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Assessment of Postnatal Mothers' Level Satisfaction with Institutional Delivery and Factors Influencing Satisfaction among Postnatal Mothers in Rural Tanzania; An Analytical Cross-Sectional Study

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Abstract

Background

At a time when efforts to reduce maternal mortality have been stepped up, it is important to look at mothers' satisfaction with institutional delivery and factors associated with it. According to WHO the main goal of health care is to deliver equitable, effective, and accessible health care, which will provide client satisfaction. Thus, this study aimed at assessing the mothers' level of satisfaction with institutional delivery services and factors associated with it.

Method

It was a hospital-based analytical cross-sectional study. A multistage sampling technique was used to obtain a sample size of 329 respondents. An interviewer-administered structured questionnaire was the main method used for data collection. Data were analyzed by statistical package for social science (SPSS) version 20. Multivariate and binary logistic regression was applied to identify factors associated with satisfaction with delivery services.

Result

Mother's satisfaction with institutional delivery was 188/329 (57.1%). Half of the respondents 168/329 (51.1%), 166/329 (50.5%) and 173/329 (52.6%) were satisfied with privacy, waiting time and health workers' communication, respectively. The majority 208/329 (63.2%) were dissatisfied with perceived attendants' competencies. Predictors of satisfaction were age group >20years (AOR=3.149, 95% CI 1.169-8.481 p=0.023) and 30 years and above (AOR=4.421, 95% CI 1.451-13.474 p=0.006) and employment (AOR=1.936, 95%CI 1.190-3.150, p=0.008).

Conclusion

Substantial numbers of post-delivery mothers were not satisfied with institutional health delivery services. Young women and unemployed were less likely to be satisfied with institutional health deliveries. The study recommends an interventional study, which will determine cost-effective strategies to improve satisfaction with health facility delivery.

Keywords: *Postnatal Mothers, Delivery Services, Health Institution, Satisfaction, Rural Tanzania.*

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Background

The problem of maternal deaths has become a global concern that requires collective action by key stakeholders. Over half a million of women die from childbirth, or complications due to pregnancy and another ten million women undergo pregnant related diseases, disabilities even depression annually(1). The available statistics show a great disproportion in maternal mortality ratio (MMR) between Sub-Saharan African (SSA) and developed countries; i.e. 533 vs. 12 per 100,000 live births, respectively (2). Most of these deaths are preventable, in countries that provide everyone with safe, affordable, high-quality health services to mothers and babies(3). According to WHO, maternal death is defined as the death of mothers while pregnant or within 42 days following termination of pregnancy.

A recent study conducted in Tanzania has reported maternal mortality ratio of 556 per 100,000 live birth(4). Yet, these mortalities are linked with lack of quality delivery services within the health institutions(5) which could have contributed to an unacceptable high proportion of women who decided to have childbirth at home instead of health facility birth. According to Tanzania Demographic and Health Survey and Malaria Indicators Survey 2015-2016, it is reported that 35% of interviewed women had home childbirth in Tanzania (4). Disparities in places of child birth do exist between rural and urban dwellers in Tanzania, where of 35% of women who had home childbirth, 91.2% were from rural settings and 8.8% were from urban settings(5). The direct causes for these deaths include severe bleeding commonly happened after delivery (PPH), high blood pressure,(pre-eclampsia and eclampsia), obstructed labor, and infection(6). Apart from direct causes, other relevant factors that contributed to causing a high percentage of maternal deaths are three delay in seeking health care, delay in reaching appropriate care, and delay in receiving care(7).

Understanding postnatal mothers' satisfaction with institutional delivery services is a very important factor affecting service adherence since there is clear relationship between poor quality of care, mothers' satisfaction and maternal mortality(8). Mothers who perceived quality care and satisfied with services are more likely to comply with treatment, information provided and being active in taking care to their own(9). Similarly, a satisfied mother may continue to use health facilities in the future and recommend service to others(10). These can contribute to reducing maternal mortality and morbidity, but also gives the opportunity for the health provider to improve services offered(11). Quality care should be a continuous practice that spans from pre-pregnancy to the postpartum period and in which women and

health providers are partners in the care provision(9). Quality health services and mother's satisfaction are interrelated since satisfaction depends on quality of health care services provided. Additionally, the quality of institutional delivery services together with the maternal and fetal good condition increases mother's satisfaction thereby improving earlier recognition of the problem(12). Mothers who are satisfied with delivery services will recommend facility for the next delivery and express their satisfaction to other people than those mothers who are not satisfied with services.

