

Maternal Satisfaction on Delivery Care Services and Associated Factors Among Mothers who Gave Birth in the University of Gondar Teaching and Referral Hospital, Northwest Ethiopia

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Research

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Abstract

Introduction: Maternal satisfaction on delivery services is an important indicator for assessment of the quality of care. Quality of delivery care is the degree to which maternal health services for individuals and populations increase the likelihood of timely and appropriate treatment for the purpose of achieving desired outcomes. The use of services and outcomes are the result not only of the provision of care but also of women's experience of that care. Therefore, investigating women's experience or satisfaction on delivery care is of paramount importance to enhance the services utilization.

Methods: An institution based cross-sectional study design was used. Data were collected using structured and pretested questionnaire from 403 mothers who were recruited by simple random sampling technique. Multivariable binary logistic regression was used to identify variables associated with maternal satisfaction on delivery services on the basis of adjusted odds ratio (AOR) with 95% confidence interval (CI) and a p – value less than 0.05.

Results: The current study found that 78.2%, 65.5%, 64.3%, 49.9% and 44.7% of the mothers who gave birth at the University of Gondar teaching and referral hospital were satisfied on physicians' communication, health care services, physicians' attitude, privacy and sanitation condition of the health institution respectively. The overall satisfaction of mothers on delivery services was found to be 65.5%. Maternal satisfaction was statistically associated with diploma and above education [AOR = 0.29, 95% CI = (0.13, 0.66)]; secondary and/or primary education [AOR = 0.42, 95% CI = (0.20, 0.90)]; *Antenatal care (ANC)* follow-up in the current pregnancy [AOR = 4.47, 95% CI = (1.77, 11.27)] and short waiting time [AOR = 1.85, 95% CI = (1.19, 2.88)].

Conclusion: This study revealed that the overall satisfaction of mothers on delivery service was found to be suboptimal. Physicians' communication, health care services and physicians' attitude were areas where the highest proportion of mothers satisfied. On the other hand, the highest proportion of mothers was dissatisfied on sanitation condition. Educational status, ANC follow-up and waiting time were found to be statistically associated with maternal satisfaction on delivery services.

Background

Maternal satisfaction on delivery services is an important indicator for assessment of the quality of care. Quality of delivery care is the degree to which maternal health services for individuals and populations increase the likelihood of timely and appropriate treatment for the purpose of achieving desired outcomes. The use of services and outcomes are the result not only of the provision of care but also of women's experience of that care⁽¹⁾.

The quality of maternity care received by mothers in developing countries is often reported as poor. Poor quality of maternity care leads to maternal and child death. Globally, about 800 women die from pregnancy or labor related complications every day. In 2010, around 287,000 women died during pregnancy and childbirth⁽²⁾. The maternal mortality is reported to be 14 times higher in developing

regions than the developed(3). Sub-Saharan Africa alone accounted for 62% of global maternal deaths. Maternal mortality in the Sub-Saharan Africa region is reaching 686 per 100,000 live births(2). The lifetime risk of maternal death in industrialized countries is 1 in 4,000 vs. 1 in 51 in countries classified as 'least developed'(4).

Ethiopia is one of ten countries sharing 58% of the global maternal deaths reported in 2013(3) and has an maternal mortality rate of 412 per 100,000 live births(5). According to Ethiopian demographic and health surveys (EDHS) 2016, institutional delivery was 26% which is low. One possible reason for this low institutional delivery might include unhappy health institutional delivery experience for the mother that limits their ability to utilize the service in subsequent pregnancies: factors might include low ANC coverage, gender sensitivity, preservation of dignity, and cultural sensitivity(6-10).

Ensuring client satisfaction is an important means of secondary prevention of maternal mortality. Satisfied patients are more likely to utilize health services, comply with medical treatment, and continue to interact with healthcare providers(11). When patients are satisfied, medical management and outcomes are enhanced. Patient satisfaction is a measure of the quality of care and is indispensable for the assessment of quality and the design and management of healthcare systems(12-14). Assessing client satisfaction with respect to service delivery and the healthcare facilities might help guide the development and improvement of service delivery. This institution based cross-sectional study was, therefore, conducted to assess level of satisfaction on delivery care services among mothers who gave birth at the University of Gondar teaching and referral hospital.

Methods

Study design and period

An institution based cross-sectional study design was used to assess level of maternal satisfaction on delivery care service and associated factors among mothers who gave birth in University of Gondar teaching and referral hospital during September 2017.

Sample size determination and sampling procedures

Sample size was determined using single proportion formula with the following assumptions: maternal satisfaction on labor and delivery care services in referral hospitals = 61.9% (15), 95% confidence interval, 5% margin of error and 15% nonresponse rate. The estimated sample size was thus 418 women. A simple random sampling technique was used to select the study subject using the registration book as a sampling frame.

