Mothers satisfaction on delivery service and associated factors among mothers who gave birth at Gondar University specialized and teaching hospital, Northwest Ethiopia 2018.

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Abstract

Abstract Background: Assessing maternal satisfaction level on maternal health care services is agreeable proxy to improve the quality of health care service, maternal health service utilization and providing client centered care. Therefore, the aim of this study was to assess the mothers’ satisfaction level and associated factors on delivery care of Gondar specialized teaching hospital, Northwest Ethiopia. Methods: A Hospital based cross-sectional study with an exit interview was conducted in Gondar university referral hospital, from November 1 to 31 2018. Total of Four hundred seventy-one postpartum mothers were participated in the study. Systematic random sampling method was employed to recruit study participants. The collected data was checked visually for incompleteness and entered to Epi-info version 7 statistical software and exported to SPSS version 20 software to descriptive, bi-variable and multivariable logistic analysis. Finally, the result was presented in tables and graphs. Results: The magnitude of mothers’ satisfaction on delivery service was 21.2%, with 95% CI (17.6, 25.1). In multivariable logistic analysis, Residence being Urban with odd ratio 0.34 (AOR=0.34; 95% CI 0.17, 0.68), Spontaneous vaginal delivery with odd ratio 0.28 AOR=0.28; 95%; CI (0.14, 0.57) and Child birth space interval of 12-24 months with odd ratio 0.22 AOR=0.22; 95%; CI (0.08,0.55) were inversely associated with mothers’ satisfaction. while, short waiting time to see health care providers with odd ratio 9.69 AOR=9.69; 95% CI: (3.16,29.76)was positively associated with mothers’ satisfaction on childbirth care services. Conclusion and Recommendation: The overall satisfaction of mothers on facility based child birth care is low when compared with other studies. Urban dwellers, mode of delivery and short child birth space interval and short waiting time to see health care providers were significantly associated with mother’s satisfaction level of facility delivery care services. Therefore, to elating the faced maternal health care services quality difficulty, the policymakers and
quality improvement program designers need to give attention on activities that change wrong perceptions of mothers on mode of delivery and intervention that ensure normal healthy child birth space time interval.

Background

The health of women is an important contributing factor to the overall development of any nation(1). Maternal satisfaction is a proxy indicator of estimating quality of maternal health care given in health facilities (2).

Even though the world maternal mortality ratio showed that decrement, However the maternal mortality ratio reduction in middle-and low-income countries still stagnant. According to WHO and United nation collaboration report estimate maternal mortality ratio is reduced by 43% from 1990 to 2015. At regional level Eastern and South Asia countries predominantly reduced maternal mortality ratio, whereas sub-Saharan Africa and Western Asia countries showed low maternal mortality ratio reduction. At country level Ethiopia is one of the highly accounted country to global maternal mortality ratio next to Nigeria, India and Republic of Congo in 2015 (3). In Ethiopia, according to 2016 EDHS report, maternal mortality ratio was 412 per 100,000 live births (4).

In fact, most of maternal death causes are preventable by providing the all necessary medical interventions. Skilled birth attendance is one of the important routes to provide necessary medical intervention. In Ethiopia three out of 10 women use skilled birth attendant service at health facility whereas the remain seven out of ten women give birth at home without skilled birth attendant support(4).

Encourage traditional birth attendants’ involvement in health facility births, establishing maternity waiting homes and birth centers, establishing quality monitoring team at local level and developing a strong cadre of health professional practitioners at health institution without assess maternal health care services quality level does not bring
expected change on the uptake of skilled birth attendant service and other maternity care services (5).

Analyzing maternal satisfaction level on maternal health care services is agreeable proxy to improve the quality of health care service and increment of maternal health service utilization(6). By considering this Ethiopian government had been implemented compassionate and respectful maternity care and other quality improve programs for a last half decade(5). Compassionate and respectful maternity care is unquestionable option to rise the proportion of facility based skilled birth and to guarantee women rights in maternity health care services (7). Even if CRC quality program have been implemented in Ethiopia as far, However, still the rate of skilled birth attendants progress and reduction of maternal mortality ratio is low (8).

There is very little research on assessment of maternal satisfaction with delivery services, in combination with respectful maternity care in Ethiopia. Therefore; the aim of this study is to asses’ women’s satisfaction with delivery services and associated factors that might hinder institutional delivery service utilization.

