



ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

LEVEL OF MATERNAL SATISFACTION DURING LABOR AND DELIVERY CARE AND
ASSOCIATED FACTORS AT AYDER COMPREHENSIVE SPECIALIZED HOSPITAL,
MEKELLE, NORTH ETHIOPIA

BY

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Advisor's Approval Sheet

This is to certify that the thesis entitled “**Level of maternal satisfaction during labor and delivery care and associated factors at Ayder Comprehensive Specialized Hospital, Mekelle, Northern Ethiopia**” is submitted in partial fulfillment of the requirements for the certificate of Obstetrics and Gynecology to the post graduate program has been carried out by Ephrem Tumsido Gurmamo, M.D., Year IV Obstetrics and Gynecology resident physician under my supervision. Therefore, I recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the Department of Obstetrics and Gynecology.

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Declaration

I hereby declare that this specialty certificate thesis is my original work and has not been presented for a degree in any other university and all sources of material used for this thesis have duly been acknowledged.

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LIST OF ABBREVIATIONS AND ACRONYMS

Acronym	Extended Form
AOR	Adjusted Odds Ratio
ANC	Antenatal care
APH	Antepartum Hemorrhage
ACSH	Ayder Comprehensive Specialized Hospital
CD	Cesarean Delivery
CI	Confidence Interval
COR	Crude Odds Ratio
ETB	Ethiopian Birr
IBM SPSS	International Business Machines Statistical Product and Service Solutions
NICU	Newborn Intensive Care Unit
PPH	Postpartum Hemorrhage
SDGs	Sustainable Development Goals
WHO	World Health Organization

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ABSTRACT

Background: Maternal satisfaction with hospital care during child birth is one of the many factors that play a role in the utilization of maternal health services. Health institutions delivering maternal health care services should strive towards client interest so that pregnant mothers will develop trust and confidence in the utilization of the health system.

Objective: To assess level of maternal satisfaction during labor and delivery care and associated factors at Ayder Comprehensive Specialized Hospital (ACSH) from December, 2020 – July, 2021.

Methodology: A hospital based cross section study was carried out at ACSH among 364 mothers who came for delivery. Study participants were selected by systematic random sampling. A structured, interviewer-administered questionnaire was used to collect data. Data was checked, coded and entered into Epidata version 3.1 software and then exported to IBM SPSS statistics 20 for analysis. Multivariate logistic regression analysis was fitted to identify confounding factors. A variable with P value of less than 0.05 was considered statistically significant.

Results: The findings of this study revealed that the level of maternal satisfaction during labor and delivery care at ACSH was 76.1 %. On multivariate logistic regression analysis planned status of pregnancy (AOR=2.89, 95% CI: 1.06, 7.85), number of ANC visits (AOR=0.37, 95% CI: 0.19, 0.71), encouragement and reassurance in the process of childbirth (AOR=18.04, 95% CI: 1.59, 96.7) were statically significant predictors of maternal satisfaction during labor and delivery care services.

Conclusions: In general, the study found that number of antenatal care visits, planned status of pregnancy, encouragement and reassurance were independently associated with level of maternal satisfactions. Therefore, unreserved effort should be considered by healthcare facilities for intervention and strategies to enhance maternal satisfaction by strengthening adherence to antenatal care visits, provision of family planning service utilization to prevent unplanned pregnancy and finally promoting respectful and compassionate caring behaviors.

Keywords: Maternal satisfaction, Labor and Deliver, ACSH, Ethiopia

1. INTRODUCTION

1.1 BACKGROUND

Patient satisfaction is a renowned standard to evaluate the effectiveness of health services being provided in hospitals. It is considered as 'patient's judgment on the quality and goodness of care'. Satisfaction reflects a patient's values and expectations regarding different aspects of medical care. It also represents a positive appraisal by the client that the client's goals and expectations regarding health cares have been achieved [1].

Improving patient care has become a priority for all health care service providers with the optimum objective of achieving a high degree of patient satisfaction. Recent practices in the health system showed that health authorities are considering the patient as the best judge who accurately assesses and provides inputs to help in the overall improvement of quality health care provision through the rectification of the system weaknesses [2].

Currently, the patients' opinions are considered as a key factor in the decision of treatment and delivering health care services. Hence, the evaluation of health service delivery from the patients' perspective has received greater attention and has become a core attribute of any health system as it serves as a valuable indicator to measure the success of a service provision, especially in public sector hospitals [3].

Various dimensions of patient satisfaction have been identified, health care services ranging from admission to discharge process, waiting time to receive care, as well as from medical care to interpersonal communication [4]. General amenities of the facility in terms of availability, its quality, and structural design were also among the identified dimensions, which significantly affect the patient satisfaction level [2].

Additionally, Socio-demographic and economic status of the patients and their expectations of care and attitudes towards the health care system were among the dimensions identified to have direct influence on satisfaction level; other psychosocial factors, including pain and depression, are also known to contribute to patient satisfaction level scores [5].

Satisfaction with childbirth is complex, deceptively simple, and multidimensional. Although there is consensus that it is a multidimensional concept, influenced by a variety of factors, it is also defined as “positive evaluation of distinct dimensions of childbirth”. Maternal satisfaction with hospital care during child birth is one of the many factors that play a role in the utilization of maternal health services [6]. Available evidence shows that the degree of client satisfaction and its determinants in the labor and delivery process are more closely measured in the developed world than in developing nations [7]. While increasing service availability and maintaining acceptable quality standards, it is important to assess maternal satisfaction with care in order to make it more responsive and culturally acceptable, ultimately leading to enhanced utilization and improved outcomes.

1.2 STATEMENT OF PROBLEM

Modern obstetric care has been shown to be deficient in treating the psychological component of clients, with these shortfalls often manifesting as poor patient satisfaction, especially in resource-limited countries. Studies show that women accessing modern institutional health care still face many challenges including disrespectful, abusive, and inhumane ways of treatment, especially during labor and delivery processes. Such treatment violates the right of women to respectful care, and can also threaten their rights to life, health, bodily integrity, and freedom from discrimination [8]. The quality of care a woman receives during pregnancy, delivery and postpartum affects her health, the health of her child and the likelihood that she will seek care in the future.

Maternal satisfactions with the delivery service have both immediate and remote effects on health of the mothers and their new born. Negative feedback of childbirth process, immediately: increases the risk of postpartum depression and dissatisfaction and remotely: change the maternal attitudes towards future pregnancies and future choice of mode of delivery. However, some identified negative impacts were reflected in a number of health outcomes, including maternal and infant mortality rate, perinatal infections, perceived health status, and hygiene compliance. Feelings of satisfaction are essential to maintaining maternal health, as well as providing continuous quality care of maternal and child health and reduction of maternal mortality [9].

The existence of maternal health service does not guarantee their use by women; neither does the use of maternal health service guarantee optimal out comes for women. In the past, interventions

mainly have targeted barriers to services such as accessibility and distance to health facilities, formal or informal service charges, and lack of awareness on the benefits of skilled maternity care. Despite these interventions, many women in low and middle-income countries who had awareness on the benefits of skilled maternity care and with no other geographical barriers to access health facility continued to prefer delivering at home. Evidence has also shown that dissatisfied mothers, especially in the developing world, tend to prefer utilizing traditional means of health care, using modern health care services as a last resort [10, 11].

Owing to considerable gaps in the services, developing countries emphasize on increasing service availability and maintaining acceptable quality standards [12]. Understanding maternal perception of care and satisfaction with services is important in this regard, as perceived quality is a key determinant of service utilization. For this reason, reproductive health experts advocate that health institutions delivering maternal health care services should strive towards client interest so that pregnant mothers will develop trust and confidence in the utilization of the health system.

