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Proportion of Cesarean Section Delivery and its Associated factors Among Mothers Who Gave Birth in Bahir Dar Health Institutions, North West Ethiopia

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COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

**DEPARTMENT OF Reproductive Health and Population
Studies**

Proportion of Cesarean Section Delivery and its Associated factors
Among Mothers Who Gave Birth in Bahir Dar Health Institutions, North
West Ethiopia.

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A THESIS RESEARCH SUBMITTED TO THE DEPARTMENT OF
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BAHIR DAR, ETHIOPIA

BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

PROPORTION OF CESAREAN SECTION DELIVERY AND ITS
ASSOCIATED FACTORS AMONG MOTHERS WHO GAVE BIRTH
IN BAHIR DAR HEALTH INSTITUTIONS, NORTH WEST
ETHIOPIA 2019.

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Abstract

Introduction: Cesarean section is one of the operating delivery interventions. It is life-saving procedure. Currently the rate of cesarean section is increased above recommendation level both in developed and developing countries including Ethiopia.

Objective: The aim of this study was to assess proportion of cesarean section delivery and its associated factors among mothers who delivered in health institutions in Bahir Dar city, North West Ethiopia 2019.

Methods: Institution based cross-sectional study was conducted on 742 mothers from March 21 - May 21 2019. Data were collected through structured interviewer and review of medical notes with systematic random sampling technique. Data were coded, cleaned and entered by epi data version 3.1 then exported into SPSS version 23 for analysis. Binary logistic regression analysis was performed. At variables with p-value <0.2. Then enter to multivariable logistic regression analysis. Finally, variables with p-value <0.05 at 95%CI in multivariable analysis were the significant factors of cesarean section delivery. Crude odds ratio and adjusted odds ratio were calculated to show the strength of association between the dependent and independent variables.

Results: The overall proportion of cesarean section delivery was 41.9% (95%CI :38%, 46%). Maternal request [AOR= 2.61; 95%CI:1.24, 5.51], secondary level of educational [AOR=3.04,95%CI:1.80,5.12] higher level of educational [AOR=2.04;95%CI:1.16, 3.59] , four and above ANC visits [AOR =1.60; 95%CI :1.08, 2.37], delivered in private institution [AOR =4.11; 95%CI :1.99, 8.45], previous cesarean section [AOR =10.04;95%CI :5.77, 17.46] and favorable attitude [AOR =1.57; 95%CI :1.08, 2.28] were significantly associated with cesarean section delivery.

Conclusion: This study relived that the proportion of cesarean section was high as compared with world health organization threshold. Maternal request, maternal educational status, number of ANC visit, history of previous cesarean section, place of delivery and attitude towards cesarean section were significantly associated with cesarean section. Therefore, emphasis on evidence based indications, enlighten mothers concerning to risks and benefits of C/S and encouraging mothers to have VBAC is highly advised.

Key words: cesarean section, proportion, associated factors, Bahir Dar, Ethiopia

Acronyms and abbreviation

ANC	Ante Natal Care
CD	Cesarean Delivery
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CPD	Cephalous Pelvic Disproportion
CS	Cesarean Section
CSA	Central Statistical Agency
EDHS	Ethiopia Demographic and Health Survey
ELCS	Elective Cesarean section
IRB	Institutional Review Board
MCH	Maternal and Child Health
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization
VBAC	Vaginal Birth After Cesarean
VD	Vaginal Delivery

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1. Introduction

1.1. Background

Cesarean section refers to the delivery of a fetus, placenta and membranes through an abdominal and uterine incision [1]. High rate Cesarean delivery was associated with a higher risk of severe acute maternal morbidity than vaginal delivery[2]. In population based analyses study from 27% of women delivering by CS 10% had severe complications. Maternal complications are frequent in CS, even performing CS electively [3]. It is major public health problem increasing health risk of mother and baby.

The rates and determinants of caesarean section delivery in private and public health institution different. Cesarean section One of the essential components of Comprehensive Emergency Obstetric and Newborn Care (CEmONC). CS can reduce common, serious maternal and neonatal mortality and morbidity. When it done in recommended level [4]. World Health Organization reflects Cesarean section rates of 5–15% to be the optimal range for targeted provision of this life saving interventions for mother and infant[5]. According the national rates of CS countries classified in three groups: Countries where under used CS rates <10%, adequate use of CS rates 10% -15%; and CS over used rates >15%. In a secondary more conservative analysis expanded the range of the “adequate use of CS” category to 5%-20% [6].

The Circumstance CS can be indicated for Maternal indications are prolonged/obstructed labour, previous cesarean delivery, pelvic anatomy problem, preeclampsia, infection, placenta praevia and abruption placenta and fetal indications are fetal distress, large babies, abnormal presentation, multiple pregnancy and maternal request [7].

Results showed disparities in the percentage of C-section among women from 34 SSA countries. C-section at public healthcare settings ranged from 3% in Burkina Faso to 15.6% in Ghana. However, in private healthcare settings, C-section ranged from 0% in Sao Tome and Principe to 64.2% in Rwanda. Overall, C-section was 7.9% from public healthcare and 12.3% from private healthcare facilities respectively.

1.2. Statement of problems

Cesarean Section worldwide has increased intensively without maternal and neonatal indication. It is major public health problem increasing health risk of mother and baby. Cesarean section was increased cost as compared to normal delivery especially in private health institution. worldwide average cesarean section rate in the private and public sector were 65.84% and 33.99 % respectively .Global average rate of CS delivery increased by 12.4% [8]. It is outstanding than suggested by WHO5-15% [5] . here is no justification in any specific geographic region to have more than 10–15% C/S births.

Cesarean delivery in Africa was 8.8% [9]. Ethiopia total cesarean rate was 2% Ethiopia Demographic and Health Survey EDHS) 2016 [10].Currently cesarean deliveries are the most widely performed surgical procedure among women.

Reasons for increase CS delivery are multifactorial and not well-understood [11]. Indications are different among countries and health sector protocols. Major most frequently indication described were previous cesarean section, cephalopelvic disproportion, fetal distress, dysfunctional labor and elective cesarean[12] and also mother higher education level, higher socio-economical level and high age pregnancy are important socio-demographic factors for cesarean delivery. And also doctor recommendation and fear of labor pain were also identified as significant non-obstetrical and non-medical reasons for cesarean delivery [13].

Medically unnecessary CS a barrier to universal coverage essential health services and global economic resources of country's [14]. Also repeat cesarean deliveries associated with serious morbidity and mortality [11].Cesarean section performed without proper indications can increase risk to both mother and baby [15].

Intervention done in china to decreased cesarean delivery rates are active involvement health care provider, encourage women vaginal birth, crate awareness consequences of cesarean delivery ,present pain relief for vaginal delivery, and careful follow Vaginal Birth After Cesarean Section Delivery [16].

Still the rate of cesarean section is increased both in developed and developing countries including Ethiopia. Therefore, to solve those problem appropriate proportion and indication to caesarean section plays one of vital role to reduced maternal mortality

and morbidity. In the study area there is no any study reported among private and charity clinics about proportion and associated factors CS. The aim of this study was to assess proportion and associated factors of caesarean section delivery among mothers delivered in health institution Bahir Dar city, North West Ethiopia 2019.

1.3. Significance of the study

The significance of this study will provide relevant information for Bahir Dar city health office and regional health bureau for future planning and designing strategies. The results of this study will be help to review programs, policy and guidelines.

The result of this finding will help to the community, health institution and nongovernmental organizations (NGOs) regarding to the prevention of unnecessary CS delivery. Also this study creates an awareness to pregnant mothers about the risks and benefits of medically un recommended and recommended CS delivery. It will also help as a source of information for a researcher for further study.

2.LITERATURE REVIEW

Literature review is organized in to two sections. Section one deals with proportion of CS in health institutions, and section two it's associated factors of among mothers who deliver in health institution.

2.1. proportion of Cesarean section delivery

The global increasing trend on caesarean section delivery showed that in L. America and Caribbean region were 40.5%, N. America 32.3%, Oceania 31.1%, Europe 25%, Asia 19.2% and Africa 7.3%, also global average CS rate increased from 6.7% to 19.1%. [8].

Studies showed that Cesarean section rates in Thailand 78%, 50% , 66% in general , private and university hospitals and in Bangladesh, 21% and 73% , Nepal 15% and 30% and India 13.7% and 37.9% public and private respectively [17-19]. Finding shows in rural India, caesarean sections were more commonly performed in public health facilities than private or charitable facilities 15% vs 5% [18] Studies showed that the rates of caesarean section were 13.6% , 23.8% and 54.5% , Pakistan ,English and China respectively [20-23].

When came to study done that in Africa country northeastern Brazil prevalence of cesarean delivery 29.9 % and 86.2 % in the public and private sectors [24]. Study show caesarean deliveries in Egypt 40.7% [25].

Finding showed in Ethiopia EDHS 2016 in showed that caesarean section delivered was 2% [10]. Also finding shows in Addis Ababa, 19.2% mother had given birth by CS. Among that 11.7% and 41.1% public and private respectively [26]. Study in Bahir Dar Felege hiwot referral hospital 25.4 % had CS delivery [27].

2.2. Factors Associated with Cesarean section deliveries

In this review determinant of CS delivery divides in to five main categories. those are socio demographic factor, maternal, fetal, medical complication and health care provider.

2.2 .1. Socio demographic and economic factors

Findings from studies conducted in Ethiopia , Brazil, India, Iran , Bangladesh and urban India , displayed that mothers with secondary and above level of education level was one of the significant factor with cesarean section delivery [10, 15, 18, 19, 28] .

Studies in Brazil, México, Iran, Pakistan, rural Bangladesh revealed that family with high-income status was associated with caesarean section than the counter parts [15, 29-32] .

Study carried out in India advances maternal age at the time of first delivery increased proportion of cesarean section as compared to their counter parts [19].

According to EDHS 2016 review, the caesarean section rate in urban residence women was more than in rural resident women [10].In contrary study in Bahir Dar FHRH CS higher rural aria than urban [27].