Methods

Study Design and period

A facility based cross-sectional study was conducted at Gondar University specialized and teaching hospital from November 1 to 30 2018.

Study Area

Gondar University Referral Hospital is found in Gondar City administration, 772 kilometers away from Addis Ababa, the capital city of Ethiopia and 185 kilometers away from Bahir Dar the capital city of Amhara regional state. According to the projection from national census of 2007 the total population of Gondar City Administration, is estimated to be 360,600 (9). There were estimated to be 83,010 of women with reproductive age group
and among these 13,342 women are expected to get pregnant which considered to give birth in the hospital annually.

**Study population**

Selected mothers who visited Gondar university specialized teaching hospital for delivery service during data collection period were taken as study population. Post-natal mothers who were sick and unable to communicate were excluded from study.

**Sample Size Determination and Sampling Procedure**

The sample size was determined by using a single population proportion formula by considering assumptions 95% of CI, 4% of marginal error, 10% of non-response rate and proportion of mothers satisfaction Felege Hiwot hospital delivery care service 74.9% (10). Finally, 496 sample size was estimated.

To recruit the final 496 study participants from delivery service received mothers, systematic random sampling method with k interval of 2 were employed. To obtain the k interval of sampling the previous months’ average number of delivery service received mothers and the estimated sample size were considered. The first client was selected by simple random sampling among the first two clients.

**Study Variables**

Maternal satisfaction with delivery services was dependent Variable; whereas Socio-demographic and economic factors (Age, religion, marital status, educational level, residence and occupation), Health care facility factor (distance), Obstetrics factors (Parity, planned status of the pregnancy, time of labor for current delivery (night/day) and ANC follow-ups ) and Respectful and non-abuse care (Physical abuse, non-consented care, non-confidential care, non-dignified care, discrimination and abandonment of care) were the independent variables of the study.

**Operational Definition**
**Maternal Satisfaction with Delivery Service:** Individuals scored 75% and more from sixteen 16 items of Client Satisfaction Likert scale questions were categorized as “satisfied”. Individuals scored below 75% from 16 items of Client Satisfaction Likert scale questions, are categorized as “unsatisfied”. (11-13).

**Respectful Materiality Care (RMC):** if respondents not experienced at least one form of disrespect and abuse during delivery services (14).

**Data collection tools and procedure**

Data was collected using structured, an exit interview questionnaire having four parts, the first part containing the socio demographic characteristics of delivering mothers, the second part obstetric characteristics of delivering mothers, the third part health facility factors. The fourth parts containing delivery service satisfaction related questions were adopted and modified from different literatures (8, 15-18) and presented using a 5-Likert scale (1-very dissatisfied, 2-dissatisfied, 3-neutral, 4-satisfied, and 5-very satisfied). The fifth part containing respectful and non-abuse care related questions were adopted from different literatures (14, 19). The first draft of the English questionnaire was translated to Amharic local language by language expert translators then back to English language to check for consistency. Two Midwives data collector were recruited and trained for 2 days on the objectives of the study, method and the approaches they employee to collect data. Before starting the actual survey, the questionnaire was pre-tested on 24 postnatal mothers in Gondar Zuria district health centers. Throughout the course of the data collection, interviewers were supervised at each site, regular meetings were held between the data collectors and the principal investigator together in which problematic issues arising from interviews which was conducted and mistakes found during editing was discussed and decisions was made. The collected data was reviewed and checked for completeness before data entry; the incomplete data was discarded.
Data Processing and Analysis

Each questionnaire was checked manually, coded and entered into EPI info version 7 statistical software and exported to statistical package of social science (SPSS) Version 20.0 software for analysis. The descriptive results expressed using summary statistics such as mean, standard deviation, frequency, and percentage. A binary logistic regression model was fitted to determine the effect of various factors with maternal satisfaction. Variables with a p-value less than 0.2 in bivariate analysis were entered into multivariable logistic regressions to determine factors independently associated with maternal satisfaction. The odd ratio with 95% confidence interval and p-value less than 0.005 were used to determine factors independently associated with maternal satisfaction.

Results

Socio-demographic characteristics of study participants

Four hundred seventy-one mothers were participated with a response rate of 95%. The Mean (SD ±) age of the study participants was 27.3 (SD ± 4.8) years with a range of 15 to 39 years. From participants’ majority were Amhara 445(94.5%) in ethnic group, married 463(98.3%) in marital status, and orthodox Christian followers (84.1%) by religion. More than three fourth (78.8%) of the study participants were urban dwellers and 79.9% of participants were literate (Table 1).