There are myriad factors that have been raised in the literature related to mother's satisfaction with the delivery service. For example, it is said that long waiting, little opportunity to communicate with service providers, and not getting involved in decision making can be some of the reasons for dissatisfaction(10). A previous study undertaken in Nigeria has also reported mothers dissatisfaction with delivery services, reasons for dissatisfaction were long waiting, poor laboratory services, inadequate medicine supply, and health workers negative attitudes(11). Other factors affecting mothers satisfaction are mothers' previous history, mode of delivery the social demographic characteristics and parity, with multipara preferring more to have vaginal delivery(10).

The Government of Tanzania made an effort to improve the quality of health care by increasing the availability of medical supplies and equipment, provision of free services to pregnant women, and expansion of health facilities to ensure accessibility. All these existence of reproductive health services are provided to reduce the risk of immediate and long term effect(13). But still, some women opt for home childbirth over health facility birth. Women who had more than one child are more likely to go for home childbirth assisted by unskilled birth attendants than primigravida women(14). The possible explanation for this could be the experience they get in institutional delivery. It is for these reasons that WHO recommended close monitoring of the mothers' satisfaction with institutional delivery services to improve delivery outcomes of both mothers and babies. In addition WHO wants every mother to receive quality services through pregnancy, childbirth, and the immediate postnatal period(15).

In the Manyara region, it has been observed that there was limited attendance to delivery services as it was reported that, institutional delivery services were only 48%(4). The proportion is unacceptably low despite the governmental effort to address barriers to health institutional childbirth (free access and increases the number of health facilities). Reasons

for low institutional delivery in the region remain unclear. There are limited studies that have been carried out to evaluate the mother's satisfaction with institutional delivery services in Manyara Region. The study focused on Manyara Region purposively because of high home birth (52%)(4) assisted by unskilled birth attendants despite the increased number of health facilities that provide both basic and comprehensive maternal emergency obstetric care. The study was therefore undertaken to assess the postnatal mother satisfaction with institutional delivery services in Manyara Region and use the findings obtained in advocacy for services improvement.

Methods

Study Setting

The study was conducted in the Manyara Region, which is one of the administrative regions in Tanzania and its headquarters is in the Babati council. The region is located in the northern zone and is bordered to the north by Arusha Region, to the northeast by Kilimanjaro Region, to the East by Tanga Region, to the South by the Dodoma Region, to the southeast by the Morogoro Region, to the southwest by the Singida Region. The region had a population of 1,425,131 comprising of 717,085 males and 708,046 females (16). Manyara Region has five administrative councils, which are Babati, Hanang, Mbulu, Simanjiro, and Kiteto. The health services in Manyara Region are provided by the government, faith-based, and non-governmental health facilities. There is one regional hospital, 10 hospitals [of which 5 are district hospitals], 25 health centers, and 207 dispensaries making a total of 252 facilities.

Study Design

A hospital-based analytical cross-sectional study design using a quantitative approach was used in assessing postnatal mothers' satisfaction with health institution delivery.

Inclusion criteria

Post-delivery mothers at the period of discharge from the hospital who gave consent to participate in the study.

Exclusion criteria

Post-delivery mothers at the point of discharge who had mental challenges and who were seriously sick.

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Sample size calculation

The sample size was estimated by using Cochran's formula (1975). In this formula, n = desired sample size, z= standard normal deviation = 1.96 (95%), e = degree of accuracy desired = 5% = 0.05. The sample size was calculated based on the previous prevalence of 25.4% of post-delivery mothers by a study conducted in Ethiopia(17).

Where:

- n = minimum sample size
- Z = confidence interval 1.96 = 95%
  - P = the (estimated) proportional of population 25.4% (17).
- e = the desired level of precision [marginal error] 5% =0.05

To adjust for non-response was 10% of the total minimum sample size make the sample size 10/100*299 = 328.9=329. Therefore, the sample size was 329.

