SHARED DECISION MAKING ON MODE OF DELIVERY AMONG PREGNANT WOMEN WITH ONE PRIOR CAESAREAN SECTION AT REGIONAL REFERRAL HOSPITALS IN DAR ES SALAAM

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By

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

Muhimbili University of Health and Allied Sciences
October, 2021

CERTIFICATION

The undersigned certifies that she has read and hereby recommends for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled; **‘‘Shared decision making on mode of delivery among pregnant women with one prior caesarean section at Regional Referral Hospitals in Dar es Salaam”,** in (partial) fulfilment of the requirements for the degree of Master of Medicine (Obstetrics and Gynaecology) of Muhimbili University of Health and Allied Sciences.

_____

Dr. Fadhlun M Alwy Al-beity

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Zainab Hassan,** 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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The comments and corrections received from the academic member department of obstetrics and gynaecology and the Institutional Review Board at MUHAS made my work much easier and am thankful.

Am also grateful to all the Regional referral hospitals, their staffs and leaders for their continuous support and above all, to the pregnant women who were willing to participate in my study.

DEDICATION

I dedicate my work to my beloved parents, my mom who sacrificed a lot to support me, to my husband, for his support and patience. To my daughter, Zafreen and my sisters for always being there for me.

ABSTRACT

Background: Tanzania has been facing high rates of caesarean section with one of the commonest indication being prior caesarean section. A trial of labour after one caesarean has been advocated in order to reduce the caesarean section rates and its associated complication after a thorough counselling of women on available modes of delivery with their risks and benefits. Though this practice of shared decision making has been shown to positively influence trial of labour and improve quality of care, it has been reported to be inadequate in both developed and developing countries and factors influencing it are still unclear.

Aim: To determine the proportion of women involved in shared decision making and its associated factors among pregnant women with one prior caesarean section in Dar es Salaam.

Methods: A cross-sectional analytical study was conducted at antenatal clinics located in Amana, Temeke and Mwananyamala hospitals. A sample size of 350 pregnant women with one prior caesarean section having a singleton pregnancy and no contraindication to vaginal delivery were included. Data was collected for duration of three months from August to November 2020 using a structured questionnaire after informed consent had been sought and data analysis was done using SPSS 20. The proportion of women was determined by using a score of 80 and above as obtained from 9-item Shared Decision-Making Questionnaire (SDM-Q9) and associated factors were obtained through multivariable linear regression model. A P-value of <0.05 was considered significant.

Results: The proportion of pregnant women involved in shared decision making was 38%. Factors that were significantly associated with sharing decision making were; having low level of education (AOR 0.55 95% CI 0.33-0.91), being married/having partner (AOR 2.58 95% CI 1.43-4.63), having a companion who had active participation (AOR 3.31 95% CI 1.03-10.6) and being familiar with the clinician (AOR 5.01 95% CI 1.30-19.2).

Conclusion: The practice of shared decision making on mode of delivery among pregnant women with prior caesarean has been found to be low despite promotion of patient centred care in medical practice. Women education level, marital status, their companion participation

in clinics and their familiarity to clinicians has been shown to influence positively on their involvement in shared decision making.

Recommendations: Concerted efforts are needed to improve the implementation of SDM as a quality of care and support patient- centered care. Encourage companion involvement during antenatal care and promotion of personal continuity of care which improve familiarity of patients to clinicians. Promotion of SDM should also target clinician's attitudes and encourage them to involve socially vulnerable population.

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LIST OF ABBREVIATIONS

ACOG	American College of Obstetrics and Gynaecology
ANC	Antenatal Care
CS	Caesarean Section
ERCD	Elective Repeated Caesarean Delivery
FIGO	International Federation of Gynaecology and Obstetrics
MNH	Muhimbili National Hospital
MUHAS	Muhimbili University of Health and Allied Science
NIH	National Institute of Health
NHS	National Health Services
SDM	Shared Decision Making
SDM-Q9	9-item Shared Decision-Making Questionnaire
TOLAC	Trial of Labour After Caesarean
VBAC	Vaginal Birth After Caesarean
WHO	World Health Organization

OPERATIONAL DEFINITION

- Trial of labour after caesarean: A planned attempt to labour by a woman who has had one prior caesarean section.

- Vaginal birth after caesarean: Vaginal delivery by a woman who has had one prior caesarean section.

- Elective repeat caesarean delivery: Planned caesarean delivery by a woman who has had one prior caesarean section.

- Shared decision making: Is a two-way dialogue between patients and their health practitioners about the benefits, risks and alternative of treatment, taking into account the patient's personal circumstances, beliefs and priorities.

    - In this study, it will also be defined as a score of 80 and above from SDM-Q9 in order to obtain a proportion of women who were involved in shared decision making.

- Cost sharing: Patients who pays for only a portion of health care costs.
- Active participation: by a woman is when she actively/explicitly asks and enquire on modes of delivery and their benefits and harm while attending the antenatal clinics.
- Companion participation: is when the person accompanying the pregnant woman to the clinic actively takes part or asks about the modes of delivery, benefits and harm. The companion refers to husband/relative/friend.
- Familiarity: Refers to how well the pregnant woman know her clinician either personally or by being attended by same clinician before and graded by Likert scale.

1.0 INTRODUCTION

1.1 Background

Cragin's century-old opinion "once caesarean always caesarean" has been challenged by current practices which urge women with prior caesarean section to try vaginal delivery in a subsequent pregnancy (1–3).The trial of labour after caesarean is expected to reduce high rates of unnecessary caesarean deliveries that have been documented worldwide (4) and the associated complications including; uterine rupture, placenta accrete spectrum, placenta praevia, hysterectomy, intra-abdominal adhesions and bladder injury that progressively increase with the number of previous caesarean scar (5).

A planned Trial of Labour After Caesarean (TOLAC) is appropriate for and may be offered to the majority of women with a singleton pregnancy of cephalic presentation at term who have had a single previous lower segment caesarean delivery, a non-recurring indication for caesarean and in women with spontaneous onset of labour without augmentation (1–3,6). It is contraindicated to attempt TOLAC in women with previous uterine rupture or classical caesarean scar and in women with other absolute contraindications to vaginal birth such as placenta praevia or cephalo-pelvic disproportion(2,3).

Trial of labour may result in labour with Vaginal Birth After Caesarean(VBAC) which is associated with shorter maternal hospitalizations, less blood loss and fewer transfusions, fewer infections, and fewer thromboembolic events than caesarean delivery (1–3). Numerous studies have reported the success of trial of labour to be consistently high, ranging from 60% - 80% in developed countries (1,3) and 63%-75% in sub Saharan countries (7).A failed TOLAC may end up with unplanned intrapartum caesarean which carries a higher risk of infection compared to planned and if not well monitored it may also result into uterine rupture. Many studies have reported the risk of uterine rupture among women with one prior lower segment caesarean to be less than 1 percent (8–15).

