

**BIRTH PREPAREDNESS, COMPLICATION READINESS AND
KNOWLEDGE OF MATERNAL DANGER SIGNS AMONG
POSTNATAL WOMEN WITH PREVIOUS SCAR ADMITTED AT
MUHIMBILI NATIONAL HOSPITAL**

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**MMED Obstetrics and Gynaecology Dissertation
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**Muhimbili University of Health and Allied Sciences
School of Medicine**



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By

Samwel Ephraim Shupa

**A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of
Master Medicine in Obstetrics and Gynaecology of**

**Muhimbili University of Health and Allied Sciences.
October, 2020**

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for examination of dissertation entitled “**Birth preparedness, complication readiness and knowledge of maternal danger signs among postnatal women with previous scar admitted at Muhimbili National Hospital**”, in partial fulfillment of the requirements for the degree of Master of Medicine in Obstetrics and Gynaecology of Muhimbili University of Health and Allied Sciences.

Dr Ali Said
(Supervisor)

Date

DECLARATION AND COPYRIGHT

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

Signature

Date.....

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DEDICATION

To my wife Violeth Mboya, my daughters Miriam, Mercy, Moureen and Tumaini and my brother Limerd Ephraim Shupa and his family. These are the key figures all what I do and my efforts are trending toward them.

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LIST OF ABBREVIATIONS

ANC	Antenatal Care
BPCR	Birth Preparedness and Complication Readiness.
CS	Caesarean Section
ICU	Intensive Care Unit
MNH	Muhimbili National Hospital
MUHAS	Muhimbili University of Health and Allied Sciences
SPSS	Statistical Package for the Social Sciences
TDHS	Tanzania Demographic Health Survey
VBAC	Vagina Birth After Caesarean Section
WHO	World Health Organization

OPERATIONAL DEFINITIONS

Skilled health personnel in this study refers to competent maternal and newborn health professionals including midwives, nurses, obstetricians, general practitioners, pediatricians and anesthetists taking part in the management of women during pregnancy, during delivery and after delivery.

Previous scar in this study refers to one or more previous delivery/child birth by caesarean section.

Post natal in this study refers to the period from giving birth to 48 hours.

Maternal danger signs of pregnancy refers to warning signs that women encounter during pregnancy, child birth and postpartum.

Birth Preparedness is a strategy aimed at reducing delays in obtaining health care. Women with previous scar need special attention in; preparing blood donors, identifying an appropriate health facility with skilled health personnel, preparing transport in case of emergency and a well-defined birth plan of where to deliver, when and how.

ABSTRACT

Background: Birth Preparedness and Complication Readiness (BPCR) is a strategy to promote the timely use of skilled maternal and neonatal care which helps to reduce delays in obtaining care. Many of the complications that lead to maternal deaths are result of delays in seeking, reaching and receiving appropriate care at health facilities. Among other complications women with previous delivery by caesarean section are at higher risk of uterine rupture in subsequent pregnancies. Understanding birth preparedness, complication readiness and knowledge of maternal danger signs in higher risk women will help to reduce delays in seeking care hence improve both maternal and newborn health.

Aim: To determine birth preparedness, complication readiness and knowledge of maternal danger signs and its associated factors among post natal women with one previous scar admitted at Muhimbili National Hospital

Methods: A cross-sectional study was conducted at Muhimbili National Hospital, Dar es Salaam among 400 postnatal women with one previous scar. Information on BPCR, knowledge of maternal danger signs and demographic and obstetric characteristics were collected using a pretested structured questionnaire. Data were analyzed using SPSS version 23. Pearson's Chi square and Logistic regression analysis were done to determine the association between BPCR and knowledge of maternal danger signs with social demographic and obstetric characteristics of the study population. A p-value <0.05 was considered statistically significant.

Results: The proportion of women prepared for birth and its complications was 63.5%. Factors significantly associated with BPCR were; having at least secondary education (AOR=3.68, 95% CI=1.83 -7.42), having health insurance or being able to pay cash (AOR= 8.77, 95% CI=3.60 – 21.39). Forty three percent of women were knowledgeable of maternal danger signs. Knowledge of maternal danger signs was significantly associated with higher formal education (AOR=5.33, 95% CI=3.17 – 8.99)

Conclusion: Nearly two-thirds of women studied were well prepared for birth and its complications. Less than a half were knowledgeable of maternal danger signs. Health insurance and level of education had strong association with BPCR and knowledge of maternal danger signs. Empowering women economically, giving them health insurance and improving their education status will help to improve their BPCR status hence improve both maternal and newborn health.

1.0 INTRODUCTION

1.1 Background

Birth Preparedness and Complication Readiness (BPCR) is an approach to improve the use and effectiveness of key maternal and newborn health services including skilled delivery service utilization. This is based on the argument that preparing for birth and being ready for complications reduces delays in receiving these services (1). The World Health Organization (WHO) has a vision of universal coverage of health care, however due to inequities in functioning health systems, pregnant women in the low and middle income countries have a high risk of morbidity and mortality (2).

The adult life-time risk of maternal mortality in women in the sub-Saharan region is estimated to be 1 in 38. This figure is higher compared to that of high income countries, which stands at 1 in 3,700 (3). Additionally, the maternal mortality ratio (MMR) in sub-Saharan countries is high, at 510 per 100,000 live births, contributing to 62% of maternal deaths in the world. Although progress has been made in the reduction in infant mortality and neonatal mortality, challenges still remain with the reduction of maternal mortality (3). Historical evidence shows that no country has managed to bring its maternal mortality ratio below 100 per 100,000 live births without appropriately skilled health professional during labour, birth and early postnatal period (4).

Complications that result in maternal deaths and that may contribute to perinatal deaths are unpredictable, and their onset can be both sudden and severe. Delay in responding to the onset of labour and such complications has been shown to be one of the major barriers to reducing mortality and morbidity surrounding childbirth (5). The birth and emergency preparedness plan elements are; identification of the desired place of birth; the preferred birth attendant, the closest appropriate care facility, a birth companion, funds for birth-related and emergency expenses; support to take care of the home and children while the woman is away, transport to a health facility for the birth, transport in the case of an obstetric emergency and identification of blood donors in case of emergency (6)

Uterine rupture in subsequent pregnancies is the most catastrophic complication in women with previous delivery by caesarean section (7). Other complications include postpartum bleeding, delay in placenta delivery, infection, intensive care unit admissions and increased chances of ectopic pregnancy(8,9). Globally there is steady increase in the rates of Caesarean Sections(7,10–12)

Among other preparations women with previous scar particularly need special attention on identification of an appropriate health care facility operating for 24 hours, identification of compatible blood donors, arrangement of reliable transport in case of emergency and funds for the birth and emergency. Knowledge of maternal danger signs is an important alarm to seek for medical attention. Women with previous scar being a high risk group are required to be knowledgeable of key danger signs of pregnancy particularly excessive vaginal bleeding, severe abdominal pain, dizziness, rupture of membranes before labour and reduced foetal movements among other danger signs.

Literature review shows very little has been studied on birth preparedness, complication readiness and knowledge of maternal danger signs with specific focus to women with previous scar which is a high risk group, with little evidence of such studies being conducted in an urban setting. With reference from other studies done in rural areas in Tanzania and other countries; this study intended to explore the gap in terms of knowledge and preparations in an urban setting with specific focus on women with previous scar.

In Tanzania and particularly at Muhimbili National Hospital there is evidence of maternal morbidity and mortality associated with lack of BPCR in women with previous delivery by caesarean section (11,13–15). There is a need to know if there are any significant changes in terms of BPCR and knowledge of maternal danger signs in an average of the past seven years since these studies were conducted. To avoid or reduce maternal and foetal complications women with previous scar need to be well prepared for birth so that they can receive appropriate and timely health care.

1.2 Problem Statement

Avoidable maternal mortality and morbidity remains a challenge in many developing countries. According to TDHS 2015/2016 the maternal mortality ratio is 556 per 100,000 live births(16). Many of the complications that result to maternal deaths are unpredictable, and their onset can be both sudden and severe. Delays in seeking, reaching and receiving appropriate health care services have been shown to be associated with maternal mortality(5).

Studies are showing global increase in the rates of Caesarean Sections(10,12,17). Furthermore there is evidence of increase in Caesarean Section related morbidity and mortality(11,13–15).Uterine rupture in subsequent pregnancies is the most fatal complication in women with previous scar(18).

