

Maternal Satisfaction on Labor and Delivery Services & Associated Factors at Public Health Facilities of Arbaminch Town, Southwest Ethiopia, 2022

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Abstract

Background: Maternal satisfaction with delivery care at public healthcare facilities is one of the most important indicators for determining delivery care performance. Knowledge gained from this study will assist healthcare providers in identifying aspects of care that produce a high degree of patient satisfaction.

Objective: To assess maternal satisfaction during delivery service at Arbaminch public healthcare facilities from 06/08/22 - 07/06/22 G.C.

Methods and Materials: An Institutional cross-sectional study assessed maternal satisfaction with delivery service and associated factors among postnatal mothers. Systematic random sampling was used to select 320 mothers from 2 hospitals and two health centers. Data was collected using an interviewer-administered structured questionnaire. Data was entered and analyzed using SPSS version 25. Bivariate and multivariate logistic regressions were applied at 95% CI.

Result: This study's finding indicated an overall maternal satisfaction of 78%. Mothers who didn't attend formal education were 11.6 times more satisfied than those who are educated AOR (95%CI) 11.620(1.012-133.043). Mothers with a history of ANC follow-up were 7.3 times more confident with labor and delivery services than those without ANC follow-up AOR (95%CI) 7.352(1.098-49.242). Mothers who received an explanation about their labor progress in their local and clear language were 14.2 times more satisfied than those who did not get an explanation AOR (95%CI) 14.186(1.535-376.465)

Conclusion: Educational status, fetal outcome, ANC follow-up, payment, waiting time, explanation about labor, and privacy were strongly associated with maternal satisfaction.

Recommendation: Health facilities need to make further efforts to improve maternal satisfaction levels by increasing ANC follow-up, assuring maternal privacy, and providing payment-free labor and delivery services. Health professionals should also get training on how maternal satisfaction with labor and delivery services is a factor in their job performance.

Keywords: Maternal Satisfaction, Labor and Delivery Service, Public Health Facility.

List of Abbreviations and Acronyms

- **AGH:** Arbaminch General Hospital
- **ANC:** Antenatal Care
- **CHS:** College of Health Science
- **ETB:** Ethiopian Birr
- **EDHS:** Ethiopian Demographic and Health Survey
- **MMR:** Maternal Mortality Rate
- **MWH:** Maternity Waiting Home
- **SPHMMC:** St. Paul's Hospital Millennium Medical College
- **SPSS:** Statistical Package for Social Sciences
- **WHO:** World Health Organization
- **H.C:** Health center

Introduction

Background

Maternal satisfaction is a multidimensional concept influenced by the overall healthcare system and is the most frequently reported indicator in evaluating the quality of maternity services [1, 2]. Satisfaction is a statement reporting the quality of service and the relationship between caregiver and patient, measured by comparing quality services and patient expectations [3]. Therefore, it reflects the gap between the expected service and the service experience from the client's point of view [4].

Maternal satisfaction is the level of satisfaction that delivering mothers experience after using the delivery service, and it occurs when maternal expectations are met [5]. Patient perceptions of health care have increasingly become an important indication for determining the quality of health services, making them integral components of monitoring and evaluation tools for health care delivery [6-8]. Maternal health care service is one of the most effective health interventions for preventing maternal morbidity and reducing maternal mortality [9]. Skilled birth attendance during pregnancy ensures women's access to a continuum of care, including appropriate management of pregnancy, delivery, and the postpartum period, together with access to lifesaving obstetric care when complications arise. This is important to lower health risks and mortality among mothers [10]. Skilled care before, during, and after childbirth can save the lives of women and newborns [11].

To decrease maternal morbidity and mortality, robust health systems offering accessible, quality, and satisfactory maternal health care are needed [12].

Statement of the Problem

World Health Organization reports in 2017, approximately 810 women died every day from preventable causes related to pregnancy and childbirth, and almost 94% of all maternal deaths occur in low and lower-middle-income countries. Sub-Saharan Africa and Southern Asia accounted for approximately 86% (254,000) of the estimated global maternal deaths in 2017. Since 2000, Ethiopia has reduced maternal and child mortality by half, but a maternal mortality rate of 412 per 100,000 live births and a child mortality rate of 67 per 1,000 are still too high [13].

Maternal deaths result from a wide range of direct and indirect causes. Maternal deaths due to direct causes Account for 80% of the total global population. The direct causes include hemorrhage, infection, unsafe abortion, hypertensive disorders of pregnancy, and obstructed labor. The majority of maternal deaths, 61%, occur in the postpartum period, and more than half of these take place within a day of delivery. Many of these deaths could be avoided if preventive measures and care were taken during pregnancy, delivery, and the postpartum period [14].

The Ethiopian government and international organizations are working to make hospital delivery services accessible and usable for all pregnant women, but EDHS 2016 reports that in Ethiopia, the proportion of births by skilled health professionals is still deficient (27.7%) [15]. The reasons forwarded by researchers for the higher maternal mortality and lower coverage of skilled delivery in Ethiopia include mothers' unhappy health institutional delivery experience [16, 17]

There needs to be more than the level of satisfaction among laboring mothers in African countries; only 51.9% and 56% of mothers were satisfied with delivery services in South Africa and Kenya, respectively [8, 19]. Ethiopian studies done in maternity referral hospitals in Addis Ababa show that the proportion of mothers who are completely satisfied with health care ranges between 2.4% and 21%. [20]

Maternal satisfaction with labor and delivery service may have immediate and long-term effects on her health and subsequent utilization of services; in fact, the satisfaction of clients can predict their future utilization of healthcare, compliance with current treatment, continuity of care, and ultimately, the effectiveness of care [21].

Multiple factors that affect the level of maternal satisfaction were determined in previous studies. The major classifications are structure, process, outcome, and other factors such as sociodemographics and convenience of access. However, studies showed that there was still a massive gap between the desired healthcare quality outcomes and the experienced quality of healthcare [22].