Data collection procedure

Data were collected using structured and pretested questionnaire. Data were collected by final year medical students Training on techniques of face to face interview and research ethics was given to data

collectors. The interview were done when the mothers were about to be discharged from the labor and delivery wards.

Measurement of outcome variable

Mothers satisfaction on labor and delivery care services, the primary outcome variable of this study was measured using a five scale (very dissatisfied, dissatisfied, neutral, satisfied, and very satisfied) assessment tool. Point 1 was given for very dissatisfied; 2 for dissatisfied; 3 for neutral; 4 for satisfied and 5 for very satisfied. The answer of each question was summed up and divided by the total number of questions and then multiplied by 100 to determine level of satisfaction. Accordingly, mothers satisfaction was taken as 'satisfied' if mothers scored 75% and above points and 'dissatisfied' if they scored less than 75% (15, 16).

Data analysis

Data were entered to Epi-Info version seven and exported to statistical package for social sciences (SPSS) version twenty for analysis. Descriptive statistics, like mean, standard deviation, frequency, and percent were analysed for most variables. Univariable binary logistic regression was used to select variables for the multivariable binary logistic regression on the basis of a p-value less than 0.2. Variables having a p-value less than 0.2 by the univariable analysis were further analysed by multivariable binary logistic regression to control confounding and finally variables associated with mothers satisfaction were identified on the basis of AOR with 95% CI and a p – value less than 0.05.

Results

Sociodemographic characteristics of participants

A total of 403 postnatal mothers participated in this study with 96.4% response rate. Among these mothers, 274 (68%) were from urban. Two hundred seven (51.4%) of the mothers were aged between 25 and 34 years. The mean age was 28 years (± 6 SD). Almost all 388 (96.3%) of the mothers were engaged at the time of the survey. Three hundred thirty-nine (84.1%) mothers were at least can read and write. Ninety-five(23.6%) mothers were housewife by their occupation. Eighty-five (21.1%) of the mothers were from a family of greater than five members. Twenty-three (5.7%) of the mothers gave more than five births(Table 1).

ANC related information

The majority, 383 (95%) of mothers knew about ANC and 373 (92.6%) of the mothers had access to ANC care services. Three hundred seventy-two (92.3%) of the mothers who gave birth were at ANC follow-up for the current pregnancy. Two hundred nineteen (58.9%) of the mother who had ANC follow-up for the current pregnancy got the services from University of Gondar teaching and referral hospital and 206 (55.4%) of the mothers reported that each visit took more than twenty minutes. One hundred fifty-five (41.7%) of the mothers followed more than four times (Table 2).

Labor and delivery related services

The vast majority, 318 (85%) of the mothers delivered their previous baby through spontaneous vaginal delivery (SVD) and 230 (57.1%) of the mothers reported that they gave birth at hospitals for their previous pregnancy. Two hundred ten (52.1%) mothers came to hospital by their own plan. Two hundred fifteen (53.3%) of the mothers reported that they waited for 10 or below minutes to get services. Three hundred eighty-seven (96%) of the mothers were seen by doctors during delivery and the labor of 381 (94.5%) mothers lasted more than 3 hours. Three hundred eighty (94.3%) mothers gave alive birth and 76 (18.9%) of the new borne babies were under weight (Table 3).

Mothers' satisfaction on delivery care service

Mothers' satisfaction on delivery care services was measured using 31 questions categorized under five categories: 10 questions under health care services; 6 under physicians' communication; 5 under physicians' attitude, 4 under privacy; and 6 under sanitation categories. Time spend with health care service providers (379/94%) and medical care received (377/93.5%) were areas where the highest proportion of mothers satisfied under the health care service category (Figure 1). The way health care providers explain clients health condition (358/88.8%), information about procedures (355/88.1%) and care providers' devotion to listen clients' worry (355/83.6%) were areas where the highest proportion of mothers satisfied under the physicians' communication category (Figure 2). Doctors' respectation (363/90.1%), nurses' respectation (193/47.9%) and the way staffs accept clients' opinion (193/47.9%) were areas where the highest proportion of mothers satisfied under the physicians' attitude category (Figure 3). Availability of separate delivery/examination rooms (260/65.3%) and gender mix of care providers (260/64.5%) were areas where the highest proportion of mothers satisfied under the privacy category (Figure 4). Facilities' cleanliness (279/69.2%) and cleanliness of waiting areas (256/63.5%) and were areas where the highest proportion of mothers satisfied under the sanitation category (Figure 5). Physicians' communication (315/78.2%), health care services (264/65.5%), and physicians' attitude (259/64.3%) were areas where the highest proportion of mothers satisfied. On the otherhand, the highest proportion of mothers (223/55.3%) were dissatisfied on sanitation condition (Figure 6). Overall, 264 (65.5%) of the mothers were satisfied on delivery services and the the rest 139 (34.5%) mothers were dissatisfied.