Obstetrics related factors

From the total respondents 311(67.2%) were got marriage after eighteen years old. Majority mothers 263(55.8%) were multiparous with rage of two to five parity. Four hundred forty-seven (94.9%) of mothers were planned for their current pregnancy and 285 (60.9%) of mothers were used obstetrics services on the previous child birth. From the total participants 73(5.6%) of participants delivered the current child with in two years’ period of pervious birth. Majority of mothers, 455 (96.9%) had received ANC service for
their last child birth. Out of the total mothers who had ANC attendance about 247 (54.3%) had Four and above visits and 51 (34.5%) had two times ANC visit during the last pregnancy while the remain 16(3.4%) study participants had no ANC follow up visit. From the total respondents 336(71.3%) were delivered by spontaneous vaginal delivery. More than fifty percentages (53.1%) of mothers’ delivery took place during night time (Table 2).

**Health facility related factors**

Majority of mothers 313(66.5%) used Bajaj as means of transport to reach hospital and the estimated travelling hours to reach hospital 330(71.1%) were less than 30 minutes. Three hundred sixty-one (76.6%) were spent less than 15 minutes to be seen the health care providers. (Table 3).

**The prevalence of respectful maternity care (RMC)**

From the total of participants, nearly one fifth 87(18.5%) of participants were received respectful maternity care on delivery care service while the remain 384 (81.5%) participants had experienced at least one form of disrespect and abuse during facility based childbirth care (figure 1). On this study non-consented care 377(80.4%) and abandonment care 379(80.5%) were found as the most prevalent form of disrespect and abuse (Table 4).

**Prevalence of mothers’ satisfaction on delivery service**

The overall satisfaction level was calculated and individuals scored 75% and above for satisfaction assessment questions was categorized as “satisfied” and others “not satisfied”. On this study the prevalence of satisfied mothers on delivery service was 21.2%, 95% CI (17.6, 25.1). whereas the remain 78.8% of mothers were not satisfied (Figure 2). Most of mothers have not satisfied on information provided on care procedure 392 (83.2%), supportiveness of healthcare provider 366 (77.7%), medical problem
Factors Associated with Mothers’ Satisfaction

In addition to the descriptive analysis, multivariable logistic regression analyses were computed.

In binary analysis age of the mother, place of residence, estimated waiting time mode of delivery, child birth space time interval and place of birth for previous child were significantly associated with mothers’ satisfaction with delivery services at p value of 0.2.

In the multivariable logistic regression analysis place of residence, estimated waiting time, mode of delivery and child birth space time interval were statically significant factor for women’s satisfaction on delivery services at p value of <0.05.

Mothers’ who came from urban were 66% times less likely satisfied on institutional delivery service than rural mothers’ (AOR=0.34; 95% CI: 0.16, 0.67), and mothers’ who delivered with spontaneous vaginal delivery were 72% times less likely satisfied on institutional delivery service than mothers undergo caesarean section delivery (AOR=0.28, 95%; CI:0.14,0.57).

The other important factor associated with mothers’ satisfaction on institutional delivery service was mothers’ waiting time, mothers who spent less than 15 minutes to see the health care providers were 9.7 times more likely satisfied on institutional delivery service when compared to those who spent 30 minutes and above (AOR=9.69; 95%: CI 3.16, 29.76). This study also revealed mothers with child birth space time interval between 12-24 months were 78% times less likely to be satisfied on institutional delivery service than mothers’ with 24 months of age and above birth space time interval (AOR=0.22; 95% CI: 0.08, 0.55) (Table 6).

Discussion
The aim of this study was to assess level of mothers’ satisfaction on delivery service and to identify factors associated with it. The overall percentage of mothers ‘who were satisfied on facility based child birth care was 21.2%, 95% CI (17.6, 25.1). This finding is in line with study done in Addis Ababa, Gandhi Memorial Hospital (21%) (20). The possible reason for this similarity might be identical residence of study participants and large number client flow in both study areas. However, this finding is lower than similar studies conducted in Nepal 89.8% (21), Kenya 87% (22), Egypt 78.5%(23) and Iran 81.7% (24).