Causes of maternal dissatisfaction with labor and delivery services may include the unwanted status of pregnancy, complicated feto-maternal outcome, and shortage of technical skills among providers, inadequate counseling and empathy from service providers and poor infrastructure of health institutions. This may result in poorer postnatal psychological adjustment, poor adherence to the medical recommendation, higher rate of future abortion, preference for caesarian section, negative feelings towards the infant and breastfeeding problem [23]. Delivering mothers are often vulnerable and anxious when they need to use hospitals. A satisfaction survey helps to understand the client's needs and concerns better, improving healthcare outcomes and standards of services in line with maternal needs. Monitoring client satisfaction and responding to problems can improve client loyalty, increase the number of clients that share their views

and opinions on social networking that are outside the hospital's control, and increase profitability in both private and public hospital maternal mortality [24].

The level of satisfaction with labor and delivery services in public hospitals was low, and there is still some gap in identifying factors that contribute to low client satisfaction [25]. Therefore, this study will aim to assess maternal satisfaction with labor and delivery services and associated factors at public health facilities of Arbaminch town.

Significance of the Study

Identifying maternal satisfaction is an important measure of the quality of labor and delivery services because the data will provide information for service providers, decision-makers, local planners, and other stakeholders to help them understand to what extent the service is functioning according to clients' Perceptions and what changes might be required to meet clients' needs and increase utilization of the service by the target population.

Understanding the mother's point of view helps to identify the gap and provide information about labor and delivery services and the changes that might be necessary to meet the mother's expectations, which is important for the health of mothers and newborns.

Local planners and decision-makers will use the findings of this study to improve the quality of institutional delivery service based on the data provided on client satisfaction with labor and delivery service at the selected public hospital in some future period. In addition, this study will be used as baseline data for future studies in the context of maternal satisfaction in the health delivery system.

Although a study was conducted on maternal satisfaction with labor and delivery care provision and associated factors at Arbaminch town and the surrounding district in 2014 (8 years ago), it was carried out in 2014. Therefore, this study aims to address the changed population size, the quality and number of public health-care facilities, and sociodemographic and economic factors.

Literature Review

Introduction

Client Satisfaction is a meaningful output indicator of quality health care. Several studies have reported that satisfied service users are more likely to utilize health services, comply with services and follow-ups, and continue with health care. Satisfaction with the childbirth experience is important to the woman, the infant's health and well-being, and the mother-infant relationship [26].

Studies reported that a mother's positive Perception of her birth experience has been linked to positive feelings toward her infant and adaptation to the mothering role [27]. In addition, maternal satisfaction with maternal care is critical to enhancing the utilization of maternal health care services and ensuring improved health outcomes. It is also indispensable for identifying areas of quality improvement in maternal care [28].

Maternal Satisfaction with Delivery Services

A population-based survey conducted in Sweden on women's

satisfaction with intrapartum care showed that 67% of the women were satisfied. Among these, 20% were fairly satisfied with the overall dimensions of care (interpersonal care, information, and involvement in decision-making and physical birth environment), and 47% were very or fairly satisfied in various combinations. The rest, 33%, were dissatisfied [29].

According to studies conducted in Dhaka, Bangladesh, and Pakistan, maternal satisfaction with delivery care was 92.3% and 61% [30, 31].

In another study on maternal satisfaction with maternity care services in Bharatpur Hospital Chitwan, Nepal, about 55.5% of the respondents were satisfied, and 40.7% were delighted with maternity services. Among the respondents who were highly satisfied with maternity services were those who were found in the item's privacy maintained during the procedure and information provided about postnatal and newborn care [32].

In a study on maternal satisfaction among laboring mothers in African countries, 51.9% and 89.34% of mothers were satisfied with delivery services in South Africa and Rwanda, respectively [33, 34].

In a review of literature from developing countries on determinants of women's satisfaction with maternal health care, 24 studies found that more than 75% of the women were satisfied with the care provided, 10 studies found that 50-75% were satisfied, and 3 studies found that less than 50% were satisfied [35].

In a study done in Queen Elizabeth Central Hospital Maternity Unit in Malawi to measure women's satisfaction, it was found that the majority of women (97.3%) were satisfied with the care they received from admission to labor and delivery and the immediate postpartum period. Around 99.1% of respondents were satisfied with their relationship/interaction with their healthcare providers. Less than 3% of the participants disliked delayed attendance, infrequent doctors/nurses' reviews, or unnecessarily prolonged stays, and less than 20% of the respondents were dissatisfied with hygiene in the toilets and postnatal rooms [36].

A community-based study conducted in Kenya among women who delivered in health facilities showed that over half (56%) of women are satisfied with delivery care. Approximately 60% of women giving birth at government hospitals responded 'very likely' to each of the two questions about how likely they would recommend the facility to others or deliver there again [37].

In a systematic review and meta-analysis on Women's satisfaction with existing labor and delivery services in Ethiopia, the overall pooled prevalence of women's satisfaction with existing labor and delivery services in Ethiopia was 70.54%. In these meta-analyses, duration of labor, free service, keeping privacy, time to be seen by healthcare provider <20min, planned delivery in the health institution, antenatal care, and maternal education were the factors mainly associated with women's satisfaction with existing labor and delivery services [38].

In a facility-based study conducted among health facilities in West Arsi, Oromia region, 74.6% of overall maternal satisfaction level has been reported [39]. In another study conducted in Debre Markos, the overall satisfaction level with delivery ser-

vice was found to be 81.7% [40]. The study done on satisfaction with institutional delivery service and factors affecting their satisfaction among mothers who gave birth in public health centers of Omo Nada district, southwest Ethiopia, shows the overall satisfaction with institutional delivery service was 65.2% [41].