With available literatures it shows very little has been studied on birth preparedness and knowledge of maternal danger signs which is an important component to complication readiness, with specific focus to women with previous scar which is a high risk group. In Tanzania and worldwide low levels of BPCR and knowledge of key maternal danger signs have been demonstrated in both urban and rural areas(19–26).

1.3 Conceptual Framework

Birth preparedness and complication readiness is essential for good maternal and foetal outcome in the journey of giving birth. There is a number of factors which are anticipated to be associated with BPCR. This study focused on socio-demographic characteristics, obstetric characteristics and individual/personal factors.

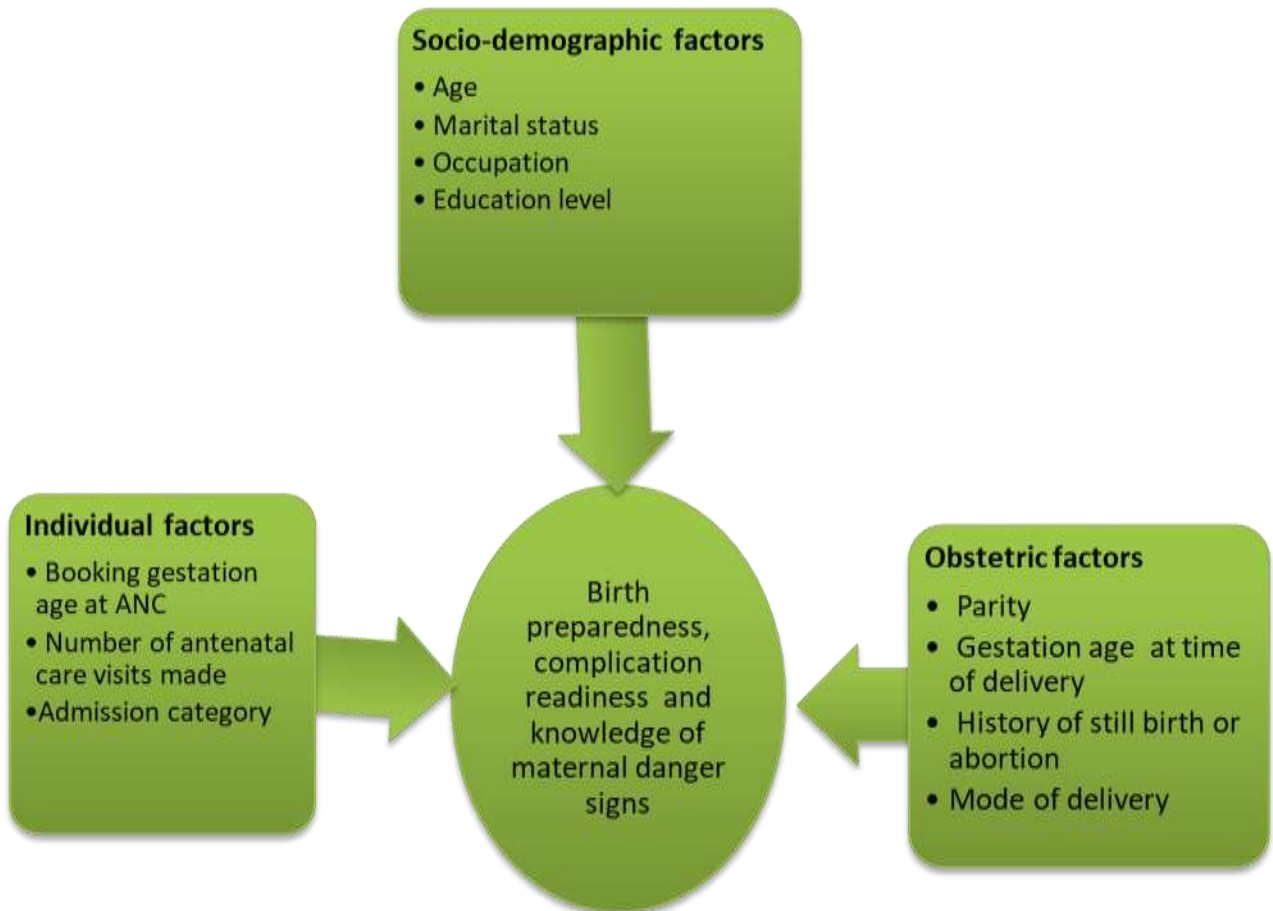


Figure 1: Conceptual framework on birth preparedness, complication readiness and knowledge of maternal danger signs among postnatal women with previous scar

1.4 Rationale

Delays in seeking, reaching and receiving appropriate health care services have been shown to be associated with maternal mortality. Uterine rupture is the most catastrophic complication in women with previous delivery by caesarean section associated with these delays.

There is a need to study birth preparedness, complication readiness and knowledge of maternal danger signs in women with previous scar which is a high risk group in order to identify the factors associated with obstetric complications contributing to maternal and neonatal morbidity and mortality.

This study intended to play a key role to identify the status of birth preparedness, complication readiness and knowledge of danger signs. The challenges, gaps obtained and recommendations have been addressed. These will help policy makers to find means to improve acquisition of intended health care hence reduce both maternal and newborn morbidity and mortality.

1.5 Research Questions

1. What proportion of postnatal women with one previous scar is prepared for birth and its anticipated complications?
2. What are the factors affecting the status of birth preparedness, complication readiness and knowledge of maternal danger signs among postnatal women with one previous scar?
3. What proportion of postnatal women with one previous scar is with desired knowledge of maternal danger signs?

1.6 Broad Objective

To determine birth preparedness, complication readiness and knowledge of maternal danger signs and its associated factors among post natal women with one previous scar admitted at MNH from 18th November 2019 to 15th February 2020.

1.6.1 Specific Objectives

1. To determine the proportion of postnatal women prepared for birth and its anticipated complications among women with one previous scar.
2. To identify the factors associated with birth preparedness and complication readiness among the study group.
3. To determine the proportion of postnatal women knowledgeable on maternal danger signs among women with one previous scar
4. To identify the factors associated with knowledge of maternal danger signs among postnatal women with one previous scar.

2.0 LITERATURE REVIEW

2.1 Overview on delivery by Caesarean Section (CS)

In recent decades Caesarean section rates have been rising globally. Latest data indicates that currently 19.1% of all births occur by CS, the rate being higher in developed countries as compared to the developing countries. The figures indicate that the rate has been tripled between 1990 and 2014, with an average annual rate increase of 4.4% (12). Among the leading countries in the CS rates are China and United States. Since the 1990s China had the CS rate at 50%. These had been contributed with the one child policy and being considered as a safe mode of delivery (27). In the United States CS rate has increased dramatically over the past four decades from 5% in 1970 to 32.3% in 2008 and a contributing factor behind this increase is a decline in the number of vaginal births after cesarean section (10).

At MNH caesarean section rates had increased from 19% in 2000 to 49% in 2011. Such an increase in CS rate suggests that many of CSs might have been performed on questionable indications thus not necessarily meant to improve perinatal outcome as it is perceived (17). Studies have pointed out several reasons for performing non clinical indicated CSs. Among these reasons are ; fear of litigation (28), women desiring CS for fear of labour pains (29,30), clinicians wanting to be convenient for fear of bad obstetric outcomes (29,31,32). Studies further indicate that some of CSs are being performed for economic incentives particularly from private patients and meeting their clients demands (29,32).

With the steady increase in caesarean section rates, the number of high risk women is increasing. These women are even subjected to unnecessary repeat caesarean sections if they are not well monitored during the antenatal period. In Tanzania studies have shown that utilization of Vagina Birth after Caesarean Section (VBAC) is low among women with previous scar. A large proportion of women with previous scar are subsequently delivered by repeat Caesarean Sections unnecessarily for fear of poor maternal and foetal outcome

particularly rupture of uterus, the reason being the delay in referrals as these women have been kept in labour somewhere before they are referred to MNH(33).