The reason for this variation might be due to a real difference in the quality of services provided in health facilities, and socio-economic characteristics of study population. The finding of this study is also lower than other studies conducted in Ethiopia, Felege Hiwot hospital in Bahir Dar 74.5% (10). The reason for this variation might be due to the difference on prevalence of disrespect and abuse maternity care between two studies. In current study 81.5% of study participants were exposed to disrespectful maternity care whereas in Felege Hiwot Hospital 43% of participants were exposed to disrespect and abuse care(14). This discrepancy might be contributed to low satisfaction of respondents.

Beside this the finding of this study is also lower than other studies conducted in Gamo Gofa Zone 79.1% (25), West Arsi 74.6% (26), Omo Nada District, 65.2% (27) and Debre Markos 81.7% (12) Assela Hospital 80.7% (28), Asrade Zewude memorial primary hospital, Amhara region 88% (2), Wolaita sodo hospital 82.3% (13).

On this study covariate like Urban dwellers, Spontaneous vaginal delivery mode of delivery, Mothers with child birth space time interval between 12-24 months’ were inversely associated with mothers’ satisfaction on delivery services, while, spending short waiting time to see health care providers were positively associated with mothers’ satisfaction.

Mothers who came from urban were 66% times less likely satisfied on institutional delivery
service when compared to rural mothers. This finding is supported by the study conducted in Addis Ababa Ethiopia (29). This might be due to less expectation by the rural clients because of their previous experience locally where the health facilities might not be of good standard as of the urban set up.

This study also found that the negative association of spontaneous vaginal delivery mode of deliver with mother satisfaction level. On this study mother who delivered spontaneous vaginal delivery were 72% times likely satisfied than caesarean section delivered women. This finding is supported by studies conducted Debre Markos (12), Gamo Gofa zone. (25).

The reason to low satisfaction to spontaneous vaginal delivery might be due to women fair of pain during vaginal delivering labor may prefer caesarean section delivery mode and they perceive as safe.

The other important factor associated with mothers’ satisfaction with institutional delivery service was mothers’ waiting time, mothers who spent short waiting time (less than 15 minutes) to see the health care providers were 9.7 times more satisfied than spent long waiting time (more than 15 minute). This finding is consistent with other studies conducted in West Arsi, Assela, Hawassa and Amhara region Hospital (18, 26, 28, 30).

This study also revealed that mothers who had child birth space time interval between 12-24 months were 78% times less likely satisfied than mothers who had 24 months and above child birth space time interval. In fact, Mothers who gave birth short spacing time and frequently more exposed to life threatening complication and less satisfied. In study conducted Amhara region referral hospitals, Mothers who faced with complication during child birth were 2 times less likely satisfied than not faced with complication (30).

Conclusions

The overall satisfaction of mothers with labor and delivery care in Gondar Referral Hospital was low when compared with other studies. Urban dwellers, spontaneous vaginal
delivery and mothers with child birth space 12-24 months’ duration and spent short waiting time to seen the midwives or doctors were significantly associated with women’s satisfaction on delivery services.

Recommendations

To elating the faced maternal health care service quality difficulty, the policymakers and health education program designers need to give attention to improve the awareness of mothers on indication, disadvantage, advantage of mode of deliver and healthy time space of pregnancy to change mothers’ wrong perception toward caesarean section mode of delivery and to reduction the occurrence of obstetric complication. The researchers also need to further investigate the underline causes for long time waiting of mothers in delivery room to see health care provider.

Limitations

Budget and time constraints prevented investigate triangulation of other data collection methods likes observational technique. It will be best to use the triangulation between perspectives of disrespectful and abusive events to provide a more holistic understanding of the scope and magnitude of these issues.

References

1. Mengesha ZB, Biks GA, Ayele TA, Tessema GA, Koye DN. Determinants of skilled attendance for delivery in Northwest Ethiopia: a community based nested case control study. BMC public health. 2013;13(130).

2. Asres GD. Satisfaction and Associated Factors among Mothers Delivered at Asrade Zewude Memorial Primary Hospital, Bure, West Gojjam, Amhara, Ethiopia: A Cross Sectional Study. International Research in Medical and Health Science. 2018;1(1):39-49.
3. WHO, UNFPA World Bank. Maternal mortality and morbidity In: Jamison DT, Nugent R, Gelband H, Horton S, Jha P, editors. Reproductive, Maternal, Newborn, and Child Health. 2. 3 ed2016. p. 51-6.