Several literatures have documented a decrease in TOLAC being due to fear among care providers of the catastrophic complications associated with TOLAC (13) and fear of blame from colleagues or medical liability claims against them (16–18). This motivated the nature and extent of informed decision making and the influence of the care provider to be explored. Currently, it is recommended that the ultimate decision to mode of delivery should be made by the woman and her physician after thorough counselling that weighs the individual risks and benefits of VBAC (1–3).

It is recommended that the discussion regarding mode of delivery should begin early in the course of prenatal care and should be updated during antenatal visits as the balance between the risks and benefits of planned route of delivery may be altered as the pregnancy progress (1–3).The information given to the woman should be evidence based, realistic and unbiased (18) and whenever possible the preference of the women should be honoured (13).

Shared decision making (SDM) is a two-way dialogue between patients and their health practitioners about the benefits, risks and alternative of treatment of their conditions, taking into account the patient's personal circumstances, beliefs and priorities. It is an ethical way to enhance patient autonomy and recommended as a key feature of good clinical care by the world health organization (WHO), National Health Services (NHS) policy and International Federation of Gynaecology and Obstetrics (FIGO) (19,20).

Besides advocating for ethical practice and improving quality of care in general, literature has shown that SDM on mode of delivery among pregnant women with prior caesarean is positively associated with the decision for TOLAC (21).It was also reported to have improved VBAC rate from 17.2% in 2006 to 27% in Australia (22) and reduced the rate of unplanned caesarean by 40% (23).Moreover, in number of studies, medical advice has been found to be the most critical factor in influencing women's decision (24–26). Some women have acknowledged that they comply with their obstetrician choice even without receiving any explanation (25,26) and therefore, showing a room for counselling these women on TOLAC.

It has been reported that pregnant women want information related to their options and welcome the opportunity to be involved in decisions about labour and birth (27–29). In addition to that, pregnant women who take an active part in the decisions about their births have been reporting more knowledge, satisfaction and sense of control about their final decisions on their mode of delivery with significant reduction of decision conflicts (30–32).

1.2 Literature Review

Overview on practice of shared decision making.

The practice of SDM varies globally. Most of studies that have been done are qualitative in nature and not able to give the proportions of women involved in SDM. Studies which were conducted in a tertiary teaching hospital at United States (USA) and northern Taiwan, reported that most women affirmed to have received inadequate information regarding their mode of delivery following prior caesarean (26,33). Similarly, another study that was done in USA to assess for informed decision making noted that patients demonstrated an overall lack of knowledge on the risks and benefits of TOLAC and elective repeat caesarean delivery (ERCD)(25).

In Africa, the study done to assess informed decision making among women with previous scar in Kenya, reported the overall proportion of women who were provided with adequate information to be only 30.6% (34). On the contrary, a qualitative study done in a tertiary university-affiliated hospital located in Peru, stated that more than half of participants affirmed that they made the decision about their approach of delivery after counselling (35).

Demographic and economic factors influencing SDM.

Literatures have reported a number of demographic and economic factors influencing SDM globally. Among studies that have been done to assess factors associated with SDM, education level of patients has been reported the most. Studies in Pennsylvania (US), California, Belgium, Hong Kong and Columbia found women with higher level of education to have higher odds of experiencing SDM compared to women with less (36–40). The less involvement of patients with low level of education was also revealed by study done in Tanzania (41), On the contrary; this was not found to be the case in Canada (42).

Age has been documented to have influence on SDM. In the study that was done in Hong Kong (39) it was revealed that younger patients were more involved in decision making. Similar findings were reported in a study which was done to assess physicians' communication and perceptions of patients (43) and in another study that was done among Netherland patients (44).

Insurance status has been shown to affect SDM variably. Women with non-private insurance have been noted to have lower odds of SDM compared to private/insured women in a study that was done in Pennsylvania (36). The findings are in line with a study in Hong Kong where women receiving a financial assistance were less likely to be involved in decision-making than non-receivers (39). However, other studies have revealed that patients with low income received more information during consultations (38) and others have found no significant association (42).

Employment status also has an interesting relationship with patient's involvement in decision making. The unemployed group were found more likely to get involved in decision-making in the National Health Survey (45) and in Hong Kong study (39). On the contrary, others have found SDM score to be lower in consultations with unemployed patient relative to the patient who were employed (40,42).

Psycho-social factors influencing SDM

Patients desire to be involved has been reported to influence SDM in number of studies. In an observational study, it was concluded that the physicians' information giving positively influenced active participation of the women during conversation (38). Similarly, meta-analysis done in 2008 in United Kingdom (46) and a qualitative study done in Tanzania (41) revealed that low SDM was associated with patients who were reluctant to discuss their information during consultation. A significant association was also found in various studies done across regions (43,47–49).

Patients who have their companion during clinic consultations are more likely to be involved in SDM (39). This association is in line with another study where by family companions were found to exert largely positive influence on medical visit dialogue (50).Comparable finding was reported in a meta-analytical review however; it was noted that not only the presence rather the roles companions assume in decision making had an impact on SDM (51).Other factor that have been found to associate with SDM include; patient's familiarity with their care provider (39,42,52) as familiarity is often associated with better communication. However the study done in Netherlands found no significant association (53)

1.3 Conceptual Framework

The conceptual framework illustrates the relationship between Shared decision making which is a dependent variable and the independent variable which are education level, age, employment status, Payment category, participant's active participation, her companion participation and her familiarity with the clinician.