According to a study conducted at Public Health Centers in Bench-Maji Zone, mothers' satisfaction with delivery service and the associated factors was 63.25% [42].

In a study on factors associated with client satisfaction with institutional delivery care at public health facilities in South Ethiopia, 67.9% of mothers were satisfied with delivery care services in the Wolaita zone. 74.7% of mothers would select the same facility for future deliveries, and 72.8% would recommend it to others based on their most recent delivery experience [43].

In a study conducted among public health facilities in Arbaminch town and the surrounding district Gamo Gofa zone, 90.2 % of the respondents were satisfied with the labor and delivery care service provided [44].

Factors Affecting Maternal Satisfaction

Sociodemographic Factors

In a study conducted in Iran, there was a positive and significant correlation between satisfaction rate and the age of patients (the older patients, the higher satisfaction). There was also an essential difference between satisfaction rate and educational level in that patients with an associate degree were the most satisfied [45]. In a study conducted in West Arsi, Oromia region, maternal age, marital status, educational status, and monthly income were also significantly associated with mothers' satisfaction with delivery service at health institutions. Mothers whose age was less than 20 were less likely to be satisfied with delivery service than those whose ages were 35-49; married mothers were three times more satisfied than widowed mothers, and mothers whose educational status was 1-6 and 7-12 were less confident than mothers whose educational status was diploma and above. However, in a study conducted in public health facilities at Arba Minch town and the surrounding district, Gamo Gofa zone mothers who did not attend formal education were eight times more likely to be satisfied than those attending college and university education.

Structural Factors

Physical Environment

Good building infrastructure, including water supply, electricity, adequate beds, adequate room space, seating arrangement, waiting areas, and cleanliness of the facility, were significant in women's upbeat assessment of the health facility and maternal care services. In research done in public and private hospitals of Addis Ababa, only 53.47% of the mothers agreed that the hospitals have adequate space and number of beds, which were significant predictors for mothers to perceive the higher quality of care AOR 3.8 [2.4-6.16] [46].

Cleanliness

Studies from India and Iran indicated that facility cleanliness was found to impact the client's concerns about their quality of care [47]. In a study conducted in hospitals in the Wolayita zone,

97.4% were satisfied with the overall cleanliness and comfort of the hospital compound during their Delivery [48].

Availability and Adequacy of Resources

A study done in Malawi showed that the inadequacy of health-care workers and issues related to their retention were important barriers to quality of care [49]. The non-availability of nursing personnel and the inadequacy of staff to attend to women, especially during labor, was reported as a cause for dissatisfaction with services in Ghana and Nigeria [50, 51].

A study conducted in South Africa revealed that availability and access to drugs were among the most suggested priorities for the improvement of public health services to bring client satisfaction to health institutions [52]. Availability of prescription drugs, essential equipment like blood pressure monitors or thermometers, lab services, and emergency supplies were significant predictors of satisfaction with care in research conducted in public and private hospitals of Addis Ababa.

Process Factors

Promptness of Care

Promptness of care implies the Provision of care without delay, and a literature review from developing countries showed that prolonged waiting time is an important determinant of satisfaction with services.

Interpersonal Behavior

Interpersonal behavior was the most widely reported determinant, with the largest body of evidence generated around provider behavior regarding courtesy and non-abuse. Other aspects of interpersonal behavior included therapeutic communication (listening, politeness, prompt pain relief, kindness, approachability and smiling demeanor), staff confidence and competence and encouragement to laboring women.

In a study conducted in urban and peri-urban areas of Gonder town, physical abuse by health workers, unnecessary referrals from health centers to hospitals and perceived "harsh" medical stuff was the cause of maternal dissatisfaction. It led many to choose the comfort and privacy of their own homes for childbirth rather than opt for skilled attendants [53].

Privacy

Privacy is a crucial requirement of women utilizing maternal care services during delivery. In a study conducted in government hospitals in Ambo town, women who perceived privacy during a physical examination and delivery were more satisfied than those who perceived the absence of privacy. This might be because not maintaining privacy during physical examination increases women's discomfort and leads to decreased satisfaction with health care delivery service [54].

Cognitive Support

From the literature review on developing countries, providing cognitive support through effective communication and sharing adequate information with women about their condition or the care required was another critical determinant of satisfaction. In a study conducted in South Africa, lack of communication and relevant information to patients was identified as a significant issue affecting quality customer satisfaction and, thus, quality of service [55].

Outcome Factors

Maternal and newborn outcomes, in terms of survival and health, affected satisfaction in research conducted in West Arsi, Oromia. In the study, mothers with normal delivery and fetal outcomes were two times more satisfied than those with complicated delivery and fetal outcomes.

Obstetric Factors

The study done on satisfaction with institutional delivery service and factors affecting their satisfaction among mothers who gave birth in public health centers of Omo Nada district, southwest Ethiopia, showed ANC attendance, utilization of maternity waiting home (MWH) service, the planned status of the pregnancy, distance and cleanliness of the toilet during delivery service were significant predictors of mothers' satisfaction with the service. Utilization of MWH and ANC attendance during pregnancy significantly increases mothers' satisfaction with institutional delivery service. On the other hand, mothers with unplanned pregnancies showed decreased satisfaction.

A study conducted by 13 public health facilities in Gamo Gofa zone relieved that mode of delivery is associated with client satisfaction; those participants who delivered with cesarean section were four times more likely satisfied than those who delivered vaginally (AOR 3.6 95% CI; 1.44–9.06).

Other Factors

Cost of Care

In a study conducted among health facilities in Arbaminch and the surrounding district Gamo Gofa zone, the level of satisfaction is also related to the payment status; nonpaying clients were more likely to be satisfied than paying clients.

Laboring Time

In a study conducted in Debre Markos town and Wolayita Zone, laboring time was significantly associated with mothers' satisfaction with delivery services, with mothers who stayed in labor pain for less time being more satisfied.