4. Central Statistical Agency. Demographic and Health Survey 2016, Key Indicators Report. ICF, Rockville Maryland and USA. 2016:18.

5. Marge Koblinsky, Mary Ellen Stanton, Emily Hillman. Ending Preventable Maternal Mortality, USAID Maternal Health Vision for Action Evidence for Strategic Approaches Washington, DC2015.

6. Mohammed A. Maternal Satisfaction Regarding Quality of Nursing care During Labor & Delivery in Sulaimani Teaching Hospital. International Journal of Nursing and Midwifery 2016; 8(3):18-27.

7. Asefa AB, D. Status of respectful and non-abusive care during facility-based childbirth in a hospital and health centers in Addis Ababa, Ethiopia. Reproductive Health. 2015;12(33):33.

8. ICF CSACEa. Ethiopia Demographic and Health Survey 2017 p. 135.

9. CSA E. Population projection of Ethiopia for all regions at wereda level from 2014-2017. Central Statistical Agency of Ethiopia. 2013.

10. Mekonnen ME, Yalew WA, Anteneh ZA. Women’s satisfaction with childbirth care in Felege Hiwot Referral Hospital, Bahir Dar city, Northwest Ethiopia, 2014: cross sectional study. BMC research notes. 2015;8(1):528.

11. Ejigu T, Woldie M, Kifle Y. Quality of antenatal care services at public health facilities of Bahir-Dar special zone, Northwest Ethiopia. BMC health services research. 2013;13(1):443.

12. Bitew KA, M. Yimam, K. Maternal Satisfaction on Delivery Service and Its Associated Factors among Mothers Who Gave Birth in Public Health Facilities of Debre Markos
Town, Northwest Ethiopia. BioMed research international. 2015;2015:460767.

13. Yohannes B, Tarekegn M, Paulos W. Mothers' utilization of antenatal care and their satisfaction with delivery services in selected public health facilities of wolaita zone, Southern Ethiopia. International journal of scientific & technology research. 2013;2(2):74-85.

14. Wassihun BZ, Shegaw. Compassionate and respectful maternity care during facility based child birth and women's intent to use maternity service in Bahir Dar, Ethiopia. BMC pregnancy and childbirth. 2018;18(1):294.

15. Reis VD, Barbara Catherine Carr, C Smith, Jeffrey. Respectful maternity care. Washington DC: USAID. 2012.

16. Hill DBaK. Exploring Evidence for Disrespect and Abuse in Facility-Based Childbirth Report of a Landscape Analysis 2010

17. Unicef WHO. Trends in maternal mortality: 1990 to 2013: estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division: executive summary. World Health Organization; 2014.

18. Agumasie MY, Zemenu Teferi Abegaz, Teferi x. Maternal Satisfaction and Associated Factors on Delivery Care Service in Hawassa City Public Hospitals, South Ethiopia. Gynecology & Obstetrics. 2018;08(05).

19. Sando DR, Hannah McDonald, Kathleen Spiegelman, Donna Lyatuu, Goodluck Mwanyika-Sando, Mary Emil, Faida Wegner, Mary Nell Chalamilla, Guerino Langer, Ana. The prevalence of disrespect and abuse during facility-based childbirth in urban Tanzania. BMC pregnancy and childbirth. 2016;16(1):236.

20. Melese. T, Yirgu Gebrehiwot, Daniel Bisetegne, Dereje Habte. Assessment of client satisfaction in labor and delivery services at a maternity referral hospital in Ethiopia Pan African Medical Journal. 2014:2-6.
21. Panth A, Kafle P. Maternal Satisfaction on Delivery Service among Postnatal Mothers in a Government Hospital, Mid-Western Nepal. Obstetrics and gynecology international. 2018;2018.

22. Okumu CO, B. Clients' satisfaction with quality of childbirth services: A comparative study between public and private facilities in Limuru Sub-County, Kiambu, Kenya. PLoS One. 2018;13(3):e0193593.

23. Sayed W, ElAal DEMA, Mohammed HS, Abbas AM, Zahran KM. Maternal satisfaction with delivery services at tertiary university hospital in upper Egypt, is it actually satisfying. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2018;7(7):2548.

24. Hoseini BL, Saeidi M, Beheshti Norouzi Z, Kiani MA, Rakhshani MH. Assessment of Maternal Satisfaction with the Quality of Obstetric Care Provided in the Maternity Unit of Mobini Hospital, Sabzevar, Iran. International Journal of Pediatrics. 2019;7(5):9369-77.