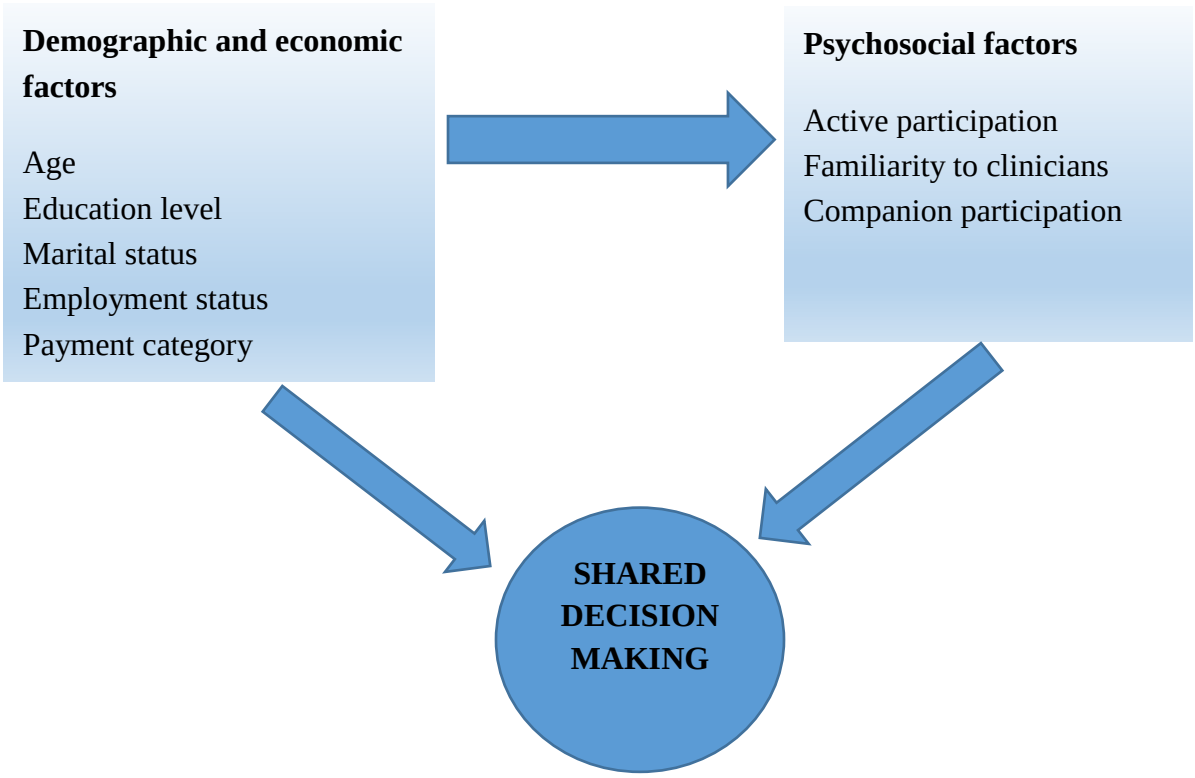


Figure 1: Conceptual framework on shared decision making with demographic, economic and psychosocial factors.

1.4 Problem Statement

The rates of caesarean section due to prior caesarean and its associated morbidity and mortality have been increasing in Tanzania (54,55). However, the rate of TOLAC is reported to be very low at 0.14% in 2007 at MNH (56).

Practice of SDM has been reported to have positive influence on TOLAC (21,22), improving quality of care and increasing patient's knowledge (30). It has also been reported to reduce the rates of unplanned caesarean section (23) and decision conflicts between the woman and her health care provider (30–32).

Unfortunately, literatures have been reporting lack of shared decision in current practice (20–23,25,26,34) and that this lack of discussion with the clinical experts is often associated with choosing caesarean section (26). The extent of this problem is still unknown in our setting and it is still unclear what factors contribute to lesser SDM behaviours.

1.5 Rationale

The study provides insight of the current SDM practices and provide a better understanding of factors associated with SDM which could support more targeted effort to implement SDM. The study may also help in improving our local guidelines with regards to counselling women on mode of delivery after caesarean section in the future to establish good clinical practice.

By implementing SDM, a more patient centred practice will be promoted which may also help to reduce the rates of repeat caesarean section, unplanned caesarean section and decision conflicts between woman and her health care provider. Furthermore, it will increase patient's knowledge and satisfaction which lead to good experience of care.

The study also provides baseline data on SDM which may open doors to future studies to further explore interactions between patients and health care providers in provision of services.

1.6 Research Question

What is the proportion of pregnant women involved in SDM on their mode of delivery and its associated factors among pregnant women with one prior caesarean section at regional referral hospitals in Dar es Salaam?

1.7 Objectives

1.7.1 Broad Objective

To determine the proportion of pregnant women with one prior caesarean who are involved in shared decision making (SDM) on their mode of delivery and its associated factors at regional referral hospitals in Dar es salaam.

1.7.2 Specific Objectives

1. To determine the proportion of pregnant women with one prior caesarean section who are involved in shared decision making on their mode of delivery at regional referral hospitals in Dar es salaam.
2. To determine the factors associated with shared decision making on mode of delivery among pregnant women with prior caesarean section at regional referral hospitals in Dar es Salaam.

2.0 METHODOLOGY

2.1 Study Design

A facility based cross-sectional analytical study.

2.2 Study Area

The study was conducted at antenatal clinics of the three regional referral hospitals located in Dar es Salaam; Amana, Temeke and Mwananyamala. The regional referral hospitals were chosen as they are the oldest regional referral hospitals, they are located in urban where the rates of caesarean sections are high and because urban population is expected to have a better-informed population compared to the rural areas. The three hospitals had a total number of 8259 deliveries for the year 2020 (July to December), with the proportion of C/S among deliveries being 35%, 43% and 36% at Amana, Temeke and Mwananyamala respectively.

The antenatal care services at respective clinics were provided from Monday to Friday. Upon arrival women were registered by nurses and attendants where their blood pressure and body weight were taken and recorded in their antenatal cards. They were also provided a general group health education on danger signs during pregnancy by nurses/ attendants. There was no any specific care given to women with prior caesarean section which differed from care given to other pregnant women. Thereafter, women were seen individually or with their companion by medical doctors either specialist or general practitioner in private room. On average duration of consultation took about 15-20 minutes. Based on pilot study, the number of women attending antenatal clinics were found to range between 800-1200 per month at each facility and among them only 60-80 had one prior caesarean.

2.3 Study Population

All pregnant women with one prior caesarean section who visited Amana, Temeke and Mwananyamala hospital for antenatal care during study period.

2.4 Study Sample

All women with one prior caesarean having a singleton pregnancy in cephalic at late preterm (34weeks and above-gestation)

2.5 Sample Size

There was no precedent study in Tanzania hence reference from neighbouring Country-Kenya hospital was used (34), where the proportion of women who made an informed decision (SDM) was reported to be 30.6%. Using the same proportion, sample size was calculated as follows.

$$n = \frac{Z^2 P(100 - P)}{\varepsilon^2}$$

Where n=the minimum sample size required, z=level of confidence is this is 95% therefore z is 1.96, Ɛ=maximum likely error which is 5%, and P= proportion of women who made an informed decision was 30.6%

$$= \frac{1.96^2 \times 30.6(100 - 30.6)}{5^2}$$

=313

Adjusting for non-response rate

where non-response percentage=10%

$$\frac{313x(100)}{90}$$

Minimum sample size=350.

2.6 Sampling Technique

Sample size was divided among the three hospitals by stratified sampling using probability proportion to size (PPS).

Sampling fraction= n/Nx100

Where by, sample size (350) and N=total number of participants expected to be recruited during study period of three months (560)

Therefore, sampling fraction=62.5%

HOSPITAL	NUMBER EXPECTED	MINIMUM SAMPLE SIZE
AMANA	200	125
MWANANYAMALA	180	112
TEMEKE	180	113
TOTAL	560	350

At each hospital consecutive sampling technique was used, whereby all women with one prior caesarean who met the criteria were enrolled. This technique was used so as the minimum sample size calculated could be reached within the study duration as the number of eligible participants was low.

2.6 Variables

The dependent variable was Shared decision making. The variable was collected using a scoring questionnaire that was dichotomized as SDM when score is 80 and above and no SDM when score is below 80.

Independent variables were; education level, age, employment status, payment category, participant's active participation, her companion participation and her familiarity with the clinician.

Education level had 5 categories, which was dichotomised to no formal/primary education and secondary school and above. Maternal age had two categories; 20-34 years, and >35 years. Marital status was categorized into; married/cohabiting and single/divorced/widowed.

Employment status had two categories; employed/self-employed and no employment and payment category had health Insurance/private and cost sharing. Participant and companion participation was dichotomized as participated and not participated and familiarity with clinician was categorized into familiar (knowing the clinician very well, well, rather well) and not familiar (not well, not well at all).