Factors associated with mothers' level of satisfaction on delivery services

Table 4 shows factors associated with mothers' level of satisfaction on delivery services. Level of education, ANC follow-up in the current pregnancy, waiting time, qualification of care providers, duration of labor, and pregnancy outcomes were selected to the multivariable binary logistic regression by the univariable binary logistic regression. Maternal satisfaction on delivery was statistically associated with level of education of the mothers, ANC follow-up in the current pregnancy, and waiting time.

This study revealed that literate mothers were more dissatisfied than illiterate mothers. The odds of satisfaction was 71% less among mothers whose education level was diploma and above compared with

mothers who didn't attend formal education [AOR = 0.29, 95% CI = (0.13, 0.66)]. Mothers who attended secondary education and/or primary education were less likely to be satisfied compared with illiterate mothers [AOR = 0.42, 95% CI = (0.20, 0.90)].

Maternal satisfaction on delivery services was significantly associated with ANC follow-up in the current pregnancy. The probability of being satisfied was 4.47 times more likely to be higher among mothers who had ANC follow-up compared with their counterparts [AOR = 4.47, 95% CI = (1.77, 11.27)].

The current study depicted that waiting time was associated with maternal satisfaction on delivery services. Mothers who waited for 10 and/or below minutes were 1.85 times more likely to be satisfied compared with mothers who waited for more than 10 minutes to get services [AOR = 1.85, 95% CI = (1.19, 2.88)].

Discussion

The present study determined the level of maternal satisfaction on delivery services at the University of Gondar teaching and referral hospital, northwest Ethiopia. The overall satisfaction level of mothers was found to be 65.5% (95% CI = 60.1 – 70.2%). The current level of satisfaction was in line with the reports of other similar studies in Amhara region (61.9%)(15) and South Ethiopia (67.9%)(17); The level of maternal satisfaction reported in this study was lower than the findings of other similar studies in Debremarkos (81.7%)(16); in Assela (80.7%)(18); in Bure (88%)(19); in Bahir Dar(74.9 %)(20); in Hawassa (87.7%)(21); in Wolayta zone(82.9%)(22) in Arba Minch(90.2%)(23) and in Nepal(89.88%)(24). The Current level of maternal satisfaction was also higher than the findings of other studies in Iran (59.5 %)(25) and Sri Lanka(29.6%)(26). The difference in level of maternal satisfaction across studies might be due to variation in health institutions quality and health care providers competency, behavior and approach.

This study showed that education status of mothers was found to be significantly associated with maternal satisfaction on delivery care services. Mothers who attended formal education were dissatisfied. Other similar studies also reported the inverse relation of satisfaction and educational status of mothers(18, 19, 21, 23). The probable reason might be due to the fact that educated mothers expect and demand better health care service quality. Moreover, educated mothers might know service quality standards and might compare the services they received with the standard(24).

This institution based cross-sectional study depicted that maternal satisfaction on delivery services was significantly associated with ANC follow-up which is inline with the findings of other studies (15, 18, 23, 27). ANC follow-up might give mothers a continuum of care from the ante natal to the post-partum period which will grant mothers all the necessary information about birth preparedness and information related to the current pregnancy(28).

This study found that waiting time to get health care service was the other statistically significant variable with maternal satisfaction. Mothers who waited shorter time to get service were more satisfied.

This finding is also supported by other studies(15, 18, 23). This might be due to the fact that providing health care services with no delay can prevent complication prolonged pain and clients boringness(29, 30).

Conclusion

This study revealed that the overall satisfaction of mothers on delivery service was found to be suboptimal. Physicians' communication, health care services and physicians' attitude were areas where the highest proportion of mothers satisfied. On the other hand, the highest proportion of mothers was dissatisfied on sanitation condition. Educational status, ANC follow-up and waiting time were found to be statistically associated with maternal satisfaction.

Abbreviations

ANC: Antenatal care; **AOR:** Adjusted odds ratio; **EDHS:** Ethiopian demographic and health surveys; **CI:** Confidence interval; **CS:** Caesarean section; **SD:** Standard deviation; **SPSS:** Statistical package for social sciences; **SVD:** Spontaneous vaginal delivery

Declaration

Ethics approval and consent to participate

Ethical clearance was obtained from the Institutional Review Board of the University of Gondar. There were no risks due to participation in this research. The collected data were used only for this research purpose. Verbal informed consent was obtained from the mothers. The information collected from participants kept with complete confidentiality. Privacy was maintained during the interview.

Consent for publication

This manuscript does not contain any individual person's data.

Availability of data and material

Data will be made available upon requesting the primary author.

Competing Interest

None of the authors have any competing interests in the manuscript.

Funding information

This study had no any special fund. However, the University of Gondar had covered questionnaire duplication fee.