25. Dewana ZF, Teshale Abdulahi, Misra. Client perspective assessment of women's satisfaction towards labour and delivery care service in public health facilities at Arba Minch town and the surrounding district, Gamo Gofa zone, south Ethiopia. Reproductive health. 2016;13(1):11.

26. Aman U. Mothers' Satisfaction with Delivery Services and Associated Factor Sat Health Institutions in West ARSI, Oromia Regional State, Ethiopia. : Addis Ababa University; 2016.

27. Haile Tadesse B. Mothers' Satisfaction with Institutional Delivery Service in Public Health Facilities of Omo Nada District, Jimma Zone. Clinical Medicine Research [Internet] Science Publishing Group. 2017;6(1):23.

28. Amdemichael RT, M Fekadu, H. Maternal satisfaction with the delivery services in
Assela Hospital, Arsi zone, Oromia region. Gynecol Obstet (Sunnyvale). 2014;4(257):2161.

29. Tadele Melese, Yirgu Gebrehiwot, Daniel Bisetegne, Dereje Habte. Assessment of client satisfaction in labor and delivery services at a maternity referral hospital in Ethiopia. 2014.

30. Azmeraw Tayelgn DTZaYK. Mothers’ satisfaction with referral hospital delivery service in Amhara Region, Ethiopia. BMC pregnancy and childbirth. 2011;11(78).

Abbreviations

ANC: Ante Natal Care; CS: Caesarean Section; CI: Confidence Interval; CRC: Compassionate Respectful Care; D&A: Disrespectful and Abuse; EDHS: Ethiopian Demography Health Survey; GC: Gregorian Calendar; MMR: Maternal Mortality Ratio; SDG: Sustainable Development Goal; SPSS: Statistical Package for Social Science; SVD: Spontaneous Vaginal Delivery; WHO: World Health Organization;

Declarations

**Ethics approval and consent to participate**

Ethical clearance was obtained from the Institutional Review Board (IRB) of University of Gondar, College of Medicine and Health Sciences, Institute of Public Health. Permission letter was obtained from Gondar University Referral hospital prior to data collection.

Verbal consent was obtained from each study subject’s age. The purpose and benefits of the study were explained to the respondents. Confidentiality of the information was also maintained throughout by excluding names as identification in the questionnaire and keeping their privacy during the interview.
**Consent to publish**

Not applicable.

**Availability of data and materials**

Data will be available upon reasonable request from the corresponding author.

**Competing interests**

The authors declare that they have no competing interests.

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This study was funded by self (Principal investigator).

**Authors’ contributions**

YT conceived the study, developed the tool, coordinated the data collection activity, and carried out the statistical analysis. SM participated in the design of the study, development of the tool, and drafting of the manuscript. MM and YT participated in the design of the study and development of the tool, performed statistical analysis and drafted the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1: Socio-demographic factors for mothers who gave birth at Gondar University specialized and teaching hospital from November 1 to 31 /2018 (N=471).

| Variables                  | Category       | Frequency | Percent (%) |
|----------------------------|----------------|-----------|-------------|
| Age in Year                | < 20           | 43        | 9.1         |
|                            | 20-34          | 382       | 81.1        |
|                            | > 34           | 46        | 9.8         |
| Residence                  | Urban          | 371       | 78.8        |
|                            | Rural          | 100       | 21.2        |
| Religion                   | Orthodox       | 396       | 84.1        |
|                            | Muslim         | 69        | 14.6        |
|                            | Protestant     | 6         | 1.3         |
| Marital status             | Married        | 463       | 98.3        |
|                            | Single         | 8         | 1.7         |
| Women’s Education status   | Unable to read & write | 68 | 14.4 |
|                            | Able to write and read | 27 | 5.7 |
|                            | Grade (1-8)    | 62        | 13.2        |
|                            | Grade (9-10)   | 230       | 48.8        |
|                            | Preparatory, college & above | 84 | 17.8 |