2.8 Inclusion Criteria

All women with one prior caesarean having a singleton pregnancy in cephalic at late preterm (34weeks and above) and have had at least two ANC visits at the same facility.

2.9 Exclusion Criteria

- ✓ Prior classical scar (as informed by her clinician on discharge summary or judged by gestational age at previous delivery)
- ✓ All women with contraindication to vaginal delivery

2.10 Data Collection

TOOL

An interviewer administered structured questionnaire was used (appendix iv). The tool had 2 sections:

Part 1 Included participant's demographic and socio-economic data; age, education level, employment status, marital status and payment category.

Part 2. This part had 9-item SDM scale (SDM-Q9) adapted from original German SDM-Q9 (57) which had the response options in the form of Likert scale ranging from 'completely disagree' to 'completely agree' scoring 0 to 5. The tool has been translated in multiple languages and has shown to have good validity and excellent internal consistency reliability (Cronbach's alpha of above 0.9).

The Participants were instructed to select one option that best matched their perceived involvement in each step of the SDM process. There were also questions to assess for participant's active participation, her companion participation and her familiarity to the clinician.

The structured questionnaire which included the original English version SDM-Q9 was forward translated to Swahili language by two independent translators then harmonized through discussion. The consensus version was then back translated to English by other two independent translators which led to minor changes to reach the final agreed version which was used for this research. The questions were refereeing to the information the participants obtained from ANC for the past six months, as recommended by the original English version SDM-Q9. The questionnaire was pretested among 20 eligible women at Sinza hospital to see if it was clear, practical and to observe for any challenges prior being used in the research.

2.11 Data collection procedure

Data were collected by principal investigator and six assistants who received training for one day on how to recruit participants, to fill information in the questionnaires and to abide to ethical principles.

The entry point for recruitment was at antenatal clinic, where the participants were identified through antenatal registry book and interviewed by investigator/ or one of the six research assistants using a checklist (appendix v). The eligible participants were recruited, and an informed consent was sought after completion of clinical care services. For those who consented, data was collected using a structured questionnaire administered by principal investigator/ or one of the six research assistants. To avoid repeating same participant in other visits, a mark was put on their antenatal card. Data collection was completed in three months and two weeks' duration.

The research assistants were recently graduates of MUHAS, two of them were stationed at each facility to facilitate the work and reduce waiting time for the interview by pregnant women. The principal investigator attended once/twice at each facility every week for

supervision, and the collected data were checked on a daily basis for missed data or ambiguous data.

2.12 Data Analysis

Using SPSS version 23, coded data were entered daily after data cleaning then analysed. For the first objective, the proportion of SDM was obtained from 9-item SDM scale which had a maximum score of 45. The raw score was transformed as suggested by original SDM-Q9 (57) by multiplying the score to 20/9 to get a score of SDM ranging from 0-100. A score of 80 and above was used to obtain proportion of women with SDM. For the other objectives, chi square was done to identify factors associated with SDM, then bivariate analysis was done to obtain factors significant at 5% level of significance to be used in the multivariable model analysis. Multivariable linear regression analysis was done using SDM as a dependent variable and demographic, economic and psychosocial factors (as categorized in the variable section) as independent factors. The independent variables used in multiple linear regression were the one in linear relationship with dependent variable (correlated with p value <5%) and with no multicollinearity (non-redundant independent variable verified with variance inflation factors <2). Statistical significance was set at p-value 0.05

2.13 Ethical Consideration

The ethical clearance for the study was obtained from Muhimbili University of Health and Allied Science (MUHAS) research and publication committee with Ref No MUHAS-REC-06-2020-283. Permission to conduct the study was sought from authorities and administration of Amana, Temeke and Mwananyamala hospital respectively.

Informed consent was sought from all women participating and signed consent obtained after they were explained the purpose of the study and the benefits obtained from study findings. They were reassured that their information would be kept confidential and in case they had withdrawn from the study; it would not have affected their clinical services. In case a principal investigator or research assistants encountered a woman who is eligible for TOLAC and she requested for it after interview, discussion with her doctor was done to find a way forward. For

women who were completely unaware of TOLAC, general basic information was given to them taking care not to create negative attitudes to their care provider, then care provider was involved in discussion.

3.0 RESULTS

During the study period, a total number of 1940 pregnant women attended ANC at all facilities and among them 484 had 1 prior caesarean. Only 360 women were found to be eligible, however 10 refused to participate due to perceived long waiting time. Women who were interviewed were 105, 128 and 117 at Temeke, Amana and Mwananyamala respectively.

