

Mothers' satisfaction with delivery services and associated factors at health institutions in west Arsi, Oromia regional state, Ethiopia

Abstract

Background: Maternal mortality and morbidity are attributed to poor maternity quality of care. Globally, more than half a million women die annually as a result of complications of pregnancy and childbirth. So, at a time when global efforts to reduce maternal mortality have been stepped up, it is important to look at maternal satisfaction and factor affecting it.

Objective: The objective of the study was to assess the mothers' satisfaction with delivery services at health institutions and associated factors in West Arsi Zone, Oromia Region, Ethiopia, 2016.

Methods: A facility based cross-sectional survey with exit interview was conducted in West Arsi, Oromia Regional State, Ethiopia. Four hundred seventy seven (477) postpartum mothers were enrolled in the study. Data was checked, coded and entered to Epi-data and was exported to SPSS version 21 for analysis. Multivariate and binary logistic regression was applied to identify the relative effect of each explanatory variable on the outcome (satisfaction).

Results: This study finding showed that the overall satisfaction level of mothers with delivery service was 74.6%. Women who had no formal education, primary education and secondary education were less satisfied than women who had diploma and above (AOR= 0.851, 95%CI: 0.306, 0.863, AOR=0.399, 95%CI: 0.154, 0.730 and AOR=0.569, 95%CI: 0.229, 0.412) respectively. Women who had monthly income less than 650ETB were three times more satisfied with delivery service than women who had monthly income more than 1900ETB (AOR=3.294, 95% CI: 1.337, 8.114). Mothers who had assisted vaginal delivery were less satisfied than mothers who had caesarian section (AOR=0.31, 95%CI: 1.253, 4.115). Mothers those their privacy measures was maintained were six times more satisfied with their delivery service at health institution than those did not maintained (AOR=6.988, 95%CI: 4.047, 12.066).

Conclusion: Only 74.6% of the mothers were satisfied from the overall level of delivery service. From this study, educational status, economical status, privacy of mothers, mode of delivery and delivery were important predictors of level of satisfaction.

Keywords: Mothers' satisfaction, delivery service, health institution, west arsi zone, Ethiopia

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Abbreviations: ANC, antenatal care; MMR, maternal mortality ratio; SVD, spontaneous vaginal delivery; UNFPA, united nations population fund; UNICEF, united nations children's fund; WHO, world health organization

Introduction

Maternal mortality and morbidity are attributed to poor maternity quality of care.¹ globally; more than half a million women die annually as a result of complications of pregnancy and childbirth. Despite the effort and substantial amount of resources spent to reduce maternal mortality; every day, approximately 800 women die from preventable causes related to pregnancy and childbirth. Ninety-nine percent of these deaths occur in most developing countries like Ethiopia.² Rates of maternal mortality are 19 times higher in developing countries than in developed. In the African Region, however, the MMR is still running at 540 per 100,000 live births, which, combined with the high levels of fertility, translates into a lifetime risk of dying from maternal causes of 1 in 37.³ The current global MMR of 216 per 100,000. The

world's MMR fell by 44% between 1990 and 2015, missing the target of a 75% reduction and In 2015, the African Region accounts for 64% of maternal deaths.³

Ethiopia is one among six countries which has more than 50% maternal death with 676 mothers out of 100,000 dying while giving birth. With each death there are another 20 women suffering from morbidity associated with child death.² It is an estimated 30,000 maternal deaths take place every year. Apart from clinical causes, a number of other relevant factors such as illiteracy, lack of health care facilities, lack of health care providers and lack of transport facilities also play a major role in causing a high percentage of maternal deaths.⁴ In Ethiopia, like in many developing countries, the causes of maternal deaths are mainly attributed to the three delays; that is delay in seeking care, delay in reaching appropriate care and delay in receiving care. Delay in receiving care can happen due to inadequate skilled personnel in emergency obstetric care, inadequate supplies and equipment and poor quality of services.⁵ A woman's satisfaction with the delivery service may have immediate and long-term effects on her