2.2.2. Maternal Obstetric related factor

Identify major indications for CS are important because of the risks intricate. Recognized exact reason is necessary for understanding intervention maternal indication. Finding show that Caesarean Section indication are different among countries and health sector. But mostly mentioned causes are cephalopelvic disproportion, previous caesarean section, eclampsia, failed induction of labor, were major maternal indication [12, 33]. Review done in Ethiopia showed that the main maternal indications for cesarean were cephalopelvic disproportion Previous scar ,breech, multiple gestations, mal presentation [34]. Other Study done in Bahir Dar FHRH the most frequent indication were obstructed labor abnormal presentation, previous CS scar and failure to progress of labour are have association with cesarean section [27].

2.2.3. Maternal requests

Studies in Addis Ababa Ethiopia , Taiwanese, Republic of China and Iceland revealed that maternal requests without medical indications was a significant factor with cesarean section delivery [26, 33, 35, 36].

2. 2.4. Health care provider related factors

Finding carried out in Iran presented Pregnant women preferred cesarean delivery than vaginal delivery one cause preference for cesarean delivery physician's advice, [30]. Study showed in Chile and Brazil Obstetricians have go to work plans and intense to attend, give good medical care in private health institution [37, 38]. Study in china cause of cesarean sections were argument between whether mother preferences or providers [22]. Finding in Addis Ababa, showed that CS performed based on Service provider's influence in the absence of medical justification. And clients were not informed by the service providers about the consequences of the procedure [26].

2. 2.5. Medical complication related factors

Medical complication: study done in Mekelle, Sudan and South Asian were the presence of medical complication associated with caesarean delivery. Those factors are hypertension, sexuality transmitted diseased like ,HIV and human papilloma virus and sever medical disorders in pregnancy were associated with caesarean delivery [18, 39, 40].

3. Conceptual Frame Work

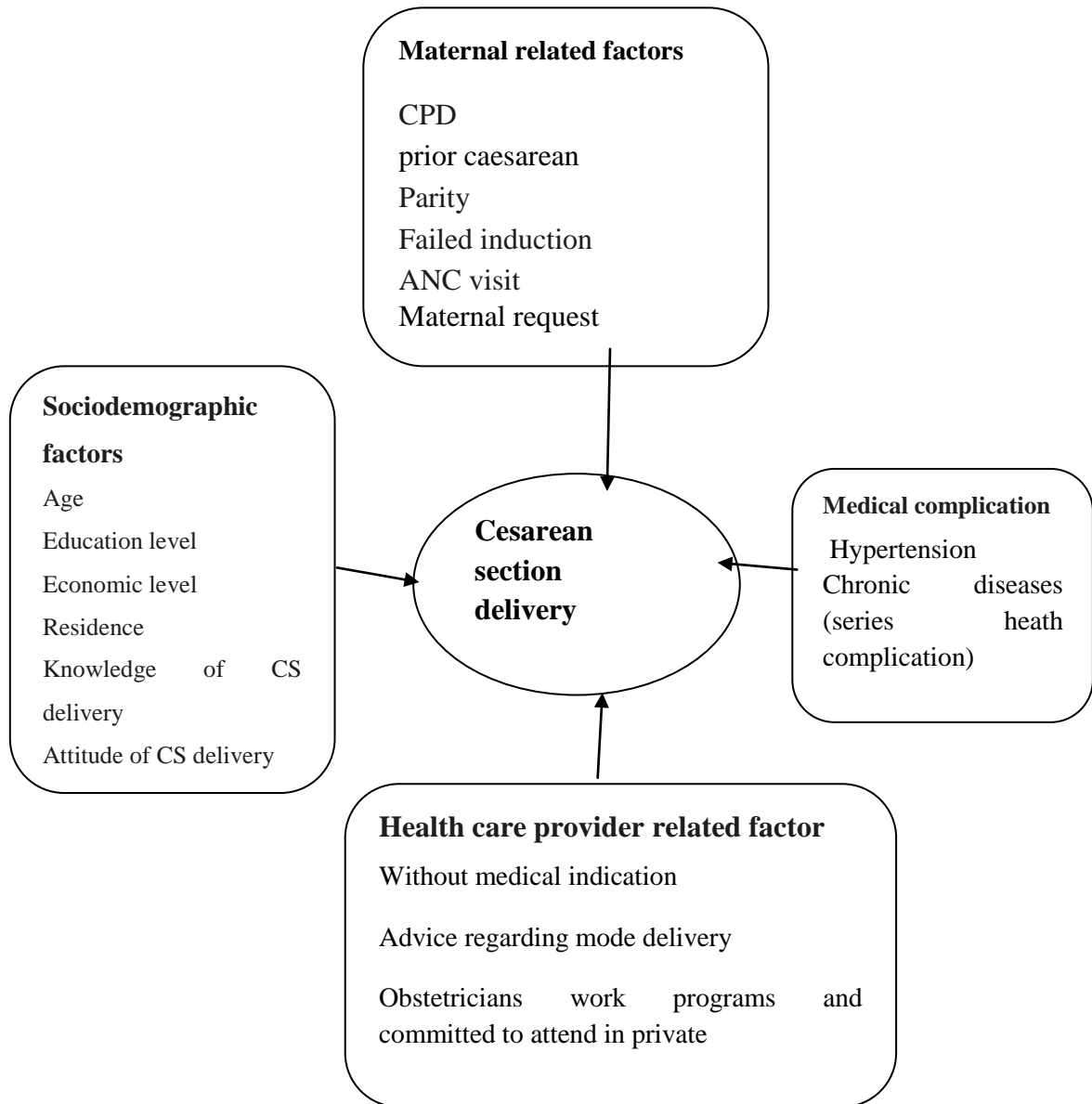


Figure 1. Conceptual frame work which shows the relationship between the dependent and independent variables, adapted from deferent literatures review.

4. OBJECTIVES

4.1 General objective

- ❖ To assess the proportion of cesarean section delivery and its associated factors among mothers deliver in health institutions in Bahir Dar city, North West Ethiopia 2019.

4.2 Specific objective:

- To determine the proportion of cesarean section delivery in Bahir Dar city health institutions.
- To identify factors associated with cesarean section delivery in Bahir Dar city health institutions.

5. METHODS

5.1. Study design and period

Institution based cross-sectional study was carried out in Bahir Dar city from March 21-May 21/ 2019.

5.2 Study area

This study was conducted in Bahir Dar city which is the capital city of the Amhara National Regional State, located at about 560kilo meter Northwest of Addis Ababa. According to 2018/19 Bahir Dar city health office health department report. The total population of the city was estimated to be 445,084. Of them population 222,097 (49.9%) were male and 222,987 (50.1%) were females. From total number of females 52, 580 (23.6%) in reproductive age group. The city has 2 governmental hospitals and 10 health centers and 3 private hospitals, 22 private clinics and 2 charity clinics. Among those, 2 governmental hospitals, 2 private hospitals and 2 charity clinics give cesarean section delivery care[41].

5.3. Population of study

5.3.1. Source population

All mothers who gave birth in Bahir Dar city health institutions.

5.3.2. Study population

All mothers who gave birth in Bahir Dar city health institutions during the study period, selected and included in the study.

5.4. Inclusion and exclusion criteria

5.4.1. Inclusion criteria

All mothers who gave birth in Bahir Dar city health institutions (give both CS and VD services) during the study period.

5.4.2. Exclusion Criteria

Those mothers who were unconscious /critically ill.

5.5. Variables of the study

5.5.1. Dependent variable

Cesarean section delivery (Yes/No)

5.5.2 Independent variables

Sociodemographic factors: Age, Education level, family income, residence, attitude and knowledge about CS

Obstetric related factor: - CPD, parity, ANC visit, filed induction, previous cesarean section and maternal request

Service providers: performed without medical indication, Physician's advice counseling model of delivery, provider work programs and committed to attend in private health institution

Medical complication: Pregnancy Induced Hypertension, HIV, Human papilloma virus, (serious health complication).

5.6. Operational definitions and measurements

Knowledge: - Mothers were asked ten (10) knowledge related questions about cesarean section delivery and each correct answer was given a value of 1 and an incorrect answer a value of 0. After computing the sum for each respondent mean score was 0.53 and it was dichotomized into good knowledge \geq mean, poor knowledge $<$ mean.

Attitude: - Mothers were asked six (6) attitude related (Likert's scale) questions about cesarean section delivery and After computing the sum for each Mothers mean score was 0.62 and it was classified into favorable attitude \geq 0.62 and unfavorable attitude score $<$ 0.62.

5.7. Sample size determination and sampling procedure

5.7.1. Sample size calculation

The sample size was determined using single population proportion formula with the following assumptions n is sample size, proportion (p) of cesarean section delivery 25.4 % [27] a marginal of error (d) 5 % and value for 95% CI ($Z_{\alpha/2}=1.96$).

$$n = \frac{(Z_{\alpha/2})^2 P(1-P)}{d^2} = \frac{(1.96)^2 (0.254 \times 0.756)}{0.05^2} = 291.2$$

When 10% added for non-response rate, the required sample n was 321.

Sample size for the second objective was determined by using double population proportion formula for cross sectional study through EPIINFO version 7 by considering assumptions of 95% CI, power 80 and ratio 1:1

Table 1: Sample size determination by using factors.

By using factors associated with cesarean section delivery for the study at Felege Hiwot Compressive Specialized referral hospital (FHCSRH), Bahir Dar, Ethiopia, 2013.

Independent variables	Ratio	Power	AOR,95%CI	% outcome exposed	% outcome unexposed	Calculated sample size by adding 10% non-response rate
Fetal weight >4000gm	1:1	80%	3.9	20.9	29.7	165
Present of risk factors	1:1	80%	2.31	42	22.8	256
Residence	1:1	80%	1.67	29.15	20.8	742

The sample size calculated using factor residence was found to be higher. Therefore, Total sample size with 10% non-response rate was 742.

5.7. 2. Sampling technique and procedure

In Bahir Dar city there are six health institutions which provide CS delivery service. After reviewing the previous two-month record. An average estimated monthly cases load at those institutions was 1890. Then, the calculated sample size $n=742$ allocated proportionally. Then sampling fraction (k) for selecting the study participants was determined by dividing the total estimated number of clients during the data collection period to the total sample size which was calculated to be approximately $k=2$. Finally, the first mother randomly selected by lottery method among the list by using their card number from Delivery Registration book, then the next study participants were identified systematically in every other interval until the required sample size was achieved. data were collected through face to face interview in the post-natal room near to discharge.