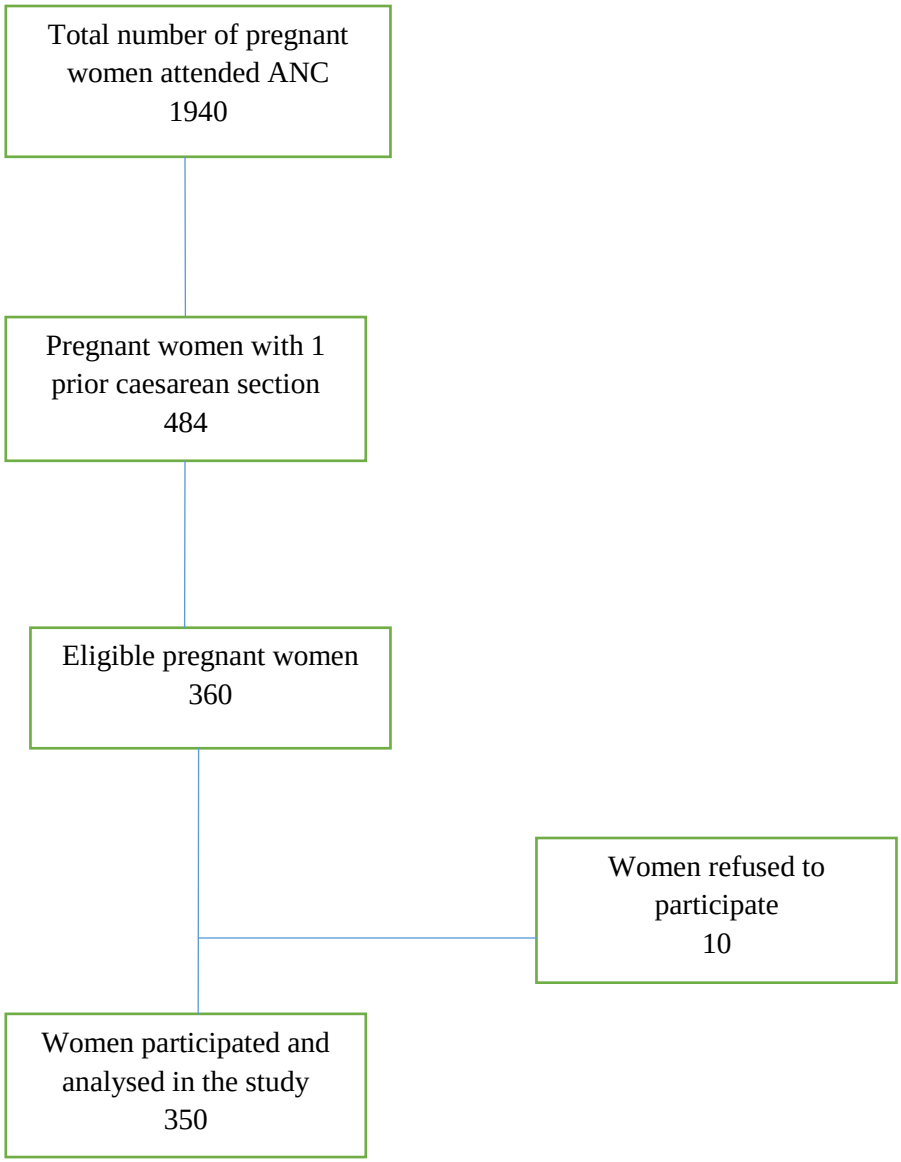


Figure 2: Flow chart for the participants

Table 1: Demographic and economic characteristics of the study population (N=350)

Variables	Frequency (%)
Age group	
20- 34	328 (93.71)
≥ 35	22 (6.28)
Marital Status	
Single/Widowed/divorced	80 (22.86)
Married/Cohabiting	270 (77.14)
Education level	
No formal & Primary education	107 (30.57)
Secondary & above	243 (69.43)
Occupation	
Unemployed	103 (29.43)
Employed/self employed	247 (70.57)
Payment category	
Private / Insurance	204 (58.29)
Cost sharing	146 (41.71)

Majority of women enrolled were aged between 20-34 years (93%)with mean age of 28.16 (SD=4.27). Most of them were married/cohabiting with education level of secondary and above as shown in Table 1.

Using the SDM score of 80 and above, the proportion of pregnant women with one prior caesarean who were involved in SDM on their mode of delivery for the index pregnancy at all facilities was found to be 38%.

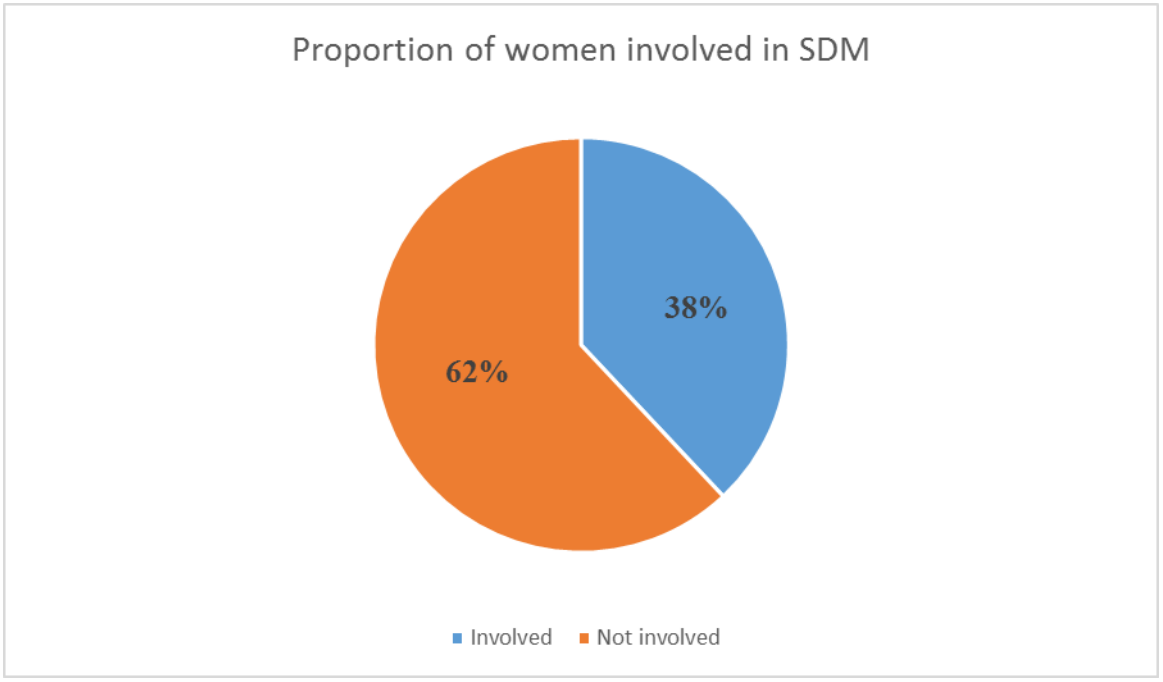


Figure 3: Proportion of SDM among pregnant women

Table 2: Association between SDM and demographic and economic characteristics

Variable	Not involved in SDM	Involved in SDM	Total	P-Value
Age				
20 to 34	204(62.58)	124(37.42)	328	0.238
35 and above	13(59.09)	9(40.91)	22	
Occupation				
Unemployed	74(71.84)	29(28.16)	103	**0.048**
Employed/self employed	143(57.89)	104(42.11)	247	
Education Level				
No formal &Primary education	76(71.03)	31(28.97)	107	**0.021**
Secondary& above	141(58.02)	102(41.98)	243	
Payment category				
Private/insurance	117(57.35)	87(42.65)	204	**0.034**
Cost sharing	100(68.28)	46(31.72)	146	
Marital status				
Single/widowed/divorced	62(77.50)	18(22.50)	80	**0.001**
Married/cohabiting	155(57.41)	115(42.59)	270	

Maternal education level, marital status, occupation and payment category showed association with involvement of pregnant women in shared decision making on their mode of delivery as shown in Table 2.

Table 3: Bivariate and Multivariable logistic regression analysis of SDM with demographic and economic characteristics

Variable	Bivariate analysis		Multivariable analysis	
	COR	P-Value	AOR	P-Value
Education Level				
Secondary & Higher education	Ref	Ref	Ref	Ref
No formal & primary Edu	0.56(0.34 - 0.92)	**0.022**	0.55(0.33 - 0.91)	**0.022**
Occupation				
Unemployed	Ref	Ref	Ref	Ref
Employed	1.98(1.12 - 3.05)	**0.015**	1.48(0.83 - 2.63)	0.176
Marital status				
Single/widowed/divorced	Ref	Ref	Ref	Ref
Married/cohabiting	2.56(1.43 - 4.55)	**0.001**	2.58(1.43 - 4.63)	**0.001**
Payment category				
Cost sharing	Ref	Ref	Ref	Ref
Private/Insurance	1.61(1.03 - 2.52)	**0.035**	1.33(0.83 - 2.15)	0.23

SDM was found to be strongly associated with education status and marital status categories. Those with no education and primary education were 0.5 less likely to be involved in SDM compared with those with secondary education and above. Women who were married/cohabiting were almost 3 times more likely to be involved than women who were single/widowed/ divorced.