2. LITERATURE REVIEW

The concept of patient satisfaction continues to be one of the main concerns in the health care arena today. Patient satisfaction is thus indispensable to quality improvement with regard to design and management of health care systems. Users, who perceive the quality of care in a health institution to be good, are more likely to visit it again, thereby increasing demand for the service [13].

In health service organization, it was reported by different studies as: satisfied client or patient has complied with the medical treatment prescribed, provider recommendation delivered, and continually using medical services at a specific health provider, which might result with, enhanced disease healing process, healthier and happier clients, whom contributing to the development of the country [14]. It was also stated that maternal satisfaction with delivery care service is used to measure the ability of services provided to meet their expectation which is an important factor for the choice of health facility, comply with services and follow ups and continue with the health care [15].

It is easy to infer, on a much larger scale, that patient satisfaction is an important factor that must be recognized by any hospital or similar health care provider. 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 [16]. Women's satisfaction with maternal health care services is integral to the current push to decrease maternal mortality; especially in the developing world, particularly Sub Saharan African. Increasing access to and utilization of health care services is not sufficient for improving maternal health outcomes. The World Health Organization (WHO) promotes skilled attendance at every birth to reduce maternal mortality and recommends that women's satisfaction be assessed to improve the quality and effectiveness of health care [17]. While increasing service availability and maintaining acceptable quality standards, it is important to assess maternal satisfaction with care in order to make it more responsive and culturally acceptable, ultimately leading to enhanced utilization and improved outcomes. Maternal satisfaction determines the level of institutional delivery service utilization.

Client satisfaction is a key determinant of quality of care and an important component in measuring performance. In addition, it is important that the hospitals promoting client-oriented

health services should carry out in-depth research on factors determining satisfaction in the respective culture [18].

Studies declared that the magnitude of satisfaction on childbirth care varies across countries; Studies conducted in Dhaka, Bangladesh, and South Australia indicated that the level of maternal satisfaction on delivery care was 92.3% and 86.1%, respectively [19, 20]. However, the level of satisfaction of mothers in African countries is not enough; only 51.9% and 56% of mothers' were satisfied with delivery services in South Africa and Kenya, respectively [21, 22]. A similar study conducted in Ethiopia, in Amhara Referral Hospitals and Assela Hospital, had shown that about 61.9% and 80.7% of mothers reported satisfaction on delivery services, respectively [23, 24]. Another study conducted in University of Gondar teaching hospital, Northwest Ethiopia, had revealed that the proportion of mothers satisfied with childbirth care service was 31.3 % [25].

It has been reported that satisfaction on health care delivery is an indication of quality care service. Evidence had indicated that satisfaction affects health service utilization, individuals happy with the care received comply with services and follow up, and continue with the care [26].

Despite women's satisfaction with health care service is influenced by their expectations; a lot of factors affect women's satisfaction during childbirth including interpersonal manner of care providers, technical quality of care, accessibility to care, birth outcomes, physical environment and availability of medical care resources [27].

Different studies conducted in Sub-Saharan African countries identified previous negative experiences with health facilities, poor quality of care, unprofessional behavior of health workers and disrespectful care as barriers for institutional delivery services utilization [7, 11].

Certain demographic characteristics have been predominantly studied in relation to satisfaction during delivery services. For example, a study done in Sweden (n=2762) reported that younger women had more negative expectations related to childbirth and they experienced more pain and lack of control during labor compared with older women, while another study done in Brazil (n=15,688) showed no age related difference in women's satisfaction with childbirth services [29,29].

Studies from developing countries show that satisfaction with services had a negative association with the amount of time women spent at the health facility before childbirth [30]. The educational level of women in different studies and settings has demonstrated positive, negative or nil association with satisfaction during delivery services [31].

Other identified factors that influenced satisfaction with childbirth services are: having clean and orderly labor rooms and women-friendly delivery processes, such as having been prepared in advance for what to expect during the labor/postpartum/breast feeding period; involvement in the decision-making process; having a birth plan and being able to follow it; having pain relief during labor; having a birth companion and respectful care providers; receiving help from care providers in performing self and neonate's care; and experiencing less symptoms in the postpartum period [32]. A woman's obstetric history, mode of delivery, and her feelings towards recent childbirth can also affect maternal satisfaction. For example: being multiparous, preferring a spontaneous vaginal delivery and being able to have a spontaneous vaginal birth enhances the women's satisfaction with giving birth [33].

Qualitative studies on Indian women's experiences and opinions on giving birth at a health facility reveal that they are not fully satisfied during delivery service, primarily due to the long waiting time before they meet a healthcare provider, having few opportunities to communicate with providers, not being involved in decision-making, and having stern care providers [34]; however, they settle for childbirth services perceived as 'essential' for safe childbirth rather than 'desirable' for a pleasant experience [35].

Maternal satisfaction in Ethiopia, with care during labor and delivery, ranges from 19% at St. Paul Millennium Medical College Hospital to 95% among hospitals in Wolaita Zones. Different studies identified that women's satisfaction with delivery care services was affected by their socio-demographic factors, health service quality, maternal health care utilization, obstetric factors and institutional related factors [36–42].

In Ethiopia the main reasons that have been reported for not delivering at health facilities were; health facilities were not customary, distance from facility, belief that it is not necessary, women's previous negative experiences, lack of privacy, lack of decision making power, fear of going to an unfamiliar setting and quality of care were influencing women's in deciding to seek

care [43]. While many interventions aim to improve access to skilled birth care, the quality of relationships with caregivers during maternity care has received less attention [44]. Efforts to increase the use of facility based maternity care in low-income countries are unlikely to achieve the desired gains if there is no improvement in the quality of care provided. The negative patient experiences at health facilities contribute to poor health outcomes and reinforce mistrust of institutional care which causes them to delay or avoid seeking care in health facilities. Improving overall satisfaction level and quality of care during pregnancy and delivery should be one of the main concerns in low and middle-income countries like Ethiopia.

2.1 SIGNIFICANCE OF THE STUDY

To identify specifically which factor causes mothers dissatisfaction requires an investigation. However, little is known about the birth experiences of mothers in Ethiopia, particularly in the study area. The current study is might be useful:-

- To understand mothers expectations which are an important ingredient in making childbirth a safe and satisfying experience. This knowledge can lead to improved communication and relationships between clients and providers of maternity care, and eventually lead to greater satisfaction with the childbirth experience. Besides, ensuring client satisfaction is an important means of secondary prevention of maternal mortality.
- To determine the magnitude of maternal satisfaction and other aspects of care that need strengthening in the study area to generate significant changes in maternal care-seeking behavior, and identify barriers that can and should be removed.
- For health care providers, administrators and policymakers as an indicator of the quality of maternity care.
- For other researchers to suggest the need for further study and investigation into this issue in order to improve the status of delivery care services in the community.