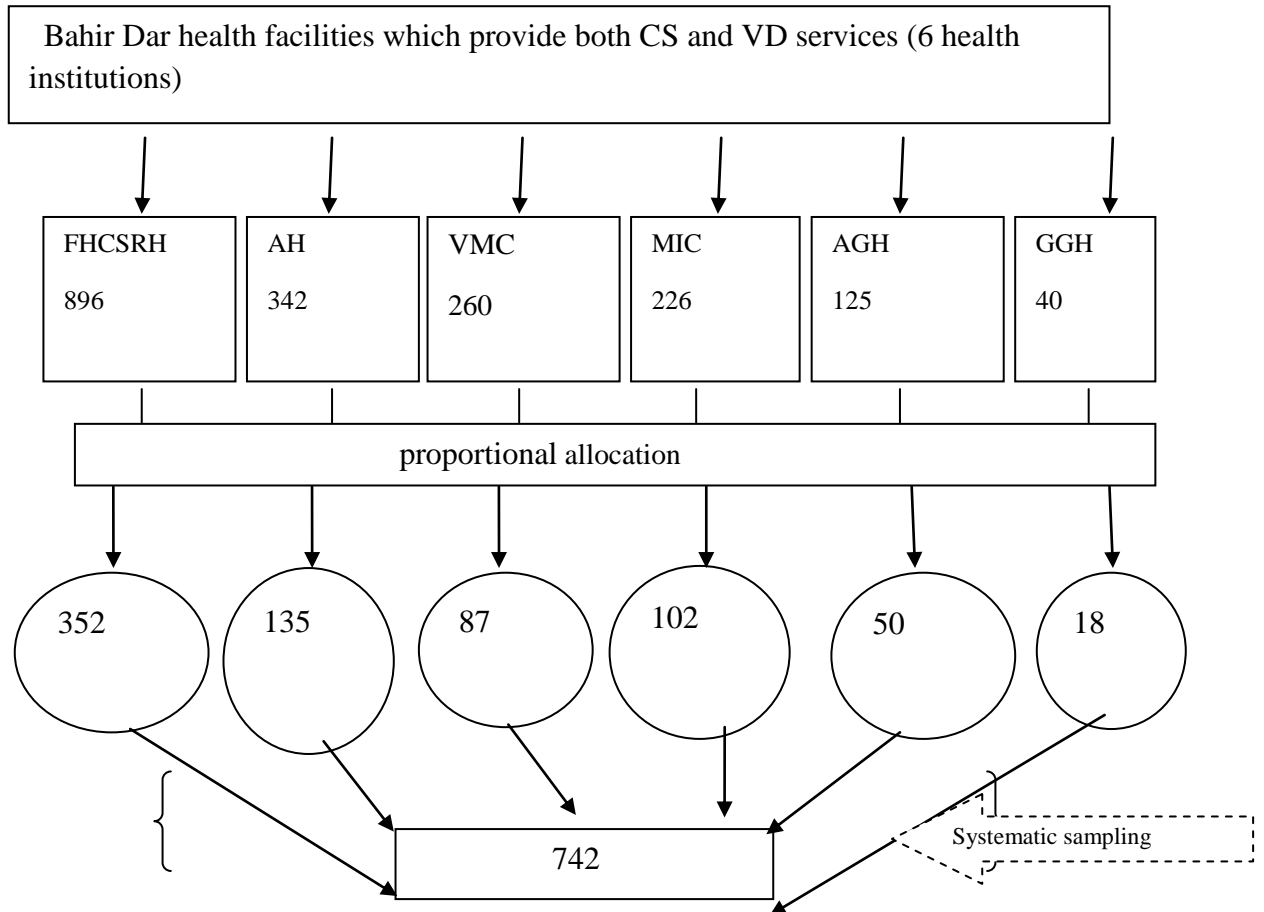


Figure 2: Schematic presentation of sampling procedure to select study participants who gave birth at health institutions in Bahir Dar city, North West Ethiopia 2019.

Key

FHCSRH (Felege hiwot compressive specialized referral hospital), AH (Adisalem hospital), VMC (vision maternity care), MIC (Marie stops international clinic), AGH (Adinas general hospital), GGTH (GAMBY General Teaching hospital)

5.8. Data collection tools

Data was collected using semi-structured interviewer and review of medical notes. The questionnaire was prepared in English language after reviewing of relevant literatures according to the objectives of the study. A total of six Diploma data collectors who are working outside the study area and two BSC midwifery supervisor were recruited for data collection process. Mothers were interviewed in postnatal care-room, and questionnaire contains socio eco-economic characteristics, maternal and fetal related, health care provider and medical problem related factors. Finally, the collected data was taken to analysis.

5.9. Data processing and analysis

The collected data were checked, cleaned, code and entered in to Epi Data version 3.1 then exported into SPSS Software version 23 for analysis. Descriptive statistics were presented in the form of table, charts, frequencies and texts. Bi-variable regression was used for all explanatory variables in relation to dependent variable. and then variables with p-value < 0.20 were selected for multivariable logistic regression model for adjustment of confounding effect between explanatory variables. Adjusted Odds ratio with 95 % confidence interval was computed and variables having P-value less than 0.05 in the multivariate logistic regression model was considered as statistically significant Model fitness test was done by using Hosmer-Lemeshow Goodness of Fit test (p-value = 0.097).

5.10. Data quality control

The quality of data was assured by well-prepared questioner. The questionnaire was prepared in English and translated in to Amharic version then translated back to English. The data collectors were selected from outside each health institution. Then two days technical training was given for data collectors on the study instrument, data collection procedure and handling of ethical issues. Pre-test was given on 5% (n=37) of total sample size prior to actual data collection. Based on the result of pre-test. Appropriate adjustment was taken. Data collectors were submitted the collected data to supervisors on daily basis. Finally, the principal investigator was monitoring the overall quality of data collection. Data coding and data entry was checked at the beginning, midway and end of data entry.

5.11. Ethical consideration

The ethical clearance was obtained from Institutional Review Board (IRB) of the College of Medicine and Health Sciences, Bahir Dar University. Official letter of permission was received from Amhara Regional Health Bureau to each selected health institution. After they received an adequate explanation of the study aims, benefits and potential harm by their data collector. Privacy of the participants was kept. The respondents' the right to withdraw the interview at any time. The confidentiality of all the information was strictly kept. The data collector start after participants was voluntary participation. After data collection principal investigator put questionnaires locked with a key.

6. RESULTS

6.1. Sociodemographic

Among a total of 742 study participants, 714 mothers were participated in the study making response rate of 96.23%. The mean age of the mothers was 27.5 (SD \pm 4.8) years and 289 (39.6%) mothers were in the age group of 25-29 years. Five hundred twelve (71.7%) mothers were urban residents. Six hundred six (84.9%) mothers were orthodox Christian and 671 (94%) were married. Two hundred eight (29.1%) mothers and 269 (37.7%) husbands attended higher education (Table 2).

Table 2. Socio demographic characteristics of mothers (n=714)

Variables	Category	Frequency (%)
Age	15-19	26 (3.6)
	20-24	156 (21.8)
	25-29	283 (39.6)
	30-34	178 (24.9)
	35 and above	71 (9.9)
Residence	Urban	512 (71.7)
	Rural	202 (28.3)
Religion	Orthodox	606 (84.9)
	Muslim	91 (12.7)
	Other*	17 (2.4)
Marital status	Married	671 (94)
	Unmarried	43 (6)
Educational status of the mother	No formal education	173 (24.2)
	Primary school	143 (20)
	Secondary school	190 (26.6)
	Higher education	208 (29.1)
Educational status of husband (n=671)	No formal education	145(21.6)
	Primary school	121(18.0)
	Secondary school	152(22.7)
	Higher education	253(37.7)
Occupation of the mother	Farmer	154(21.6)
	Housewife	236(33.1)
	Employed	299(41.9)
	Other**	25(3.5)
wealth index	Poorest	192 (26.9)
	poor	91 (12.7)
	Medium	158 (22.1)
	Rich	29 (4.1)
	Richest	244 (34.2)

Other*, protestant and catholic, Other**student, daily labour

6.2 . Knowledge and attitude of the mothers about cesarean section delivery

From total participated (714) 453 (63.4%) respondents heard about CS delivery during ANC. Of these ,163 (36.8%) and 185 (40.8%) know about indication and risk of CS delivery respectively. Four hundred eighty- eight (68.3%) of respondents know time of next pregnancy after CS delivery. The main source of information regarding to CS delivery was health professionals. Three hundred-seventy- eight (52.9%) mothers were knowledgeable about CS and 444 (62.2) mothers had favorable attitude towards CS delivery (Table 3).

Table 3 Knowledge and attitude of the mothers about cesarean section
(*n=714*).

Variables	Category	Frequency (%)
Information about CS delivery during	Yes	453(63.4)
	No	261(36.6)
Know indication of CS delivery	Yes	163(35.8)
	No	551(64.2)
Know risk and benefits of CS delivery	Yes	185(40.8)
	No	529(59.2)
Source of information	Health care provider	150(21.0)
	Family	88(12.3)
	Friends	142(19.9)
	Social media	64(9.3)
Know time of next pregnancy after CS	Yes	488(68.3)
	No	226(31.7)
Information about danger sign	Yes	447(62.6)
	No	267(37.4)
knowledge of mothers to CS	Poor knowledge	336(47.1)
	Good knowledge	378(52.9)
Attitude of mothers to CS delivery	Unfavorable attitude	270(37.8)
	Favorably attitude	444(62.2)
Autonomy of mother (multiple response)	Health care provider	159(22.3)
	Mothers	560(78.4)
	Husband	350(50.0)
	Family	33(4.6)
Major decision maker of about CS delivery (multiple response)	Health care provider	83(11.6)
	Mothers	236(33.1)
	Husband	136(19)
	Family	12(1.7)

.3. Obstetrics related factors

Form total participated mothers, 415(58.1%) and 299(41.9%) were delivered by Vaginal and Cesarean Section respectively. Among 299 (41.9%) CS delivery, 199(66.6%) had emergency type CS and 100(33.4) planed and regarding to the type of anesthesia received, about 252 (84.3%) and 47(15.7%) were received spinal and general anesthesia respectively. About 132(44.2%) had history of previous CS delivery. Four hundred forty-nine (60%) respondents have four and above ANC visits during pregnancy. Five hundred forty-one (75.8%) of respondents were term pregnancy and around 351 (49.2%) mothers were by referral case.