2.2 Birth preparedness, complication readiness and knowledge of maternal danger signs

Women with previous scar need special attention in their antenatal care in order to improve their perinatal outcome. This is evident from a Cohort study done in England between 2008 and 2011 in which it was found that implementation of midwife-led antenatal care for women with one previous cesarean offers a safe and appropriate mode of delivery also reducing unnecessary repeat CSs and promoting Vaginal Birth after Caesarean Section(34). Studies have shown that BPCR interventions are effective in reducing maternal and neonatal mortality in low resource setting. In a randomized trial in BPCR it was found that exposure to BPCR interventions was associated with statistically significant reduction in neonatal mortality by 18% and maternal mortality by 28% (35).

Institutional delivery service utilization has been found to be higher in mothers who are well-prepared for birth and its complication focusing on the strategies that increase the preparedness of mothers for birth and complication ahead of childbirth (36). Knowledge of danger signs of pregnancy has been associated with BPCR. This is evident from the study done at Mulago hospital in Uganda in 2014. The study also found that knowledge of maternal danger signs was also higher in women who had problems in their past pregnancies(37). Age and education of women and of their partners plays an important role on the components of BPCR (26).

Studies have shown that birth preparedness and complication readiness status is low in developing countries with evidence from studies done in some of the countries like Ethiopia, Rwanda, Uganda and Bangladeshi(25,26,38,39). The situation is better in developed and middle income countries where a study done in Thailand demonstrated that the proportion of BPCR among pregnant women attending antenatal care was high (40).

Tanzania among other developing countries has low levels of birth preparedness particularly in peripheral areas. In a study done in Mpwapwa district it was found that only 14.8% of the women knew three or more obstetric danger signs (19). A similar study was done at Chamwino district, central Tanzania in which it was found that 58.2 % of the respondents were considered as prepared for birth and its complications (41).

In a community based study in rural Tanzania Furaha et al found that community members expressed a perceived need to prepare for childbirth. They were aware of the importance to attending the antenatal clinics, relied on family support for practical and financial preparations such as saving money for costs related to delivery, moving closer to the nearest hospital (42).

Men's involvement in reproductive health particularly in antenatal care service is identified as important in maternal health. Awareness of obstetric danger signs facilitates men in making a joint decision with their partners regarding accessing antenatal and delivery care (42).

3.0 METHODOLOGY

3.1 Study Design

The study was a cross sectional analytical study.

3.2 Study Setting

This study was conducted at MNH post natal wards. Muhimbili National Hospital is the largest consultant, tertiary and teaching hospital in Tanzania also serving as a teaching hospital to Muhimbili University of Health and Allied Sciences (MUHAS) and other universities. The hospital is located in the city of Dar es Salaam which has a total population of about 4.5 million people(43).

The hospital receives referred patients from Dar es Salaam regional hospitals and other hospitals from within the city and upcountry. The major referring regional hospitals within Dar es Salaam are Amana, Mwananyamala and Temeke and more than 61 other health facilities within the city. Maternity unit receives women directly from home as well as referrals from almost all regional and district hospitals in Dar es Salaam. The maternity block has two wings with nine wards; four wards are reserved for admission of women with antenatal and postnatal complications, three wards for women with sick children, a neonatal care unit, a labour ward which has 20 delivery beds and High Dependent Unit where Pre eclamptic/Eclamptic and other critically ill patients are admitted. There is a total of seven postnatal wards.

An operating theatre with four operating rooms is located near to the maternity block. MNH labour ward receives around 800 admissions monthly mainly from four sources which are referrals, admissions directly coming from home and transfer in patients from wards or antenatal clinics. The average admissions for women with previous scar are around 35 per month. The average number of deliveries per month is around 600. Mode of delivery being Spontaneous vaginal delivery, Assisted Breech Delivery, Low cavity vacuum extraction and

Caesarean section which is at average rate of around 67% (source of data; Labour ward admission book and perinatal reports prepared by residents).

3.3 Study Duration

The duration for data collection was 8 weeks. It commenced on 18th November 2019 and ended in 15th February 2020.

3.4 Study Population

All post natal women admitted at MNH post natal wards during the study period.

3.5 Study Sample

All women with one previous scar within 48 hours of delivery who were admitted at MNH post natal wards were included in the study.

3.6 Sample Size

From previous studies birth preparedness and complication readiness index taken as a reference point is 58% -Chamwino Study (41). Sample size is calculated using this single proportion formula;

$$n = z^2 p(100-p) / \epsilon^2$$

Where: n = Minimum sample size designed,

z = the point on standard normal deviation corresponding to 95% Confidence Interval which is 1.96

p = proportion of birth preparedness and complication readiness (58%) - Chamwino Study (41)

ϵ = Margin of error set at 5%

$$n = (1.96)^2 \times 58 \times (100 - 58) / (5)^2$$

$$n = 390$$

The minimum required sample size was 390

Ten women were added in extra of the study sample because they met inclusion criteria. At the end of data collection period the sample size reached 400 women.

3.7 Sampling Technique

Convenient non probability sampling technique was used, involving all recently delivered women within 48 hours of giving birth who had one previous delivery by caesarean section prior to the current delivery. Participants' names were taken from the admission books. They were then cross checked for inclusion and exclusion criteria after a physical contact. Women with inclusion criteria who consented and willing to participate in the study were interviewed using a structured questionnaire by picking one after the other until the minimum required sample was reached. Interviews were conducted in all seven days of the week. An average of eight women was interviewed each day. During the week days from Monday to Friday data collection was done during the afternoon hours. During the week ends data were collected during the morning and afternoon. Interviews were delayed in women who had lost babies and those with very sick neonates (admitted in neonatal intensive care unit) until these women were ready to consent and willingly participate in the study. However they were interviewed not later than three days from giving birth.

3.8 Inclusion Criteria

All post natal women with one previous delivery by Caesarean Section prior to the current delivery.

3.9 Exclusion Criteria

- Women with cognitive impairment; including those with mental illness and communication disorders
- Seriously sick women including those with eclampsia and those admitted in intensive care unit.

3.9. Training of a research assistant and pretesting of the questionnaire

The questionnaire was pretested from ten participants to find out areas of improvement preceding the data collection process, from which no significant changes were made. One research assistant was recruited, a recent Doctor of Medicine graduate, trained on the purpose of the study, meaning of every question in the questionnaire and ethical conduct in approaching women to be recruited for the study. The research assistant was recruited for the purpose of taking cover in case the principal investigator was not available for inevitable reasons. A total of 54 out of 400 study participants were interviewed by the research assistant in the duration of seven days.

3.10 Data Collection

Data were collected from consented participants using a standardized questionnaire translated to Swahili. The questionnaire was adapted from the birth preparedness and complication readiness monitoring tools and indicators for maternal and newborn health developed by Johns Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) (1). During interviews the questionnaires were completed by Principal Investigator (PI) and a trained research assistant and were coded in order to maintain participants' confidentiality.

Information on BPCR, knowledge of maternal danger signs and social demographic and obstetric characteristics was recorded. Social demographic and obstetric characteristics included age, marital status, occupation, education level, parity, gestation age at time of delivery, booking gestation age and number of visits made at ANC, past obstetric history and admission category.

3.11 Data management and analysis

Using SPSS version 23, coded data were entered on daily basis. Data cleaning was done sequentially until the completion of data entry. Pearson's Chi square statistics was used to test the association between the dependent and independent variables. All independent variables which showed association at bivariate analysis at (P value < 0.05) were fitted into a multiple

logistic regression model to test for the association of each with the dependent variable. Odds Ratios (OR) with 95% confidence intervals and P-value were reported. Association and difference between variables were considered statistically significant if $P < 0.05$.

The dependent variables were BPCR and knowledge of maternal danger signs in women with one previous scar. The key steps for birth preparedness and complication readiness were; preparation of materials for delivery, identification of the desired place of birth, identification of the preferred skilled health personnel, funds for birth-related and emergency expenses, transport in the case of an obstetric emergency and identification of blood donors. A woman taking at least four steps among the six steps (more than a half) was considered prepared for birth and its complications. A woman taking less than four steps was classified as not prepared.

Maternal danger signs were divided in three categories namely; during pregnancy, during birth, and after delivery. The danger signs during pregnancy were; excessive vaginal bleeding, convulsions, fever, headache, blurred vision, swelling of hands and feet, severe abdominal pain, dizziness, reduced foetal movements, rupture of membranes(leakage) before labour. Danger signs during birth were; excessive vaginal bleeding, convulsions, delay in placenta delivery > half an hour, prolonged labour > 12 hours. Danger signs after birth were excessive vaginal bleeding, convulsions, foul smelling vaginal discharges, high fever, severe abdominal pains and swollen tender breasts. Women being able to mention at least five obstetric danger signs were considered knowledgeable of danger signs. Mentioning at least one danger sign in each category was mandatory. Those who could not mention at least one danger sign in each category were considered as not knowledgeable of maternal danger signs of pregnancy. This scoring system has previously been used by studies assessing PRCR and knowledge of maternal danger signs(41,44–46).