health and subsequent utilization of the services. Providing satisfying delivery care increases service utilization.^{6,7} Maternal satisfaction has often been defined using theoretical models of patient satisfaction.⁸ But there is consensus that it is a multidimensional concept, influenced by a variety of factors.⁹ It is therefore also defined as "positive evaluation of distinct dimensions of childbirth."¹⁰ Evidence on mothers' perception of and satisfaction with the quality of maternal care help to determine other aspects of care that need strengthening in health institution delivery services to support long-term demand, generate significant changes in maternal care-seeking behavior, and identify barriers that can and should be removed. Therefore understanding women's perception of care and satisfaction with services is important in this regard, as perceived quality is a key factor affecting service utilization.^{11,12} Service utilization and positive maternal and neonatal outcomes can be significantly enhanced by improving quality of facility deliveries and making them more acceptable to women.¹³ Evaluating to what extent patients are satisfied with health services is clinically relevant, as satisfied patients are more likely to comply with treatment, take an active role in their own care, to continue using medical care services and recommend center's services to others.¹⁴ Satisfaction is not a pre-existing phenomenon waiting to be measured, rather a judgment people made reflecting their experience under specific circumstances. A simple and practical definition of satisfaction would be the degree to which desired goals have been achieved.¹⁵ A satisfied patient will recommend center's services expressing their satisfaction to four or five peoples, while a dissatisfied patient on the other hand will complain to twenty or more.¹⁶ Users, who perceive the quality of care in a health center to be good, are more likely to visit it again, thereby increasing demand for the service.¹⁷ User satisfaction is considered 'patient's judgment on the quality and goodness of care'.¹⁸ The Factors influencing the satisfaction level have also been identified which include education of the women, place of residence and their monthly income; these are non-medical factors, one of which is mode of delivery¹⁹⁻²² Maternal satisfaction has often been defined using theoretical models of patient satisfaction.²³ This study was assessed mothers' satisfaction with delivery services at health institution and associated factors to answer the question of the prevalence of mothers' satisfaction with delivery services at health institutions and associated factors in West Arsi Zone. Study finding provided clear information about mothers' satisfaction with delivery services and associated factor for health care providers working at study setting health institution, West Arsi Zone Health office, police makers, researchers and community on prevalence of mothers' satisfaction with delivery services and associated factors affecting the mothers satisfaction. The objective of this study was to assessed the mothers' satisfaction with delivery services at health institutions and associated factors in West Arsi Zone, Oromia Region, Ethiopia, 2016

Methods and materials

Study area and Period: This study was conducted in West Arsi Zone, Oromia Regional state, Ethiopia in Governmental Health institution. The Zone has seven woreda and one city administration, Shashemene which is allocated 275 kilometers Form Addis Ababa. Currently in west Arsi Zone, there are around seventy Eight Health centers and four Hospitals of which one Zonal Hospital and two districts and one nongovernmental hospital, which are functional during this study period for total population of 2,450,413. From this total population, 541541 are mothers in reproductive age group and among them around 85,029 of them pregnant mothers. The study period was from March 25/03/2016 to April 25/04/ 2016.

Study design: Across-sectional study design was used to assess mothers' satisfaction and associated factors affecting mothers' satisfaction with delivery services.

Source population: All women who visited, West Arsi Zone Governmental Health institutions for the delivery service were taken as a source of population, March, 2016 to April, 2016.

Study population: All pregnant mothers' who had gave birth in selected Governmental Health institutions and fulfilled the selection criteria were study population.

Inclusion and Exclusion criteria

Pregnant mothers' who had gave birth in selected Governmental Health institutions and who were discharged from the postnatal ward; during the data collection period were included to the study. Post natal mothers 'who were mentally or critically ill was not include in the study subjects.

Sample size determination

Sample size was determined using the formula for single population proportion based on the following assumptions.

$$n = (Z\alpha / 2)2P(1 - P) / d^2$$

Where: n= is the size of the sample, $Z_{\alpha/2}$ is the standard normal value corresponding to the desired level of confidence, d=error of precision, P= is the estimated proportion of an attribute that is present in the population which is 74.9% from Felege-Hiwot Referral Hospital, Bahir Dar city, Northwest Ethiopia.²⁴ The calculated sample is 289 plus a non-response rate of 10%=318, plus considering a design effect of 1.5 (318x1.5), a total of 477 women are required.²⁵

Sampling procedure

Multistage sampling technique was used to get the required study subjects. The Health centers and Hospitals were selected using simple random sampling. From these Health institutions, the Health centers and Hospitals were selected using simple random sampling by lottery method. Number of study subjects in each Hospital and Health centers were determined by proportion to population size from reviewing the first and second quarter report of 2008 Ethiopian fiscal year.²⁶⁻³⁰

Method of data collection and Tools

Data was collected using structured, exit interview questionnaire having three parts, the first containing the socio demographic characteristics of delivering mothers. The second part had Obstetric history of delivering mothers, to measure mothers' satisfaction with delivery service. The third parts containing respondents' satisfaction on health facility process, structure and distance traveled related. Delivery service satisfaction related questions were adopted and modified from the Donabedian quality assessment framework⁸ and presented using a 5-scale likert scale (1-very dissatisfied, 2-dissatisfied, 3-neutral, 4-satisfied, and 5-very satisfied).The first draft of the English questionnaire was translated to Afaan Oromo language by language expert translators then back to English language to check for consistency. Seven Diploma holder Nurses were selected to collect the data; and two BSC holders Nurse were selected as a supervisors.³¹

Data quality assurance

Before starting the actual survey, the questionnaire was pre-tested on 24 postnatal mothers, the five percent of sample from the Hospital

and Health centers which was not included in the study. Throughout the course of the data collection, interviewers were supervised at each site, regular meetings was 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 reached. The collected data was reviewed and checked for completeness before data entry; the incomplete data was discarded.