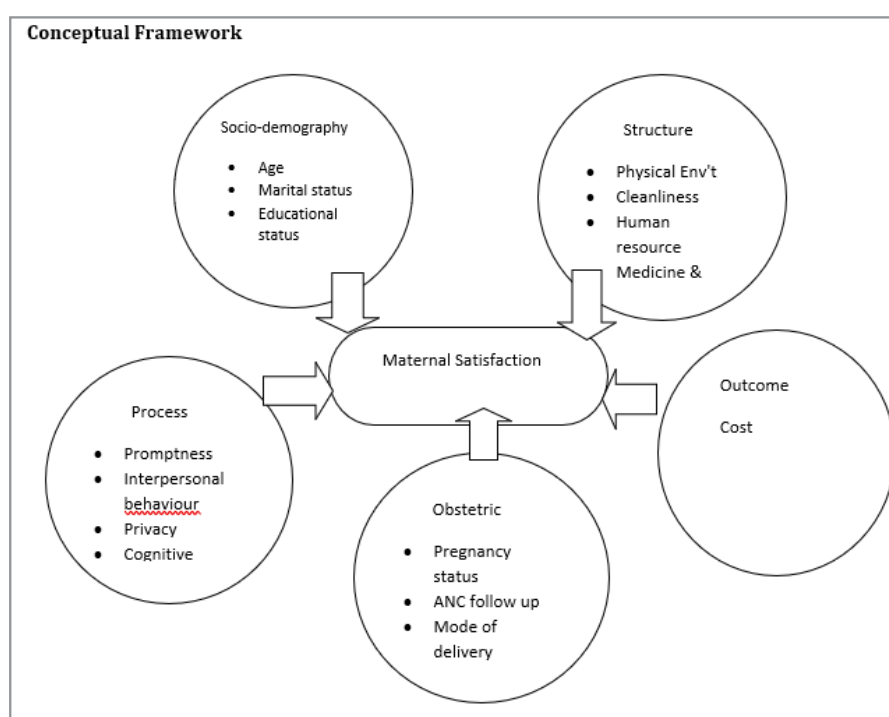


Figure 1: Conceptual Framework Showing Factors Affecting Maternal Satisfaction (Adapted)

Objective

• General Objective

To assess maternal satisfaction with labor and delivery services and its associated factors among those who deliver at Arbaminch public healthcare facilities, SNNPR, South West Ethiopia, 2022 G.C.

• Specific objectives

To determine maternal satisfaction with labor and delivery services at Arbaminch public healthcare facilities, SNNPR, South West Ethiopia, 2022 G.C.

To identify factors affecting maternal satisfaction with labor and delivery services at Arbaminch public healthcare facilities, SNNPR, South West Ethiopia, and 2022 G.C.

Methods and Materials

Study Area and Period

The study was conducted from (06/08/2022 -07/06/22 G.C.) in Arba Minch town public healthcare facilities. Arba Minch Town is located in Gamo Zone, Southern Nations Nationalities People's Region 505 km south of Addis Ababa, the country's capital city. Arba Minch Town has four sub-cities; within the four sub-cities, it has 12 administrative kebeles. According to the information obtained from the District Health Office, the total population size of the Town was estimated to be 118040. Among these, 27503 was the reproductive age group, and the estimated number of deliveries was 4084 in 2020 G.C. There are two hospitals, two health centers, 20

clinics, 11 health posts and 13 pharmacies that provide health service for the community.

Study Design

An institutional-based cross-sectional study was employed at public healthcare facilities in Arbaminch town.

Populations

Source Population

All mothers who visited public healthcare facilities in Arbaminch town for delivery service.

Study Population

All mothers who gave birth at public healthcare facilities in Arbaminch town and present postnatally at the delivery ward during the time of data collection

Inclusion and Exclusion Criteria

Inclusion Criteria

Mothers who gave birth at public healthcare facilities in Arbaminch town

Exclusion Criteria

Critically ill and mentally ill mothers during the data collection period were excluded from the study.

Sample Size Determination and Sampling Procedure

Sample Size Determination

A single population proportion formula was used with the following parameters in consideration,

- n = sample size
- P = proportion of postnatal mothers satisfied with hospital delivery care service = 74.6% (study from west Arsi zone, (39))
- D = margin of error = 0.05 with 95% confidence interval

- $Z_{\alpha/2} = 1.96$ (level of significance)
- $n = (z_{\alpha/2})^2 p(1-p) / d^2 = (1.96)^2 * 0.746(1-0.746) / (0.05)^2 = 291$

By considering 10% non-response rates and yielding a final Sample size of 320

Sampling Techniques

In this study, a systematic random sampling technique was conducted. The total sample was allocated proportionally to the number of average expected deliveries within one month in government healthcare facilities by reviewing the annual document of average monthly deliveries attended in 2021 G.C.

The average monthly deliveries in 2021 G.C. at AGH, Dillfana Primary Hospital, Secha HC and Weze HC were 402, 113, 82 and 67, respectively, with total deliveries of 664. A proportionate allocation formula allocates the sample size of each public healthcare facility.

- $n_i = n/N * N_i$
- n = total sample size to be selected
- N = total population
- N_i = total population of each health facility
- n_i = sample size from each health facility

Therefore, the sample size for AGH, Dillfana Primary Hospital, Secha HC and Weze HC was 194, 54, 40 and 32, respectively.

The sampling interval (K) was determined by dividing the average expected deliveries within one month in each health facility by the sample size (i.e., $e. 402/194, 113/54, 82/40, 67/32$). Then $K=2$ for each healthcare facility.

The data was collected from mothers at every K interval daily for two weeks (from 15/10/14 - 29/10/14 E.C.) until the required sample was allocated and maintained.