Independent variables were social demographic and obstetric characteristics. Age was grouped into four categories which were; 18-24, 25-34, 35-44 and >44 years. Marital status was divided into two groups; married/cohabiting and single/widowed/divorced. Occupation was

grouped into three; employed, self-employed and business dealers, peasants and petty traders, and the third group covered the unemployed, housekeepers and students. The level of education was divided into two categories which were; primary school and below and secondary school and above. Parity was classified as multipara (Para 1, 2, 3 and 4) and grand multipara (Para 5 and more), still birth was described as delivery of dead baby or early neonatal death (death of the baby within 14 days after live birth), abortion was described as pregnancy terminated before 28 weeks gestation. Admission category was divided into two groups namely cost sharing (those with some prepaid expenses by the government) and the insurance/private group, Gestation age at time of delivery was either term (37 completed weeks) or preterm (less than 37 weeks). Booking gestation age was either first trimester booking (up to 12 weeks) or booking beyond the first trimester (beyond 12 weeks) and the number of antenatal care visits were less than four and four or more visits. Mode of delivery was spontaneous vaginal delivery, elective repeat caesarean section or emergency repeat caesarean section.

3.13 Ethical Consideration

The ethical clearance to conduct the study was secured from the Senate Research and Publication Committee of Muhimbili University of Health and Allied Sciences (MUHAS). Permission to conduct the study was sought and obtained from authorities and administration of Muhimbili National Hospital.

Written informed consent was obtained from the participants, after being informed on the purpose of the study, what is going to be done and the benefits expected to be obtained from the study findings. Participants had rights to withdraw from the study at any time they wished and withdrawal from the study would not affect their subsequent health care services delivery among other services needed. The participant's information was to be kept confidential. The research data obtained will be kept for 5 years after the study dissemination and publication, and there-after destroyed.

4.0 RESULTS

A total of 2258 deliveries took place during the study period from November 2019 to February 2020 where 1024(45.3%) had spontaneous vaginal delivery and 1234(54.7%) women delivered by caesarean section of whom 480(38.9%) had previous scar. Among women with previous scar 400 met inclusion criteria and were analyzed.

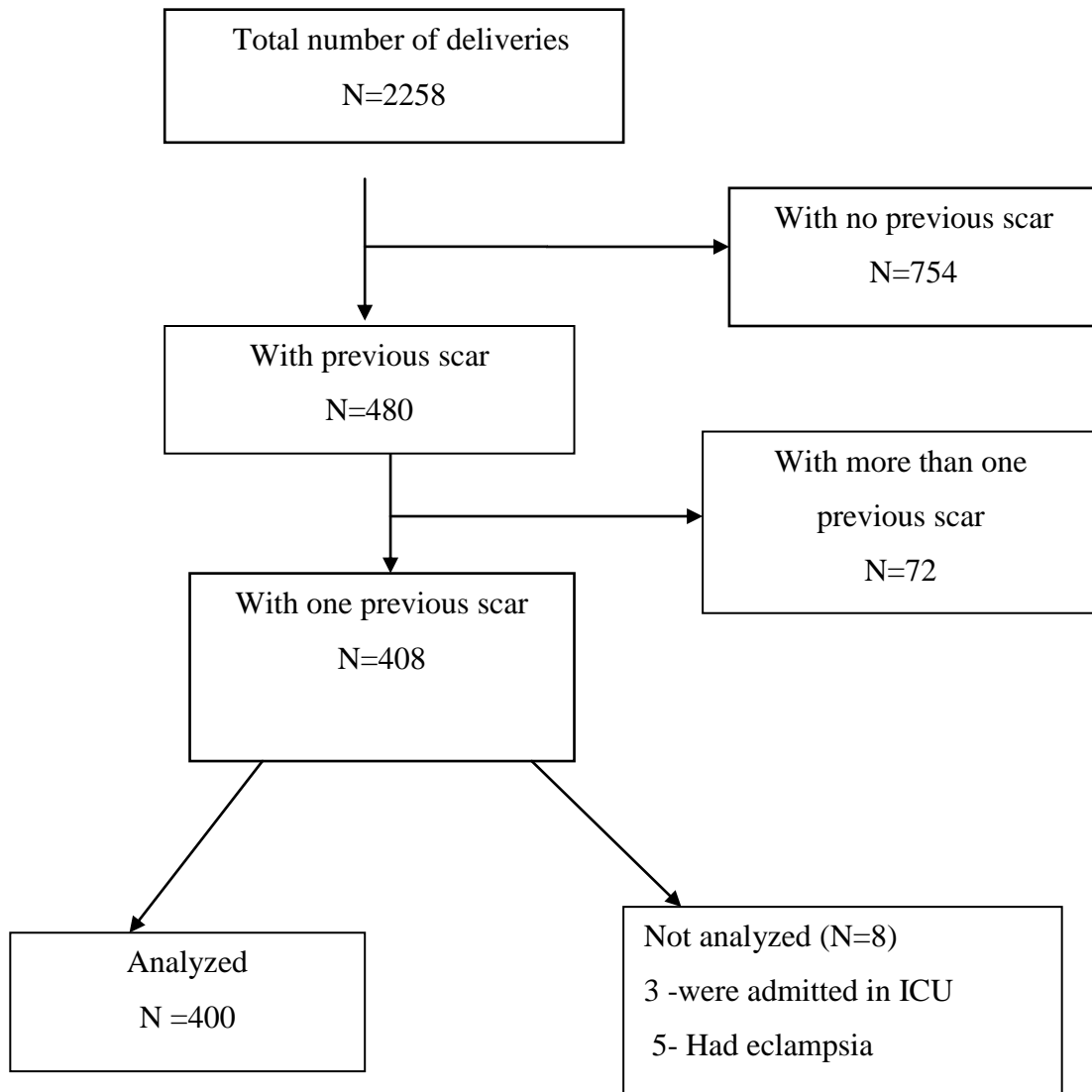


Table 1: Social demographic characteristics of the study population

(N=400)

Variable	Frequency	Percentage
Age group		
18-24	27	6.8
25-34	262	65.5
35-44	111	27.7
Marital status		
Single/Widowed/Divorced	1	0.25
Married/Cohabiting	399	99.75
Education Level		
Primary and below	138	34.5
Secondary and above	262	65.5
Occupation		
Employed/Self-employed/Business	215	53.7
Peasant /Petty traders	86	21.5
Unemployed/Housekeepers/Student	99	24.8
Admission category		
Cost sharing	237	59.2
Insurance/private	163	40.8

The mean age of the study population was 32(\pm 4.8) most were between 25 and 34 years 262(65.5%). Their median age was 31.5. The minimum age was 18 years and maximum was 44 years respectively. Almost all were married or cohabiting 399(99.8%). More than half of study participants had an education level of at least secondary education and were either employed, self- employed or doing business.

