbeleyajibusahihi

6. Kiwango cha elimu

- | | | |
|-------|------------------|-----|
| v. | Hujasoma | [] |
| vi. | Elimuyamsingi | [] |
| vii. | Elimuyasekondari | [] |
| viii. | Elimuyachuo | [] |

7. Haliyandoa

- | | | |
|-------|-------------|-----|
| vi. | Hujaolewa | [] |
| vii. | Umeolewa | [] |
| viii. | Wametengana | [] |
| ix. | Umeachika | [] |
| x. | Mjane | [] |

8. Kazi

- | | | |
|-----|-----------------|-----|
| iv. | Umejiriwa | [] |
| v. | Umejiajiri | [] |
| vi. | Mama wanyumbani | [] |

SEHEMU B: HALI YA KIAFYA YA MAMA

Wekaalamayavema (√) mbeleyajibusahihi

9. Je, unamatizoyoyotemengineyaKiafya

- c) Ndiyo
- d) Hapana

10. Ni ainaipiyamatatizomengineyakiafyauliyonayo?

- d) Mfumowadamu.... **Ndiyo** [] **Hapana** []
- e) Mfumowahewa.... **Ndiyo**[] **Hapana** []
- f) Mfumowamkojo.... **Ndiyo**[] **Hapana** []

11. Uliwahikuhudhurianakupewahudumazozotezaawalizauzazikablayakujifungua?

- c) Ndiyo
- d) Hapana

SEHEMU C: HALI YA UTUMIAJI WA HUDUMA YA KUJIFUNGUA KWA UPASUAJI

Wekaalamayavema (√) mbeleyajibusahihi

12. Umewahikujifunguakwanjiayaupasujaji?

- a) Ndiyo []
- b) Hapana []

13. Ni ainaganiyaupasujajulifanyiwa?

- a) Upasuajiwadhalura []
- b) Upasuajiwakupangwa []

14. Ni vizazivingapiulijifunguakwaupasujaji?

- a) Moja []

15. Ni kituganikilipelekeaujifunguekwanjiayaupasujaji?

- a) Mapigoyamoyoyamtotokubadilika
- b) Uchungupingamizi
- c) Mtotokukaavibayatumboni
- d) Kupitilizakwamudawakujifungua
- (f) Sababuninginezo

16. Ni wapiulijifunguliakwaupasujaji?

- a) HopsitalyaSerikali []
- b) Hospital Binafsi []

17. Ni nani alikushaurikujifungua kwa upasuaji? (Unawezakutoajibu zaidi yamoja)
- d) Maamuzi binafsi
 - e) Mtoahudumaza afya
 - f) Ndugu
18. Je, kwamtazamowakoushauri ulioupata wanjiayakujifungua ulikuwasahihi?
- c) Ndiyo []
 - d) Hapana []
19. Umewahikujiadiliana njiayakujifungua ujauzitouliofuata/ujaonadaktari au muuguzi?
- c) Ndiyo []
 - d) Hapana []
20. Kujifungua kwanji upasuaji kuliku harimuchochote?
- a) Ndiyo []
 - b) Hapana []
21. Ulipewana fasiyako amapendekezo yako juu yakuji fungua kwanji upasuaji nakusikilizwa?
- c) Ndiyo []
 - d) Hapana []
22. Umewahikuji patamadharayoyote baada yakuji fungua kwanji upasuaji?
- 30. Ndiyo []
 - 31. Hapana []
23. Ukipewana fasiyaku amajuu yanjiayakujifunguliakwamimbazijazo, utachagua kujifungua kwanji upasuaji au kwanji yakawaida?
- c) Upasuaji []
 - d) Kawaida []