2.2 CONCEPTUAL FRAME WORK

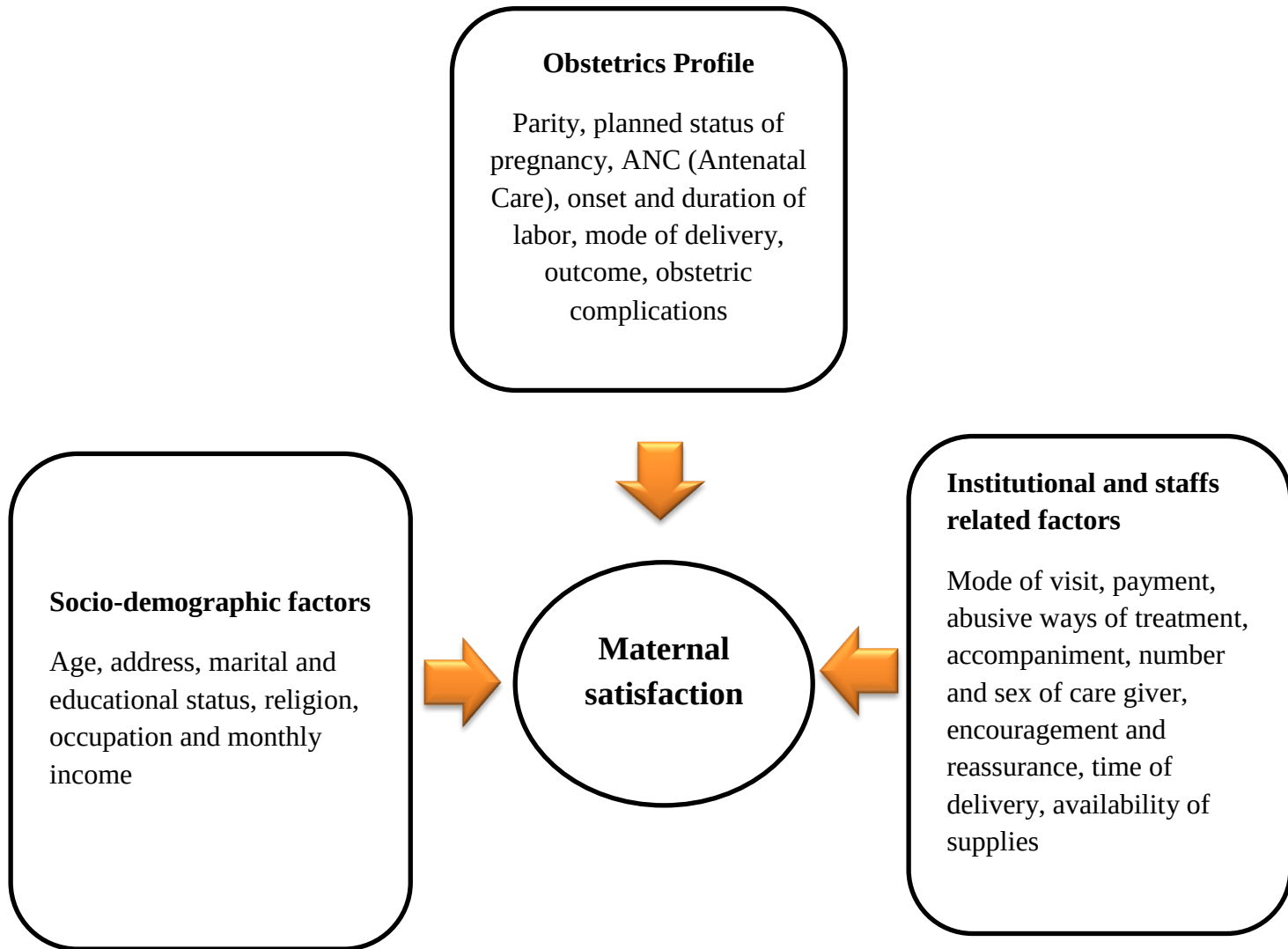


Figure 1: Conceptual frame work of factors affecting maternal satisfaction

3. OBJECTIVES OF THE STUDY

3.1 GENERAL OBJECTIVE

To assess level of maternal satisfaction and associated factors during labor and delivery care at Ayder Comprehensive Specialized Hospital, Mekelle, Northern Ethiopia from December, 2020 to July, 2021

3.2 SPECIFIC OBJECTIVES

To determine level of maternal satisfaction during labor and delivery care from December, 2020 to July, 2021

To determine factors affecting maternal satisfaction during labor and delivery care from December, 2020 to July, 2021

4. METHODS AND MATERIALS

4.1 STUDY AREA

The Study was conducted at Ayder Comprehensive Specialized hospital in Mekelle city. The city is the capital of the Tigray Administrative Region and located in Northern Ethiopia at a distance of 789 km from Addis Ababa, the capital city of Ethiopia.

The estimated catchment population of the hospital is around 9 million from Tigray, Afar and Northern part of Amhara. It gives almost all type of service at tertiary level including Obstetrics care. Based on 3 months report from the hospital preceding the survey, there was around 1000 mothers received childbirth care in the hospital, which implies that on average 330 received childbirth care in each month.

4.2 STUDY PERIOD

The study was carried out from December, 2020 – July, 2021.

4.3 STUDY DESIGN

Hospital based cross sectional study design

4.4 SOURCE POPULATION

All women who gave birth in Ayder Comprehensive Specialized Hospital

4.5 STUDY POPULATION

All women who gave birth in Ayder Comprehensive Specialized Hospital between December, 2020 – July, 2021.

4.6 ELIGIBILITY CRITERIA

4.6.1 Inclusion criteria

All women who gave birth in Ayder Comprehensive Specialized Hospital and volunteer to participate

4.6.1 Exclusion criteria

Mothers who delivered by elective cesarean delivery (CD)

Mothers who are mentally or critically ill and unable to communicate

Mothers who are not willing to participate in the survey

4.7 SAMPLE SIZE DETERMINATION

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

$$n = \frac{(Z_{\alpha/2})^2 P(1-P)}{d^2}$$

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 31.3% (mothers satisfied with the labor and delivery care) from university of Gondar teaching hospital [25].

Considering 95% CI (Confidence Interval) and 5% margin of error and 10% nonresponse rate the calculated sample size was 364.

4.8 SAMPLING METHOD

Systematic sampling technique with proportional allocation of mothers who give birth within the study period and fulfill the inclusion criteria were used to select the samples of this study. From the hospital previous report of delivery, average number of clients who delivered in the hospital was 330 per month. Therefore the numbers of participants who will visit the hospital were estimated for the study period; then sampling fraction for selecting the study participants were determined by dividing with the total estimated number of patients during the data collection period to the total sample size which was calculated to be five. The first study participant was selected by lottery method among the list of mothers, from one to ten, who gave birth on the first day of data collection; the next study participants were identified systematically in every five intervals until the required sample size was achieved.

4.9 VARIABLES

4.9.1 Dependent variables

- Maternal satisfaction

4.9.2 Independent Variables

- Socio-demographic factors (age, address, marital and educational status, religion, occupation and monthly income)
- Obstetric profile (parity, planned status of pregnancy, ANC, onset and duration of labor, mode of delivery, outcome, obstetric complications)
- Institutional and staffs related variables (Mode of visit, payment, accompaniment, number and sex of care giver, abusive ways of treatment, encouragement and reassurance, time of delivery, availability of supplies)

4.10 DATA COLLECTION METHOD

The data were collected using face to face administrated structured questionnaires adapted from reviewed literatures. The questionnaire were designed to obtain information including socio-demographic characteristics, reproductive history, satisfaction related questions and other factors affecting satisfaction of service users. Delivery service satisfaction related questions were adopted from the Donabedian quality assessment framework and presented using a 5 point Likert scale (1- very dissatisfied, 2-dissatisfied, 3- neutral, 4-satisfied and 5- very satisfied).

The questionnaire was initially prepared in English and translated into Tigrigna and retranslated back to English to ensure consistency prior to the start of data collection, but finally administered in Tigrigna. Data collected in a private setting to let them respond freely for questions.