Dependent variable and independent variables

Mothers' satisfaction was dependent variable and Waiting time, availability of adequate human resources, medicines and supplies, Physical environment, sex, Attitude and relationship with mothers' during service were independent variable

Operational definition

Satisfied: individuals scored 75 % and more from eighteen (18) items of Patient Satisfaction Questionnaire, are categorized under "satisfied" for the overall satisfaction level and for each responses of 'very satisfied' and 'satisfied' are classified as satisfied.

Unsatisfied: individuals scored below75 % from eighteen (14) items of Patient Satisfaction Questionnaire, are categorized under "unsatisfied" for the overall satisfaction level and for each responses, 'very dissatisfied', 'dissatisfied' and 'neutral' as unsatisfied.

Data processing and analysis

Data was checked, coded and entered to Epi-data and was exported to SPSS (Statistical Package for Social science) version 21 for analysis. Data entry was made by the principal investigator. During analysis, the responses of 'very satisfied' and 'satisfied' were classified as satisfied and responses of 'very dissatisfied', 'dissatisfied' and 'neutral' were classified unsatisfied. Neutral responses were classified as dissatisfied considering that they may represent a fearful way of expressing dissatisfaction. Binary logistic regression was fitted to identify factors associated with mother's satisfaction with delivery services in health institution. In descriptive statistics tables, graphs and frequency was used to present the information. Significance was obtained at Odds ratio with 95% CI and $p < 0.05$.

Ethical consideration

The study was conducted after approval by the IRB (Institutional Review board) School of allied health sciences department of nursing and midwifery, AAU. Official letters was obtained from CHS, AAU to the respective officials, in turn the Zone Health Administration Office; was written a letter for study Hospitals and Health centers to get recognition and collaboration. Informed verbal consent was obtained from respondents after explaining the objective of the study. In addition, all the responses was kept confidential and anonymous by assuring that any information concerning them was never passed to any individual or institution without their agreement. A woman were kindly requested and included in the study but was told that it was their right to participate or not.

Result

Socio-demographic characteristics of study population

A total of 477 mothers who gave birth in West Arsi Zone health institutions in this study period were interviewed making a response rate

of 100%. Among these respondents, 76(15%) were less than 20 years, 347(72.7%) were between20-34years and 54(11.3%) were above 35 years. Marital status, 446(93.5%) were currently married, 16(3.4%) were Single, 11(2.3%) were divorced. Ethnicity of the respondents 305(69.9%) were Oromo, 94(19.7%) were Amhara, 14(2.9%) were Gurage, 8(1.7%) were Tigrina and 56(11.7%) were other ethnicity. Two hundred forty six (51.6%) of mothers were Muslim religion followers and followed by Orthodox Christian 122(25.6%). Among the interviewed mothers, 96(20.1%) had no formal education and 51 (10.7%) had diploma and above educational Status. Occupational status of the mothers, 229(48.0%) were house wife, 101 (21.2%) were merchant, 65(13.6%) were governmental employee and, 52(10.9%) were farmer. Monthly income of the mothers, 216(45.3%) were no monthly income, 112(23.5%) were less than 650 ETB and 62(13.0%) were more than 1900 ETB (Table 1).

Table 1 Socio demographic characteristics of delivering mothers in West Arsi zone, Health institutions, March 25-April 25,2016 (n=477)

Variable	Frequency	Percent (%)
Age		
<20 years	76	15
20-34years	347	72.7
35-49years	54	11.3
Marital status of the mother		
Single	16	3.4
Married	446	93.5
Divorced	11	2.3
Widowed	4	0.8
Ethnicity		
Oromo	305	63.9
Amhara	94	19.7
Tigrina	8	1.7
Gurage	14	2.9
Others	56	11.7
Religion		
Orthodox	122	25.6
Muslim	246	51.6
Protestant	105	22
Other	4	0.8
Educational Status		
No formal education	96	20.1
Grade 1-6	169	35.4
Grade7-12	161	33.8
Diploma and above	51	10.7
Occupational status		
Governmental employee	65	13.6
Merchant	101	21.2
Farmer	52	10.9
House wife	229	48
Student	27	5.7

Table Continued...

Variable	Frequency	Percent (%)
Other	3	0.6
Economic status		
No monthly in come	216	45.3
<650	112	23.5
650-1000	42	8.8
1001-1900	45	9.4
>1900	62	13

Obstetric history of the mothers

From the interviewed mothers, 233 (48.8%) were multipara mothers and 152(31.9%) were prim gravid mothers. The majority, 352(73.8%) of mothers were planned for delivery services, while 125(26.2%) of mothers were referred from other health institutions for delivery service. From these mothers, 421(88.3%) were wanted pregnancy and 56(11.7%) of the mothers were unwanted pregnancy status. Mode of delivery, 326 (68.3%) of mothers were gave birth with spontaneous vaginal delivery, 88(18.4%) of the mothers were gave birth with Assisted vaginal delivery and 63(13.2%) of the mothers were gave birth with caesarian section. From the mothers who gave birth in selected health institutions 423(95%) were gave birth without complication and 24(5%) were gave birth with complication and 452 (94.8%) of the mothers were gave birth lived fetus and 25(5.2%) were gave birth died fetus. Prenatal care and previous facility delivery, 451(94.5%) of the mothers were had ANC follow up and 26(5.5%) of them did not have ANC follow up, while 300(62.9%) of the mothers had previous facility delivery experience and 177(37.1%) of them were did not have previous facility delivery experience (Table 2).