Table 2: Obstetric characteristics of the study population

Variable	Frequency	Percentage
Parity		
Multipara (Para 1 to 4)	373	93.2
Grand multipara (Para 5 and above)	27	6.8
Gestation age during delivery		
Term	277	69.2
Preterm	123	30.8
Past obstetric history		
History abortion/still birth	122	30.5
No history of abortion/still birth	278	61.5
ANC attendance		
Less than 4 visits	28	7
4 visits and more	372	93
Booking gestation age		
First trimester	264	66
Beyond first trimester	136	34
Mode of delivery		
Elective repeat CS	151	37.7
Emergency repeat CS	247	61.8
Vaginal delivery	2	0.5

All women had attended antenatal clinic at least once during the course of pregnancy and most of them were multipara. Very few 2(0.5%) had vagina birth after caesarean section

Table 3: Practices on birth preparedness, complication readiness and knowledge of maternal danger signs

Variable	Frequency	Percentage
Identified place of delivery	389	97.3
Identified skilled health personnel	174	43.5
Identified transport for delivery/obstetric emergency	275	68.8
Saved money for birth and emergency	389	97.3
Prepared materials/birth kit	232	58
Prepared at least two blood donors	39	9.8
Took at least 4 steps(prepared)	254	63.5
Key maternal danger signs responded		
Excessive vagina bleeding	296	74
Severe headache	280	70
Convulsions	52	13
Blurring of vision	93	23.3
Severe abdominal pains	62	15.5
Dizziness	95	23.8
Swelling of hands and feet	229	57.3
Loss of foetal movements	46	11.5
High grade fever	153	38.3
Water leakage before labour	52	13
Labour lasting > 12 hours	51	12.8
Delay in placenta delivery	51	12.8
Abnormal vagina discharges	218	54.5
At least one danger sign during pregnancy	396	99
At last one danger sign during birth	200	50
At least one danger sign after delivery	234	58.8
At least 5 danger signs(knowledgeable)	172	43

*Could not sum up to 100 % because multiple responses were possible

Most of the study participants 389(97.3%) had already chosen where to give birth and saved money. However only few women 39(9.8%) had arranged potential blood donors. Two hundred and sixty four (63.5%) women took at least four key preparedness steps and were considered well prepared for birth and its complications.

The most frequently mentioned danger sign was excessive vagina bleeding 296(74%). At most all women 396(99%) were able to mention at least one danger sign during pregnancy. The overall knowledge of maternal danger signs was 43%.

Table 4: Association between BPCR and social demographic and obstetric characteristics (Chi square test)

Variable	BPCR status		P.value
	Prepared n(%)	Not prepared n(%)	
Maternal age			
18-24	10(37.04)	17(62.96)	0.003
25-34	164(62.60)	98(37.40)	
35-44	80(72.07)	31(27.93)	
Education Level			
Primary and below	36(26.09)	102(73.91)	<0.001
Secondary and above	218(83.21)	44(16.79)	
Occupation			
Employed/Self-employed/Business	190(88.37)	25(11.63)	<0.001
Peasant /Petty traders	34(39.53)	52(60.47)	
Unemployed/Housekeepers/Student	30(30.30)	69(69.70)	
Parity			
Multipara	241(64.78)	131(35.22)	0.052
Grand multipara	13(46.43)	15(53.57)	
Gestation age during delivery			
Term	187(67.51)	90(32.49)	0.012
Preterm	67(54.47)	56(45.53)	
Past obstetric history			
History of abortion/still birth	81(66.39)	41(33.61)	0.426

Without history of abortion/still birth	173(62.1-23)	105(37.77)	
ANC attendance			
Less than 4 visits	9(32.14)	19(67.86)	<0.001
4 visits and more	245(65.86)	127(34.14)	
Booking gestation age			
First trimester	183(69.32)	81(30.68)	0.001
Beyond first trimester	71(52.21)	65(47.79)	
Mode of delivery			
Elective repeat CS	127(83.44)	26(16.56)	<0.001
Emergency repeat CS	127(51.42)	120(48.58)	
Admission category			
Cost sharing	97(40.93)	140(59.07)	<0.001
Insurance/private	157(96.32)	6(3.68)	
Knowledge of danger signs			
Knowledgeable	144(83.72)	28(16.28)	<0.001
Not knowledgeable	110(48.25)	118(51.75)	

*Statically significant at $p < 0.05$

BPCR was associated with maternal age, education level, occupation, gestation age at time of delivery, timing of booking at antenatal clinic and number of visits made, mode of delivery, admission category and knowledge of danger signs. These variables were further run into logistic regression analysis to see the association of each with the dependent variable.

Table 5: Association between knowledge of maternal danger signs and social demographic and obstetric characteristics (Chi square test)

Variable	Knowledge of danger signs		P.value
	Yes n(%)	No n(%)	
Maternal age			
18-24	6(22.22)	21(77.78)	0.004
25-34	106(40.46)	156(59.54)	
35-44	60(54.05)	51(45.95)	
Education Level			
Primary and below	24(17.39)	114(82.61)	<0.001
Secondary and above	148(56.49)	114(43.51)	
Parity			
Multipara	160(43.01)	212(56.99)	0.987
Grand multipara	12(42.86)	16(57.14)	
Past obstetric history			
With history of abortion/still birth	56(45.90)	66(54.10)	0.437
Without history of abortion/still birth	116(41.73)	162(58.27)	
ANC attendance			
Less than 4 visits	4(14.29)	24(85.71)	0.001
4 visits and more	168(45.16)	204(54.84)	
Booking gestation age			
First trimester	124(46.97)	140(53.03)	0.025
Beyond first trimester	48(35.29)	88(64.71)	

*Statically significant at $p < 0.05$

Knowledge of maternal danger signs was associated with maternal age, education level, timing of booking at antenatal clinic and number of visits made. These variables were further run into logistic regression analysis to see the association of each with the dependent variable.

Table 6: Bivariate and multivariate logistic regression analysis of BPCR with social demographic and obstetric characteristics

Variable	BPCR			
	Bivariate COR	(95% CI)	Multivariate AOR	(95% CI)
Maternal age				
18-24	1			
25-34	2.84	1.25 - 6.46	1.21	0.3 - 4.02
35-44	4.39	1.81 -10.62	1.9	0.5 - 6.79
Education Level				
Primary education and below	1			
Secondary education and above	12.25	7.39 -20.29	3.68	1.83 -7.42
Occupation				
Unemployed/Housekeepers/Student	1			
Peasant /Petty traders	1.5	9.61 - 31.79	0.89	0.42- 1.89
Employed/Self-employed/Business	17.48	0.82 - 2.76	2.29	0.97- 5.41
Gestation age during delivery				
Preterm	1			
Term	1.74	1.12 -2.68	0.9	0.50- 1.64
ANC attendance				
Less than 4 visits	1			
4 visits and more	4.07	1.79 - 9.26	1.32	0.4 - 4.14
Booking gestation age				
Beyond first trimester	1			
First trimester	2.07	1.35 - 3.17	1.66	0.9 - 2.99
Admission category				
Cost sharing	1			
Insurance/private	37.77	32.14 – 71.55	8.77	3.60- 21.39
Knowledge of danger signs				
Not knowledgeable	1			
Knowledgeable	5.52	3.41 - 8.92	1.84	0.9 - 3.47

On bivariate analysis BPCR was associated with higher maternal age (35 -44 years), secondary school and higher education, booking within the first trimester, making four or more ANC visits, delivering at term, having health insurance and being knowledgeable of maternal danger signs. These variables were run into multivariate analysis.

On multivariate logistic regression analysis women with secondary school and above education level were more than 3.5 folds more likely to prepare for birth and its complications compared with those having primary school and below. Women with health insurance and those who were able to pay cash were 8.77 times more likely to prepare for birth than those without insurance (cost sharing group).

Table 7: Bivariate and multivariate logistic regression analysis of knowledge of maternal danger signs with social demographic and obstetric characteristics

Knowledge of maternal danger signs				
Variable	COR	Bivariate 95% CI	AOR	Multivariate 95% CI
Age group				
18-24	1			
25-34	2.38	0.93 -6.03	1.12	0.38 - 3.28
35-44	4.12	1.54 - 10.98	2.14	0.70 -6.53)
Education Level				
Primary education and below	1			
Secondary education and above	5.46	3.29 - 9.08	5.33	3.17 - 8.99
ANC attendance				
Less than 4 visits	1			
4 visits and more	4.94	1.68 - 14.52	2.67	0.84 - 8.56
Booking gestation age				
Beyond first trimester	1			
First trimester	1.62	1.06 - 2.49	1.37	0.85 - 2.20

On bivariate analysis knowledge of maternal danger signs was associated with higher maternal age (35 -44 years), secondary school and higher education, booking within the first trimester and making four or more ANC visits. These variables were run into multivariate analysis.

On multivariate logistic regression analysis women with secondary school and above education level were 5 folds more likely to mention at least five danger signs compared with those having primary school and below.

5.0 DISCUSSION

Among the women included in the study nearly two-third were considered well prepared for birth and its complications. Less than a half were knowledgeable of maternal danger signs. Having health insurance or being able to pay cash and the level of formal education were the factors strongly associated with BPCR and knowledge of maternal danger signs.