Final year medical students who are fluent in the local language collected the data under supervision. Training was held for data collectors and supervisors for 2 days on the objectives of the study, method and the approaches they employee to collect data.

4.11 DATA QUALITY CONTROL

Pretest was done on 5% of the questionnaires, which is not included in the final analysis, prior to the actual data collection period for the amendment of the questionnaires. Throughout the course of the data collection, interviewers were supervised and there were regular meetings with the principal investigator to discuss on challenges encountered during data collection process and solutions were given at the same time. Data completeness was checked on daily basis by supervisors and principal investigator; the incomplete data were discarded.

4.12 DATA PROCESSING AND ANALYSIS

Data was checked, coded and entered into Epidata version 3.1 software and then exported to IBM SPSS (International Business Machines Statistical Product and Service Solutions) statistics 20 for analysis. Data entry was made by the principal investigator.

Univariate and bivariate analyses were computed to see the frequency distribution and to test whether there is an association between satisfaction and selected independent variables, respectively. Factors associated with satisfaction on bivariate were identified, and the variables with P value of 0.25 and less were taken to multivariate logistic regression analysis for controlling the possible effect of confounders and finally the variables which have significant association were identified based on P value less than 0.05.

4.13 OPERATIONAL DEFINITIONS

Satisfaction: the responses of ‘very satisfied’ and ‘satisfied’ were classified as satisfied and responses of ‘very dissatisfied’, ‘dissatisfied’ and ‘neutral’ were classified as unsatisfied.

Neutral responses are classified as dissatisfied considering that they may represent a fearful way of expressing dissatisfaction.

Overall Satisfaction Level: Individuals scored 85% and above for the satisfaction assessing questions were categorized under “satisfied” and those who score less than 85% for the items were categorized as “unsatisfied”

4.15 ETHICAL CONSIDERATIONS

The study was conducted after approval by the Institutional Review Board of Mekelle University College of Health science. Informed consent was obtained from respondents after explaining the objective of the study. In addition, all the responses were kept confidential and anonymous by assuring that any information concerning them was never passed to any individual or institution.

4.16 DISSEMINATION OF THE RESULT

The final result of the study will be presented and submitted to St Paul’s Hospital and Millennium Medical College, department of Obstetrics and Gynecology and Mekelle University College of Health Science, department of Obstetrics and Gynecology. It will also be presented in annual scientific meeting and conferences. Efforts will be made for the findings of this study to be published in reputable journals.

5. RESULTS

5.1 PROFILE OF THE STUDY POPULATION

During the study period, a total of 364 mothers were enrolled who were found to be eligible with the inclusion and exclusion criteria, making a response rate of 100%.

Most of the study participants (n = 302, 82.9%) were in the age group of 20 – 34 years with minimum and maximum age of the study participants being 17 and 45 years. The mean age of participants was 27.79 ± 5.25 years. Two hundred and forty-seven (67.9 %) of mother's reside in the urban setting. Majority of the study participants (n = 312, 85.7%) were followers of orthodox Christianity.

With regard to education, 125 (34.3%) of mothers were at College or University level and 38 (10.4%) of them had no formal education. Three hundred and forty of the respondents (93.4 %) were married while 213(58.5%) were housewives in occupational status. Based on the study, the study participants had a mean monthly income of 3717.43 ETB (Ethiopian Birr) and 37.6% of respondents claimed to have an estimated average monthly household income of less than 1000 ETB (please see Table 1).

In this study, more than half (54.9%) were multiparous, 142 (39%) were primipara and 22 (6%) were grand multipara mothers. Among all participants, three hundred and twenty (87.9%) mothers' current pregnancies were described as planned. About 328 (90.1%) of the respondents had ANC and of them 228 (62.6%) had at least four visit to a health institution for the current pregnancy. Two hundred ninety - seven (81.6%) of the mothers gave birth after spontaneous onset of labor and in the remaining 18.4% of them onset of labor were by induction.

Labor persist for more than 24 hours only on 43(11.8%) of the respondents. Regarding mode of delivery, 138 (37.9%) of mothers gave birth with spontaneous vaginal delivery, 8(2.2%) of the mothers were gave birth with operative vaginal delivery and 133(36.5%) of the mothers were gave birth with caesarian section. From the mothers who enrolled in study 266 (73.1%) were gave birth without any obstetric complication and 348 (95.6%) of the mothers were gave birth lived fetus (please see Table 2).

Table 1: Socio-demographic characteristics of study participants' at ACSH from December, 2020-July, 2021 (n=364)

Socio –demographic variables	Frequency	Percentage
Age (Years)		
≤ 19	13	3.6
20 -34	302	82.9
≥ 35	49	13.5
Address		
Urban	247	67.9
Rural	117	32.1
Religion		
Orthodox	312	85.7
Muslim	49	13.5
Protestant	1	0.3
Catholic	2	0.5
Educational status		
No formal education	38	10.4
Primary School	89	24.5
Secondary school	112	30.8
College/University	125	34.3
Marital status		
Single	17	4.7
Married	340	93.4
Divorced	7	1.9
Occupation		
Employee	91	25
House wife	213	58.5
Merchant	43	11.8
Student	11	3
Others	6	1.6
Monthly income (ETB)		
Less than 1,000	137	37.6
1,001 – 3,000	66	18.1
3,001 – 5,000	74	20.3
5,001- 10,000	66	18.1
More than 10,000	21	5.8

Table 2: Obstetric profile of study participants' at Mekelle University, ACSH from December, 2020 – July, 2021 (n=364)

Obstetric profile	Frequency	Percentage
Parity		
I	142	39
II-IV	200	54.9
≥ V	22	6
Planned pregnancy		
Yes	320	87.9
No	44	12.1
ANC		
Yes	328	90.1
No	36	9.9
Number of ANC visits		
Once	11	3
2 to 3	89	24.5
≥ 4	228	62.6
Place of ANC		
ACSH	86	23.6
Out of ACSH	242	66.5
Duration of labor (hours)		
Less than 12 hours	152	41.8
12 to 24 hours	169	46.4
More than 24 hours	43	11.8
Labor onset		
Spontaneous	297	81.6
Induced	67	18.4
Mode of delivery		
Spontaneous vaginal delivery	138	37.9
Operative vaginal delivery	8	2.2
Episiotomy assisted delivery	85	23.4
Cesarean delivery	133	36.5
Outcome		
Alive and on maternal side	291	79.9
Alive and admitted to NICU (Newborn Intensive Care Unit)	57	15.7
Stillbirth	16	4.4
Obstetric complications		
No	266	73.1
APH(Antepartum Hemorrhage)	22	6
Hypertensive disorders of pregnancy	26	7.1
Preterm birth	23	6.3
PPH(Postpartum Hemorrhage)	14	3.8
Others	13	3.6
Obstetric complications		
Yes	98	26.9
No	266	73.1

5.2 HEALTH FACILITY AND STAFF RELATED FACTORS

Majorities of parturient (71.1%, n=259) were planned for delivery services or delivered at ACSH for the first time and about 160(44 %) of parturient visited the hospital after referred from other health institutions. Among mothers participated in the study, 359 (98.6%) of them have reported the providers encouragement and reassurance in their labor and delivery care process. Two hundred seventy-seven (76.1%) and 87 (23.9%) of the mothers who participated in the study and gave birth were attended by male and female health care providers, respectively.