Health facility and care provider related respondents' satisfaction

Majority of the mothers 387(81.1%) were traveled less than 25km, 87(18.2%) were traveled 25-50km and 3(0.6%) were traveled more than 50km to get delivery service. Most of the mothers 327(68.6%) were used car as mode of transportation while the others 150(31.4%) were traveled on their foot, Animal or human shoulder as means of transportation mode to get delivery service. Three hundred and twenty eight (68.8%) of the mothers were satisfied with the distance they traveled to get service, but 149(31.4%) of the mothers were unsatisfied with the distance they traveled to get the delivery service. With the information on the location of the services of the hospital or health center, 404(84.7%) the mothers were satisfied while 73(15.3%) unsatisfied with the information of the service location. Among the mothers who gave birth in selected health institution, 125 (26.2%) of them were referred from other health institution. From those referred, 103(82.4%) of them were satisfied with referral link and admission at where they referred while 22(17.6%) of mothers were unsatisfied with referral link. In the selected health institutions, 327(68.6%) of the respondents were satisfied with access of toilet while, 150(31.4%) of the respondents were unsatisfied and 281(58.9%) of the respondents were satisfied with cleanliness of the toilet while, 196(41.1%) of the respondents were unsatisfied with cleanliness of the toilet.

From the mothers who gave birth in selected health institutions, 420(88.1%) were got service with exempted, while the others 57(11.9%) were paid for delivery service. Majority (97.1%) of the mothers were satisfied with the cost of the service and 14 (2.9%) were

unsatisfied with the cost of the service. Among respondents who paid for delivery service, 22(38.6%) of them were paid less than hundred (100) ETB and 35(61.4%) of them were paid more than hundred (100) ETB. Among the mothers who were gave birth in the selected health institutions for the study, for 216(45.3%) of them drugs and medical supplies was ordered for them and for 261(54.7%) were not ordered. Of those drugs and medical supplies was ordered for them, 172(79.6%) were satisfied with availability of the drugs and medical supplies at health institutions, while 44(20.4%) of the mothers were unsatisfied with unavailability of the drugs and medical supplies at health institutions which was ordered for them.

Table 2 Obstetric history of mothers who gave birth in West Arsi Zone health institutions, March 25-April 25, 2016, (n=477)

Variable	Frequency	Percent (%)
Number of parity		
One	152	31.9
Two-five	233	48.8
more than five	92	19.3
Reason for visit		
Planned for delivery	352	73.8
Referred for delivery	125	26.2
Status of pregnancy		
Wanted	421	88.3
Unwanted	56	11.7
Mode of delivery		
Spontaneous vaginal delivery	326	68.3
Assisted delivery	88	18.4
Caesarian section	63	13.2
Maternal out come		
Normal	453	95
With complication	24	5
Fetal outcome		
Lived	452	94.8
Died	25	5.2
ANC follow up		
Yes	451	94.5
No	26	5.5
Previous facility delivery		
Yes	300	62.9
No	177	37.1

The waiting area for patients and relative, 429(89.9%) of the respondents were responded as there was a waiting area, while 48(10.1%) of the respondents were responded as there was no waiting area for patents and relatives. From all respondents, 318(66.7%) were satisfied with cleanliness and comfort of a waiting area for the patients and relatives while, 159(33.3%) of the mothers were unsatisfied with cleanliness and comfort of a waiting area for the patients and relatives. In this study, 373(78.2%) of the mothers were satisfied with the cleanliness and comfort of examination room while, 104(21.8%) of the mothers were unsatisfied with the cleanliness and comfort of examination room for the patients. The overall cleanliness and comfort of health facility, 422(88.5%) of the mothers were satisfied and 55(11.5%) of the mothers were unsatisfied (Table 3).

Table 3 Health facility related respondents' satisfaction in West Arsi Zone, Health institutions, March 25- April 25, 2016 (n=477)

Variable	Frequency	Percent (%)
Distance traveled for service		
<25km	387	81.1
25-50km	87	18.2
>50km	3	0.6
Mode of transportation used		
Car	327	68.6
On foot ,Animal or Human shoulder	150	31.4
Satisfaction with facility distance		
Satisfied	328	68.8
Unsatisfied	149	31.2
Satisfaction with information of service		
Satisfied	404	84.7
Unsatisfied	73	15.3
Referred from health institution		
Yes	125	26.2
No	352	73.8
Satisfaction with referral link		
Satisfied	103	82.4
Unsatisfied	22	17.6
Satisfaction with toilet access		
Satisfied	327	68.6
Unsatisfied	150	31.4
Satisfaction with toilet cleanliness		
Satisfied	281	58.9
Unsatisfied	196	41.1
Payment status		
Paid	57	11.9
Free	420	88.1
Cost paid for service		
<100	22	38.6
>100	35	61.4
Satisfaction with cost of service		
Satisfied	463	97.1
Unsatisfied	14	2.9
Ordered drugs and supplies		
Yes	216	45.3
No	261	54.7
Satisfaction with availability of drugs and supplies		
Satisfied	172	79.6
Unsatisfied	44	20.4
Presence of waiting area		

Table Continued...