Sampling technique

A multistage sampling technique was used to obtain respondents. The first stage was the selection of districts. In this stage, a simple random technique by replacement using the lottery method was employed to obtain five districts out of seven councils of the Manyara Region. All five district hospitals were included in the study purposively (serve large population). The second stage sampling technique was the selection of health centers. All health centers in a district were listed and a simple random sampling using the lottery method was done to select two health centers. Also, in the second stage sampling technique, a simple random sampling technique was employed to select two dispensaries from each district. The third stage sampling technique was the selection of post-delivery mothers. In this stage, proportional sampling was used to establish how many samples were needed from each health facility. The five selected district hospitals contributed 75% of the total sample meaning 15% from each district hospital. Health centers contributed 16% of the total sample meaning 8% from each health center and dispensaries contributed 9% of the total sample, each 4.5%. Then systematic random sampling was employed in which postnatal mothers were identified from the clinical registration book. Then the Kth interval formula was used to select mothers to be involved in the study. K=N/n where

N = Total population

n = proportion sample size

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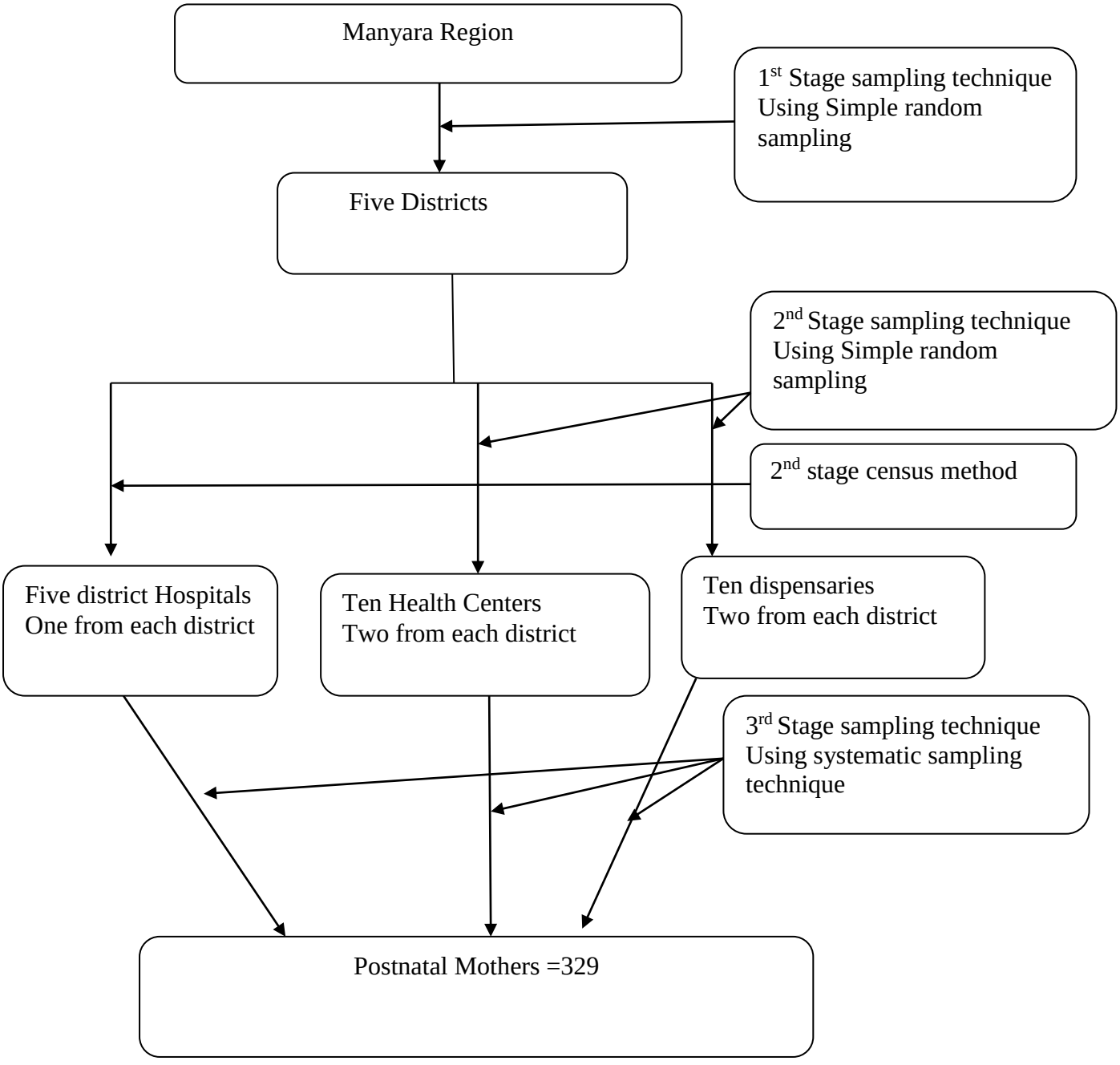