More than half of the mothers (59.3%, n = 216), had no preference over the sex of health care providers who attended the delivery. Two-thirds of the delivery was happened at day time. Forty five (12.4%) of the mothers paid for drugs and other supplies during the delivery process and 203(55.8%) of the respondents' were not allowed to had a companion during their labor and delivery processes. Three hundred and fifty three 353 (97%) of the study participants' were recommend others as to use the service, while the remaining 11(3%) respondents were reported as do not come back again for the service.

Table 3: Institutional and staffs related study participants' response at Mekelle University, ACSH from December, 2020 – July, 2021 (n=364)

Institutional and staff related factors	Frequency	Percentage
Reasons of Visit		
Self	158	43.4
Family	35	9.6
Referral	160	44
Other	11	3
First visit (multipara)		
Yes	117	52.7
No	105	47.3
Who attended the delivery		
Male	277	76.1
Female	87	23.9
Preference		
Male	85	23.4
Female	63	17.3
No preference	216	59.3
Encouraged and reassured		
Yes	359	98.6
No	5	1.4
Time of delivery		
Day time	242	66.5
Night time	122	33.5
Payment		
Yes	45	12.4
No	319	87.6
Recommend others to deliver at ACSH		
Yes	353	97
No	11	3

5.3 THE OVERALL LEVEL OF MATERNAL SATISFACTION AND ASSOCIATED FACTORS

The findings of this study revealed that the prevalence of maternal satisfaction during labor and delivery care at ACSH was 76.1 %.

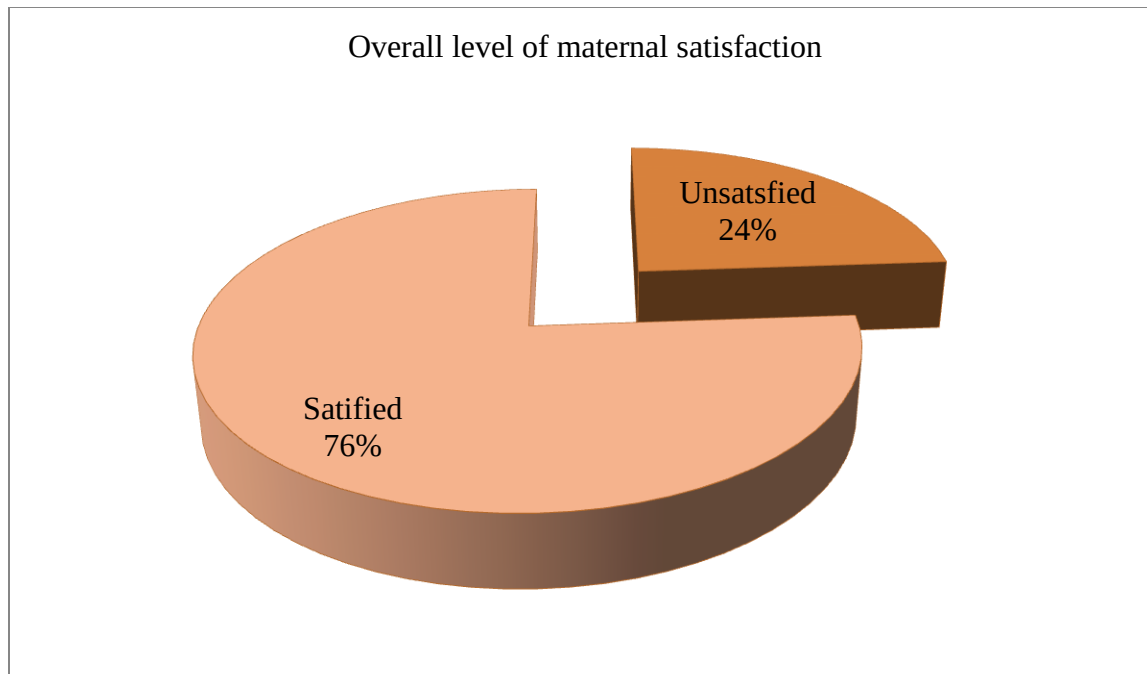


Figure 2: Overall level of maternal satisfaction

In the bivariate analysis, Socio –demographic characteristics such as mother’s education level and place of residence had a significant association with maternal satisfaction. On the other hand, obstetric profiles, institutional and staff related variables such as parity, planned status of pregnancy; number and place of ANC, mode and time of delivery, fetal outcome, number and sex of care givers, payment, accompaniment, encouragement and reassurance were associated with maternal satisfaction.

On multivariate logistic regression analysis planned status of pregnancy, number of ANC visits, encouragement and reassurance were statically significant predictors of maternal satisfaction during labor and delivery care services at p value of < 0.05 .

This study revealed that odds of satisfaction with delivery care were 2.89 times higher for women with a planned pregnancy compared to mothers whose pregnancy was not planned (AOR=2.89, 95% CI: 1.06, 7.85).

This study also identified that odds of satisfaction with delivery care for those mothers who did attend two to three ANC visits were 0.37 times compared to those who had four and above ANC visit (AOR=0.37, 95% CI: 0.19, 0.71).

In this study, odds of satisfaction with the care received for those mothers who gave birth where the providers encourage and reassure them during labor and delivery services were 18.04 times more than those who were not (AOR=18.04, 95% CI:1.59, 96.7).

Table 4: Multivariate analysis of factors associated with maternal satisfaction during labor and delivery care at ACSH, Northern Ethiopia, from December, 2020 – July, 2021 (n=364)

Variables	Maternal satisfaction		COR (95% CI)	AOR (95% CI)
	Satisfied	Unsatisfied		
Place of residence				
Urban	198	49	1.94 (1.18 - 3.19)	1.15 (0.56 - 2.38)
Rural	79	38	1	1
Educational status				
No formal education	25	13	0.43 (0.19 - 0.97)	1.35 (0.33 - 5.46)
Primary School	65	24	0.61 (0.32 - 1.17)	0.99 (0.43 - 2.29)
Secondary school	85	27	0.71 (0.38 - 1.33)	0.99 (0.46 - 2.13)
College/University	102	23	1	1
Was the pregnancy planned?				
Yes	258	62	5.55 (2.84 - 10.57)	2.89 (1.06 - 7.85) *
No	19	25	1	1
Number of ANC visits				
Once	8	3	0.50 (0.13 - 1.97)	0.38 (0.08 - 1.79)
2 to 3	57	32	0.33 (0.19 - 0.59)	0.37 (0.19 - 0.71) *
≥ 4	192	36	1	1
Outcome				
Alive and on the maternal side	219	72	1.38 (0.47 - 4.11)	1.92 (0.42 - 8.83)
Alive and admitted to NICU	47	10	2.13 (0.60 - 7.52)	2.99 (0.53 - 16.86)
Stillbirth	11	5	1	1
Encouraged and reassured				
Yes	276	83	13.3 (1.47 - 49.7)	18.04(1.59 - 96.7) *
No	1	4	1	1

Key: * = Significant at p-value < 0.05 on multivariate logistic analysis, COR: Crude Odds Ratio; AOR: Adjusted Odds Ratio

6. DISCUSSION

In this study, we assessed prevalence of maternal satisfaction and associated factors during labor and delivery care at ACSH, Mekelle town. The study found that more than three-quarters (76 %) of mothers were satisfied with the labor and delivery care provided in the hospital. The findings of this study also reflected that planned status of pregnancy, number of ANC visits; encouragement and reassurance were significant predictors of maternal satisfaction during labor and delivery care service.

The overall maternal satisfaction in this study was found to be 76.1 % and this result was consistent with the finding of the study conducted in different parts of the country and the globe like in Felege Hiwot Referral Hospital Northwest Ethiopia (74.9%) [36], at health institutions in West Arsi, Oromia regional state (74.9 %)[42], Jimma University Specialized hospital (77%)[45], Gamo Gofa Zone (79%)[38] and Australia (73%) [46].