Variable	Frequency	Percent (%)
Yes	429	89.9
No	48	10.1
Satisfaction with cleanliness of waiting area		
Satisfied	318	66.7
Unsatisfied	159	33.3
Satisfaction with cleanliness of examination room		
Satisfied	373	78.2
Unsatisfied	104	21.8
Satisfaction with over all cleanliness and comfort of health facility		
Satisfied	422	88.5
Unsatisfied	55	11.5
Overall level of satisfaction of delivery service		
Satisfied	410	74.6
Unsatisfied	67	25.4

Care provider related respondents' satisfaction

The overall satisfaction level of mothers who were satisfied with delivery service in this study was 74.6 %. Of all satisfaction levels, cleanliness of toilet related satisfaction (58.9%), cleanliness of waiting area for patients and relatives' related satisfaction (66.7%), and access toilet of related satisfaction (68.6%) and facility distance (68.6%) were the first three least values (Table 3). Whereas Of all satisfaction levels, cost paid related satisfaction (97.1%), health profession related satisfaction (91.2%), and courtesy and respects of health care provider related satisfaction (89.5%) were the first three highest values of mothers' satisfaction with delivery services at health institutions. Among all the respondents 368(77.1%) of mothers waiting time to see a doctor or midwife or other health care provider was less than one hour, 62(12.9%) was 1-2 hours and 47(10%) were greater than two hours. Of these 421(88.3%) of them were satisfied with the time spent to be seen by health care providers and 56(11.7%) of them were unsatisfied.

The courtesy and respect of health care providers during care provision, 427(89.5) of them were satisfied while 50(10.5%) of them were unsatisfied with the courts and respect of health care provider during care provision. Among these respondents, 435 (91.2%) were satisfied with the health profession who examining them, while 42(8.8%) were unsatisfied with health profession who examining them. From the health profession examining them, 344(72.1%) were Midwife, 71(14.9%) were Doctor, 42(8.8%) were health officers and 20(4.2%) were Nurses. More than half 249 (52.2%) of the mothers who gave birth in selected health institution were attended by male sex and 228(47.8%) were by female health care provider. Three hundred twenty seven (68.6%) were satisfied with the sex who attended their delivery, while 150(31.4%) were unsatisfied. From the respondents, 374(78.4%) were satisfied with the measure taken to assure their privacy, while 113(23.7%) were unsatisfied. Four hundred twenty three (88.7%) were satisfied with information had given for them on their health problems, but 54(11.3%) were unsatisfied. About 410(86.0%) of the mothers were satisfied with the confidentiality of health care provider and 67(14.0%) were unsatisfied. Consistency use of the service and recommending service for their family and relatives, 457(95.8%) of the respondents were reported as to use the

service, while 20(4.2%) of the respondents were reported as do not come back again for the service. Four hundred sixty one (96.6%) were reported as to recommending service for their family, relatives and friendlies and 16(3.4%) were not recommending (Table 4).

Table 4 Care provider related respondents' satisfaction with delivery service at health institutions in West Arsi Zone, March 25-April 25, 2016 (n=477)

Variables	Frequency	Percent
Waiting time before seen by midwife or doctor		
Less than 1hour	368	77.1
1-2hours	62	12.9
More than 2hours	47	10
Satisfaction with time spent before seen by midwife or doctor		
Satisfied	421	88.3
Unsatisfied	56	11.7
Satisfaction with courts or respect		
Satisfied	427	89.5
Unsatisfied	50	10.5
Satisfaction with profession of examiner		
Satisfied	435	91.2
Unsatisfied	42	8.8
Profession of examiner		
Doctor	71	14.9
Midwife	344	72.1
Nurse	20	4.2
Health officer	42	8.8
Sex of examiner		
Male	249	52.2
Female	228	47.8
Satisfaction with sex of examiner		
Satisfied	327	68.6
Unsatisfied	150	31.4
Privacy assured		
Yes	374	78.4
No	103	21.6
Satisfaction with privacy		
Satisfied	364	76.3
Unsatisfied	113	23.7
Satisfaction on information about health problem		
Satisfied	423	88.7
Unsatisfied	54	11.3
Satisfaction with confidentiality		
Satisfied	410	86
Unsatisfied	67	14
Coming back again for service		
Yes	457	95.8
No	20	4.2
Recommending service for others		
Yes	461	96.6
No	16	3.4

Factors influencing mother's satisfaction with delivery service at health Institution

Socio-demographic factors

In bivariate analysis maternal age, marital status, educational status and monthly income was significantly associated with mother's satisfaction with delivery service at health institution. Mothers whose their age was less than 20 were less likely to be satisfied with delivery service than those their age was 35-49 at $p=0.031$. (COR=0.834, 95% CI: 0.806, 0.983) .Married mothers were three times more satisfied than Widowed mothers (COR=3.130, 95% CI: 1.436, 12.484). Mothers whose their educational status was 1-6 and 7-12 were less satisfied than mothers whose their educational status were diploma and above (COR=0.55, 9% CI: 0.255, 0.679 and COR=0.714, 95% CI: 0.328, 0.852) respectively.