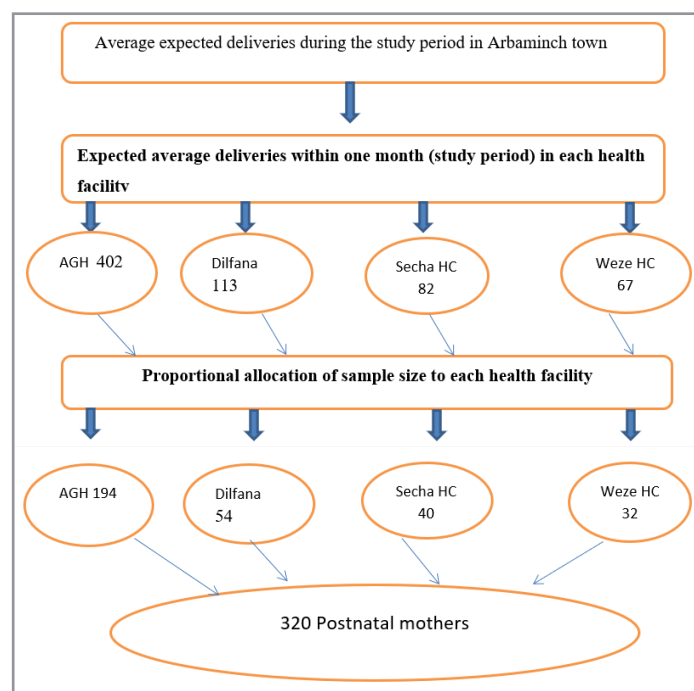


Figure 2: Diagrammatic Presentation of Sampling Procedures

Variables

Dependent Variable

Maternal satisfaction

Independent Variables

Sociodemographic Variables

Maternal age, mother's educational and occupational status, marital status, religion, income,

Structural Factors

Good building infrastructure having water supply, electricity, adequate beds, adequate room space, seating arrangement and waiting areas and cleanliness of the facility, availability and access to drugs

Process Factors

Privacy, waiting time, emotional support, promptness, Interpersonal behavior, cognitive support

Outcome Factors

Maternal and newborn outcomes

Obstetric Factors

ANC attendance, utilization of maternity waiting home (MWH) service, the planned status of the pregnancy, distance and cleanliness of the toilet during delivery service

Other Factors

Cost of care, laboring time of mothers

Operational Definitions

- **Maternal Satisfaction:** Mothers expressed satisfaction with labor and delivery service.
- **Satisfied:** A mother is satisfied if she responds higher than the mean score ($> 75\%$).
- **Unsatisfied:** A mother is unsatisfied if she responds less than the mean score ($< 75\%$).
- **Delivery service:** A service provided to the mother from admission until discharge.
- **Waiting time:** Perceived time interval from the arrival of the mother at the hospital to the time seen by a health professional.
- **Privacy:** The state of being free from being observed and disturbed by others.

Data Collection Tool and Procedures

The data was collected using a structured questionnaire adapted from other similar studies, which was used to collect data through a pretested interviewer-administered questionnaire. The questionnaire was prepared in English and translated into Amharic.

Data Quality Management

The questionnaire was pretested in nearby district government health facilities by principal investigators before collecting data on 5% of the total sample size. Revisions and adjustments were made after the pretest.

Data Processing and Analysis

The data was entered, coded, cleaned and analyzed using SPSS statistical software version 25.

Descriptive statistics were computed, and the overall level of maternal satisfaction was determined by categorizing mothers who scored 75% and above for the 13 items of the satisfaction questionnaire under "satisfied" and those who scored below 75% under "unsatisfied."

The dependent variable was maternal satisfaction with delivery services. A 5-point Likert scale was used to measure maternal satisfaction. During analysis, responses of 'very satisfied' and 'satisfied' were classified as satisfied, and responses of 'very dissatisfied,' 'dissatisfied,' and 'neutral' were classified as unsatisfied. Neutral responses were classified as dissatisfied, considering that they may represent a fearful way of expressing dissatisfaction.

A bivariate analysis was carried out to assess the association of different independent variables with the outcome variable. Also, multivariate analysis was performed to identify the most important predictors of maternal satisfaction and only variables with p -value < 0.25 were taken to multivariate analysis.

Ethical Consideration

Permission was obtained from the College of Medicine and Health Sciences, Arba Minch General Hospital. The first page of the questionnaire provided full information to the study participants regarding the purpose and nature of the research. Verbal consent was obtained from each participant. Participation in the study was voluntary, and participants were informed of their right not to participate and the right to withdraw from the study at any point.

Moreover, the confidentiality of the information was ensured through anonymous questionnaires and by keeping the data secure.

Dissemination of Result

The final report of the study will be presented and submitted to Arba Minch University College of Medicine and Health Science, Department of Public Health, for the final defense presentation. An attempt will be made to publish it in peer-reviewed national or international journals.

Result

Sociodemographic Characteristics

From the total 320 planned study participants, a complete response rate of 315(98.44%) was obtained. The mean age of participants was 28.52(S.D. ± 4.8). Of these, the majority, 293(93%), were married. About 121(38.4%) didn't attend formal education, and 79(25.1%) had a diploma or above.

Regarding occupation 159(50.5%) were housewife and 53(16.8%) were government employees. One hundred fifty-four (48.9%) had average monthly income between 3100-5000.