This study found the proportion of women well prepared for birth and its complications to be 63.5%. This finding does not differ much from the findings obtained from studies done in semi urban arrears in other regions of Tanzania. At Chamwino district in central Tanzania the proportion of BPCR was 58.5%(41). The two studies are similar in terms of study setting and methodological approach; however the study population is different as this study involved women with previous scar which is a higher risk group.

Studies have demonstrated lower levels of birth preparedness in rural areas of Tanzania where BPCR status is below 50%(19,42,47,48) .Similar proportions have been observed in rural areas of other developing African countries with evidence from studies done in Ethiopia, Rwanda, Uganda and Bangladeshi(25,26,38,39). The gap observed in the proportion of preparedness could be due to the difference in study setting and population as this study was done at a referral tertiary facility to women with previous scar who are expected to be more prepared because of their potential risks. Elsewhere in developed and middle income countries BPCR index is higher than the findings observed from this study(40).

Furthermore BPCR did not differ from some of the studies done outside Africa with similar methodological approaches and study setting. A study done in India indicated 55.83% women were prepared for birth and its complications(26). However the study population remains to be different as this study involved women with previous scar. Despite these similarities and variations, the proportion of women prepared for birth and its complications in this study is still low which warrants intervention.

Maternal education status has been strongly associated with BPCR. Women who had secondary school and above education were 3.5 folds more likely to prepare for birth and its complications than those with primary education and below. Among other factors many studies have cited maternal education as among strong determinants of BPCR. Women with higher levels of formal education have more chances of being prepared for birth and its complications than those with low levels of education or without formal education by odds ranging from 1.5 to 8.04(26,36,38,41,45,49–51).

BPCR status has also been associated with past obstetric history, being higher in women who had problems in their past pregnancies(50). However the association between bad past pregnancy outcomes with BPCR could not be picked. The possible explanation could be because the study group was women with one previous scar; most of them having low parity. They are not expected to have undergone a long trend of past obstetric events.

Women with health insurance or being able to pay cash were 8.77 times more likely to be prepared for birth and its complications than those without insurance (cost sharing group). Several studies have pointed out that health insurance improves BPCR as it reduces the burden of pocket dependency in covering health service dues. Women with health insurance have more chances of having skilled birth attendance, serving money and having regular ANC follow ups as they have no fear of costs(49,52–55)

Less than half (43%) of women studied were knowledgeable of danger signs. This figure is higher than the findings observed from rural and urban areas in the country as reported by other studies. The study done at Rufiji – southern Tanzania pointed out the proportion of knowledge of maternal danger signs to be 3.8%(24). In central Tanzania 25.2% of women were knowledgeable of maternal danger signs(23). The proportion in urban from the study done in Dar es Salaam was 31%(22). This figure is lower than the findings obtained from this study despite the similar study setting and methodological approach. This study was done at a referral tertiary facility to women with previous scar which is a high risk group. This could be the reason to explain the gap observed.

With similar methodological approach studies have shown variations in the proportion of knowledge of maternal danger signs in rural and urban areas. In Ethiopia the proportion ranged from 37.5 to 56.8%(56–58). In rural Nigeria studies have reported 52.5% women were knowledgeable of danger signs; the urban proportion being 56.3%(59,60). Nepal had 66% women knowledgeable of maternal danger signs(20). These proportions are higher than the findings obtained from this study.

Education status has been strongly associated with knowledge of maternal danger signs. This study found that women who had at least secondary education were 5 times more likely to have knowledge of maternal danger signs. Many other studies with similar methodological approach have cited maternal education as among the key factors for the knowledge of danger signs(23,36,39,45,46,56,61,62). Studies have further demonstrated low levels of knowledge of maternal danger signs and BPCR status in areas with low formal education rates due to several reasons including poverty and poor infrastructure; hard to reach areas(25,45,56). This justifies formal education to play a key role in knowledge of maternal danger signs.

Despite the reported results, this study had some limitations. The study was a tertiary health facility based in an urban setting in which more at-risk representative population was targeted. Therefore the findings obtained cannot possibly be generalized. A community based, qualitative study design could have further solidified the results observed. However, the results are valid and form a step ahead towards further understanding of how to overcome the issues of low rates of BPCR and knowledge of maternal danger signs leading to the delays in seeking appropriate health care.

6.0 CONCLUSION AND RECOMMENDATION

Nearly two-thirds of women studied were well prepared for birth and its complications. Less than a half were knowledgeable of maternal danger signs. The proportion of BPCR and knowledge of maternal danger signs is still low which warrants intervention. Health insurance and level of education had strong association with BPCR and knowledge of maternal danger signs. Empowering women economically, giving them health insurance and improving their education status will help to improve their BPCR status hence improve maternal and newborn health.

Universal health insurance coverage would help poor women who fail to acquire even the minimum requirements of BPCR status due to economic reasons. Further studies are recommended particularly community based qualitative studies to make more exploration and possibly come with new knowledge which will help to make changes for the sake of improvement.

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APPENDICES**Appendix I: Consent Form (English Version)****SCHOOL OF MEDICINE****DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY****MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS)****CONSENT TO PARTICIPATE IN RESEARCH**

STUDY TITLE: Birth preparedness, complication readiness and knowledge of maternal danger signs among postnatal women admitted at Muhimbili National Hospital.

Code number.....

PART I: INFORMATION

Dear Participant;

My name is Samwel Ephraim Shupa. I would like to invite you to participate in this research that intends to determine birth preparedness, complication readiness and knowledge of maternal danger signs and its associated factors among post natal women with one previous delivery by Caesarean Section. This is part of my study program.

Aim: The aim of the study is to determine birth preparedness, complication readiness and knowledge of maternal danger signs and its associated factors among post natal women with one previous delivery by Caesarean Section.

Participation: The principal investigator will have a short interview with you regarding your birth preparedness, complication readiness and knowledge of maternal danger signs. The information you provide will be filled in the structured questionnaire.

Confidentiality: All information you provide will be protected to the best possible way and interviews will be conducted in a privacy. No identity will be displayed on any documents instead a code will be used on the questionnaire.

Right to withdrawal: Your participation is entirely voluntary. You are free to agree or refuse to participate in the study or to withdraw at any point even if you agreed earlier. Decline in your participation will not affect the delivery of health services that you came to seek.

Benefits: There will be no direct benefits to the participants, however findings obtained from this research will aid the policy makers to improve services regarding birth preparedness, complication readiness and knowledge of maternal danger signs thus improve maternal and newborn health.

Injury/Harm: There are no anticipated risks that you will be exposed to by participating in this study.

Who to contact: For any inquiry regarding this study please contact Dr. Samwel Ephraim Shupa, resident doctor in Obstetrics and Gynaecology Department at Muhimbili University of Health and Allied Sciences (MUHAS), who is the principal investigator of this study; P.O Box 65001, Dar es Salaam, mobile +255 784 544 876.

For any questions pertaining to rights as a research participant, contact Dr. Bruno Sunguya, the Director of Research and Publications Committee at MUHAS; P.O. Box 65001, Dar es Salaam, Tel: +255 222 150 302-6/2152489.

PART II: CERTIFICATE OF CONSENT

I, _____ have read the above information/it has been read to me. I have had the opportunity to ask questions about it and any questions I asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Signature of the participant _____

Signature of researcher _____

Date of signed consent _____

I -CONSENT FORM (SWAHILI VERSION)**SHULE YA UTABIBU****IDARA YA UZAZI NA MAGONJWA YA WANAWAKE****CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI****FOMU YA RIDHAA YA KUSHIRIKI KATIKA UTAFITI**

UTAFITI: Maandalizi ya kujifungua, utayari wa kukabiliana na matatizo na uelewa wa dalili za hatari kwa akina mama waliowahi kujifungua kwa upasuaji, waliolazwa katika Hospitali ya Taifa Muhimbili.

SEHEMU YA I: TAARIFA

Ndugu mshiriki,

Naitwa Dkt. Samwel Ephraim Shupa. Napenda kukushukuru kwa kushiriki kwenye mahojiano haya. Ninafanya utafiti kuhusu maandalizi ya kujifungua, utayari wa kukabiliana na matatizo na uelewa wa dalili za hatari kwa mama mjamzito baina ya akina mama waliowahi kujifungua kwa kupasuliwa.

Lengo: Kufanya tathmini juu ya hali ya maandalizi ya kujifungua, utayari wa kukabiliana na matatizo na uelewa wa dalili za hatari kwa mama mjamzito baina ya akina mama waliowahi kujifungua kwa kupasuliwa.