Table 4: Obstetrics related factors of mothers in Bahir Dar city health institutions, *Bahir Dar, Northwest Ethiopia, 2019(n=714)*.

Variables	Category	Frequency (%)
Parity	Prim parity	257(36)
	Multiparty	457(64)
Gestational age of current pregnancy	<37weeks (preterm)	81(11.3)
	37-40-weeks(term)	541(75.8)
	>40 weeks (post-term)	92(12.9)
Frequency of ANC visits	No ANC	33(4.6)
	Less than four (1-3)	232(32.5)
	Four and above ANC	449(62.9)
Referral states of current delivery	Referred	351(49.2)
	Not referred(direct)	363(50.8)
Heard about danger sign during pregnancy	Yes	447(62.6)
	No	267(37.4)
History of previous CS	Yes	123(17.2)
	No	582(82.8)
Current birth outcome	Still birth	21(2.9)
	Alive birth	693(97.1)
Types of CS delivery	Emergency	199(66.6)
	Planned	100(33.4)
Type of anesthesia to current CS delivery	General	47(15.7)
	Spinal	252(84.3)

Maternal indication (multiple response)	Prevised CS delivery	132(18.5)
	Cephalo-pelvic disproportion	55 (7.7)
	Failed induction	16(2.2)
	Prolonged labor	22(3.1)
	other ***	20 (2.8)
Maternal request to CS delivery more than one answer is possible	Fear of labor pain	24(4.4)
	Think it better for health of baby or mother	27(3.8)
	Health care provider advise benefit CS	12(1.7)
	Other****	3(0.4)
Place of delivery	Public	460(64.4)
	Private	68(9.5)
	Charity	186(26.1)

Other*** other indication mentioned by mothers, Other**** * other indication mentioned maternal request

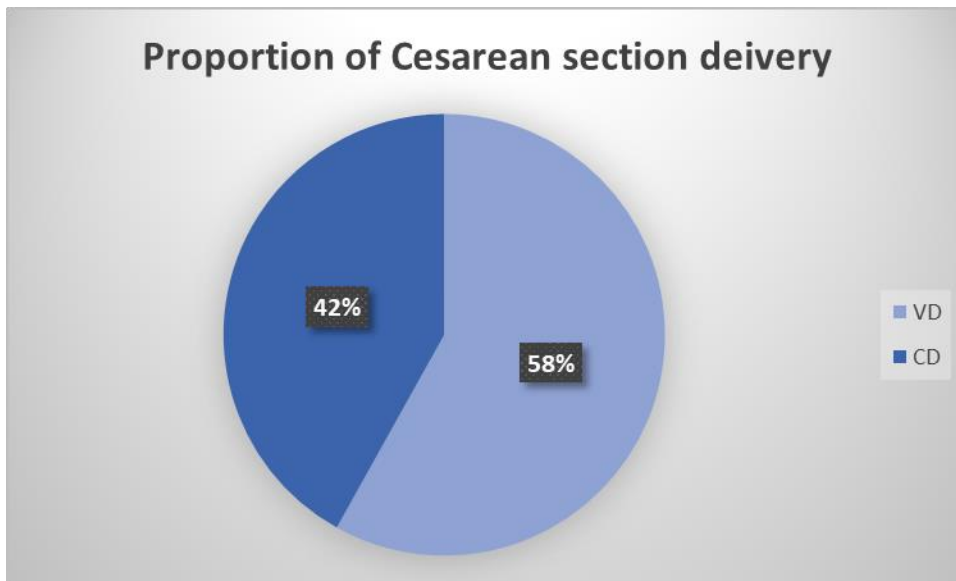


Figure 3 Proportion of vaginal and cesarean section delivery among mothers who gave birth in Bahir Dar city health institutions,

Bahir Dar, Northwest Ethiopia, 2019

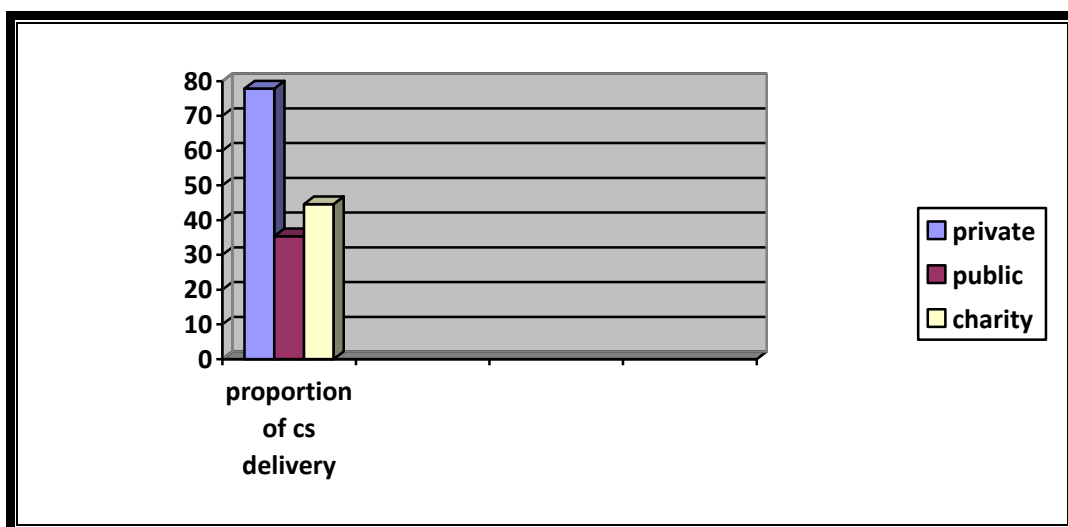


Figure 4 Proportion of cesarean section delivery mothers in Bahir Dar health institution Northwest Ethiopia, 2019

6.4. Factors associated with cesarean delivery

Associated Factors with CS were identified by using binary logistic regression analysis variables were Resident, maternal request, mother's education level, husband's education level, ANC visits, Place of delivery, Previous CS delivery, knowledge on indication of CS, knowledge on risk factors of CS, health care provider gives information about CS, knowledge and attitude of CS were candidate variables on BiVariable logistic regression at p-value<0.2.

After controlling confounders by multivariable logistic regression, maternal request for cesarean section, maternal education, frequency of ANC visits, place of delivery, previous cesarean section and attitude towards cesarean section were significantly associated variables with cesarean delivery at p-value<0.05 and 95%CI.

Mothers requested for indication of cesarean delivery were 2.6 times (AOR= 2.61; 95% CI: 1.24, 5.51) more likely to had cesarean delivery as compared to those not requesting cesarean delivery.

Mothers who had secondary school educational level were 3.04 times (AOR=3.04; 95%CI:1.80, 5.12) and those who attended higher level of education were 2.04 times (AOR=2.04;95% CI:1.16, 3.59) more likely to give birth by cesarean section as compared to those who did not attend formal education.

Mothers who had four and above ANC visit were 1.6 times (AOR =1.60; 95%CI: 1.08, 2.37) more likely to be delivered by cesarean section as compared to less than four ANC visits.

Those mothers delivered in private hospitals were 4.11 times (AOR =4.11; 95%CI :1. 99; 8.45) more likely to deliver by cesarean section as compared to those mothers delivered in public hospitals.

Those mothers who had previous cesarean section were 10.04 times (AOR =10.04; 95%CI: 5.77; 17.46) more likely to deliver by cesarean section as compared to their counterparts.

Those mothers who had favorable attitude towards cesarean section were 1.57 times (AOR =1.57; 95%CI:1.08, 2.28) more likely being delivered by cesarean section as compare to their counterparts.

Table 5: Multivariable logistic regression analysis of factors associated with cesarean delivery .

In Bahir Dar city health institution, Bahir Dar, North west Ethiopia, 2019.

Variables	CD		COR95%CI	AOR95%CI
	Yes (%)	No (%)		
Residence				
Urban	239(46.7)	273(53.3)	2.07 (1.46, 2.93)	0.67(0.40, 1.11)
Rural	60(29.7)	142(70.3)	1	1
Mother's educational level				
Not attending formal education	37(21.4)	136(78.6)	1	1
Primary school	53(37.1)	90(62.9)	2.16(1.31, 3.55)	1.74(0.99,3.04)
Secondary school*	101(53.2)	89(46.8)	4.17(2.62, 6.62)	3.04((1.80,5.12)
Higher education level	108(51.9)	100(48.1)	3.97(2.52, 6.25)	2.03((1.15,3.59)
Husband's educational level				
Not attending formal education	41(5.8)	118(16.6)	1	1
Primary school	45(6.3)	75(10.5)	1.72(1.03,2.88)	1.57(0.84, 2.93)
Secondary school	72(10.1)	92(12.9)	2.25(1.40,3.60)	1.06(0.54,2.08)
Higher education level	140(19.7)	129(18.1)	3.12(2.03,4.7)	1.37(0.70,2.71)
Frequency of ANC visits				
Four and above	226(50.3)	223(49.7)	2.66(1.92,3.69)	1.6(1.08,2.36)
Less than four	73()	192()	1	1
Maternal requests to CS				
No	265(39.9)	401(60.1)	1	1
Yes	34(70.8)	14(29.1)	3.67(1.9,6.98)	2.61(1.24,5.59)
Place of delivery				
Public health institution	163(35.4)	297(64.6)	1	1
Private health institution *	53(77.9)	15(22.1)	6.4(3.51,11.78)	4.11 (1.99, 8.45)
Charity health institution	83(44.6)	103(55.4)	1.46(1.03,2.07)	1.16(0.75,1.77)
Pervious CS delivery*				
No	195(32.9)	396(67.1)	1	1
Yes	104(84.5)	19(15.4)	11.11(6.6,18.66)	10.0(5.77,17.46)
Knowledge towards indication of CS				
No	196(35.6)	355(64.4)	1	1
Yes	103(63.2)	60(36.8)	3.10(2,16,4.47)	1.32(0.89, 1.96)

Knowledge risk CS delivery				
No	195(36.9)	334(63.1)	1	1
Yes	104(56.2)	81(43.7)	2.19(1.56,3.09)	1.17(0.08, 2.12)
Health care providers give information about CS				
No	200(35.5)	364(64.5)	1	1
Yes	99(66)	51(34)	3.53(2.41,5.16)	1.32(0.82,2.14)
Knowledge on CS				
Poor knowledge	101(30.1)	235(69.1)	1	1
Good knowledge	198(52.4)	180(47.6)	2,55(1.8,3.48)	0.75 (0.40, 1.39)
Attitude towards CS				
Favorable	205(46.2)	239(53.8)	1.6(1.7,2.19)	1.51 (1.02, 2.23)
Unfavorable	94(34.8)	176(65.2)	1	1

P-value < 0.001 * Secondary school, Place of delivery, Pervious CS delivery,

7. Discussion

Cesarean Section is a life-saving procedure for both the mother and the baby[7]. On the other hand, early and incorrect decision may increase the maternal and fetal morbidity and mortality. The purpose of this study was to assess the proportion of cesarean and its associated factors CS delivery in Bahir Dar health institution. In this study the overall proportion of CS was 41.9% (95%CI :38%, 46%).