However, the result of the current finding related to the level of maternal satisfaction was higher than the result of study, which was conducted at St. Paul's Hospital Millennium Medical College Addis Ababa (19%)[41], health facilities in Mizan-Aman town (30.4%)[39], Gondar teaching hospital (31.3%)[25], public health facilities in West Shewa zone, Oromia region (60.8%)[47] in Ethiopia, South Africa (51.9%) and Kenya (56%)[22] in Africa. It was also higher than the study in Jordan 17.8% [48], and health facilities in Bangladesh (63.2%) [49]. The possible reason why the level of satisfaction in this study higher than the others may be due to limitation of measuring levels of satisfaction, which means that level of satisfaction of women, could depends on many factors in addition to the indicators used to measure it in this study. The levels of satisfaction of women with childbirth care service depend on their expectation towards the service provision at the health institutions [50].

The maternal satisfaction rate observed in this study was low when compared with other studies conducted in Ethiopia, such as researches in Assela Hospital (80.7%)[24], at public health facilities of Debre Markos town (81.7%)[29], Nekemte Specialized Hospital (82%)[51], government hospitals in Ambo Town, Oromia Region (83.9%)[52], Harar hospitals (84.7%)[40] and Asrade Zewude Memorial Primary Hospital, West Gojjam(88%)[37]. This finding was also lower than the study finding from Southern Mozambique (92.5%) [53] and Bheri Zonal Hospital, Nepal (89.88%) [54]. This variation may be due to the difference in a study setting and/or due to

a real difference in quality of services provided but it needs further investigation as these issues were not addressed in the study.

This study showed that planned status of pregnancy, number of ANC visits, encouragement and reassurance were significant predictors of maternal satisfaction during labor and delivery care service.

Planned status of the pregnancy was significant predictor of satisfaction, it has been noted that mothers who planned their pregnancy were more likely to be satisfied with institutional delivery service than those mothers who didn't. These findings are in line with the study finding from public hospitals of North Shoa Zone Ethiopia, on Maternal satisfaction with intrapartum care and associated factors among postpartum women, the adjusted odds of satisfaction with delivery care was higher for women with a planned pregnancy [AOR: 2.245; 95% CI, (1.212,4.158)]. In addition, the study conducted in public health facilities of Omo Nada District, Jimma Zone, on Mothers' satisfaction with institutional delivery service, also showed maternal satisfaction with delivery care was associated with planned status of the pregnancy, mothers who planned their pregnancy were 2.85 times [AOR=2.85 with 95%CI (1.56, 5.21)] more likely satisfied than those did not planned [55, 56].

The other most important predictor of maternal satisfaction in this study was number of ANC visits. In this study, maternal satisfaction was lower among women who did attend two or three ANC visits compared to those who had four and above visits. Another similar study conducted in public hospitals of North Shoa Zone, also showed frequent ANC had a significant impact on maternal satisfaction with intrapartum care. This study revealed that, mothers who had attended ANC visit four and above in their current pregnancy were 2.4 times [AOR: 2.389; 95% (1.437, 3.974)] more likely to be satisfied with intrapartum care compared to women who had attended ANC less than four visits[55].

On the other hand, this finding contradicts with the study conducted in Mizan-Aman Town, which showed that those women who did not attend ANC service during their pregnancy were six times (AOR = 6.48, 95% CI = 1.01, 41.68) more likely to be satisfied as compared to that of mothers who reported four or more times ANC follow up[39].

The current study also showed that mothers who are encourage and reassured during labor and delivery were more satisfied with the overall delivery services than their counterparts. Women who were provided with continuous support during labor and childbirth were at increased chance of spontaneous vaginal birth, had no harm, and were more satisfied [57]. The use of praising words by the medical staff or by the obstetrician or midwife during delivery encouraged women and boosted their self-esteem, as reported in a study in Lebanon. In fact women chose to repeat the same provider for their next delivery if s/he was comforting and encouraging to them [58].

STRENGTHS OF THE STUDY

The strengths of the study includes high response rate and the other is, since there is no similar study conducted in the area (ACSH), it can provide useful information for planning quality obstetric care and it can also contribute as baseline information for future studies.

LIMITATION OF THE STUDY

The cross-sectional nature of the study does not show a cause and effect relationship. So the temporal relationship between maternal satisfaction and different background variable cannot be done.

Social desirability bias might be introduced as mothers might have given responses that would please health care providers instead of true reflection of their satisfaction.

It has to be noted that the finding of this study mainly reflects the situation only at ACSH and should be interpreted with caution. Because the health facility from where mothers were selected was purposively selected thereby limiting generalization to the overall health facility experience of childbirth by women. So, the representativeness of the findings may be limited.

This study has limitations which is inherent to satisfaction studies. The factors expected to influence satisfaction of childbirth services may not be exhaustive and satisfaction can be assessed better with qualitative approach.

7. Conclusion and Recommendation

In general, the study found that more than three-quarters (76 %) of mothers were satisfied with the labor and delivery care provided in the hospital. Although majority of women were satisfied with the labor and delivery care service they got, more could be done to assure that services provided are more patient centered. The finding of this study also showed that number of antenatal care visits, planned status of pregnancy, encouragement and reassurance were independently associated with level of maternal satisfactions during labor and delivery care. Therefore, unreserved effort should be considered by healthcare facilities for intervention and strategies to enhance maternal satisfaction by strengthening adherence to antenatal care visits, provision of family planning service utilization to prevent unplanned pregnancy and finally promoting respectful, compassionate and caring behaviors, which may lead to increasing institutional delivery, decreasing maternal mortality and realizing Sustainable Development Goals (SDGs) target 3.1.

In addition, further large population-based studies supplemented with qualitative design should be conducted to address the cause and effect relationship of determinants of maternal satisfaction during labor and delivery care and to assess mechanisms required to promote quality of childbirth services.

8. REFERENCES

1. Hall, J.A., & Dornan, M.C. (1988). Meta-analysis of satisfaction with medical care; Description of research domain and analysis of overall satisfaction levels. *Social Science Medicine*, 27, 637- 644.
2. B. Prakash, "Patient satisfaction and normative decision theory," *Journal of Cutaneous and Aesthetic Surgery*, vol. 3, no. 3, p. 151, 2010.
3. Mohd, A.; Chakravarty, A. Patient satisfaction with services of the outpatient department. *Med. J. Armed Forces India* 2014, 70, 237–242.
4. J. Hopkins, "Defining the patient-physician relationship for the 21st century," *Disease Management*, vol. 7, no. 3, pp. 161–179, 2004.
5. K. H. Todd, E. P. Sloan, C. Chen, S. Eder, and K. Wamstad, "Survey of pain etiology, management practices and patient satisfaction in two urban emergency departments," *CJEM*, vol. 4, no. 4, pp. 252–256, 2002.
6. Emelumadu OF, Onyeonoro UU, Ukegbu AU, et al. Perception of quality of maternal healthcare services among women utilizing antenatal services in selected primary health facilities in Anambra State, Southeast Nigeria. *Niger Med J*. 2014; 55(2):148–55.
7. Yohannes B, Tarekegn M, Paulos W (2013.) 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* 2: 74–85.
8. WHO (2015) The prevention and elimination of disrespect and abuse during facility-based childbirth. Geneva, Switzerland: human production program.
9. Anna J, Kone P. Organizational performance impacting patient satisfaction in Ontario hospitals: a multilevel analysis. *Br Med C Res Notes*. 2013;6(1):509.
10. Bohren MA, Hunter EC, Munthe-Kaas HM, Souza J, Vogel JP, Gülmezoglu A. Facilitators and barriers to facility-based delivery in low- and middle-income countries: a qualitative evidence synthesis. *Reprod Health*. 2014; 11(1):71–88.
11. Shiferaw S, Spigt M, Godefrooij M, Melkamu Y, Tekie M. Why do women prefer home births in Ethiopia? *BMC Pregnancy Childbirth*. 2013;13(5):1–10.
12. Thomason J, Edwards K (1991) Using indicators to assess quality of hospital services in Papua New Guinea. *Int J Health Plann Manage* 6: 309-324.