Table 4: Association between SDM and psycho-social factors

Variable	Not involved in SDM	Involved in SDM	Total	P-Value
Active participation				
Yes	146(53.28)	128(46.72)	274	<0.0001
No	70(93.33)	6(6.67)	76	
Companion participation				
Yes	57(47.5)	63(52.50)	120	<0.0001
No	32(86.49)	5(13.51)	37	
Familiarity with clinician				
Yes	148(54.41)	124(45.59)	272	<0.0001
No	69(88.46)	9(11.54)	78	

Active participation of women, companion participation and familiarity with clinicians showed association with involvement of pregnant women in SDM on their mode of delivery as shown in Table 4.

Table 5: Bivariate and Multivariable logistic regression analysis of SDM with psycho-social characteristics

Variable	Bivariate analysis			Multivariable analysis		
	COR	**95% C. I**	**P-Value**	**AOR**	**95% C. I**	**P-Value**
Active participation						
No	1					
Yes	12.27	4.80-31.35	0.000	1.89	0.44-8.01	0.39
Companion participation						
No	1					
Yes	7.07	2.58-19.39	0.000	3.31	1.03-10.64	0.04
Familiarity with clinician						
No	1					
Yes	6.42	3.08-13.39	0.000	5.01	1.30-19.25	0.02

SDM was found to be strongly associated with companion participation and familiarity to clinician categories. Those with companion who had active participation were 3.3 more likely to be involved in SDM compared with those who had no companion participation. Women who were familiar to clinicians were 5folds more likely to be involved than women who were not familiar with clinicians.

4.0 DISCUSSION

The study has revealed less involvement of pregnant women with prior caesarean in SDM on their mode of delivery. It has also shown how various factors such as education level, marital status, occupation status and payment category influence SDM. The psychosocial factors such as women and their companion active participation at clinics and familiarity of women to their clinicians have also been found to have high influence on SDM.

The study found that only less than half of pregnant women were involved in SDM similar to findings globally and as well as in African countries (25,26,33,34). The study findings differ from a qualitative study done in a tertiary university-affiliated hospital located in Peru, where by more than half of its participants affirmed that they made the decision about their approach of delivery after counselling (35). It also differs from study done in Taiwan where by proportion of SDM was found to be as high as 89%. The difference could be due to the fact that the two studies were done among women with higher health literacy which has been shown to influence positively SDM.

Education level of patients has been reported the most to have influence on SDM. The study found that women with low level of education were less likely involved in SDM than women with higher. The results are in line with other studies which have shown that women with higher level of education have higher odds of experiencing SDM compared to women with less due to their nature of being more assertive and inquisitive (36–40,58). The less involvement of women with less education could also be due to their health care provider who find it difficult to engage patients with low education perceiving that they will not be able to understand things quickly and easily as reported in a qualitative study in Tanzania (41).

The study findings found no association between age and SDM. This is in contrary to the studies that have been done in various countries where it was revealed that younger patients were more involved in decision making and that the less involvement of old patient could be due their preference of a more passive role on receiving information (39,43,44).The results

differs because in this study majority of women were younger, unlike the other studies were old patients were involved.

Marital status has been found to exert largely positive influence on SDM. There are limited literatures with regards to the effect of marital status on SDM, however one study reported similar finding whereby the degree of SDM was higher in married group compared to the divorced group indicating the impact of family on the patients care (58). These findings further add the value of companion involvements in antenatal care.

Insurance status has been shown to affect SDM variably. In this study, Women in cost sharing group were noted to be less likely involved in SDM compared to private/insured women though the relation was not statistically significant, similar to what was reported in other regions (36,39,42).Women receiving a financial assistance through cost sharing were less likely to be involved in decision-making than non-receivers as this group is said to have low social status. However, the findings are in contrary to the study which revealed that patients with low income received more information during consultations (38).

Employment status has been found to have an interesting relationship with patient's involvement in decision making. In this study, women who were employed were more likely to be involved in SDM than women in the unemployed group similar to what was found in other studies (40,42).On contrary, unemployed groups were found more likely to get involved in decision-making in National Health Survey (45) and in Hong Kong study (39).

Patients desire to be involved has been reported to influence SDM in number of studies. In this study, women who initiated conversation on their mode of delivery were more likely to be involved in SDM, however the relation was not statistically significant. The findings are in consistence with observational study which reported that the physicians' information giving was positively influenced by features of the patient's communicative style, such as question asking, affective expressiveness and opinion giving (38).The findings are also in line with other reports from meta-analysis done in 2008 in United Kingdom (46) and in Tanzania (41) which revealed that low SDM was associated with patients who were reluctant to discuss their

information during consultation or simply did not desire responsibility for making decisions relating to their health. A significant association was also found in other various regions (43,47–49,59).

Patients who have their family's support and encouragement are inclined to be more confident and involved when they discuss their health conditions and treatment plan with their caregivers. The study revealed that companion involvement had a positive impact on SDM and this association is in line with other studies which found companions to exert largely positive influence on medical visit dialogue (39,50,51).Patient's familiarity with their clinicians has been found to have significant association with SDM, in line with study done in Hong Kong (39,42,52). Familiarity with clinicians open up communication, increase feeling of being helped forward, trust in the clinicians, and increase the perception of clearer treatment plan made.

5.0 STRENGTH OF THE STUDY

The study used quantitative approach which provides numerical data as a baseline for future comparison as studies in this area are limited in Tanzania.

The use of three different regional referral hospital provided diversity among study population which increases the ability to generalize the study results.

6.0 STUDY LIMITATION

The study assessed patient's perception of SDM and not actual provider behaviour, which may include their self-report and recall bias This was mitigated by asking patients to recall information they were given for the past six month.

7.0 CONCLUSION

The practice of SDM on mode of delivery among pregnant women with prior caesarean has been found to be low despite promotion of patient centred care in medical practice. Women marital status, education level, their companion participation and their familiarity to clinicians has been shown to influence positively on their involvement in SDM.

8.0 RECOMMENDATION

- ✓ The relatively low SDM score noted reinforce the idea that concerted efforts are needed to improve the implementation of SDM as a quality of care and support patient-centred care.
- ✓ Encouragement of companion involvement during antenatal care and promotion of personal continuity of care which improve familiarity of patients to clinicians should be considered when designing strategies to implement SDM.
- ✓ Promotion of SDM should also target clinician's attitudes and encourage them to involve socially vulnerable population like women with low education level, unemployed and women in the cost sharing group.
- ✓ Given the limited information regarding shared decision making in Africa and Tanzania in particular, the findings of this study provides baseline for future studies and encourage further studies to explore interactions between patients and health care providers in provision of services.

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APPENDICES

Appendix I: Consent Form (English Version)

STUDY TITLE

SHARED DECISION MAKING ON MODE OF DELIVERY AMONG PREGNANT WOMEN WITH ONE PRIOR CESAREAN AT REGIONAL REFERRAL HOSPITALS IN DAR ES SALAAM.

Code No: _____

PART I: INFORMATION

Dear Participant

My name is Zainab Hassan Yussuph. I would like to invite you to participate in this research. I am conducting a study to assess shared decision making on mode of delivery among pregnant women with one prior cesarean at regional referral hospitals in Dar es salaam.