This study revealed that women who had no monthly income less satisfied with delivery service at health institution than women who had more than 1900 ETB monthly income and women who had monthly income of less than 650ETB were two times satisfied more than women who had more than 1900 ETB monthly income (COR=0.635, 95%CI: 0.859, 0.458 and COR=2.111, 95%CI: 1.987, 4.515). By applying multivariate logistic regression on socio demographic variables to control confounding effect of one variable over the other variable; Age, Marital status, Education status and economic status were adjusted. Only their educational status and their monthly income were significantly associated with satisfaction of mothers' with delivery service at health institution among socio-demographic variables at p value of <0.05. Women who had no formal education, primary education and secondary education were less satisfied than women who had diploma and above (AOR=0.851, 95%CI: 0.306, 0.863, AOR=0.399, 95%CI: 0.154, 0.730 and AOR=0.569, 95%CI: 0.229, 0.712) respectively. Women who had monthly income less than 650ETB were three times more satisfied with delivery service than women who da monthly income of more than 1900ETB (AOR=3.294,95% CI:1.337,8.114) (Table 5).

Obstetrics history factors

Obstetrics factors like; Number of parity, Reason for visit, status of pregnancy, Mode of delivery, Maternal outcome, ANC follow up and Previous health facility delivery experience were computed by using bivariate logistic regression analysis to identify their significance on the satisfaction of mothers satisfaction with delivery service. From these variables all have significant association with satisfaction of mothers with delivery service at health institution except number of parity and health facility delivery experience at p value of <0.05. Mothers who had; planned for delivery, Wanted pregnancy, Normal maternal and fetal outcome and ANC follow up were two times more satisfied than mothers who had not planned delivery, unwanted pregnancy, maternal and

fetal complication and had not ANC follow up (COR=2.264,95%CI:1.453,3.527), (COR=2.297,95% CI:1.288, 4.096), (COR=2.288, 95% CI:1.288, 4.096 and COR 2.905, 95% CI:1.287,6.554) and (COR=2.273, 95% CI:1.014, 5.096) respectively (Table 5). Mothers who had assisted vaginal delivery were less satisfied than mothers who gave birth through caesarian section (COR=0.404, 95%CI: 0.356, 0.592). By applying multivariate logistic regressions on Obstetrics history variables to control confounding effect of one variable over the other variable were adjusted. Among these variables only mode of delivery has significant association with satisfaction of mothers' satisfaction with delivery service at health institutions at p value of <0.05. Mothers who had assisted vaginal delivery were less

satisfied than mothers who had caesarian section (AOR=0.31, 95%CI: 1.253, 4.115) (Table 5).

Health facility and health care provider related factors

Bivariate and multivariate logistic regression analysis was computed for, waiting time before seen by midwife or doctor or other health care provider, Measures taken to assure privacy, Consistency of service use and Recommending service for others. Accordingly, mothers who spent less than one hour before seen by Midwife or Doctor or Other health care provider and those their privacy was assured were six times more satisfied than mothers who spent more than two hours before seen by health care provider (COR=6.198,95% CI:3.279,11.714) and those their privacy was not assured (COR=6.363,95%CI:3.960,10.224)

respectively at p value of <0.05. Mothers who responded to come back for the service were nine times more satisfied than those do not come back again for service(COR=9.934,95%CI:3.528,27.970).Those recommending service for their family, relatives and friends were fourteen times more satisfied than those do not recommending service for others(COR=14.164,95%CI:3.963,50.624). In the multivariate logistic regression analysis; measures taken to assured privacy and recommending service for others were significantly associated with satisfaction of mothers with delivery service at health institution at p value of <0.05. Mothers those their privacy measures was maintained were six times more satisfied with their delivery service at health institution than those did not maintained(AOR=6.988, 95%CI:4.047,12.066) (Table 6).

Table 5 Socio-demographic and obstetric factors which associated with mothers' satisfaction with delivery services at health institutions in West Arsi Zone, March 25-April 25, 2016