13. Dettrick Z, Firth S, Soto EJ (2013) Do strategies to improve quality of maternal and child health care in lower and middle income countries lead to improved outcomes? A review of the evidence. *PLoS One* 8: e83070.
14. Andaleeb SS, Nazlee S, Shahjahan K. Patient satisfaction with health services in Bangladesh. *Health Policy and Planning*. 2007;22:263-273.
15. Mesfin F, Dheressa M. Maternal Satisfaction and Associated Factors towards Delivery Service among Mothers Who Gave Birth at Public hospitals in Harar City, Eastern Ethiopia. Doctoral dissertation, Haramaya University. 2018.
16. Mpenbeni RNM, Killewo JZ, Leshabari MT, Massawe SN, Jahn A, et al. (2007) Use pattern of maternal health services and determinants of skilled care during delivery in Southern Tanzania: Implications for achievement of MDG-5 targets. *BMC Pregnancy Childbirth* 7: 29.
17. World Health Organization (WHO), Making Pregnancy Safer: The Critical Role of the Skilled Attendant: A Joint Statement by WHO, ICM, FIGO, World Health Organization (WHO), Geneva, Switzerland, 2004.
18. Sayed W, Abd ElAal DEM, Mohammed HS, Abbas AM, Zahran KM. Maternal satisfaction with delivery services at tertiary university hospital in Upper Egypt, is it actually satisfying?. *Int J Reprod Contracept Obstet Gynecol*. 2018;7(7):2547-2552.
19. A. Hasan, J. Chompikul, and S. U. Bhuiyan, Patient Satisfaction with Maternal and Child Health Service among Mothers Attending the Maternal and Child Health Training in Dahaka Bangeladish, Mahidol University, 2007.
20. Australian Government, Maternity Service in South Australia Public Hospital: Patient Satisfaction Survey Research, Australian Government, South Australia, Australia, 2007.
21. T. G. Lumadi and E. Buch, "Patients' satisfaction with midwifery services in a regional hospital and its referring clinics in the Limpopo Province of South Africa," *Africa Journal of Nursing and Midwifery*, vol. 13, no. 2, pp. 14–28, 2011.
22. E. S. Bazant and M. A. Koenig, "Women's satisfaction with delivery care in Nairobi's informal settlements," *International Journal for Quality in Health Care*, vol. 21, no. 2, pp. 79–86, 2009.

23. A. Tayelgn, D. T. Zegeye, and Y. Kebede, "Mothers' satisfaction with referral hospital delivery service in Amhara Region, Ethiopia," *BMC Pregnancy and Childbirth*, vol. 11, article 78, 2011.
24. R. Amdemichael and M. Tafa, "Maternal satisfaction with the delivery services in Assela Hospital, Arsi zone, Oromia region," *Gynecology & Obstetrics*, vol. 4, article 257, 2014.
25. Gashaye KT, Tsegaye AT, Shiferaw G, Worku AG, Abebe SM (2019) Client satisfaction with existing labor and delivery care and associated factors among mothers who gave birth in university of Gondar teaching hospital; Northwest Ethiopia: Institution based cross-sectional study. *PLoS ONE* 14(2):e0210693.
26. Goodman P, Mackey MC, Tavakoli AS. Factors related to childbirth satisfaction. *J Adv Nurs*. 2004;46(2):212–9.
27. Senarath U, Femando DN, Rodrigo I. Factors determining client satisfaction with hospital-based perinatal care in Sri Lanka. *Trop Med Int Health*. 2006;11(9):1442–51.
28. Sawyer A, Ayers S, Abbott J, Gyte G, Rabe H, et al. (2013) Measures of satisfaction with care during labour and birth: A comparative review. *BMC Pregnancy Childbirth* 8: 13.
29. Bitew K, Ayichiluhm M, Yimam K (2015) Maternal satisfaction on delivery service and its associated factors among mothers who gave birth in public health facilities of Debremarkos town, northwest Ethiopia. *BioMed Res Int*, pp: 1-6.
30. Geerts CC, Van Dillen J, Klomp T, Lagro-Janssen ALM, de Jonge A (2017). Satisfaction with caregivers during labour among low risk women in the Netherlands: The association with planned place of birth and transfer of care during labour. *BMC Pregnancy Childbirth* 17.
31. Haile Tadesse B (2017) Mothers' satisfaction with institutional delivery service in public health facilities of Omo Nada district, Jimma zone. *Clin Med Res* 6: 23.
32. Changee F, Irajpour A, Simbar M (2015) Client satisfaction of maternity care in Lorestan province Iran. *Iran J Nurs Midwifery Res* 20: 398-404.
33. McMahon SA, George AS, Chebet JJ, Mosha IH, Mpembeni RN, et al. (2014) . Experiences of and responses to disrespectful maternity care and abuse during childbirth: A qualitative study with women and men in Morogoro Region, Tanzania. *BMC Pregnancy Childbirth* 14.

34. Bhattacharyya S, Srivastava A, Roy R, Avan BI.(2016). Factors influencing women's preference for health facility deliveries in Jharkhand state, India: A cross sectional analysis. *BMC Pregnancy Childbirth* 16.
35. Pal R, Das P, Basu M, Tikadar T, Biswas G, et al. (2010) Client satisfaction on maternal and child health services in rural Bengal. *Indian J Community Med* 35: 478.
36. 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 Res Notes*. 2015;8:528.
37. Asres GD. Satisfaction and associated factors among mothers delivered at Asrade Zewude memorial primary hospital, Bure, west Gojjam, Amhara, Ethiopia: a cross sectional study. *J Public Manag Res*. 2018;4(1):14.
38. Tesfaye R, Worku A, Godana W, Lindtjorn B. Client Satisfaction with Delivery Care Service and Associated Factors in the Public Health Facilities of Gamo Gofa Zone , Southwest Ethiopia : In a Resource Limited Setting. *Obstet Gynecol Int*. 2016;2016:1–8.
39. Teklemariam Ergat Y, Wasihun Adrar A, Tariku R, Addisu G. Level of maternal satisfaction and its determinants at health facilities in Mizan-Aman town, Ethiopia: cross sectional study. *Int J Women's Heal Wellness*. 2019;5(1):4–8.
40. Getenet AB, Teji Roba K, Seyoum Endale B, Mersha Mamo A, Darghawth R. Women's satisfaction with intrapartum care and its predictors at Harar hospitals, eastern Ethiopia: a cross-sectional study. *Nurs Res Rev*. 2018; 9:1–11.
41. Demas T, Getinet T, Bekele D, Gishu T, Birara M, Abeje Y. Women's satisfaction with intrapartum care in St Paul's hospital millennium medical college Addis Ababa Ethiopia: a cross sectional study. *BMC Pregnancy Childbirth*. 2017;17(1):1–8.
42. Edaso AU, Teshome GS. Mothers' Satisfaction With Delivery Services and Associated Factors at Health Institutions in West Arsi, Oromia Regional State, Ethiopia. *MOJ Womens Heal*. 2019;8(1):1–8.
43. Shifraw T, Berhane Y, Gulema H, Kendall T, Austin A. A qualitative study on factors that influence women's choice of delivery in health facilities in Addis Ababa, Ethiopia. *BMC Pregnancy Childbirth* [Internet] 2016;16(1):1–6.
44. WhiteRibbonAlliance(WRA). Respectful maternity care campaign update April 2015; 2015. p. 1–3. Available from: whiteribbonalliance.org.