Table 1: Sociodemographic Characteristics of Mothers who Gave Among Public Health Facilities of Arbaminch Town, SN-NPR, Ethiopia, June 2020

Variables		Frequency(n)	Percent (%)
Age	18-25	82	26.0
	26-34	196	62.2
	>=35	37	11.7
Marital status	Single	12	3.8
	Married	293	93.0
	Divorced	10	3.2
Educational status	No formal education	121	38.4
	Grade 1-8	96	30.5
	Grade 8-12	19	6
	Diploma	63	20.0
	Degree& above	16	5.1
Occupation	Gov'tal employee	53	16.8
	Private employee	103	32.7
	Housewife	159	50.5
Average monthly household income	500-1500	3	1.0
	1600-3000	133	42.2
	3100-5000	154	48.9
	>5000	25	7.9

Obstetric History of Respondents

Among the total participants, 77(24.4%) were primiparous, and 238(75.6%) of respondents had two or more delivery experiences. The majority of the pregnancies, 297(94.3%), were planned and wanted.

Two hundred seventy-five (87.3%) of participants gave birth by spontaneous vaginal delivery and 40(12.7%) were assisted by

instruments. Three hundred seven (97.5%) of mothers deliver without complication, the remaining 8(2.5%) with complication. The majority of the participants, 288(91.4%), had normal fetal outcomes, while 27(8.6%) had a stillbirth and neonatal death. About 274(87%) of participants had ANC follow-up. One hundred sixteen (36.8%) of mothers were admitted during 6 pm- 12 pm, 87(27.6%) during 12 am- 6 pm, 63(20%) during 6 am-12 am and 49(15.6%) during 12 pm-6 am.

Table 2: Obstetric History of Mothers who Gave Birth in Public Health Facilities of Arbaminch Town, SNNPR, Ethiopia, June 2022

Variables		Frequency(n)	Percent (%)
Parity	Primiparous	77	24.4
	Multiparous	238	75.6
Status of pregnancy	Wanted	297	94.3
	Unwanted	18	5.7
Mode of delivery	SVD	275	87.3
	Assisted	40	12.7
Maternal outcome	Healthy	307	97.5
	Complicated	8	2.5
Fetal outcome	live birth	288	91.4
	Stillbirth	23	7.3
	neonatal death	4	1.3
ANC follow up	Yes	274	87.0
	No	41	13.0
Time of admission	6 am- 12 am	63	20.0
	12 am- 6 pm	87	27.6
	6 pm- 12 pm	116	36.8
	12 pm- 6 am	49	15.6

Health Facility Structure Related Maternal Satisfaction

Among the total participants, 247(78.4%) were satisfied with the number of healthcare providers of labor and delivery services. Two hundred eighteen (69.2%) were satisfied with the availability and adequacy of medical supplies and drugs.

Two hundred four (64.8%) and two hundred and nine (67.6%) of the respondents were satisfied with the availability of labora-

tory investigations and the sufficiency and cleanliness of labor rooms, beds and spaces, respectively.

Only 89(28.3%) and 73(23.2%) of participants were satisfied with the availability and sanitation of toilets and showers, respectively.

Table 3: Health Facility Structure-related Satisfaction of Mothers who Gave Birth in Public Health Facilities of Arbaminch Town, SNNPR, Ethiopia, June 2022

Variables	Strongly satisfied	Satisfied	Neutral	Dissatisfied	Strongly dissatisfied
Satisfaction with the number of health provider	20(6.3%)	227(72.1%)	35(11.1%)	32(10.2%)	1(0.3%)
Satisfaction with medical supplies & drugs	18(5.7%)	200(63.5%)	47(14.9%)	47(14.9%)	3(1%)
Satisfaction with laboratory investigation	4(1.3%)	200(63.5%)	37(11.7%)	66(21%)	8(2.5%)
Satisfaction with rooms, beds& space	8(2.5%)	205(65.1%)	49(15.6%)	51(16.2%)	2(0.6%)
Satisfaction with the availability and sanitation of toilet	0	89(28.3%)	77(24.4%)	114(36.2%)	35(11.1%)
Satisfaction with the availability and sanitation of shower	0	73(23.2%)	108(34.3%)	97(30.8%)	37(11.7%)
Satisfaction with the comfort of the waiting area	2(0.6%)	166(52.7%)	63(20%)	63(20%)	21(6.7%)

Process and Outcome-related Maternal Satisfaction

From the total 315 respondents, 208(66%) of mothers wait 15-30 min, 47(14.9%) <15 min, 41(13%) 30-60 min and 19(6.1%) >1hr before receiving care. Two hundred twenty-eight (72.4%) were satisfied with their time before receiving care.

Two hundred seventy-two (86.4%) of participants agreed that they were asked permission before applying any procedure or examination, while the remaining 43(13.6%) disagreed. Two hundred sixty-six (84.4%) of participants agreed that healthcare workers explained the progress of labor in their local and clear language, while the remaining 49(15.6%) disagreed.

Two hundred seventy-six (87.6%) of participants reported that health workers encouraged, praised and reassured them during labor and delivery. Two hundred sixty-seven (85.3%) of participants were satisfied with the respect and courtesy of the health care provider.

Two hundred seventy-two (86.4%) participants were satisfied with the amount of time spent on the examination, and two hundred ninety-three (93%) participants were satisfied with the competency and confidence of the care provider.

Most participants, 285(90.5%), were satisfied with the privacy measures taken during the examination.

From the total 315 respondents, 215(68.3%) of deliveries were attended by female healthcare providers, while the rest 100(31.7%) were attended by male healthcare providers. Two hundred sixty-two (73.2%) of respondents were satisfied with the sex of the health care provider.

Two hundred eighty-eight (91.4%) of participants' newborns were healthy, while the remaining 27(8.6%) had complications. Three hundred eight (97.8%) of the mothers believed that their baby had received enough care and support, while the rest seven (2.2%) didn't.