SEHEMU D: HALI YA HUDUMA BAADA YA KUJIFUNGUA KWA UPASUAJI

Weka alama yavema (✓) mbele ya jibu sahihi

24. Hali yamtoto baada yakuji fungua kwa upasuaji ilikuajendani yasi ku 7?
- a. Nzuri []
 - b. Mbaya []

- c. Mfu []
25. Je, mtotoalisaidiwakupumuapunde baadaya kujifunguakwa upasuaji?
 c) Ndiyo []
 d) Hapana []
26. Je, mtoto aliweza kunyonya punde baadaya kujifunguakwa upasuaji?
 c) Ndiyo []
 d) Hapana []
27. Baadaya kujifunguakwa upasuaji mtoto alipatwa na homa zama raka wama randa ni yama asaa 72?
 a) Ndiyo []
 b) Hapana []
28. Baadaya kujifunguakwa njiaya upasuaji hali yako ilikuajenda ni yasiku 7?
 c) Nzuri []
 d) Mbaya []
29. Punde baadaya kujifunguakwa njiaya upasuaji ulitokwa na damu nyingi?
 c) Ndiyo []
 d) Hapana []
30. Baadaya kujifunguaukipatwa na kijipu/uvimbewo wote kwenye kidonda cha upasuaji?
 c) Ndiyo []
 d) Hapana []
31. Baadaya kujifunguakwa upasuaji ulitokwa na ucha fuwoto wenye harufumbayakwenye ukendani yasiku 7?
 a) Ndiyo []
 b) Hapana []
32. Baadaya kujifunguakwa upasuaji ulipatwa na homa zama raka wama randa ni yasiku 7?
 a) Ndiyo []
 b) Hapana []

MWISHO

AKSANTE KWA USHIRIKIANO WAKO

Appendix C: Ethical clearance letter

Dear Sir/Madam.....

The heading above is concerned. I'm second-year students undertaking Master of Science in medicine at the University of Dodoma Tanzania. I'm expecting to do a research titled "**Primary caesarean deliveries: prevalence, indications and management outcomes among pregnant women who deliver at Iringa Region Referral Hospital**". I kindly ask for your support in facilitating this research by granting me an ethical clearance. It is my hope that this request will be put into consideration.

Yours faithfully,

.....

Mbunga, Erick A.

Appendix D: Informed consent

TITLE: PRIMARY CAESAREAN DELIVERIES: PREVALENCE, INDICATIONS AND MANAGEMENT OUTCOMES AMONG PREGNANT WOMEN WHO DELIVER AT IRINGA REGION REFERRAL HOSPITAL.

My name is Mbunga, Erick A. a postgraduate student undertaking Master of Science in medicine enrolled at the University of Dodoma College Health Science department of obstetrics and gynecology. I am interested in conducting an analytical cross-sectional study in Iringa region Tanzania on assessing the effect of primary caesarian deliveries on maternal and neonatal outcomes and management among prime and multipara women. The results of this study will be used to complete educational requirements at Dodoma University and will also be shared with you, the nursing faculty and administration of participating hospital, and the research respondents.

This study poses little to no risks to the respondents. You are free to join the study and discontinue at any point during the research period.

Thank you for your cooperation in advance.

Respondent's signature.....

Researcher	signature	date
Mbunga, Erick A.

Appendix E: Letter of access

Dear _____:

I am planning to conduct a research study entitled **“Primary caesarean deliveries: prevalence, indications and management outcomes among pregnant women who deliver at Iringa Region Referral Hospital”**. It is a component of a Master of medicine in obstetrics and Gynecology from the University of Dodoma under the supervision of Dr.IpyanaMwampagatwa ,andDr Alex Ernest Ibolinga

Participation of the respondents will involve completion of a questionnaire which will take approximately 15 minutes of their time. I believe that conducting this study is of vital importance when one considers the maternal and neonatal deaths of Tanzania’s population, advanced science and technology and increased scope of work which has resulted in an increased demand for highly clinical decision and judgment to provide care to the society.

Unfortunately, there is limited research on this phenomenon from a Tanzanian perspective. The research findings will help to ensure quality care with cost effective to the community thus reducing maternal and neonatal mortality and morbidity rate. I hope that you will concur with the merits of this study, and I would like to request that you provide me with a letter of support for the study at your convenience.

Sincerely,

Mbunga, Erick A.