45. F. Assefa, A. Mosse, and Y. H/Michael, "Assessment of clients' satisfaction with health service deliveries at Jimma university specialized hospital," *Ethiopian Journal of Health Sciences*, vol. 21, no. 2, 2011.
46. Guest M, Stamp G (2009) South Australian rural women's views of their pregnancy, birthing and postnatal care. *Rural and Remote Health* 9: 1–9.
47. Bulto GA, Demissie DB, Tasu TL, Demisse GA, Mother's satisfaction with the existing labor and delivery care services at public health facilities in West Shewa zone, Oromia region, Ethiopia, 2018.
48. Khitam ISM, Insaf S, Caroline H, Debra C. Womens satisfaction with hospitalbased intrapartum care: a Jordanian study. *Int J Nurs Midwifery*. 2014;6(3): 32–9.
49. Adhikary G, Shawon MSR, Ali MW, et al. Factors influencing patients' satisfaction at different levels of health facilities in Bangladesh: results from patient exit interviews. *PLoS One*. 2018;13(5):e0196643. doi:10.1371/journal.pone.0196643
50. Quality Services Guides Innovative and Quality Services Treasury Board Secretariat (613) 954-9094. Cited date: 26 June 2015. http://www.iccsisac.org/en/pubs/QS_Guide.pdf
51. Babure ZK, Assefa JF, Weldemariam TD, Maternal Satisfaction and Associated Factors towards Delivery Service among Mothers Who Gave Birth at Nekemte Specialized Hospital, Nekemte Town, East Wollega Zone, Oromia Regional State, Western Ethiopia, 2019: A Cross sectional Study Design
52. Gejea T, Abadiga M, Hasen T, Maternal Satisfaction with Delivery Services of Government Hospitals in Ambo Town, West Shoa Zone, Oromia Region, Ethiopia, 2020.
53. Mocumbi S, Högberg U, Lampa E, Sacoor C, Valá A, Bergström A, et al. Mothers' satisfaction with care during facility-based childbirth: a crosssectional survey in southern Mozambique. *BMC Pregnancy Childbirth*. 2019; 19:303.
54. Panth A, Kafle P. Maternal satisfaction on delivery service among postnatal mothers in a government hospital. *Mid-Western Nepal Obstet Gynecol Int*. 2018;2018:1–11.
55. Silesh M, Lemma T (2021) Maternal satisfaction with intrapartum care and associated factors among postpartum women at public hospitals of North Shoa Zone Ethiopia. *PLOS ONE* 16(12): e0260710. <https://doi.org/10.1371/journal.pone.0260710>

56. Haile Tadesse B., “Mothers’ Satisfaction with Institutional Delivery Service in Public Health Facilities of Omo Nada District, Jimma Zone,” *Clin. Med. Res.*, vol. 6, no. 1, p. 23, 2017.
57. Hodnett ED, Gates S, Justus Hofmeyr G, Sakala C. Continuous support for women during childbirth. *Cochrane Database Syst Rev*. 2014;10(25):1–59.
58. Kabakian-Khasholian T, Campbell O, Shediak-Rizkallah M, Ghorayeb F. Women’s experiences of maternity care: satisfaction or passivity? *Soc Sci Med*. 2000;51:103–13.

9. ANNEXES

ANNEX 1: CONSENT – ENGLISH VERSION

Introduction

My name is Dr. Ephrem Tumsido, I am a Doctor of Medicine currently specializing in Obstetrics and Gynecology. I am now in my 4th year of study. My thesis is on level of maternal satisfaction during labor and delivery care and associated factors at Ayder Comprehensive Specialized Hospital. I am kindly requesting you to be part of my study.

Consent

I have been well aware of that this research undertaking is for a partial fulfillment of a specialty degree in Obstetrics and Gynecology which is fully supported and coordinated by the department of Obstetrics and Gynecology, School of Medicine, College of Health Sciences and the designate principal investigator is Ephrem Tumsido, M.D. I have been fully informed in the language I understand about the research project objectives.

I have been informed that all the information I shall provide to the interviewer will be kept confidential. I understood that the research has no any risk. I also knew that I have the right to withhold information, skip questions to answer or to withdraw from the study any time. I have acquainted and nobody will impose me to explain the reason of withdrawal. I am also enlightened that there would be no effect in my health benefit or other administrative effect that I get from the refuge.

I have assured that I have the right to ask information that is not clear about the research before and or during the research work.

I have read this form, or it has been read to me in the language I comprehend and understood the condition stated above, therefore, I am willing and confirm my participation by signing the consent.

Signature of the participant _____

Level of maternal satisfaction during labor and delivery care and associated factors at ACSH

Socio-demographic characteristics

- ### Obstetric Profile:

- 32

- Obstetric risks
 - A. APH
 - B. Hypertensive disorders of pregnancy
 - C. Preterm birth
 - D. PPH
 - E. Other _____

Institutional and staff related factors

- Is this your first visit to ACSH for labor and delivery care?
A. Yes B. No
- Reasons of choosing the facility (ACSH) for labor and delivery care
A. My self B. Family C. referral D. Other reason: i.e., friends
- How many health professional was following you during labor and delivery? _____
- Were the provider encouraging and reassuring during labor and delivery?
A. Yes B. No
- Do you think you were subjected to any type of abuse? (Has any provider yelled at you, insulted, threatened or humiliated you, denied provision of care, pushed you, harmed you, or done a digital vaginal examination in a painful way?)
A. Yes B. No
- Are you allowed someone (husband or any other family) to accompany you during labor and delivery care?
A. Yes B. No
- Who attended the delivery (sex of health professional)?
A. Male B. Female
- Which health professional do you prefer?
A. Male B. Female C. No preference
- Time of delivery
A. Day time B. Night time
- Was there any payment for the delivery process?
A. Yes B. No
- Do you recommend others to come here for labor and delivery services?
A. Yes B. No

Satisfaction assessment

- Satisfaction with facility distance
A. very satisfied B. satisfied C. neutral D. dissatisfied E. very dissatisfied
- Satisfaction with time spent before seen by Midwife or Doctor
A. very satisfied B. satisfied C. neutral D. dissatisfied E. very dissatisfied
- Your level of satisfaction with privacy assurance during physical exam and delivery
A. very satisfied B. satisfied C. neutral D. dissatisfied E. very dissatisfied
- Satisfaction with involvement in the decision making process and/ or management of your own labor and delivery care?
A. very satisfied B. satisfied C. neutral D. dissatisfied E. very dissatisfied
- Satisfaction with periodic updates about the treatment given and/ or progress of labor
A. very satisfied B. satisfied C. neutral D. dissatisfied E. very dissatisfied
- Satisfaction with Courtesy and respect during labor and delivery service
A. very satisfied B. satisfied C. neutral D. dissatisfied E. very dissatisfied
- Satisfaction with availability of laboratory services, drugs and other supplies
A. very satisfied B. satisfied C. neutral D. dissatisfied E. very dissatisfied