Figure 1. Sampling Technique Flow Chart

Data collection procedure

Data were collected using an interviewer-administered questionnaire. The information collected includes social-demographic characteristics of the mothers, delivery services satisfaction related questions based on the domain of privacy, communication, waiting time, and provider's competence, presented using Likert scale (1-very dissatisfied, 2-dissatisfied, 3-neutral, 4-satisfied, 5-very satisfied)

Data collected with the help of research assistants and the principal investigator. The research assistants were trained in 2 days based on the objectives of the study, methods, and approaches they employ during data collection before doing the actual data collection. Those respondents who could not read or write were assisted by the researchers to fill the questionnaire by reading the questions to them and then fill the responses they provided on the questionnaire.

Pretest of the tools was done before the actual date of data collection to check the reliability of the tool to the respondents with similar criteria the study sample and appropriate modifications were made as required. The Cronbach's alpha coefficient scale test for the questionnaire for assessing satisfaction was 0.804.

Variable Measurement

Satisfaction in the current study was based on the following categories –privacy, communication, mothers waiting time, and providers' competence. These variables were chosen as the major aspect of the institutional delivery services, which influence the mother's satisfaction. Likert scale was used to score each satisfaction categories from 1 – 5 where (1=very dissatisfied; 2=dissatisfied; 3=neutral; 4=satisfied; 5=very satisfied). Privacy was assessed by two Likert scale items which were: (1) How much were you satisfied with the measures taken to assure privacy during your examination, for example, private room, curtained or screened area? and (2) Are you satisfied with the measures taken to assure confidentiality about your health problem? Communication with health care providers was measured by four Likert scale items (1) How much were you satisfied with the completeness of the information given by health care providers during birth? (2) How much were you satisfied with the health worker's explanation of the labor progress using clear language? (3) How much were you satisfied with the courtesy and respect of the doctor/midwife during your visit? and (4) How much were you satisfied with health workers verbally encouraged praised and reassured during the time of labor. Mothers' waiting time was assessed using two Likert items: - (1) How satisfied were you with the time spent waiting to be seen by a

health care provider? and (2) How satisfied are you with the adequacy of time health workers spent for examination? and providers' competence was assessed using two Likert items (1) How were you satisfied with the medical interventions done to you during childbirth (physical examination)? and (2) How much were you satisfied with support from the staff immediately after birth and how to care for your baby?

The mean scores were used to categorize each component of satisfaction into two groups (Satisfied and dissatisfied). Those who scored above the mean were termed as satisfied while those below the mean were termed as dissatisfied. A total score was computed which was the summation of scores from the four components of satisfaction. Here as well the mean score was computed and postnatal mothers who scored above mean were regarded as satisfied with institutional delivery and those who scored below mean regarded as dissatisfied with institutional delivery.

Data processing and Analysis

Data were cleaned, entered, and analyzed through the statistical package for social science (SPSS) version 20. The analysis involved descriptive statistics to describe the sample population and relevant proportions in terms of percentages, frequencies, tables, and cross-tabulations between independent and dependent variables. The mean, median, standard deviations, and range were used to summarize continuous variables such as age, for Likert scale items on level of postnatal mothers' satisfaction the mean score was generated. Further analysis was done through the inferential statistics in which the logistic regression was run to establish factors, associated with health facility delivery satisfaction. Cross tabulation was done to find out the relationship between independent variables and the dependent variable (maternal satisfaction). Independent variables with p-value less than 0.2 were entered into regression model. Univariate analysis was done among those variables and crude odds ratio was obtained. This was followed by a multiple regression analysis to establish predictors of satisfaction.

Results

Social-demographic characteristics of the respondents

A total number of 329 post-delivery mothers in health facility institutions were interviewed with a response rate of 100%. The mean age in years of post-natal mothers was 27 ±6.59; the minimum age was 17 years and the maximum was 43 years. The findings revealed that

the most prominent age was between 20-29(50.5%), were married 279 (80.4%), had primary level of education 210 (63.8%), were multipara 250 (76.0), and were not employed 314 (95.4%) refer (Table 1).