Authors' contribution

AF, AM, AD, AA, AB, AB and AA participated during conception of the research issue, development of a research proposal and data collection. ZA supervise the data collection process and wrote various parts of the research report. ZG analyzed the data and prepared the manuscript. All the authors read and approved the final manuscript.

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Tables

Table 1: Sociodemographic information of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017

Sociodemographic variable	Frequency	Percent
Place of residence		
Urban	274	68.0
Rural	129	32.0
Age		
15 - 24 years	139	34.5
25 - 34 years	207	51.4
35 and above years	57	14.1
Marital status		
Engaged	388	96.3
Not engaged	15	3.7
Educational status		
Do not attend formal education	64	15.9
Secondary and below	200	49.6
Diploma and above	139	34.5
Occupation		
Housewife	95	23.6
Government employee	198	49.1
Private employee	35	8.7
Merchant	43	10.7
Farmer	25	6.2
Student	7	1.7
Family size		
<=5	318	78.9
>5	85	21.1
Number of births you gave		
<=5	380	94.3
>5	23	5.7

Table 2: ANC related services of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017

ANC related information	Frequency	Percent
Do you know about ANC?		
Yes	383	95
No	20	5
Are you currently on ANC?		
Yes	372	92.3
No	31	7.7
Where you follow ANC (n = 372)?		
At a local health center	153	41.1
At Gondar university hospital	219	58.9
How many times you follow (n = 372)?		
Once	12	3.2
Two times	150	40.3
Three times	55	14.8
Four or more	155	41.7
How long does each visit lasts (n = 372)		
<20 min	166	44.6
>20 min	206	55.4

Table 3: Delivery care services of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017

Variable	Frequency	Percentage
Place of delivery of previous children		
No previous delivery	29	7.2
At home	78	19.4
At a health center	66	16.4
At a hospital	230	57.1
Mode of delivery of previous baby (374)		
SVD	318	85
CS	56	15
If CS, how was the CS done?		
Emergency	42	75
Elective	14	25
How do you come to this hospital?		
Planned	210	52.1
Referred	193	47.9
How long do you wait to be seen by health a physician?		
<=10 minutes	215	53.3
>10 minutes	188	46.7
How long does the labor last?		
Up to 3 hours	22	5.5
More than 3 hours	381	94.5
Qualification of the physician who takes care of you		
Doctor	387	96.0
Midwife	16	4.0
What is the outcome of the current pregnancy?		
Alive	380	94.3
Dead	23	5.7

If the outcome is alive, what is the birth weight (n = 380)?		
<2500gm	76	18.9
2500-4000gm	294	73
>4000gm	30	7.4

Table 4: Factors associated with maternal satisfaction on delivery care services of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017

Variable	Maternal satisfaction		COR(95% CI)	AOR(95% CI)
	Satisfied	Dissatisfied		
Level of education				
Do not attend formal education	47	17	1	
Secondary and below	132	68	0.70 (0.38, 1.32)	0.42 (0.20, 0.90)*
Diploma and above	85	54	0.57 (0.30, 1.09)	0.29 (0.13, 0.66)**
Currently on ANC follow-up				
Yes	249	123	2.16 (1.03, 4.51)	4.47 (1.77, 11.27)**
No	15	16	1	
Waiting time				
<10 minutes	150	65	1.50 (1.00, 2.26)	1.85 (1.19, 2.88)**
> 10 minutes	114	74	1	
Qualification of care provider				
Doctor	251	136	1	
Midwives	13	3	2.35 (0.66, 8.38)	2.60 (0.71, 9.58)
Duration of labor				
Up to 3 hours	18	4	2.47 (0.82, 7.45)	2.23 (0.73, 6.83)
More than 3 hours	246	135	1	
Pregnancy outcome				
Alive	252	128	1.81 (0.78, 4.20)	1.90 (0.76, 4.74)
Dead	12	11	1	