This finding was consistent with studies conducted in Sudan, Northern Brazil and Egypt 43.2%, 43.4% and 40.7% respectively [38, 39, 42].

The proportion of current result is higher than study conducted in Bahir Dar in FHCSRH which was 25.4% [27]. The possible reason might be due to inclusion of private and charity health facility in the current study. This reason is also supported by another studies which were done in India and Armenia which revealed that there were higher CS rate in private health facilities than in public health facilities[43, 44].

This finding was higher than studies conducted in Addis Ababa 19.2% %, EDHS 2016 (2%) and WHO recombination 5-15% [10, 26, 45]

The difference might be due to variation in study setting. This study is institutional based but the previous study was community based . So, the number participants were cesarean delivery in institution based study is higher than community based study because community based study include home delivery mothers but this study excludes them.

This finding was also higher than studies conducted in Pakistan which was 13.6% [46]. and Liberia which was 35.5% [47]. This difference might be due to in methodological and Sociodemographic difference of the mothers. Since mothers in Pakistan 69.9% rural residence and only 19.9% had secondary and above education level and Liberia almost all rural residence and only 10.5% of mothers Completed primary or greater

But, this finding was lower than study conducted in China (54.5%) and Shanghai (57%)[22, 35]. The possible explanation might be due to the difference in study setting. Since China and Shanghai are developed countries. The rate of cesarean section is higher as compared to developing nation like Ethiopia. B/c developing countries lack of skill man power, resource, facility, and full instrument.

This finding showed that factors such as maternal request for cesarean section, maternal education, frequency of ANC visit, place of delivery, previous cesarean section, fetal indication and favorable attitude towards cesarean section were significantly associated with cesarean delivery.

The analysis of maternal request with cesarean delivery showed that statistically significant relationship with maternal request to CS delivery. This finding was supported by study conducted in Addis Ababa [48]. The relationship between CS and maternal request in facts 71% current study mothers and 98% previous study were urban residence. Urban residence more intended to request CS delivery.

Mother attending secondary school and higher education were more likely undergoing to CS. This finding was in-line with studies study conducted, EDHS 2016, Dessie town, multilevel molding in Ethiopia and Iran [10, 30, 49, 50]. This might be due to the fact that educated mothers may be open to discuss with physicians regarding to their CS preference.

But this finding was inconsistent with study conducted in Sudan[39] .

There is an increase in CS births with increase in the number of ANC visits. The mother who had more than 4 ANC visit more likely of CS delivery as compared to those who did not make any ANC visit. This finding is supported by studies conducted in India, Nepal, and Pakistan, [18, 21, 51]. This might be due to that health care provider may reported to mother having pregnancy complications and counsel about the birth preparedness plan, mode of delivery and the benefits/risks of each mode of delivery during each ANC visits which may lead the woman to easily accept CS delivery indication and request.

In the current study, CS proportion in private health institution are much larger than the WHO recommended maximum limit of 15% for CS births. Those mothers delivered in private hospitals were higher to be delivered by cesarean section as compared to those mothers delivered in public hospitals. This finding also supported by another study conducted in North eastern Brazil, Southern Brazil, [38, 52] and India[19]. The possible reasons might be mothers served in private health institution, were had higher educational level, had higher income, get many ultrasonography's and they expected better get care.

Others factor for caesarean delivery in this study was those mothers who had previous cesarean section were many times more likely to cesarean section as compared to non-previous CS . This finding was supported by study South Attat Hospital, Gurage Zone,

National review in Ethiopia, India, England and Nigeria. This is highest single indication for repeat [20, 23, 34, 53, 54]

This might be due to the fact that Trial of vaginal birth after caesarean section is poor since their fear of complication. Obstetricians still regard vaginal birth after previous caesarean section as a high-risk. Because VBAC need close monitoring in carefully.

Those mothers who had favorable attitude towards cesarean section were more likely delivered by cesarean section as compare to their had un-favorable attitude. This might be due to the fact that if peoples had positive attitude to something, they willingness to try doing new things. It is a positive mindset that uses the words, “I can”, and “it is possible”. Having a positive attitude helps you cope more easily with the events that occur during a match and makes it easier to avoid distractions and negative thinking [55].

8. Limitation of the study

- Incomplete documentation (i.e. indication of C/S)

9. Conclusion

This research revealed that the overall proportion of cesarean section delivery was high in health facilities of Bahir Dar city as compared to WHO recommendation.

Factors such as maternal request, maternal education, number of ANC visit, previous cesarean section, Private health institution, and attitude towards cesarean section were significantly associated with cesarean section by increasing CS delivery .

10. Recommendation

For Bahir Dar city health office and regional health bureau

- Special focus on private institution is needed in order to reduce high proportion of cesarean section.
- Emphasis on evidence based indications of cesarean section.

For health professionals

- Enlighten mothers concerning to risks and benefits of cesarean section delivery.
- Advise and encourage mothers to have vaginal birth after cesarean section delivery.

For researchers

- longitudinal and observational study approach is recommended for further investigations.

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12. list of annex

Annex I: Information Sheet

A Study prepared to collect data, cesarean section delivery in order to assess proportion and associated factor CS delivery in health institution in Bahir Dar city, North West Ethiopia, 2019

Hello! My name is _____. I am conducting a survey on cesarean section delivery. In order to assess CS proportion and associated factor in health institutions in Bahir Dar city. This is beneficial to identify areas of improvement to give mother proper CS access and appropriate induction. In order to attain this goal, you are kindly requested to provide your genuine response on the questions given below. I would like to confirm you that you have the right to with draw the interview at any time or skip any question that you do not wish to answer. Because taking part in this survey is not mandatory and your responses will be held in strict confidence. Your privacy will also be confidential and no one will know your answer. If you do not wish to participate, it will not affect the services you receive at the clinic now or in the future. I also request you to answer it candidly because your answers are like one important piece of brick in the whole research and determine the outcome of this study. Thank you very much for your willingness to listen me. In case if you have any question, you can ask.

Name Yeshalm Wubie Phone: +251-909043535 Email rutabwubie@gmail.com

Are you willing to participate? If the answer is, YES, - Please continue NO ...Thanks her and end

Annex II: Consent Form

Hello! My name is. -----I temporarily represent Bahir Dar University, College of Medicine and Health Science, and Department of reproductive health. This study is conducted with the objective of this study to assessing the proportion and factor associated of CS in Bahir Dar city. As the study is directly Cs delivered mothers and you are one of them who have been selected randomly to participate in this study. Therefore, you are kindly requested to participate in this study and provide the essential information required from you. I would like to ask you a few questions, but you can refuse to answer any question I ask you may end the interview at any time. You can also refuse to participate in the study totally. The interview will last approximately 5-10 minutes. The study involves women who give birth during study period Bahir Dar city you are one of selected participants if willing to participates. we are so happy and you are offered clearly understanding and show your agreement. Your participation is defiantly important to identify proportion and associated factors but no direct benefit and risks in your participation responses will be kept confidential and there will be no way of linking your individual responses to the final results of the study findings. I would like to inform you that the responses that you provide to the questions are very essential for the successful accomplishment of the study objectives. If will have time and willing the questioner includes: socio-eco-demographics factor, knowledge, attitude and obstetric related factors CS delivery include Are you voluntary to respond to the questions?

Do you have any questions? May I begin the interview now?

signature of interviewer -----date-----/-----/2011

respondent agrees to be interviewed -----1

respondent does not agree to be interviewed. -----2 end

if recorded respondents agree starting time----- and end time-----

Annexes III: English Questionnaire

questioners to asses proportion and associated factors of CS delivery among women who give birth health institution both services CS and SVD in Bahir Dar city 2019

- Date of data collection /..... /2019
- Name of Health facility
- Code: _____
- Interviewer signature..... date..... /....
- **Instruction:** Indicate the answer by encircle the number which contains the correct answer

Section I Sociodemographic variables

No	Question and filters	Coding Categories	Skip to next Q
101	Age in completed	..... Years	
102	your residence?	1. Urban 2. rural	
103	your Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other specify.....	
104	Your current marital status	1. Single 2. Married 2. Divorced 4. Widowed	
105.	your educational status	1. Unable to read and write 2. Able to read and write 3. Primary (1-8) 4. Secondary (9-12) 5. College Diploma 6. University Degree and above	
106	If your answer is married your husband education status	1. Unable to read and write 2. Able to read and write 3. Primary (1-8) 4. Secondary (9-12) 5. College Diploma 6. University Degree and above	
107	your occupation	1. Farmer 2. housewife 3. Governmental worker 4. Student 5. Merchant 6. Daily laborer 7. Privet worker	

		8. other(specify)_____	
108	your family monthly income in (Ethiopia Birr)	.....
Part II	Knowledge assessment questionnaire about C-section	Coding Categories	skip
201	Did you get information about caesarean section (CS) during the antenatal period, or delivery period?	1. Yes 2. No-----	Skip to Q 204
202	If you say yes Q 201 which information did you get about CS more than one answers is possible	1. indication of CS delivery and risk 2. the risks and benefits of repeat C 3. other	
203	What is your source of information	1. Health care provider 2. Family 3. Friends 4. Social media 5. other Specify -----	
204	Is it possible to have a vaginal birth after a C-section?	1. yes 2. no	
205	children born by C-section have poorer health and develop slower than their peers who were born vaginally?	1. yes 2. no 3. equal	
206	How long should you wait after a C-section before getting pregnant again?	..... Years	
208	Does a planned C-section guarantee the mother's and baby's good health?	1. Yes 2. No	
209	Who mostly influenced Mode of delivery decision	1. Woman herself 2. Doctor 3. Women's' husband 4. Others family members	
Part III	Attitude questions about CS delivery		
301	How do you view a woman that was delivered by CS?	1. Very bade 2. Bad 3. Undecided 4. God's wish 5. Very good	
302	Vaginal birth is your Preferred Mode of Delivery	1. Strongly agree 2. agree 3. Neutral /un-decides 4. des- agree 5. strongly des- agree	
303	Cesarean section delivery is your Preferred Mode of	1. Strongly agree 2. agree 3. Neutral /un-decides	