Ushiriki: Mtafiti mkuu ataongea na wewe kwa muda mfupi juu ya hali yako ya maandalizi ya kujifungua, utayari wa kukabiliana na matatizo na uelewa wa dalili za hatari kwa mama mjamzito. Taarifa utakazotoa zitajazwa katika dodoso.

Usiri: Taarifa zote utakazotoa itakuwa ni siri na masailiano yatafanyika mahali pa faragha. Jina lako halitaandikwa popote kuhusiana na taarifa utakazotoa isipokuwa dodoso litakuwa na namba.

Haki ya kujitoa: Uko huru kukubali ama kukataa kushiriki ama kusitisha ushiriki wako muda wowote hata kama ulikubali hapo awali. Hata kama utakataa ama kusitisha kushiriki utapatiwa huduma ulizojia kama kawaida

Faida: Hakutakuwa na faida za papo kwa hapo utakazopata kwa kushiriki ila matokeo ya utafiti huu yatawasilishwa kwa watunga sera na kuwezesha kuboresha huduma za afya hususani mpango wa maandalizi ya kujifungua na utayari wa kukabiliana na matatizo yanayoweza kujitokeza

Kuumia/Madhara: Kushiriki katika utafiti huu hakutakuweka katika mazingira yoyote hatarishi. Hatutarajii madhara yoyote kwako, au kwa familia yako, au kwa wasaidizi wako kutokana na ushiriki katika utafiti huu.

Kwa mawasiliano: Endapo utakuwa na swali lolote linalohusu utafiti huu, wasiliana na wafuatao: Dkt. Samwel Ephraim Shupa (Mtafiti mkuu), mwanafunzi wa Shahada ya Uzamili Idara ya Uzazi na Magonjwa ya Wanawake, Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, S.L.P.65001, Dares Salaam. Simu +255 784 544 876.

Kwa maswali kuhusu haki zako kama mshiriki, unaweza kuwasiliana na Dkt. Bruno Sunguya, Mwenyekiti wa Kitengo cha Utafiti, Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, S.L.P 65001, Dar es Salaam. Simu: +255 222 150 302-6/2152489.

SEHEMU YA II: CHETI CHA RIDHAA

Mimi nimesoma (nimesomewa) taarifa hii kama ilivyoielezwa hapo juu. Nimepata nafasi ya kuuliza maswali na nimejibiwa na nimeridhika. Nimeelewa dhumuni la utafiti huu. Ninakubali/ninaridhia kwa hiari yangu kushiriki katika utafiti huu.

Sahihi ya mshiriki _____

Sahihi ya mtafiti _____

Tarehe _____

Appendix II: Questionnaire (English Version)

BIRTH PREPAREDNESS, COMPLICATION READINESS AND KNOWLEDGE OF MATERNAL DANGER SIGNS AMONG POSTNATAL WOMEN WITH PREVIOUS SCAR ADMITTED AT MUHIMBILI NATIONAL HOSPITAL.

Questionnaire ID: _____ Date: ___/___/_____ Initials of interviewer_____

SECTION ONE: SOCIO – DEMOGRAPHIC CHARACTERISTICS

1. How old are you (years).....
2. Place of residence.....
3. What is your marital status?
 - a) Single
 - b) Married
 - c) Divorced
 - d) Widowed
 - e) Cohabiting
4. What is the highest level of education you have attained?
 - a) Never attended school
 - b) Primary school
 - c) Secondary school
 - d) College/University
5. What is your occupation?
 - a) Employed
 - b) Self employed
 - c) Peasant
 - d) Business
 - e) Petty trader
 - f) Other
6. How big is your family?(number of family members).....

SECTION TWO: OBSTETRIC CHARACTERISTICS

7. Parity
8. History of abortions (below 28 weeks)
 - a) Yes (number
 - b) No
9. Number of living children.....
10. Gestation age at time of delivery
 - a) Term
 - b) Preterm (weeks.....)
11. Did you have any normal delivery after previous Caesarean Section?
 - a) Yes (number
 - b) No
12. Were you told the reason for operation in your last Caesarean Section?
 - a. Yes (mention it
 - b. No
13. History of still birth or early neonatal death(within 14 days after delivery)
 - a) Yes(mention the number.....)
 - b) No

SECTION THREE: BIRTH PREPAREDNESS AND COMPLICATION READINESS

14. How old is the child preceding the current birth?
15. Mode of delivery of the child preceding the current birth.
 - a. Normal delivery
 - b. Caesarean Section
16. Had you been attending antenatal clinic?
 - a) Yes(number of visits made.....)
 - b) No
17. Booking gestation age (weeks).....

18. Distance to the nearby health facility.

- a) Within half an hour
- b) One hour
- c) Two hours
- d) Three hours
- e) Four hours and more

19. Were you using any family planning method after your last Caesarean Section?

- a) Yes
- b) No

20. When should a woman conceive again after delivery by Caesarian Section?(time interval)

.....

21. Had you prepared any materials for delivery?

- a. Yes
- b. No

22. If yes; mention the materials you had prepared.

- Surgical gloves
- Plastic sheet
- Sterile blade
- Cord ties
- Soap
- Gauze
- Cotton
- Pieces of cloth.
- Others.....

23. Who told you to prepare those materials/ how did you know that you need to prepare Materials?

- a) Health service provider
- b) Relatives
- c) Mass media
- d) Other (specify).....

24. If you had no materials prepared can you give reason?

- a) Didn't know
- b) Had no money
- c) Has insurance
- d) Other reason(specify).....

25. Overall preparations

STEP	PREPAREDNESS STATUS	
	Yes	No
Identified place of delivery		
Identified a skilled health personnel		
Secured transport to the health facility for the birth		
Saved funds for giving birth and emergency		
Secured transport in case of emergency		
Identified compatible blood donors		
Prepared someone to take care of family		
Birth escort to the health facility		
Someone to lead/make decisions		

26. Where did you plan to give birth?.

- a) Dispensary
- b) Health center
- c) Hospital /Referral hospital
- d) Home /traditional birth attendant

27. Is the healthy facility you identified offering Caesarean Section delivery?

- a) Yes
- b) No
- c) Don't know

28. Did you discuss/share ideas with your service provider on the place of delivery?
- a) Yes
 - b) No
29. Did you plan the mode of delivery with your service provider?
- a. Yes (Please mention.....)
 - b. No
30. What is mode of delivery of your current newborn?
- a) Normal
 - b) Elective repeat caesarean section
 - c) Emergency repeat caesarean section
31. What is your perception on the mode of delivery for a woman with one previous delivery by
Caesarian section?
- a) Can deliver normally with trial of scar
 - b) Must undergo Caesarian section
 - c) Don't know
32. What is your perception on the mode of delivery for a woman with two or more previous
delivery by Caesarian section?
- a) Can deliver normally with trial of scar
 - b) Must undergo Caesarian section
 - c) Don't know
33. Do you have insurance to cover your medical expenses?
- a) Yes
 - b) No

34. At the place of your residency are there any community initiatives (governmental, non-governmental or individual groups) to help pregnant mothers in their birth preparations or delivery expenses?

- a) Yes
- b) No
- c) Don't know

SECTION FOUR -KNOWLEDGE OF OBSTRETRIC DANGER SIGNS

35. Have you ever heard of danger signs in pregnancy?

- a. Yes
- b. No

36. Mention the danger signs of pregnancy that you know.

a) During pregnancy ;

- Excessive vaginal bleeding
- Convulsions
- Fever
- Headache
- Blurred vision
- Difficulty breathing
- Swelling of hands and feet
- Severe abdominal pain
- Dizziness
- Reduced or increased foetal movement
- Rapture of membranes before labour.

b) During birth;

- Excessive vaginal bleeding
- Convulsions
- Delay in placenta delivery
- Prolonged labour > 12 hours

- c) During postpartum;
 - Excessive vaginal bleeding
 - Convulsions
 - Foul smelling vaginal discharges
 - Difficulty breathing
 - High fever
 - Abdominal and perennial pains
 - Body weakness
 - Swollen tender breasts.

37. Are there any maternal risks to the woman with previous delivery by Caesarean section as compared to the one who delivered normally?