Note: * p-value < 0.05 | ** p-value <0.01 | Hosmer and Lemeshow Test = 0.140

Figures

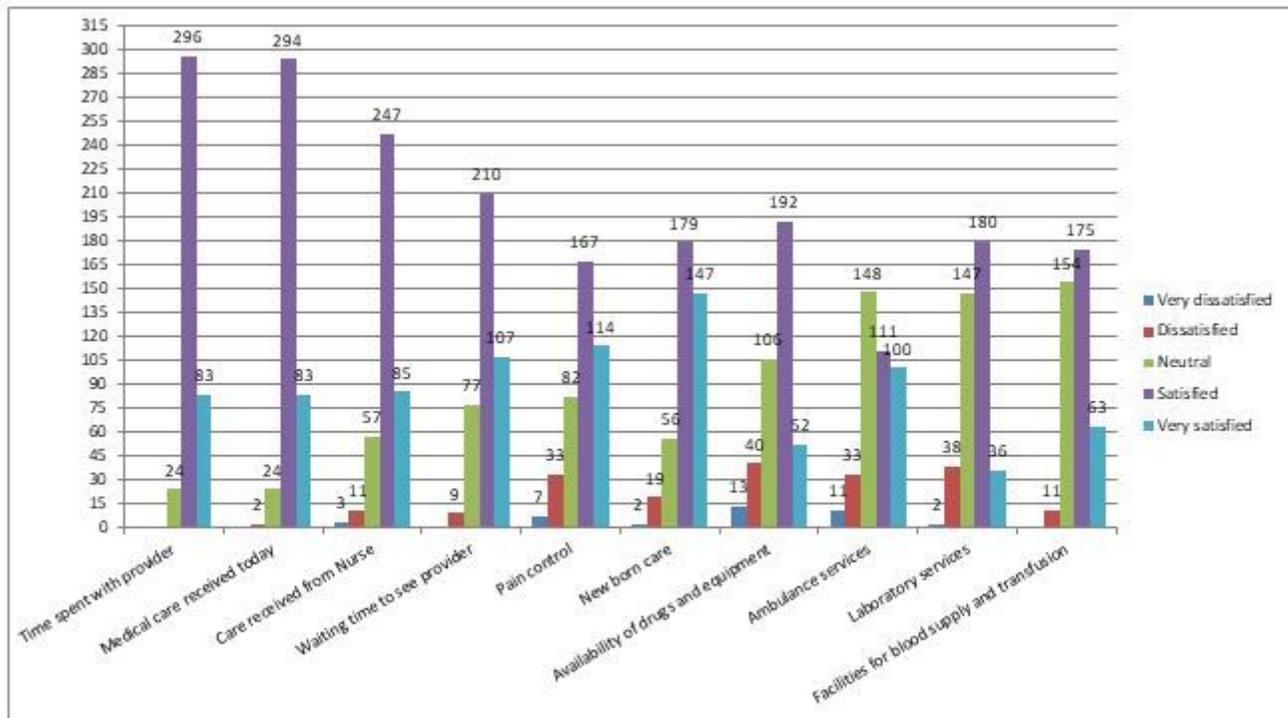


Figure 1

Level of satisfaction of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017 on health care services