		4. des- agree 5. strongly des- agree	
304	Are you willing to undergo CS if indicated	1. Yes ----- 2. No	Skip Q306
305	If say No Reasons for not willing to undergo CS	1. Fear of dying 2. Fear of pain during and after surgery Expensive 3. Not Gods wish. 4. Fires of next pregnancy problem 5. Cost of CS problem	
306	Giving birth by C-section is looks really scary. you be worried if you have to have one? Today,	1. very stressed /worried 2. worried 3. undecide 4. not worried 5. noting stressed/worried	
307	Did you agree cesarean sections performed at a woman's request?	1. Strongly agree 2. agree 3. Neutral /un-decides 4. des- agree 5. strongly des- agree	
Part IV	Obstetric related factor		
401	Did you have ANC follow-up for the current pregnancy r	1. Yes 2. No	
402	How many times do you have ANC follow-up	.....
403	Referral states of current delivery	1. directly /not refereed 2. referred	
405	Are you heard about danger sine of pregnancy	1. Yes 2. No	
406	Did you occurred problem related to current delivery faced	1. Yes 2. No-----	Skip to
407	If yes for which types of bad obstetrical history are experienced?	1. Hemorrhage 2. Obstructed(prolonged) labor 3. Sepsis 4. Fistula 5. Preeclampsia/eclampsia 6. Uterine rupture 7. If other(specify)_____	
408	What is your current mode of delivery?	1. Cesarean section 2. Vaginal	
409	If say yes CS Which types of CS done	1. Emergency	

	for you?	2. Elective(planed)	
410	Have you ever had history of abortion an abortion? Miss	1. Yes 2. No	
411	Have you ever had history of a stillbirth?	1. Yes 2. No	
412	How many times became pregnant including abortion	.....
413	current number of children do you have?	-----	
414	All child birth alive	1. yes 2.no	
415	If say no which not live	Present/current baby Previsе Childs	
416	Presentation of current baby	Compound prestation Breech Vertex Obelic Unknown	
417	Gestational age your current pregnancy?	-----in weeks	
418	Weighted of current baby	-----grams	
419	Did you have previous caesarean delivery?	1. Yes 2. No	
415	If say yes CS Which types of CS done for you?	3. Emergency 4. Elective(planed)	
416	Type of Anesthesia your current CS delivery	1. Spinal Anesthesia 2. General Anesthesia	
417	What was the reason of current cesarean section delivery	1. Maternal indicated factor -- 2. Maternal request ----- 3. Medical complication ---- 4. Heath care provider----- 5. Fetal indicated factors-----	Q417 Q418 419 420 421
419	If your answer is 1 (Maternal indication) which of the following your maternal indication happen to you?	1. Cephalopelvic Disproportion 2. Repeated C-section 3. Lack of labor progress 4. Lack of response to induction of labor	
420	If your answer 2 (Maternal request) why you preferred Cesarean section delivery?	1. To keep natural pelvic organ /vagina 2. don't know Vaginal delivery is natural and acceptable mode of delivery 3. fear of delivery pain (to avoid labor pain) 4. Consider that CS is safe for	

		<p>the mother or the child</p> <p>5. partner's(husband's) preference of CS mode of delivery</p> <p>6. Did not informed by the service providers about the consequences of the procedure</p> <p>7. Other specify</p>	
421	If your answer was 3 (medical complication) What was the medical factor?	<p>1. PIH- (pregnancy induced hypertension)</p> <p>2. Other chronic disease</p>	
422	If your answer was 4 (health care provider) Which was health care provider factor?	<p>1. He performed without medical indication</p> <p>2. Physician's advice counseling model of delivery.</p> <p>3. Obstetricians work programs and committed to attend.</p> <p>4. Other specify</p>	
423	If your answer was 5 (Fetal indication) , which of the following fetal indication of cesarean delivery?	<p>1. fetal distress</p> <p>2. abnormal presentation</p> <p>3. twin pregnancy</p> <p>4. Placenta preview or Placental abruption</p> <p>5. Large-sized fetus</p> <p>6. Decreased amniotic fluid</p> <p>7. Other specify</p>	

Which of the following assets you have and Household utilities?

Questions about the status of mothers in the city

No	Questions	Choose of answer
501	Who is the owner of the home /house?	1. Private 2. Kebele 3. Rent 4. Other
502	How many rooms are there?	.....
503	The number of people who slept in a room	.....
504	House floor	1. Soil 2. Cement 3. Ceramic
505	The roof of the house	1. still 2. Grass 3. Other
506	The walls of the house	1. Mound of concrete mud 3. Stone / Cement 2. Wood with mud 4. Other
507	What is the main cooking utensil of the house?	1. Electric 3. Wood 5. Gas 2. Charcoal 4. Cough 6. Other
508	You Have a Different Kitchen Home	1. Yes

		2. No		
509	What is the source of water you use	1. Plumbing Private 2. Shared Plumbing 3. Wells 4. River / Stream / Source		
510	What type of latrines you use	1. private ceramic secretion with water discharge 2. Constructed Cement Joint at 3. Traditional 4. open		
600	Do you have any of the following in the home? How much are they?			
601	Type	Yes	By number	No
	Radio			
	TV			
	Refrigerator			
	The bed /			
	Table			
	Chair			
701	Is there anyone has in your family follows these describe in number			
	Type	Yes =1	Number	No=0
	Cell Phone			
	Motorcycle Bicycle			
	Bajaj			
	Car			
	Ox / cow			
	Horse / mule			
	Goat / sheep			
	Hen			
	Beehive			
	Bank / saving booklet Other			
	How many birrs do have in book account			

Only full to come from the rural areas

No	Question		Options
801	Who is the owner of the house?		1. Private 2. Other
	the roof of the house		1. still 2. Grass 3. Other ...
	the exterior wall of the house		1. Mud suspended cement 2. Wooden mud 3. Blocked by Stephano 4. Other ...

	Kitchen Main source of energy Kitchen:		1. Coal 2. Wood 3. Cottage 4. Gas 5. Other .	
	Is there special home for the animals		1 yes 2. No	
	you have a different kitchen		1 yes 2.no	
	What is the source of water you use?		Pipe in compound 2 . water with Pump 3. Pond / River / Stream / Source 4. Shared hole 5. Other	
901		Are there any of the following people at home? How much are they worth?		
	Item type	Yes	numbers	No
	Radio or tape	1		0
	Bed mattress / cotton / sponge	1		0
	Mobile phone	1		0
	Water Generator	1		0
	The power of the Solar System	1		0
	Bull / cow / calf	1		0
	Tractor / Others ...	1		0
	Horse	1		0
	Goat / sheep	1		0
	Dar	1		0
	Beehive	1		0
	Agricultural land per hectare	1		0
1001		how many of the following products you have in sac/100kg/		
	Product type	Yes	Number In sacs	no
	Tiff	1		0
	Barley	1		0
	Wheat	1		0
	Corn	1		0
	Melon	1		0
	Sesame	1		0
	Beans	1		0
	Pea	1		0
	Chickpeas	1		0
	Lent	1		0
	Nuts	1		0
	Sorghum	1		0
	If you have other products, include	1		0

	1. _____ 2. _____	3 4
--	----------------------	--------

THANKS A LOT!!!

Annex IV: Information sheet Amharic version

IV: የተሳታፊዎች መረጃ መስጫ ቅጽ- በአማርኛ

ስለጥናቱ ማስታወቂያ ቅጽ

ጤና ይስጥልኝ ስሜ እባላለሁ። የመጣሁት ከባ/ዳር ዩንቨርሲቲ ስነ-ተዋልዶ ጤና ት/ት ክፍል ለሚሰራው ጥናት መረጃ ለማሰባሰብ ነው። የጥናቱ ዋና አላማ በቀዶ ጥገና የማዋለድ ዘዴ የሚወልዱ እናቶች መጠን ምን ያህል እንደሆነ እና ወሳኝ ምክንያቶች ምን ምን እንደሆኑ ለማወቅ ሲሆን የርስዎ በዚህ ጥናት መሳተፍ አላስፈላጊ ቀዶ ጥገና እና አስፈላጊ ቀዶ ጥገና የማዋለድ ዘዴ በማድረግና ባልማድረግ የሚመጡ ጉዳቶቻችን እናቶች ላይ የሚደርስ ተያያዥ ችግሮች እና ሞት ከመቀነስ አንጻር ጉልህ አስተዋጾ ይኖረዋል ነገር ግን ከመጠይቁ የሚሠጥዎት ቀጥታ ጥቅም ወይም ክፍያ የለም። የሚሰጡት መረጃ በሙሉ በፍፁም አስተማማኝነት ለዚህ ጥናት ብቻ የሚያገለግል ሲሆን በዚህ ቃለ-መጠይቅ ስም ይሁን አድራሻ አይገለጽም። መጠይቁ የእርስዎ ፍቃደኝነት ፍጹም ከተረጋገጠ ብቻ የሚካሄድ ይሆናል። በተጨማሪም ለመመለስ የማይፈልጋቸው ጥያቄዎች ካሉ ጥያቄውን ለመመለስ አይገደዱም። እንዲሁም በጥናቱ ላይ በሙሉም ይሁን በክፍል ላለመሳተፍ ከፈለጉ በማንኛውም ሰዓት ማቋረጥ ይችላሉ። መጠይቁ የሚወሰደው 10 ደቂቃ ነው ከመጠይቁ ። ጥናቱን በተመለከተ ጥያቄ ካለዎት ማንኛውም ጥያቄ መጠየቅ ይቻላል!! ስም: የሻለም ውቤ ስልክ ቁ 0909043535 አድራሻ: ባህር ዳር Email rutabwubie@gmail.com

ከመጠይቁ በፊት የተጠያቂውን ስምምነት ማረጋገጫ ቅጽ

የባህር ዳር ዩንቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ ህብረተሰብ ጤና ሳይንስና የስነ-ተዋልዶ ት/ት ክፍል ከላይ በመግቢያው ላይ የተጠቀሰው መረጃ አንብቢያለሁ ወይም በቃል የተሰጠኝን ማብራሪያ ተረድቻለሁ። በዚህ መሰረት ከኔ የሚጠበቅብኝን ድርሻ በሚገባ አውቁዋለሁ እናም በዚህ ጥናት ላይ በመሳተፍ ሊከሰቱ የሚችሉትን ሁኔታዎች ተገንዝቢያለሁ። ከዚህ ጥናት በማንኛውም ሰዓት ያለምንም ቅድመ ሁኔታና ምክንያት ራሴን ከተሳታፊነት የማግለል ሙሉ መብት እንዳለኝ ተረድቻለሁ። ይህን ውሳኔዬን ተከትሎ በኔም ሆነ በቤተሰቦቼ ላይ በምንፈልገው የጤና አገልግሎት ላይ ምንም አይነት አሉታዊ ተጽኖ አንደማይደርስብኝ ተረድቻለሁ። መጠይቁን እንድቀጥል ፈቃደኛ ነዎት?