Table 4: Process-related Satisfaction of Mothers who Gave Birth in Public Health Facilities of Arbaminch Town, SNNPR, Ethiopia, June 2022

Variables	Strongly satisfied	Satisfied	Neutral	Dissatisfied	Strongly dissatisfied
Satisfaction with waiting time	19(6%)	209(66.4%)	33(10.5%)	54(17.1%)	0
Satisfaction with respect and courtesy	17(5.4%)	251(79.7%)	13(4.1%)	33(10.5%)	1(0.3%)
Satisfaction with the amount of time spent on the examination	12(3.8%)	260(82.6%)	31(9.8%)	12(3.8%)	0
Satisfaction with competency and confidence	36(11.4%)	257(81.6%)	16(5.1%)	6(1.9%)	0
Satisfaction with privacy during examination	9(2.9%)	276(87.6%)	11(3.5%)	17(5.4%)	2(0.6%)
Satisfaction with the sex of the care provider	18(5.7%)	244(77.5%)	41(13%)	12(3.8%)	0

Maternal satisfaction toward overall labor and delivery services

Two hundred forty-five (77.8%) of the participants were satisfied with the overall care and support during labor and delivery services, while the remaining 70(22.2%) were dissatisfied.

Most of the participants, 259(82.2%), responded that they will seek delivery service in the same facility in the future, and 260(82.5%) will recommend the same facility to their families and relatives.

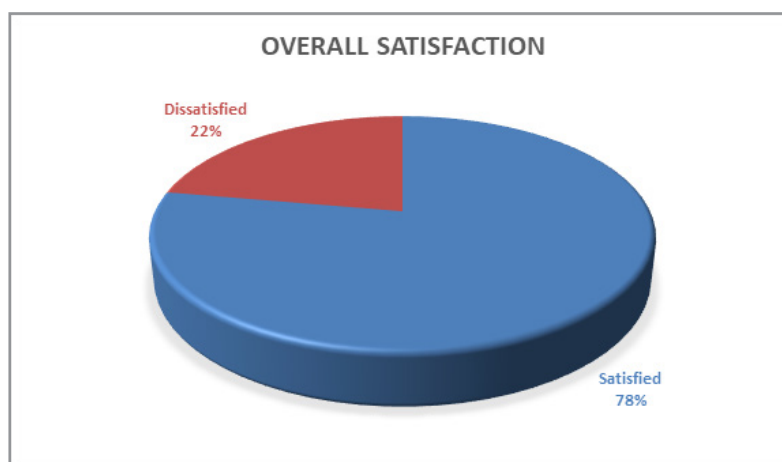


Figure 3: Pie Chart Showing the Overall Level of Maternal Satisfaction Towards labor and Delivery Services Among Public Health Facilities of Arbaminch Town, SNNPR, Ethiopia, June 2022

Factors Affecting Maternal Satisfaction with Labor and Delivery Services

Thirty-four independent variables were analyzed by logistic regression with the dependent variable. Twenty-two variables that have a P value <0.25 were entered into multivariable logistic regression analysis. However, only seven variables were independent predictors, such as educational status, fetal outcome, ANC follow-up, payment, waiting time, explanation about labor, and measures to assure privacy.

Only educational status, fetal outcome, and ANC follow-up were strongly associated with maternal satisfaction, excluding the sociodemographic and obstetric characteristics of the mother.

Mothers who did not attend formal education were more satisfied with labor and delivery services than those who attended formal education. Mothers whose fetal outcome was live birth were more confident than those whose fetal outcomes were still-birth or neonatal death.

Mothers who had a history of ANC follow-up were more satisfied with labor and delivery services than those who had no history of ANC follow-up.

Mothers who did not pay for labor and delivery services were more satisfied than those who paid. Mothers who waited less than 15 minutes to be seen by the health care provider were more confident than those who waited more than an hour COR (95%CI) 35.889(6.994-184.169).

Mothers who received an explanation about their labor progress in their local and clear language were more satisfied than those who did not get an answer.

For those mothers, measures taken to assure their privacy were more satisfactory than those privacy measures not taken. COR (95%CI) 2.496(1.251-4.977) AOR (95%CI) 21.761(2.843-166.594).

Table 5: Factors Associated with Maternal Satisfaction with Labor and Delivery Services Among Public Health Facilities of Arbaminch Town, SNNPR, Ethiopia, June 2022

Variables	Maternal satisfaction		COR (95%CI)	AOR (95%CI)	P-value
	Satisfied (n, %)	Dissatisfied (n, %)			
Educational status					
No formal education	106 (87.6%)	15 (12.4%)	3.677(1.127-11.998)	11.620(1.012-133.043)	0.039
Educated	139 (71.6%)	55 (28.4%)	1	1	
Fetal outcome					
Normal	239 (83%)	49 (17%)	14.633 (1.491-143.625)	2.755 (1.209-23.059)	0.024
Other (stillbirth and neonatal death)	6 (22.2%)	21 (77.8%)	1	1	

ANC follow up					
Yes	222 (81%)	52 (19%)	3.341 (1.681-6.640)	7.352 (1.098-49.242)	0.04
No	23 (56%)	18 (44%)	1	1	
Payment					
Free	110 (88.7%)	14 (11.3%)	3.259 (1.723-6.165)	6.122 (1.336-28.050)	0.01
Paid	135 (70.7%)	56 (29.3%)	1	1	
Waiting time					
Satisfied	224 (91.4%)	21 (8.6%)	7.341 (1.499-35.946)	24.054 (1.051-385.577)	0.02
Dissatisfied	31 (44.3%)	39 (55.7%)	1	1	
Explanation about labor					
Agree	239 (97.6%)	6 (2.4%)	17.054 (6.524-44.582)	14.186 (1.535-376.465)	0.03
Disagree	48 (68.6%)	22 (31.4%)	1	1	
Measures to ensure privacy					
Yes	259 (94.9%)	14 (5.1%)	2.496 (1.251-4.977)	21.761 (2.843-166.594)	0.002
No	26 (61.9%)	16 (38.1%)	1	1	

Discussion

This study investigates maternal satisfaction with labor and delivery services and associated factors at public health facilities of Arbaminch town, Southwest Ethiopia. The study findings show that the majority of the respondents, 245 (77.8%), are satisfied with the overall health facility structures, care and support during labor and delivery services.