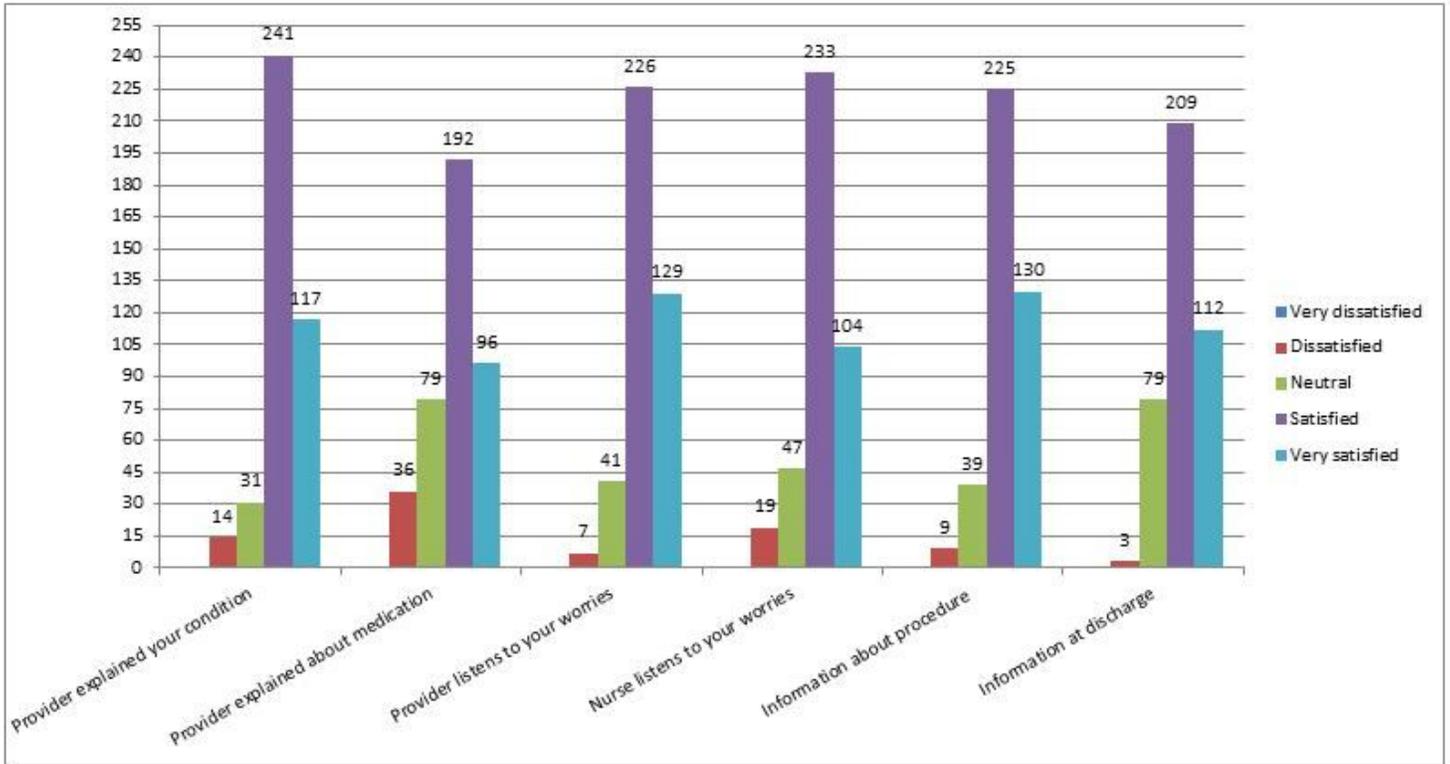


Figure 2

Level of satisfaction of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017 on health workers communication

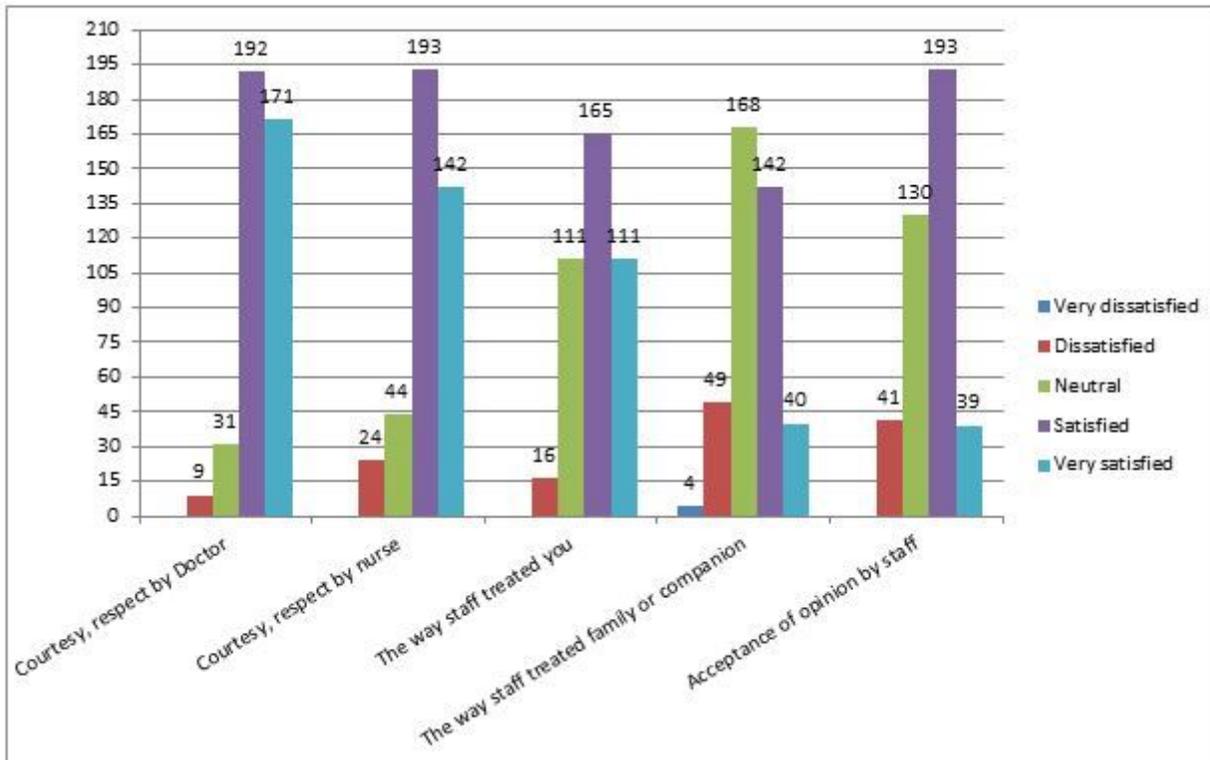


Figure 3

Level of satisfaction of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017 on health workers attitude