- 1. ፈቃደኛ ናቸው 1..... ቃለ መጠይቁ ይቀጥላል
- 2. ፈቃደኛ አደለሁም 2..... ቃለ መጠይቁ በማቆም አመስግነው ይለያዩ

ጥናቱን በተመለከተ ማብራሪያ የተሰጠ መሆኑን የሚያረጋግጥ ፊርማ.....

መመሪያውን በጥንቃቄ ካንብቡላት በኋላ ከፊት ትክክል ሆላቡን ይገልጻል ያሉትን መልስ በጥንቃቄ ያክብቡ (ክፍት ቦታውን ይሙሉ)።

መጠይቅ

መመሪያውን በጥንቃቄ ካንብቡላት በኋላ ከፊት ትክክል ሆላቡን ይገልጻል ያሉትን መልስ በጥንቃቄ ያክብቡ (ክፍት ቦታውን ይሙሉ)።

- መረጃው የተሰጠበት ቀን...../.....2011 ዓ.ም
- መለያ ኮድ 1H
- መለያ ኮድ 2p.....
- መጠይቁን የሞላው ሰው..... ፊርማ

ክፍል አንድ ማህበራዊና ኢኮኖሚያዊ መረጃዎች

ተራቁ	ማህበራዊና ኢኮኖሚያዊ መረጃዎች	አማራቸጭ መልሶች	ወደ
101	እድሜዎት ስንት ነው?	.....በአመት	
102	የመጡበት አካባቢ የት ነው?	1. ገጠር 2. ከተማ	
103	ሃይማኖትዎ ምንድን ነው?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ ካለ ይገለጽ.....	
104	የትዳር ሁኔታ	1. ያገባች 2. ያላገባች 3. የፈታች 4. የሞተባች	
105	የትምህርት ደረጃዎ	1. ማንበብና መጻፍ የማይችል 2. ማንበብና መጻፍ የሚችል 3. የአንደኛ ደረጃ (1-8) 4. ሁለተኛ ደረጃ (9-12) 5. ኮሌጅ ዲፕሎማ 6. ዲግሪ እና ከዚያ በላይ	
106	የባለቤትዎ የትምህርት ደረጃ	1. ማንበብና መጻፍ የማይችል 2. ማንበብና መጻፍ የሚችል 3. የአንደኛ ደረጃ (1-8) 4. ሁለተኛ ደረጃ (9-12) 5. ኮሌጅ ዲፕሎማ 6. ዲግሪ እና ከዚያ በላይ	
107	ስራዎት ምንድን ነው?	1. አርሶ አደር 4. ተማሪ 2. የቤት እመቤት 5. ነጋዴ 3. የመንግስት ሰራተኛ 7. የግል ድርጅት 5. ቀን ሰራተኛ 8. ሌላ.....	
108	አማካይ የቤተሰብዎት የወር ገቢ ምን ያህል ነው?	.....
ክፍል ሁለት	እናቶች ስለ ቀደጥና ያላቸው ግንዛቤ መለኪያ		
201	በአሁኑ እርግዝናዎት የእርግዝና ክትትል ያደርጉ ነበር?	1. አዎ 2. የለም	
202	አዎ ካሉ ለምን ያክል ጊዜ ተከታትለዋል	.....በሳምንት/ በወር	
203	የአሁን እርግዝና ግዜው ምን ያክል ነበር	1. ቀኑ ከመድረሱ በፊት 37 ሳምንት በታች 2. በቀኑ ከ (37-40) ሳምንት ባለው 3. ቀኑን ያሳለፈ ከ40 ሳምንት በላይ	
204	ይህ ስንትኛ እርግዝነሽ ነው	.....
204	አሁን ከወለዱበት የጤና ተቋም የመጡት በምን ነው	1. በሪፈራል 2. በቀጥታ	
205	ከአሁን በፊት በቀደ ጥገና ወልደው ያወቃሉ?	1. አዎ 2. የለም	
207	ከአሁን በፊት ያለውት ቀደ ጥገና የት ነው የወለዱት	1 የመንግስት-የጤና ተቋም 2 የግል የጤና ተቋም 3 በጎ አደራጎት ጤና ትቀክመ	
208	በእርግዝና ወይም በወሊድ ጊዜ ስለ ቀደ ጥገና የማዋለጃ ዘዴ ሰምተው ያወቃሉ?	1. አዎ 2. የለም	
209	አዎ ካሉ የሰሙት ስለምንድን ነው? (ከአንድ በላይ መምረጥ ይቻላል)	1. በቀደጥና ለመወለድ ስለሚያስገድድ ሁኔታዎች ወሳኔዎች 2. ተደጋግሞ የሚሰራ ቀደ ጥገና ወሊድ ጥቅምና ጉዳት 3. ሌላ ካለ ይጥቀሱ.....	
210	መረጃዎን ያገኙት ከማን ነው?	1. ከጤና ባለሙያው 2. ከቤተሰብ 3. ከጓደኛ /ጎረቤት	

		4. ከመገናኛብዙሀን 5. ሌላ ካለ ይጥቀሱ	
211	በቀደጥገና ለመውለድ ስለሚያስገድድ ሁኔታዎች ምንም እንደሆኑ ያውቃሉ	1. አዎ 2. የለም	
212	አዎ ካሉ ምን ምን ናቸው	..... .....
213	በቀደ ተጥገና ከወለዱ በኋላ አምጦ መውለድ ይቻላል?	1.አዎ ይቻላል 2. አይቻልም 3. አላውቀውም	
214	በቀደ ጥገና የተወለዱ ህጻናት በማህጸን ከተወለዱት ጋር ሲወዳደር የበለጠ ጤናማ ይሆናል ብለው የሚያስቡ የትኛውን ነው?	1. በቀደ ጥገና የተወለደውን 2. አምጦ በማህጸን የተወለደውን 3. እኩል ናቸው 4. አላውቀውም	
215	አንዲት እናት በቀደ ጥገና ከወለደች በኋላ ቀጣይ ለማርገዝ ምን ያህል ጊዜ መቆየት አለባት?	1..... ዓመት 2. አላውቀውም	
216	የታቀደ ቀደ ጥገና ማዋለድ ዘዴ ለእናትም ሆነ ለልጅ ጤና የተሻለ ዋስትና አለው?	1. አዎ 2. የለውም 3. አላውቀውም	
ክፍል ሶስት	እናቶች ስለ ቀደጥገና ያላቸው የአመለካከት መለኪያ ጥያቄዎች	አማራቸጭ መልሶች	
301	በቀደ ተጥገና መዋለድ ዘዴን እንዴት ያዩታል?	1. በጣም መጥፎ 2. መጥፎ 3. አላውቅሁም/አልወሰንሁም/ 4. ጥሩ 5. በጣም ጥሩ	
302	አምጦ መውለድ ዘዴ የእርስዎ ዋና ምርቶች ነው ቢባል	1. በጣም አልሰማማም 2. አልሰማማም 3. አልዎስነኩም 4. አስማማለሁ 5. በጣም አስማማለሁ	
303	በቀደ ጥገና መውለድ ዘዴ የእርስዎ ዋና ምርቶች ነው ቢባል	1. በጣም አልሰማማም 2. አልሰማማም 3. አልዎስነኩም 4. አስማማለሁ 5. በጣም አስማማናለሁ	
304	እርስዎ ቀደ ጥገና ይሰራልሽ ብትባይ ምን ይላሉ ፍቃደናኛ ይሆናሉ	1. በጣም አልሰማማም 2. አልሰማማም 3. አልዎስነኩም 4. አስማማለሁ 5. በጣም አስማማናለሁ	ወደ305
305	በተራ ቁጥር 303 መልስ ፈቃደነኛ አይደለሁም ካሉ የማይሆኑበት ምክንያት የትኛው ሊሆን ይችላል	1. በቀደ ጥገናው አማካኝነት የሚመጣ ሞትን በመፍራት 2. ሲሰራና ከተሰራ በኋላ የሚምጣ ህመምን በመፍራት 3. ለቀጣይ እርግዝና በማሰብ 4. በመጥፎ እንደሆነ በማስብ 5. ክፍያውን ለመክፈል ስለሚከበድ	
306	ቀደ ጥገና ስራ ጠባሳ ጥሎ ሊያልፍ ይችላል ከተሰራልሽ ጥሎት በሚያልፈው ጠባሳ ልትጨነቁ ትችያለሽ	1. ምንም (በጣም)አልጨነቅ 2. አልጨነቅም 3. አልዎስነኩም 4. እጨነቃለሁ 5. በጣም እጨነቃለሁ	
307	ምንም አይነት አስገዳጅ የጤና ችግር ሳይኖርባት እናትየዋ ከጠየቀች ቀደ ጥገና	1. በጣም አልሰማማም 2. አልሰማማም	