This study's findings are in line with those of a study conducted in Debre Markos Town, Northwest Ethiopia and Nepal. Their findings showed that overall satisfaction was 81.7% and 79.6%, respectively [56]. Similarly, this research supports the research conducted at public hospitals in Eastern Ethiopia, where overall satisfaction was 80% [57]. Furthermore, a similar supporting finding was noted in research conducted in Assela Hospital, Arsi zone, Oromia region, where the level of satisfaction was 80.7%.

On the contrary, this study's findings were higher than those of other studies conducted in Central Ethiopia, which indicated maternal satisfaction of 36.6%, in Mizan-Aman Town, which indicated maternal satisfaction of 30.4%, and in Yeka Sub City, Addis Ababa, which indicated a satisfaction level of 63% [58-60].

However, this study's findings are below those of a study conducted in Ambo Town, West Shoa Zone, Oromia Region, which accounted for 83.9%. Therefore, the alteration of the findings could be a good indicator of the difference in service provision, customers' expectations about the services or the kind of health facilities that the study area has acquired.

The study's logistic regression analysis indicates the significant causation of the seven variables, such as educational status, fetal outcome, having ANC follow-up, payment, waiting time, explanation about labor, and measures to assure privacy on maternal satisfaction.

The predictors are significantly associated with measuring satisfaction. For example, mothers who have no formal education have higher satisfaction rate (87.6%) which is 11.6 times more than those with formal education (71.6%) with [AOR (95%CI),

11.620(1.012-133.043)], as in a similar finding with a study conducted in North West Ethiopia which explained that women who had not formal education were 2.19 times more likely to be satisfied with the existing labor and delivery services than women who had formal education [61]. This could be explained by the tendency of more educated women to better understand health information and communication, which leads them to expect more services in the health institution, which diminishes the Perception of maternal satisfaction. Maternal satisfaction level for average fetal outcome accounts for a higher rate (2.3 times) than other (stillbirth and neonatal death) with [AOR (95%CI), 2.755(1.209-23.059)]. This could be because pregnant mothers wish to have a normal baby, so if they lose or have complications with their baby, the mother may believe that it is the fault of the healthcare professional who attended to her, resulting in maternal dissatisfaction. Similarly, mothers with ANC follow-ups have 7.3 times more satisfaction with [AOR (95%CI), 7.352(1.098-49.242)] than those with no ANC follow-ups. Likewise, mothers who did not pay for labor and delivery services were 3.2 times more satisfied than those who paid. Mothers who waited less than 15 minutes to be seen by the health care provider were 26.9 times more confident than those who waited more than an hour AOR (95%CI) 26.909(1.691-261.839), which supports the similar study conducted in Hawassa, South Ethiopia that explains getting attention within five minutes by health care providers after arrival at delivery ward is also associated with satisfaction [AOR = 5 (2.08-12.03)] [62]. This might be because the long waiting period resulted in dissatisfaction due to the absence of reassurance from the health care provider, failure to provide labor pain management and poor or absent waiting areas.

Mothers for whom measures were taken to assure their privacy were more satisfied than those privacy measures were not taken COR (95%CI) 2.496(1.251-4.977) AOR (95%CI) 21.761(2.843-166.594), which support similar study conducted at public hospitals in eastern Ethiopia showed mothers whose privacy assured were more satisfied with AOR (95% CI) 3.73(1.79-7.75). This might be due to the fact that not maintaining women's privacy during physical examination increases women's discomfort and leads to dissatisfaction.

In sum, based on the findings of this study, we have further strengthened the longstanding notion that maternal satisfaction with labor and delivery services is factor-dependent. In other words, mothers with good public health facilities will eventually become more satisfied with services than those with poorly delivered services, as we witnessed among the Arbaminch town respondents. Higher labor and delivery services give the possibility of higher customer satisfaction. Higher satisfaction also represents increased and better activities, a demand for more work, and a better reputation for service providers.

Strength and Limitations of the Study

Strengths

- The study has a high response rate; from the total 320 planned study participants, a complete response rate of 315 (98.44%) was obtained.
- The findings depict the actual practices of the study area using a rigorous scale of measures (logistic regression). Therefore, it is hoped that the predictors (validated seven items) can be employed more widely in future research.

Limitations

- Lack of external validity and bias-related issues. Since the respondents were interviewed within the hospitals, they may reply favoring the health professionals.

Conclusion

In conclusion, the overall maternal satisfaction with labor and delivery services among public health facilities in Arbaminch town was about 78%. Most participants were satisfied with the health care providers, medical and drug supplies and waiting time. On the contrary, the majority of the participants were dissatisfied with the availability and sanitation of the toilet. Maternal educational status, fetal outcome, antenatal care follow-up, service payment, waiting time, explanation about labor progress and assuring maternal privacy during labor and delivery were factors significantly associated with maternal satisfaction. Health facilities need further efforts to improve maternal satisfaction levels by increasing ANC follow-up, assuring maternal privacy, and providing payment-free labor and delivery services.

Recommendations

Based on the findings of this study, the following recommendations are forwarded:

Recommendation for Respective Health Care Facilities and Authorities

- Those health facilities should use screens and curtains to ensure clients' privacy where more than one woman is delivering in the same room.
- The health facilities should check and curb irregularities in supplies of medication/ delivery materials associated with deliveries to avoid informal payments. Thus, a complete application of cost-exempted services should be made for mothers coming for delivery.

Recommendation for Health Professionals

- They should explain labor progress to their clients in their local and explicit language.
- Should keep their respectful approaches and courtesies with clients.

- Further studies should be conducted using observational assessment to assess the quality of care given in the facilities.

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