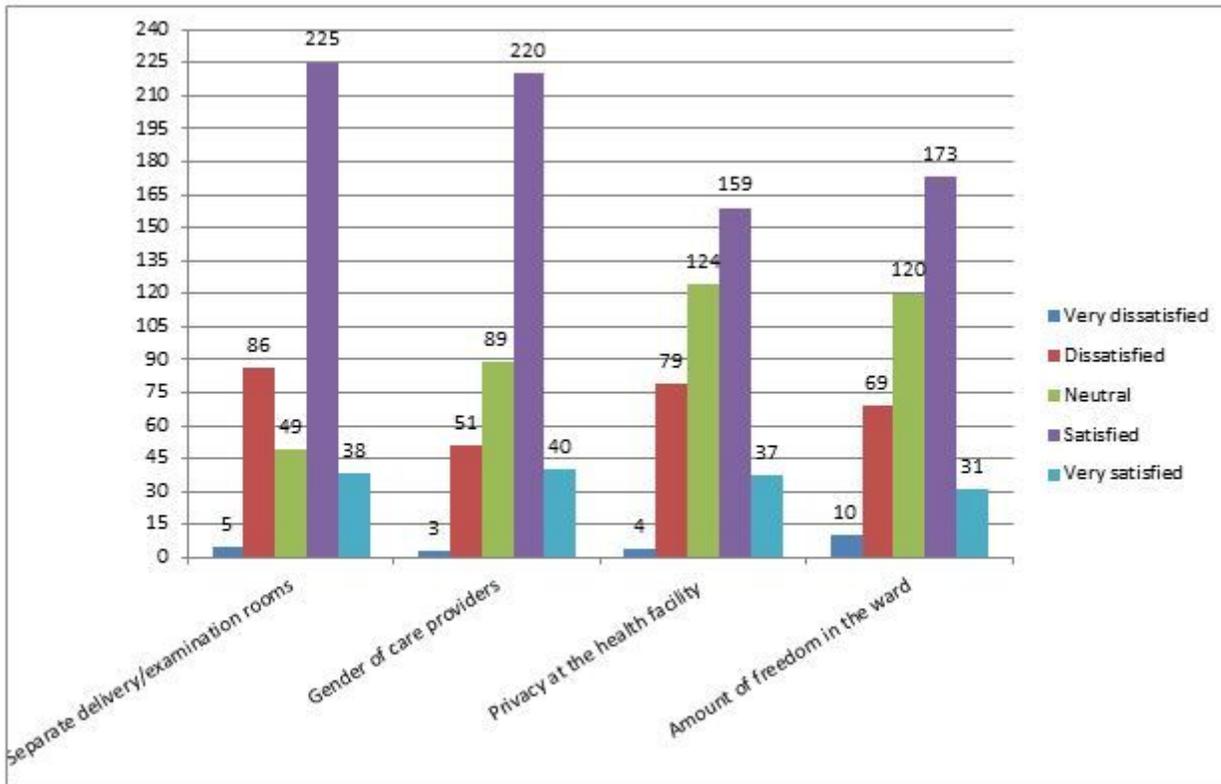


Figure 4

Level of satisfaction of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017 on privacy