- a) Yes(mention the risks you know)
 - Risk to rapture of uterus
 - Risk of repeat Caesarean Section
 - Other (mention).....
- b) No
- c) Don't know

END

.....thanks for your cooperation

III: Questionnaire (Swahili Version)

UTAFITI; Maandalizi ya kujifungua, utayari wa kukabiliana na matatizo na uelewa wa dalili za hatari kwa akina mama waliowahi kujifungua kwa upasuaji, waliolazwa katika Hospitali ya Taifa Muhimbili.

Questionnaire ID: _____ Date: ___/___/_____ Initials of interviewer_____

SEHEMU A: TAARIFA BINAFSI

1. Umri wako ni miaka mingapi?.....
2. Makazi.....
3. Hali ya ndoa .
 - a) Sijaolewa
 - b) Nimeolewa
 - c) Nimeachika
 - d) Mjane
 - e) Mseja
4. Kiwango cha elimu.
 - a) Sikuwaki kuandikishwa shule
 - b) Shule ya msingi/awali
 - c) Shule ya sekondari
 - d) Chuo /Chuo kikuu
5. Kazi
 - a) Nimeajiriwa
 - b) Nimejajiri
 - c) Mkulima
 - d) Mfanyabiashara
 - e) Mjasiriamali
 - f) Kazi nyingine (taja)
5. Ukubwa wa familia (idadi ya wanafamilia).....

SEHEMU B: HALI YA UZAZI

7. Umejifungua mara ngapi?.....
8. Idadi ya mimba zilizoharibika (chini ya wiki 28).....
9. Idadi ya watoto walioko hai
.....
10. Umri wa mimba wakati wa kujifungua (wiki).....
- Ilitimia miezi tisa(wiki 37 hadi 40)
 - Haikutimia miezi tisa(wiki.....)
11. Uliwahi kujifungua kawaida baada ya kuzaa kwa kupasuliwa?
- Ndiyo, mara ngapi?.....
 - Hapana
12. Ulielezwa sababu za kupasuliwa?
- Ndiyo (taja.....)
 - Hapana
13. Kuzaa mtoto mfu au mtoto kufariki ndani ya muda mfupi(siku 14) baada ya kujifungua.
- Ndiyo(taja idadi.....)
 - Hapana

SEHEMU C: MAANDALIZI YA KUJIFUNGUA NA UTAYARI WA KUKABILIANA NA MATATIZO

14. Umri wa mtoto aliyefuatiwa na uzazi huu.
.....
15. Njia ya kuzaliwa kwa mtoto aliyefuatiwa na uzazi huu.
- kawaida
 - kwa kupasuliwa
16. Ulikuwa unahudhuria kliniki ya wajawazito?
- Ndiyo (idadi ya mahudhurio.....)
 - Hapana

17. Hudhurio la kwanza (wiki).....
18. Umbali toka kituo cha kutolea huduma cha karibu au ambako umekuwa unahudhuria kliniki.
- Ndani ya nusu saa
 - Saa moja
 - Masaa mawili
 - masaa matatu
 - masaa maine au zaidi
19. Ulitumia njia yoyote ya kupanga uzazi baada ya kuzaa kwa kupasuliwa?
- Ndiyo
 - Hapana
20. Mama anayezaa kwa kupasuliwa anatakiwa kubeba mimba nyingine baada ya muda gani?
.....
21. Uliandaa vifaa vyovyote kwa ajili ya kujifungua?
- Ndiyo
 - Hapana
22. Kama ndiyo taja vifaa ulivyoandaa.
- Mipira ya kuvaa mikononi
 - Mpira wa kutandika kitandani
 - Wembe mpya
 - Kamba ya kufungia kitovu
 - Sabuni
 - Gozi
 - Pamba
 - Kanga/vitenge
 - Vifaa vingine(taja).....

23. Ni nani alikwambia uandae vifaa hivyo/ulijuaje kuwa unatakiwa kuandaa vifaa hivyo?

- a) Mhudumu wa kituo cha kutolea huduma
- b) Ndugu
- c) Vyombo vya habari
- d) Namna nyingine(taja).....

24. Kama hukuandaa kifaa chochote taja sababu.

- a) Sikujuu
- b) Sikuwa na pesa
- c) Nina bima
- d) Sababu nyingine(taja).....

25. Maandalizi ya jumla

HATUA	HALI YA MAANDALIZI	
	Ndiyo	Hapana
Mahali pa kujifungulia		
Mtaalamu aliyepata mafunzo		
Usafiri kwenda kujifungua		
Fedha kwa ajili ya uzazi pamoja na dharura		
Usafiri inapotokea dharura		
Wachangiaji damu angalau wawili		
Mtu wa kubaki kuangalia familia		
Msindikizaji wakati wa kwenda kujifungua		
Mtu wa kuongoza/kufanya maamuzi		

26. Tafadhali taja sehemu uliyokuwa umepanga kujifungulia.

- a) Zahanati
- b) Kituo cha afya
- c) Hospitali kubwa/Hospitali ya rufaa
- d) Nyumbani/kwa mkunga

27. Sehemu uliyochagua kujifungulia inatoa huduma za upasuaji wa kutoa mtoto?
- a) Ndiyo
 - b) Hapana
 - c) Sijui
28. Ulijadiliana ama kushauriana na mtoa huduma juu ya sehemu unayotakiwa kujifungulia?
- a) Ndiyo
 - b) Hapana
29. Mlijadiliana na mtaalamu uliyepanga akuzalishe juu ya njia ya kujifungua ?
- a. Ndiyo (itaje.....)
 - b. Hapana
30. Njia ya kujifungua mtoto wako wa sasa.
- a) Kawaida
 - b) Upasuaji wa kupanga
 - c) Upasuaji wa dharura
31. Una mtazamo gani juu ya njia ya kujifungua kwa mama ambaye amepasuliwa mara moja ili kutoa mtoto?
- a. Anaweza kujifungua kawaida
 - b. Ni lazima apasuliwe tena
 - c. Sijui
32. Una mtazamo gani juu ya njia ya kujifungua kwa mama ambaye amepasuliwa mara mbili au zaidi ili kutoa mtoto?
- a) Anaweza kujifungua kawaida
 - b) Ni lazima apasuliwe tena
 - c) Sijui
33. Unatumia bima ya afya kugharamia matibabu yako?
- a) Ndiyo
 - b) Hapana

34. Katika eneo unaloishi kuna mipango yoyote endelevu iliyowekwa na serikali/shirika binafsi/kikundi katika kuwasaidia akina mama wajawazito katika maandalizi ya kujifungua?

- a) Ndiyo
- b) Hapana
- c) Sijui

SEHEMU D: DALILI ZA HATARI KWA MAMA MJAMZITO

35. Umeshawahi kusikia juu ya dalili za hatari kwa mama mjamzito ?

- a. Ndiyo
- b. Hapana

36. Taja dalili za hatari kwa mama mjamzito unazozifahamu

a) Wakati wa ujauzito;

- Kutokwa na damu nyingi ukeni
- Degedege
- Homa
- Kuumwa kichwa
- Kuona giza/maluweluwe
- Kupumua kwa shida
- Kuvimba miguu na mikono
- Maumivu makali ya tumbo
- Kizunguzungu
- Mtoto kupunguza kucheza au kucheza kuliko kawaida
- Kupasuka kwa chupa kabla ya uchungu

b) Wakati wa kujifungua;

- Kutokwa na damu nyingi ukeni
- Degedege
- Kondo kubakia kwenye kizazi
- Uchungu wa kupitiliza zaidi ya masaa 12

c) Baada ya kujifungua;

- Kutokwa na damu nyingi ukeni
- Degedege
- Kutokwa na majimaji yenye harufu mbaya ukeni
- Kupumua kwa shida
- Homa kali
- Maumivu ya tumbo na nyonga
- Mwili kudhoofu
- Matiti kuvimba na kuuma

37. Je kuna hatari zozote zinayoweza kumkabiri mama mjamzito aliyezaa kwa kupasuliwa hapo awali tofauti na yule aliyejifungua kwa njia ya kawaida?

a) Ndiyo (taja unazozijua)

- Hatari ya kupasuka kizazi
- Uwezekano wa kuzaa kwa kupasuliwa tena
- Nyingine (taja).....

b) Hapana

c) Sijui

MWISHO

.....Ahsante kwa ushirikiano wako.....