Variable	Satisfied	Un satisfied	COR (95% CI)	AOR(95%CI)
Age				
<20 years	49(64.5%)	27(35.5%)	0.834(0.806, 0.983)	1.105(0.488,2.504)
20-34years	270 (77.8%)	77 (22.2%)	1.611(0.860,3.018)	1.763(0.891,3.489)
35-49years	37 (68.5%)	17 (31.5%)	1	1
Marital Status				
Single	9(56.2%)	7(43.8%)	1.286(0.143,11.543)	1.858(0.165,20.936)
Married	338(75.8%)	108(24.2%)	3.130(1.436, 12.484)	4.055(0.459,35.850)
Divorced	7(63.6%)	4(36.4%)	1.750(0.173,17.686)	2.194(0.178,27.042)
Widowed	2(50.0%)	2(50.0%)	1	1
Educational Status				
No formal education	78(81.3 %)	18(18.8%)	1.057(0.447,2.499)	0.851(0.306, 0.863)
Grade 1-6	117(69.2%)	52(30.8%)	0.55(0.255, 0.679)	0.399(0.154, 0.730)
Grade7-12	120(74.5%)	41(25.5%)	0.714(0.328, 0.852)	0.569(0.229, 0.412)
Diploma and above	41 (80.4%)	10(19.6%)	1	1
Economic status				
No monthly in come	150(69.4%)	66(30.6%)	0.635(0.859,0.458)	1.397(0.642,3.041)
<650	95(84.8%)	17(15.2%)	2.111(1.987, 4.515)	3.294(1.337,8.114)
650-1000	31(73.8%)	11(26.2%)	1.065(0.439,2.581)	1.752(0.631,4.867)
1001-1900	35(77.8%)	10(22.2%)	1.322(0.539,3.244)	1.821(0.687,4.829)
>1900	45(72.6%)	17(27.4%)	1	1
Reason for visit				
Planned for delivery	278(79.0%)	74(21.0%)	2.264(1.453,3.527)	1.674(0.988,2.836)
Referred for delivery	78(62.4%)	47(37.6%)	1	1
Status of pregnancy				
Wanted	323(76.7%)	98(23.3%)	2.297(1.288,4.096)	1.454(0.747,2.833)
Unwanted	33(58.9%)	23(41.1%)	1	1
Mode of delivery				
Spontaneous Vaginal Delivery	260(79.8%)	66(20.2%)	1.832(1.010,3.323)	1.018(0.496,2.091)
Assisted Vaginal Delivery	53(60.2%)	35(39.8%)	0.404(0.356, 0.592)	0.31(1.253, 4.115)
Caesarian Section (C/S)	43(68.3%)	20(31.7%)	1	1
Maternal out come				
Normal	346(76.4%)	107(23.6%)	2.288(1.288,4.096)	2.581(0.959,6.943)

Table Continued...

Variable	Satisfied	Un satisfied	COR (95% CI)	AOR(95%CI)
With complication	10(41.7%)	14(58.3%)	1	1
Fetal outcome				
Lived	343(75.9%)	109(24.1%)	2.905(1.287,6.554)	1.016(0.67,2.814)
Died	13(52.0%)	12(48.0%)	1	1
ANC follow up				
Yes	341(75.6%)	110(24.4%)	2.273(1.014,5.096)	1.332(0.523,3.393)
No	15(57.7%)	11(42.3%)	1	1

Table 6 Health facility and Health care provider related factors which associated with mothers' satisfaction with delivery services at health institution in West Arsi Zone, March 25 –April 25, 2016 (n=477)

Variable	Satisfied	Un satisfied	COR (95% CI)	AOR(95%CI)
Cost paid for service				
<100	13(59.1%)	9(40.9%)	0.719(0.500,1.034)	1.640(0.518,5.189)
>100			1	1
Waiting time before seen by midwife or doctor				
Less than 1hour	303(82.1%)	66(17.9%)	6.198(3.279,11.714)	6.854(3.318,14.162)
1-2hours	33(54.1%)	28(45.9%)	1.591(0.739,3.425)	1.841(0.779,4.351)
More than 2hours	20(42.6%)	27(57.4%)	1	1
Profession of examiner				
Doctor	45(63.4%)	26(36.6%)	2.292(0.303,1.580)	2.529(0.196,2.425)
Midwife	268(77.9%)	76(22.1%)	1.411(0.689,2.887)	1.903(0.377,2.159)
Nurse	13(65.0%)	7(35.0%)	0.743(0.238,2.315)	0.724(0.198,2.646)
Health officer	30(71.4%)	12(28.6%)	1	1
Privacy assured				
Yes	311(83.2%)	63(16.8%)	6.363(3.960,10.224)	6.988(4.047,12.066)
No	45(43.7%)	58(56.3%)	1	1
Coming back again for service				
Yes	3351(76.8%)	106(23.2%)	9.934(3.528,27.970)	1.402(0.10,9.361)
No	5(25.0%)	15(75.0%)	1	1
Recommending service for others				
Yes	353(76.6%)	108(23.4%)	14.164(3.963,50.624)	3.151(0.364,27.253)
No	3(18.8%)	13(81.2%)	1	1