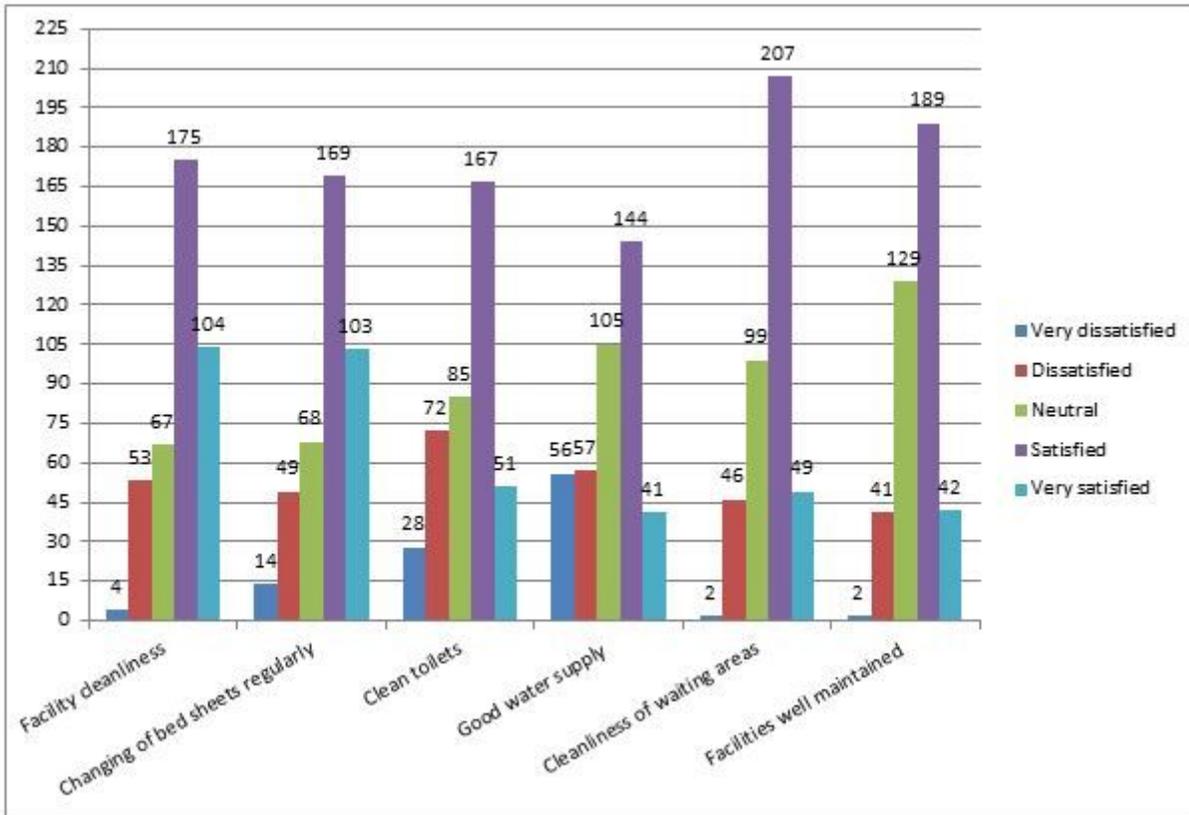


Figure 5

Level of satisfaction of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017 on sanitation

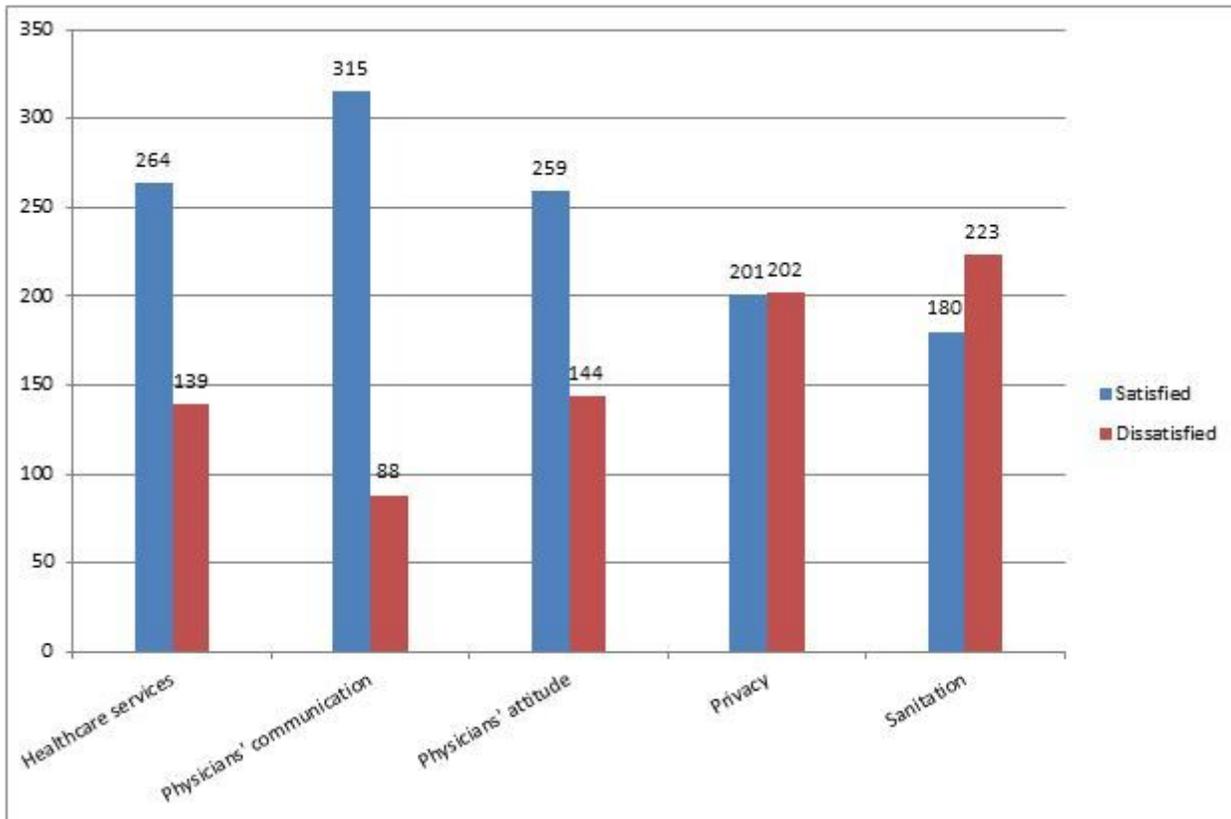


Figure 6

Level of satisfaction of mothers who gave birth at University of Gondar teaching and referral hospital during September 2017 on health care services, physicians' communication, physicians' attitude, privacy and sanitation