Participation: Principal investigator or research assistants will get information from you via a questionnaire which will be administered to you after completion of clinical services.

Confidentiality: All the information obtained will be kept confidential and they will only be used for intended study aim. No any write up or publication of this study where your name or other identity will be displayed.

Right to withdrawal: Your participation to this study is voluntary and you may walk out of the study at any moment you desire after you have consented and no penalty shall be imposed to you.

Benefits: There is no financial incentive upon your participation to this study. The findings of this study will help us determine the practice of shared decision making on mode of delivery among pregnant women with one prior cesarean at regional referral hospitals in Dar es salaam

.

Injury/Harm: The study will not in any way affect your plan of management for your condition. We do not expect any harm to you as a result of your participation to this study.

Who to contact: For any inquiry regarding this study please contact Dr. Zainab Hassan, resident doctor in Department of Obstetrics and Gynaecology at Muhimbili University of Health and Allied Sciences (MUHAS), who is the principal investigator of this study; P.O Box 65000, Dar es Salaam, mobile +25557457588.

If you have any questions/ concerns about your rights as a participant, you may contact Dr Bruno Sunguya, Director of MUHAS research and publications committee. P.O Box 65000, Dar es Salaam Tel 255 222 150 302-6/252489.

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 _____

Appendix II: Consent Form (Swahili Version)

RIDHAA YA KUSHIRIKI KATIKA UTAFITI

UTAFITI: MAAMUZI SHIRIKISHI KWENYE HOSPITALI ZA MKOA NA RUFAA KUHUSU NJIA ZA KUJIFUNGUA KWA MAMA MJAMZITO ALIEJIFUNGUA KWAUPASUAJI HAPO AWALI.

Namba Ya Utambulisho: .....

SEHEMU YA I: TAARIFA

Ndugu Mshiriki,

Naitwa Dkt Zainab Hassan Yussuph. Napenda kukushukuru kwa kushiriki kwenye mahojiano haya. Ninafanya utafiti ili kuangalia maamuzi shirikishi kwenye hospitali za mkoa na rufaa kuhusu njia za kujifungua kwa mama mjamzito aliejifungua kwaupasuaji hapo awali.

Ushiriki: Mtafiti mkuu/msaidizi atakuuliza maswali mbalimbali kwa kutumia karatasi ya Utafiti baada ya kupata huduma yako ya afya.

Usiri: Taarifa zote zitakazopatikana zitahifadhiwa kwa usiri na zitatumika kwa ajili ya lengo la utafiti tu. Jina lako au utambulisho wako hautatokea kwenye maandishi au machapisho yoyote ya utafiti huu.

Haki ya kujitoa: Ushiriki wako kwenye utafiti huu ni wa hiari na unaweza kujitoa kwenye utafiti huu wakati wowote baada ya kukubali, hakuna adhabu yoyote itakayotozwa juu yako.

Faida: Hakuna motisha ya kifedha juu ya ushiriki wako kwenye utafiti huu; hata hivyo ushiriki wako ni muhimu katika kutimiza lengo la utafiti wa maamuzi shirikishi kwenye hospitali za mkoa na rufaa kuhusu njia za kujifungua kwa mama mjamzito aliejifungua kwaupasuaji hapo awali.

Kuumia/Madhara: Utafiti huu hautaathiri upatikanaji huduma za kiafya kwako. Hatutarajii madhara yoyote kwako, au kwa familia yako, au kwa wasaidizi wako kutokana na ushiriki wako katika utafiti huu.

Kwa mawasiliano: Endapo utakua na swali lolote linalohusu utafiti huu, wasiliana na wafuatao: Dkt Zainab Hassan(Mtafiti mkuu), mwanafunzi wa Shahada ya Uzamili Idara ya Magonjwa ya Akina mama na Wanawake, Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, S.L.P. 65000, Dares Salaam. Simu +255757457588

Kama kutakuwa na maswali kuhusu haki zako kama mshiriki, unaweza kumpigia Dr Bruno Sunguya, mwenyekiti wa kamati ya Utafiti. Simu 255 222 150 302-6/252489.

SEHEMU YA II: CHETI CHA RIDHAA

Mimi ……. nimesoma (nimesomewa) taarifa hii kama ilivyoelezwa 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 mtoa huduma za afya_____

Sahihi ya mtafiti_____

Tarehe _____

Appendix III: Questionnaire (English Version)

Part I:

Demographic and economic characteristics

1. Age of the participant ……

2. Indicate your highest education level attained:
    a) University
    b) High school
    c) Secondary school
    d) Primary school
    e) No formal education

3. Indicate your marital status:
    a) Married/cohabiting
    b) Single
    c) Separated
    d) Divorced

4. Indicate your occupation:
    a) Employed
    b) Self employed
    c) No employment.

5. Payment category:
    a) Health Insurance
    b) Cash payment (private)
    c) Cost sharing

Part 2:

Please answer these questions based on the counselling you have received in ANC from medical professionals:

6. The Doctor/ Doctors made clear that a decision on mode of delivery needs to be made.

0. Completely disagree
1. Strongly disagree
2. Somewhat disagree
3. Somewhat agree
4. Strongly agree
5. Completely agree

7. The Doctor/ Doctors wanted to know exactly how I want to be involved in making the decision on mode of delivery.

0. Completely disagree
1. Strongly disagree
2. Somewhat disagree
3. Somewhat agree
4. Strongly agree
5. Completely agree

8. The Doctor/ Doctors told me there are different options for delivery following one prior cesarean.

0. Completely disagree
1. Strongly disagree
2. Somewhat disagree
3. Somewhat agree
4. Strongly agree
5. Completely agree

9. Doctor precisely explained the advantages and disadvantages of each mode of delivery following one prior cesarean.
    0. Completely disagree
    1. Strongly disagree
    2. Somewhat disagree
    3. Somewhat agree
    4. Strongly agree
    5. Completely agree
10. The Doctor/ Doctors helped me to understand all the information.
    0. Completely disagree
    1. Strongly disagree
    2. Somewhat disagree
    3. Somewhat agree
    4. Strongly agree
    5. Completely agree
11. The Doctor/ Doctors asked me which mode of delivery I prefer
    0. Completely disagree
    1. Strongly disagree
    2. Somewhat disagree
    3. Somewhat agree
    4. Strongly agree
    5. Completely agree
12. The Doctor/ Doctors and I thoroughly weighed the different options of mode of delivery.
    0. Completely disagree
    1. Strongly disagree
    2. Somewhat disagree
    3. Somewhat agree
    4. Strongly agree
    5. Completely agree

13. The Doctor/ Doctors and I selected the mode of delivery together.

0. Completely disagree
1. Strongly disagree
2. Somewhat disagree
3. Somewhat agree
4. Strongly agree
5. Completely agree

14. The Doctor/ Doctors and I reached an agreement on how to proceed.

0. Completely disagree
1. Strongly disagree
2. Somewhat disagree
3. Somewhat agree
4. Strongly agree
5. Completely agree

15.At the clinic, did you enquire about your mode of delivery, benefits and harm?