Discussion

Since patient satisfaction with maternity services is an important outcome measure for the quality of care and provision of services, this study revealed mothers' satisfaction level with delivery service at health institutions. Accordingly, the overall proportion of mothers who were satisfied with delivery care in this study was 74.6% and 25.4% of the mothers were unsatisfied with overall services of health institutions at where they had their delivery. This study finding is similar with the study conducted in Felege Hiwot Referral Hospital, Bahir Dar city, Northwest Ethiopia, among women who received delivery care, where the proportion of satisfaction was 74.9. %³² and also supported by study conducted in Pakistan and Assela Hospital, among women who received delivery care, where the proportion of satisfaction were 70% and 80.7 % respectively.¹⁸ But, this study finding is lower than the study conducted in Cote d'Ivoire, which was 92.5% of the mothers were satisfied with delivery service³³ and higher

than the study result found in Nairobi Kenya , Pakistan, Sri Lanka and referral hospital delivery service in Amhara Region, Ethiopia which were 56%,61%, 48%and 61.9% of the mothers were satisfied with their delivery service respectively.^{7,18} This variation may be due to a real difference in quality of services provided, an increase in awareness about what mothers should have obtained in the maternity care services, expectation of mothers or the type of health facilities provided delivery service.³⁴

The other probable reason for the difference might be, exempted from any payment for childbirth care services, increased accessibility of ambulance service for laboring mothers from their home to health institution for delivery service and an increase government concern for maternal health service in terms of qualified human power such as midwives, emergency surgery Health officers and obstetricians. According to the analytic part of this study, educational status, economic status, mode of delivery, maternal outcome, and waiting

time before seen by midwife or doctor and measures had taken to assure privacy was statistically significant predictors of women's satisfaction childbirth care. Mothers whose their educational status was no formal education, primary education (1-6) and secondary education (7-12) were less satisfied with delivery service than whose their educational status was diploma and above (AOR=0.851, 95% CI: 0.306, 0.863), (AOR=0.399, 95% CI: 0.154, 0.730) and (AOR=0.569, 95% CI: 0.229, 0.412) respectively. The study conducted in Pakistan supported this result.⁴ This is might be due to greater experience and maturity as their educational status is increased. The other probable reason for this result is might be expectation that health care providers have for educated and not educated and educated mothers might be not have difficult to communicate her problems with health care providers during care provision. But, the study conducted in Ghana, Nigeria, and Zambia contradicted with this result, which showed mothers' educational levels negatively affected their satisfaction with maternal care³⁴ and the study conducted in Assela Hospital found that mothers whose their educational status was secondary school level (7-12) were 2.42 times more satisfied with delivery service than diploma and above (AOR=2.42, 95% CI: 1.17, 5.00).

Women who had monthly income was less than 650 ETB were 3.294 times more satisfied with their delivery service at health institution than women who had monthly income of more than 1900 ETB monthly income (AOR=3.294, 95% CI: 1.337, 8.114) (Table 5). This study finding is supported by the study conducted in Assela Hospital which showed mothers 'who had monthly income of less than 500ETB were 2.40 times more satisfied with their delivery service than mothers' those their monthly income was more than 1000ETB (AOR=2.40, 95% CI: 1.25, 4.78).²⁹ This might be as economic status of mothers increased mothers expectation on delivery service increased with their monthly income increment. Mothers who had assisted vaginal delivery were less satisfied than mothers who had caesarian section (AOR=0.31, 95% CI: 1.253, 4.115). This study is supported by the Study conducted in Amhara, Ethiopia found that mothers, who gave birth by SVD (spontaneous Vaginal Delivery) (142 (34%) more satisfied than assisted delivery 70(16.8%).³²

From this study, mothers' who had seen by doctors or midwife or other health care provider at less than one hour were 6.854 times more satisfied with their delivery service than mothers' who had seen at more than two hours (AOR=6.854, 95% CI: 3.318, 14.162). This study result finding is supported by study conducted in Assela Hospital and Amhara region Hospital which showed that mothers' seen by health care provider less than one hour were 26.7 times more satisfied (AOR: 26.7, 95% CI: 5.56, 12.81) and 2.9 times more satisfied (AOR=2.9, 95% CI: 1.14, 7.58) than mothers 'those visited at more than two hours respectively.^{29,32} This study finding suggest that mothers those their privacy measures was maintained were 6.988 times more satisfied with their delivery service at health institution than those did not maintained (AOR=6.988, 95% CI: 4.047, 12.066). This finding is supported by study conducted in Bangladesh and India which showed maintenance of privacy via a separate room or screen for examination or delivery was a significant factors affecting of satisfaction with maternal health services in.^{25,31} Finally this study may have limitation on the study design and study approach because satisfaction can be assessed better with qualitative approach.

Conclusions and recommendations

The overall satisfaction of hospital delivery services in this study is found to be suboptimal. The study strongly suggests that more could

be done to assure that services provided are more patient centered. This study also revealed several constraints in the provision of delivery care services which can be implied as areas of possible improvement; including educational status, economic status, mode of delivery, waiting time before seen by health care provider and maintaining the privacy of the mothers. Health institution should work on cleanliness of waiting area, compound, examination room and cleanliness and access of toilet. Caregivers need to fully understand the expectations that patient have for their care, and provide care that is consistent with those expectations. The care givers of the facility should avoid staying longer waiting time to see the delivering mothers, breeching confidentiality and privacy of mothers. Future studies should consider gathering more data from a more diverse sample to address the generalizability issue.

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Conflicts of interest

The author declares there are no conflicts of interest.

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