Table 1: Social demographic characteristics of post-natal mothers in institutional delivery in Manyara region, Tanzania, June 2020 (N=329)

Variable	Frequency(n)	Percent (%)
Age group		
<20 Yrs.	35	10.6
20 -29Yrs	166	50.5
≥30 Yrs.	128	38.9
Marital status		
Married	279	84.8
Single	50	15.2
Education level		
No formal education	9	2.7
Primary	210	63.8
Secondary	110	33.5
Parity		
Primipara	79	24.0
Multipara	250	76.0
Employment		
Employed	15	4.6
Not employed	31	95.4

Satisfaction with institutional delivery

About 51.1% of the post-natal mothers were satisfied with privacy, 52.6% with communication, and 50.5% with waiting time. However, about 63.2% were not satisfied with provider competence (Table 2).

Relationship between social-demographic characteristics and satisfaction with Institutional delivery services

Table 3. Indicate that there was statistically significant relationship between age group (p = 0.003), education level (p= 0.019), marital status (p= 0.019) parity (p= 0.008), occupation (p=0.015) and the satisfaction with institutional delivery services among post-delivery mothers (Table 3).

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Table 2: Satisfaction with institutional delivery services among postnatal mothers in Manyara region, Tanzania June 2020 (N=329)

Variables	Frequency (N)	Percentage (N)
Privacy		
Satisfied	168	51.1
Dissatisfied	161	48.9
Provider competence		
Satisfied	121	36.8
Dissatisfied	208	63.2
Waiting time		
Satisfied	166	50.5
Dissatisfied	163	49.5
Communication		
Satisfied	173	52.6
Dissatisfied	15	47.4

The majority of the respondents were satisfied with institutional delivery services 188 (57.1%) while 141 (42.9%) were dissatisfied with health institution delivery.

Table 3: Relationship between social-demographic characteristics and satisfaction with delivery services among postnatal mothers in Manyara region, Tanzania, June 2020 (N=329)

Variable	Satisfied n (%)	Dissatisfied \n(%)	X^2	p-value
Age group				
< 20 Yrs.	10(28.6)	25(71.4)		
20 -29 Yrs.	92(55.4)	74(44.6)		
≥30 Yrs.	86(67.2)	42(32.8)	17.141	0.003
Marital status				
Married	167(59.9)	112(40.1)		
Single	21(42)	29(58)	5.521	0.019
Education level				
No formal education	6(66.7)	3(33.3)		
Primary	131(62.4)	79(37.6		
Secondary and above	51(46.4)	59(53.6)	7.905	0.019
Occupation				
Not Employed	180(57.3)	134(42.7)		
Employed	8(53.3)	7(46.7)	5.927	0.015
Parity				
Primipara	35(44.3)	44(55.7)		
Multipara	153(61.2)	97(38.8)	6.998	0.008

Predictors of satisfaction with institutional delivery services

After controlling of confounders, predictors of post-delivery mothers' satisfaction with health facility birth were age group of mothers (>20years (AOR=3.149, 95% CI 1.169-8.481 p=0.023) and those with the age group of 30 years and above (AOR=4.421, 95% CI 1.451-13.474 p=0.006) as well as mothers who had employment (AOR=1.936, 95%CI 1.190-3.150, p=0.008) (Table 4).

Table 4: Predictors of satisfaction with institutional delivery services in Manyara region, Tanzania June 2020 (N=329)

Variable		95%CI		p-value		95%CI		p-value
	OR	Lower	Upper		AOR	Lower	Upper	
Age group								
Less than 20 years	1				1			
20 -29 Yrs.	3.108	1.404	6.88	0.005	3.149	1.169	8.481	0.023
30 Yrs and above.	5.119	2.252	11.634	0.014	4.421	1.451	13.474	0.006
Marital status								
Single	1				1			
Married	2.059	1.118	3.791	0.02	0.73	0.358	1.489	0.387
Education level								
No formal education	0.829	0.202	3.409	0.795	0.809	0.185	3.531	0.778
Primary Education	0.432	0.103	1.816	0.252	0.431	0.095	1.95	0.274
Secondary and above	1				1			
Parity								
Primipara	1				1			
multipara	1.983	1.189	3.308	0.009	0.871	0.437	1.771	0.704
Occupation								
Unemployed	1	1.116	2.822	0.015	1	1.19	3.15	0.008
Employed	5.9				1.936			

Confounders were education level, parity and marital status

Discussion

Generally, the findings revealed that more than half of the postnatal mothers were satisfied with institutional delivery services. This indicates that there is still a remarkable number of postnatal women (42.9%) who are not satisfied with institutional delivery services. The level

of satisfaction with privacy, communication, and waiting time was low in half of the interviewed women. The majority of women were not satisfied with perceived health workers' competence in the provision of obstetric services.