Table 2: Obstetrics Characteristics for mothers who gave birth at Gondar University specialized and teaching hospital, Northwest Ethiopia from November 1 to 31/2018(N=471).
| Variables                                | Category        | Frequency | Percentage (%) |
|------------------------------------------|-----------------|-----------|----------------|
| Age at first marriage                    | < 18            | 152       | 32.8           |
|                                          | > 18            | 311       | 67.2           |
| Status of pregnancy                      | Planned         | 447       | 94.9           |
|                                          | Not planned     | 24        | 5.1            |
| Number of gravidities                    | One             | 186       | 39.5           |
|                                          | Two to five     | 280       | 59.4           |
|                                          | Above five      | 5         | 1.1            |
| Birth spacing between children           | 12-24 months    | 73        | 5.6            |
|                                          | > 24 months     | 212       | 74.4           |
| Delivery took place for previous child   | Home            | 39        | 13.7           |
|                                          | Health facilities | 246       | 52.2           |
| ANC follow-up                            | Yes             | 445       | 94.6           |
|                                          | No              | 16        | 3.4            |
| Time of delivery                         | Day time        | 221       | 46.9           |
|                                          | Night time      | 250       | 53.1           |
| Mode of current delivery                 | SVD             | 336       | 71.3           |
|                                          | C/S             | 135       | 28.7           |

Table 3: Health facility factors for mothers who gave birth at Gondar University Referral Hospital, November 1 to 31, 2018 (N=471).
| Variables                        | Category           | Frequency | Percent (%) |
|---------------------------------|--------------------|-----------|-------------|
| Type of transport               | Bajaj              | 313       | 66.5        |
|                                 | Ambulance          | 91        | 19.3        |
|                                 | Public transport   | 47        | 10.0        |
|                                 | On foot            | 20        | 4.2         |
| Estimated travelling hours to reach hospital | Less than 30 minutes | 330      | 71.1        |
|                                 | 30-60 minutes      | 80        | 17.0        |
|                                 | 61-90 minutes      | 26        | 5.5         |
|                                 | Above 90 minutes   | 35        | 7.4         |
| Estimated waiting time          | Less 15 minutes    | 361       | 76.6        |
|                                 | Above 15 minutes   | 110       | 23.4        |

Table 4: Categories and types of respectfully maternity care reported by mothers during delivery services in Gondar University specialized and teaching hospital, North West Ethiopia, 2018 (N=471).
| Category                          | Types of RMC                                      | Yes       | No        |
|----------------------------------|--------------------------------------------------|-----------|-----------|
| Physical abuse                   | Physical harm/ill treatment/slapped during delivery | 4(0.8)    | 467(99.2) |
|                                  | Physically restrained at any time                | 146(31.0) | 325(69.0) |
|                                  | Separated from my baby                           | 18(17.8)  | 453(82.2) |
|                                  | Were you denied food or fluid in labor           | 84(17.8)  | 387(82.2) |
| Right to information,            | Introducing themselves                           | 44(9.3)   | 427(90.7) |
| informed consent,                | Encourage to ask questions                       | 205(43.5) | 266(56.5) |
| & choice/preferences (non-consented care) | Respond questions with politeness                | 377(80.4) | 94(19.7)  |
|                                  | Provider explained to me what is being done      | 110(23.4) | 361(76.6) |
| Non-confidentiality              | Periodically update on progress of my labor       | 354(75.2) | 117(24.8) |
|                                  | Allowed to assume position                       | 60(12.7)  | 411(71.3) |
| Non-dignified care               | Obtained consent or permission                   | 112(23.8) | 359(76.2) |
|                                  | Allowed family members/companion to be           | 18(3.8)   | 453(96.2) |
|                                  | Used visual barriers/screens)                    | 94(20)    | 377(80)   |
| Discrimination                   | Spoke politely                                    | 111(23.6) | 360(76.4) |
|                                  | Was not insulted or threatened                   | 35(7.4)   | 436(92.6) |
| Abandonment of care              | Spoke in a language that I can understand        | 42(8.9)   | 429(91.1) |
|                                  | Showed not disrespectful                         | 206(43.7) | 265(56.7) |
|                                  | The health provider encouraged to call if needed | 146(31.0) | 325(69.0) |
|                                  | Was not left without care/attention              | 211(44.8) | 260(55.2) |
|                                  | Came quickly when needed                         | 379(80.5) | 92(19.5)  |