a) Yes
b) No

16.Do you usually visit doctors room with your companion?

a. Yes
b. No –skip question 24

17. When you attended clinic with your companion, did he/she enquire about your mode of delivery, benefits and harm?

a) Yes
b) No

18. How well do you know your clinician?

a) Very Well
b) Well
c) Rather well
d) Not well
e) Not well at all

19. Familiarity with clinician

a) First time attended by the clinician
b) Has been attended by the clinician before

Appendix IV: Questionnaire (Swahili Version)

DODOSO

Sehemu ya I:

Taarifa za kijamii

1. Umri wa mshiriki ……

2. Onesha kiwango cha juu kabisa cha elimu ulichofikia:
    a) Chuo kikuu
    b) Elimu ya juu ya sekondari (kidato cha VI)
    c) Elimu ya chini ya sekondari (kidato cha IV)
    d) Elimu ya msingi
    e) Sikusoma elimu rasmi

3. Onesha hadhi yako ya ndoa:
    a) Nimeolewa/ninaishi na mwenza
    b) Sijaolewa
    c) Nimetengana na mwenza
    d) Nimetalikiana na mwenza

4. Onesha kazi unayofanya:
    a) Nimeajiriwa
    b) Nimejiajiri
    c) Sina ajira (sifanyi kazi yoyote)

5. Kundi la malipo:
    a) Nina bima ya afya
    b) Hufanya malipo ya matibabu kwa fedha tasilimu
    c) Huchangia gharama za huduma

Sehemu ya 2:

Tafadhali, jibu maswali yafuatayo kwa kuzingatia ushauri uliopata kutoka kwa wataalamu wa afya wakati ulipohudhuria kiliniki ya mama mjamzito:

6. Daktari/Madaktari walinifafanulia kwamba uamuzi wa namna ya kujifungua unahitaji kufanyika.

0. Sikubaliani kabisa
1. Sikubaliani kwa kiwango kikubwa
2. Sikubaliani kiasi
3. Ninakubaliana kiasi
4. Ninakubaliana kwa kiwango kikubwa
5. Ninakubaliana kabisa

7. Daktari/Madaktari walihitaji kufahamu namna ninavyopenda kushirikishwa katika kufanya uamuzi wa namna ya kujifungua.

0. Sikubaliani kabisa
1. Sikubaliani kwa kiwango kikubwa
2. Sikubaliani kiasi
3. Ninakubaliana kiasi
4. Ninakubaliana kwa kiwango kikubwa
5. Ninakubaliana kabisa

8. Daktari/madaktari waliniambia kwamba kuna namna nyingi za kujifungua ninazoweza kuchagua baada ya kujifungua kwa njia ya upasuaji hapo awali.

0. Sikubaliani kabisa
1. Sikubaliani kwa kiwango kikubwa
2. Sikubaliani kiasi
3. Ninakubaliana kiasi
4. Ninakubaliana kwa kiwango kikubwa
5. Ninakubaliana kabisa

9. Daktari alieleza kwa kina faida na hasara za kila namna ya kujifungua baada ya kujifungua kwa njia ya upasuaji hapo awali.

0. Sikubaliani kabisa
1. Sikubaliani kwa kiwango kikubwa
2. Sikubaliani kiasi
3. Ninakubaliana kiasi
4. Ninakubaliana kwa kiwango kikubwa
5. Ninakubaliana kabisa

10. Daktari/madaktari walinisaidia kuelewa taarifa zote zilizokuwapo.

0. Sikubaliani kabisa
1. Sikubaliani kwa kiwango kikubwa
2. Sikubaliani kiasi
3. Ninakubaliana kiasi
4. Ninakubaliana kwa kiwango kikubwa
5. Ninakubaliana kabisa

11. Daktari/madaktari waliniuliza kuhusu njia ya kujifungua ninayopendelea zaidi.

0. Sikubaliani kabisa
1. Sikubaliani kwa kiwango kikubwa
2. Sikubaliani kiasi
3. Ninakubaliana kiasi
4. Ninakubaliana kwa kiwango kikubwa
5. Ninakubaliana kabisa

12. Mimi na daktari/madaktari kwa pamoja tulitazama kwa kina faida na hasara za kila njia ya kujifungua.

0. Sikubaliani kabisa
1. Sikubaliani kwa kiwango kikubwa
2. Sikubaliani kiasi
3. Ninakubaliana kiasi

4. Ninakubaliana kwa kiwango kikubwa
5. Ninakubaliana kabisa

13. Kwa pamoja, mimi na daktari/madaktari tulichagua njia bora ya kujifungua.
    0. Sikubaliani kabisa
    1. Sikubaliani kwa kiwango kikubwa
    2. Sikubaliani kiasi
    3. Ninakubaliana kiasi
    4. Ninakubaliana kwa kiwango kikubwa
    5. Ninakubaliana kabisa

14. Kwa pamoja, mimi na daktari/madaktari tulikubaliana kuhusu hatua zinazofuata kuhusu kujifungua kwangu.
    0. Sikubaliani kabisa
    1. Sikubaliani kwa kiwango kikubwa
    2. Sikubaliani kiasi
    3. Ninakubaliana kiasi
    4. Ninakubaliana kwa kiwango kikubwa
    5. Ninakubaliana kabisa

15. Je, uliulizia kuhusu njia au namna mbalimbali za kujifungua, faida na hasara ulipohudhuria kliniki ya mama mjamzito,?
    a) Ndio
    b) Hapana

16. Je, kwa kawaida huwa unakwenda kumwona daktari ukiwa na mwenza wako?
    a) Ndio
    b) Hapana – Ruka swali la 24

17. Je, mwenza wako aliuliza kuhusu njia au namna mbalimbali ya kujifungua, faida na hasara ulipokwenda kumwona daktari?

a) Ndio
b) Hapana

18.kiwango gani unamjua mtoa huduma za afya aliyekuhudumia ulipohudhuria kliniki ya mama mjamzito?

a) Vizuri sana
b) Vizuri kiasi
c) Vizuri
d) Si vizuri
e) Si vizuri kabisa

19. Namna umemzoea mtoa huduma za afya aliyekuhudumia ulipohudhuria kliniki ya mama mjamzito?

a) Mara ya kwanza kunihudumia
b) Aliwahi kunihudumia kabla

Appendix V: Checklist for Eligibility

1. Gestation age	≥ 34
2. Number of visits at this facility	≥ 2

3.Reason for previous caesarean section

- Fetal distress
- Poor progress of labor
- Malpresentation
- Antepartum hemorrhage
- Macrosomia

4.Estimated gestation age at previous caesarean delivery

- Term

5.Ever told by clinician who performed previous caesarean section not to attempt vaginal delivery in subsequent pregnancy

- No

6.Any complications during previous caesarean section or wound healing

- No

7.Any history of uterine rupture

- No

8.Any history of uterine surgery

- No

9.Check ANC card and ultrasound if available, confirm

- GA
- Singleton
- Cephalic
- Placenta away from cervical os