Through improving privacy, communication, waiting time, and perceived provider competence as components of satisfaction with delivery services, the government can improve the use of health facilities for childbirth. Speaking of privacy, the government of Tanzania has improved the labor rooms from an open space to cubes where each delivering mother is assured of privacy in the process in some health facilities. Still more than half of interviewed women were not satisfied with privacy. Probably, women who opt for home childbirth assisted by untrained attendants are attracted to the privacy during childbirth. A previous study done in Ethiopia reported that privacy significantly influences the level of satisfaction with institutional delivery(18).

The government of Tanzania is working hard to increase institutional deliveries through increasing health facilities and remove the financial barrier to access services(19). It is obvious that the existence of a health facility does not guarantee its use. The decision to use a health institution for childbirth is influenced by many factors including the level of satisfaction with the obstetric services provided(20). This means that the availability of health facilities has to go hand in hand with improving the quality of obstetric care services. Quality health services are a cornerstone strategy for increasing demands. Similar findings were reported from a similar study done in Pumwani maternity hospital in Kenya(13). A different finding was reported from a similar study done in Chhattisgarh, India where the majority of postnatal mothers were satisfied with delivery service(20). The observed difference could be attributed to differences in sample size where the study in India used a large sample size.

Also, unlike this study, the study in India excluded women who had complications during childbirth. By excluding women who had complications during childbirth could have favored the study findings obtained from the study done in India. Women who experienced complications have more time to encounter delivery services compared to their counterparts and such encounter may influence their level of satisfaction with maternal services. However, the study done in Basrah Iraq reported less than half of the women were satisfied with institution delivery services and other women showed some degree of satisfaction respectively(21). The possible different rates of the satisfaction level could be related to the geographical, cultural, social-economic characteristics of the study population and the

government concern for maternal health services in terms of involvement of different stakeholders to reduce maternal mortality.

The study found that the age of pregnant women predicted satisfaction with institutional delivery services. Older women had high odds to be satisfied with delivery services than young women. The majority of women younger than 20years are giving birth for the first time. Most of them use health care facilities for childbirth compared to older women(14). Their satisfaction with institutional delivery predicts their use of health facility delivery services in the subsequent pregnancies. It is alarming that this group is the one with low odds for satisfaction with institutional deliveries. It is important to invest in this group so that they can opt for institutional delivery in their next pregnancies. A similar study by Yohannes et al.,(22) has reported similar findings. The study also found the employment status of women to influence satisfaction with delivery services. Employed women had higher odds to be satisfied with institutional deliveries than unemployed women. Employment goes hand in hand with economic status. Mothers who have a source of income can choose which health facility to go to for childbirth services.

The study was not without limitations; it lacks the ability to demonstrate causal effect relationship as it was a cross-sectional study. Being a facility based study it may not be a true reflection of the satisfaction status of the general catchment of these facilities. However, the central goal was to work out satisfaction status and factors, which influenced satisfaction, thus, this study serves as an important precursor for the development of an intervention study.

Conclusion

This study found that a substantial number (42.9%) of post-delivery mothers were not satisfied with health institutional delivery services. Young women and unemployed were less likely to be satisfied with health institutional deliveries. The study recommends a qualitative study on health institution delivery, which will allow more understanding of postnatal satisfaction with institutional delivery. The study also recommends an interventional study targeting to improve satisfaction with health facility delivery.

Declarations

Competing interests

The authors declare that they have no conflict of interest.

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Availability of data and materials

The data and material used in the current study are available from the corresponding authors upon request.

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Author's contributions

JW conceptualized the study, did data collection, analysis and wrote the first draft of the manuscript while FM guided the conceptualization, analysis, and critical review of the manuscript. All authors read and consented to the manuscript to be submitted for peer review.

Abbreviations

ANC	Antenatal Care
AOR	Adjusted Odds Ratio
CI	Confidence Interval
DHIS	District Health Information System
HFs	Health Facilities
$MGSO_4$	Magnesium Sulphate
MMR	Maternal Mortality Ratio
NBS	National Bureau of Statistic
OR	Odds Ratio
PPH	Post-Partum Hemorrhage
QIT	Quality Improvement Team
RAS	Regional Administrative Secretary
SPSS	Statistical Package for Social Science
SSA	Sub Saharan Africa
TDHS	Tanzania Demographic Health Survey
UDOM	University of Dodoma
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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