Table 5: Mothers’ overall satisfaction with different aspects of delivery service in Gondar University specialized and teaching hospital from November 1 to 31/2018 (N=471).
| Category                                                                 | Score 1 | Score 2 | Score 3 | Score 4 | Score 5 |
|-------------------------------------------------------------------------|---------|---------|---------|---------|---------|
| Information received about the care process                              | 160(34.0) | 192(40.8) | 40(8.5) | 11(2.3) | 68(14.4) |
| Satisfaction with Explanation during care process what you were expected to do | 54(11.5) | 223(47.3) | 89(18.9) | 54(11.5) | 51(10.8) |
| Satisfaction with time spent with you                                    | 171(36.3) | 131(27.8) | 28(5.9) | 114(24.2) | 27(5.7) |
| Satisfaction with Privacy during examination                             | 7(1.5) | 313(66.5) | 33(7.0) | 85(18.0) | 33(7.0) |
| Examined you carefully before deciding and what is wrong                 | 0 | 271(57.5) | 89(18.9) | 86(18.3) | 25(5.3) |
| Satisfaction with manner of healthcare provider’s trust to help           | 0 | 0 | 90(19.1) | 215(45.6) | 166(35.2) |
| Satisfaction with interest/supportiveness                                | 0 | 197(41.8) | 160(34.0) | 77(16.3) | 37(7.9) |
| healthcare provider                                                      |       |       |       |       |       |
| Treated you with respect                                                 | 2(0.4) | 327(69.4) | 39(8.3) | 41(8.7) | 62(13.2) |
| Satisfaction with other staffs’ friendliness and courteousness           | 0 | 165(35.0%) | 185(39.3%) | 57(12.1) | 64(13.6) |
| Satisfaction with prescribed drugs and tests                             | 44(9.3%) | 172(36.5) | 127(27.0) | 106(22.5) | 22(4.7) |
| Convenience with physical examination process                            | 0 | 283(60.1) | 61(13.0) | 79(16.8) | 48(10.2) |
| Satisfaction with health care provider’s explanation on reasons for the tests and procedures | 50(10.6) | 225(47.8) | 73(15.5) | 74(15.7) | 49(10.4) |
| Satisfaction with medical problem explanations                            | 131(27.8) | 196(41.6) | 46(9.8) | 73(15.5) | 25(5.3) |
| Satisfaction with care provider’s skills to do the                        | 45(9.6) | 182(38.6) | 143(30.4) | 37(7.9) | 64(13.6) |
Satisfaction with procedures presented time during his/her clinic hours

|                | Category | Maternal satisfaction | COR (95% CI) | AOR (95% CI) |
|----------------|----------|-----------------------|--------------|--------------|
| Residence      | Urban    | 69(18.6%)             | 0.51(0.31,0.84) | 0.34(0.16,0.7) * |
|                | Rural    | 31(31.0%)             | 1            | 1            |
| Mode of delivery | SVD     | 52(15.5%)             | 0.33(0.21,0.53) | 0.28(0.14,0.6) * |
|                | C/S      | 48(35.6%)             | 1            | 1            |
| Waiting time   | <15 minutes | 95(26.3%)             | 7.5(2.96,18.95) | 9.69(3.2,29.8) * |
|                | >15 minutes | 5(4.5%)               | 1            | 1            |
| Birth spacing  | 12-24 months | 7(9.6%)              | 0.34(0.14,0.77) | 0.22(0.08,0.5) * |
|                | >24 months | 51(24.1%)             | 1            | 1            |
| Age of respondents in years | < 20 | 9(20.9%)               | 0.41(0.16,1.05) | 1.89(0.14,25.07) |
|                | 20-34    | 73(19.1%)             | 0.36(0.19,0.7) | 0.45(0.21,1.03) |
|                | > 34     | 18(39.1%)             | 1            | 1            |
| Place of birth for previous child | Home | 13(33.3%)             | 2.23(1.06,4.68) | 0.87(0.32,2.39) |
|                | HFs      | 45(18.3%)             | 1            | 1            |

N = Number

Table 6: Factors associated with mothers’ satisfaction on delivery services in delivery services in Gondar University specialized and teaching hospital, Northwest Ethiopia from November 1 to 31/2018 (N=471).

*(p<0.05), HFs = Health facilities, SVD = Spontaneous Vaginal Delivery, C/S = cesarean Section
The prevalence of respectful maternity care (RMC)

Figure 1

The prevalence of respectful maternity care at Gondar University specialized and teaching hospital, Northwest Ethiopia from November 1 to 31/2018
Figure 2

Level of Maternal satisfaction at Gondar University specialized and teaching hospital, Northwest Ethiopia from November 1 to 31/2018 Satisfied