	ሊስራላት ይገባል ቢባል	3. አልዎስነኩም 4. አስማማለሁ 5. በጣም አስማማለሁ	
ክፍል አራት	ከማህጸንና ፅንሰ የተያያዙ መረጃዎች	አማራች መልሶች	
401	ሰለ አደገኛ የእርግዝና ምልክቶች ሰምተሽ ታቂያለሽ	1. አዎ 2. የለም	
402	ከወሊድ ጋር በተያያዘ ያጋጠመሽ ችግር ነበር?	1. አዎ 2. የለም	
403	ያገጠመሽ ችግር ምን ነበር?	1. የደም መፍሰስ ችግር 2. ኢንፌክሽን 3. የደም ግፊት መጥፋት 4. የማህፀን መተርተር 5. ሌላ ካለ ይጥቀሱ.....	2. የምጥ ችግር 3. ፊስቱላ 4. የፅንሰ
405	አሁን የወለዱት በየትኛው የወሊድ ዘዴ ነው?	1. አምጠዉ በማህፀን 2. በቀዶ ጥገና 3. መሳሪያ በመታገዝ	
406	የቀዶ ጥገናዉ አይነት በየትኛው ነው?	1. ድንገተኛ 2. የታቀደ	
407	ጠፍቶ የተወለደ ልጅ አጋጥሞሽ ያውቃል?	1. አዎ 2. የለም	
408	አሁን በሂዎት ስንት ልጆች አለዎት? (ወልደዋል)	.....
409	የተወለዱት ልጆዎት ሁሉም በህይወት አሉ	1. አዎ 2. የለም	
410	ሰንተኛ እርግዝናሽ ነው ምርጫን ጨምሮ	.....
411	የለም ካሉ በህይወት የሌለ ሰንተኛዉ ልጅ ነዉ	1. ያሁኑ 2. ከዚህ በፊት ከተወለዱት	
412	የልጁ አመጣጥ ምን ነበር	1. እጅ ና እግሩ ተደራርቦ 2. በመቀመጫዉ 3. በጭንቅላቱ	4. ተጋደሞ 5. አይታወቅም
412	የልጆዎትን ክብደት ምን ያህል ነበር	-----	
413	በአወላለድ ሁኔታሽ ላይ በአብዛኛው ውሳኔ የሚሰጥ ማነው	1. ራስዎት 2. የጤና ባለሙያው 3. ባለቤትዎ 4. ሌሎች የቤተሰብ አባላት	
414	የጤና ባለሙያዉ በቀዶ ጥገና ስለመወልደ ሰለ ጥቅምና ጉዳቱ አስረዲቶሻል	1. አወ 2. የለም 3. አላወቅሁም	
415	የጤና ባለሙያው ተገቢውን ህክምና እንዲሰጥዎት ተገቢዎነን እንክብካቤ አድርጎልሻል	1. አወ 2. የለም 3. አላወቅሁም	
416	የወለዱት ህጻን የደረሰት የጤና ችግር አለ	1. አወ 2. የለም	
417	በእርግዝና ጊዜ ወይም ከእርግዝና በፊት ደም ግፊት እና ሌላ የቆየ የጤና ችግር ነበረብዎት	1. አወ 2. የለም 3. አላወቅሁም	
418	ለለአሁኑ የተሰጠዎት ማደንዘዣ ወይም ሰመመን ምንድን ነው	1. ሙሉ አጠቃላይ 2. ከወገብ በታች	
419	ለአሁኑ ቀዶ ጥገና የወለዱበት ዋናዉ ምክንያት ምንድን ነዉ (ከ1 በላይ መልስ ይቻላል)	1. በእናት የጤና ችግር ምክንያት 2. እናትየዋ ስለጠየቀች 3. በልጅ የጤና ችግር ምክንያት 4. ከዚህ በፊት በነበረ የጤና ችግር ምክንያት	

		5. በጤና ባለሙያው ምክንያት 6. ሌላ ካለ ይጥቀሱ.....	
420	ከላይ የመለሱት መልስ ምክንያት 1 (በእናትየዋ የጤና ችግር ምክንያት) ከሆኑ ከተዘረዘሩት ዋናው ምክንያት የትኛው ነው	1. የማህፀን መጥበብ 2. ከዚህ በፊት በነበር ቀደ ጥገና ምክንያት 3. የምጡ ሁኔታ በትክክል ስላልሄደ 4. የምጥ መርፌ ቢሰጥም ምጥ ባለመጀመሩ 5. ሌላ ካለ ይጥቀሱ.....	
421	የጥያቄዎ መልስ 2 (እናትየዋ ስለጠየቀች) ከሆነ የጠየቀሽዉ በምን ምክንያት ነው (ከ1 በላይ መልስ ይቻላል)	1. የማህፀን የተፈጥሮ ይዘት ለመጠበቅ 2. በማህፀንመውለድ ተፈጥሮአዊና ተቀባይነት እንዳለው ባለማወቅ 3. የምጥ ህመምን በመፍራት ህመምን ለማስወገድ 4. የቀደ ጥገና ወሊድ ለእናትም ለልጅም ጥሩ መሆኑን በማሰብ 5. ባለቤትዎ እንዲወልዱ ስለገፋፉዎት 6. የጤና ባለሙያው ስለችግሩና ሁኔታ ስላላስረዳሽሌላ ካለ ይጥቀሱ..... 7. ሌላ ካለ ይጥቀሱ.....	
417	መልስዎ ከዚህ በፊት በነበረ 3 (የጤና ችግር) ከሆነ ምክንያቱ ምን ነበር	1. በእርግገና ጊዜ ወይም ከእርግገና በፊት በነበረ ደም ግፊት መባባስ 2. ሌላ የቆየ የጤና ችግር በመኖሩ ምክንያት 3. ሌላ ካለ	
418	መልስዎት የጤና ባለሙያው ከሆነ ምክንያቱ ምን ነበር	1. የላቀ ህክምና እንዲሰጥዎት 2. ምንም ምክንያት ሳይኖር በራሱ 3. ጥቅምናጉዳቱንባለማስረዳቱ ምክንያት 4. የጤና ባለሙያው ስለአዎላለዱ ምክር ስለሰጠኝሌላ 5. ካለ ይጥቀሱ.....	
419	መልስዎ የህፃኑ የጤና ችግር ከሆነ ምክንያት ምን ነበር	1. ህጻኑ ስለታፈነ 2. አመጣጡ ትክክል ስላልነበር 3. መንታ በመሆኑ 4. ከመወለዱ በፊት እትብቱ ከእናቱ በመገንጠሉ 5. ክብደቱ ትልቅ ስለነበር (4 ኪ.ግ) በላይ 6. ቀኑ ስላልፍ 7. ሌላ ካለ ይጥቀሱ.....	

ከተማ ለመጡ እናቶች የሀብት ሁኔታን የሚመለከት ጥያቄዎች		
ተ.ቁ	ጥያቄ	አማራጮች
501.	የቤቱ ይዞታ የማን ነው?	1. የግል 2. የቀበሌ 3. የክራይ 4. ሌላ.....
502	ስንት ክፍል አለው	.....
503	አንድ ክፍል ውስጥ የሚተኙ ሰዎች ብዛት	በቁጥር
504	የቤቱ ወለል	1. አፈር 2. ሲሚንቶ 3. ሴራሚክ
505	የቤቱ ጣራ	1. ቆርቆሮ 2. ሳር 3. ሌላ
506	የቤቱ ግድግዳ	1. በጭቃ ሲሚንቶ ግርፍ /ብሎኬት በስሚንቶ 2. ዕንጨት በጭቃ 3. ድንጋይ 4. ሌላ
506.	የቤቱ ዋና የምግብ ማብሰያ የሚጠቀሙት የቱን ነው	1. ኤሌክትሪክ 2. ከሰል 3. እንጨት 4. ኩብት 5. ጋዝ 6. ሌላ.....

507	የተለየ የምግብ ማብሰያ ቤት አልዎት	1.አወ 2.የለም
508	የሚጠቀሙበት የውኃ ምንጭ ምንድን ነው	1. ቧንቧ የግል 2. የጋራ ቧንቧ 3. የጉድጓድ ውኃ 4. ወንዝ/ወራጅ/ምንጭ
509	የሚጠቀሙበት መጻዳጃ ቤት ምን ዓይነት ነው	1. የውሃ መልቀቂያና ማፋሰሻ ያለው የግል ሴራሚክ 3. ባህላዊ የጉድጓድ 2. የተሻሻለ በሲሚንቶ የተሰራ የጋራ 4. ሜዳ ላይ
610	ቤት ውስጥ ከዚህ በታች የተዘረዘሩት አሉዎት አሉ? አወ ካሉ ቁጥራቸውን ምን ያህል ነው	
	ሬዲዮ	1. አወ _____ 2. የለም
	ቴሌቪዥን	1. አወ _____ 2. የለም
	ፍሪጅ	1. አወ _____ 2. የለም
	አልጋ/	1. አወ _____ 2. የለም
	ጠረጴዛ	1. አወ _____ 2. የለም
	ወንበር	1. አወ _____ 2. የለም
711	ከቤተሰብዎ ውስጥ ከሚከተሉት ያለው አለ? መልስዎ አወ ከሆነ ምን ዓይነት ነው	
	የዕጅ ስልክ	1. አወ 1. ስማርት 2. ሌላ 2. የለም
	ሞተር ሳይክል	1. አወ 2. የለም
	ባጃጅ	1. አወ 2. የለም
	መኪና	1. አወ 2. የለም
	በሬ/ላም	1. አወ 2. የለም
	ፈረስ/በቅሎ	1. አወ 2. የለም
	ፍየል/በግ	1. አወ 2. የለም
	ደሮ	1. አወ 2. የለም
	የንብ ቀፎ	1. አወ 2. የለም
	የባንክ/የቁጠባ ደብተር	1. አወ 2. የለም
	የባንክ/የቁጠባ ደብተር ምን ብር አለዎት	

ከገጠር ለመጡ ብቻ የሚሞላ		
ተ. ቁ	ጥያቄ	አማራጮች
80 1	የቤቱ ይዘታ የማን ነው?	1. የግል 2. ሌላ.....
80 2	የቤቱ ጣራ	1. ቆርቆሮ 2. ሳር/ዕንጨት 3. ሌላ
80 3	የቤቱ የውጭ ግድግዳ	1. በጭቃ ሲሚንቶ ግርፍ 2. ዕንጨት በጭቃ 3. ብሎኬት በሲሚንቶ 4. ሌላ
80 4	የቤቱ ዋና የምግብ ማብሰያ	1. ኤሌክትሪክ 2. ከሰል 3. እንጨት 4. ኩብት 5. ጋዝ 6. ሌላ.....
80 5	ለእንስሳቱ መኖሪያ የሚሆን የተለየ ቤት አልወት	1. አወ 2. የለም
80 6	የተለየ የምግብ ማብሰያ ቤት አልዎት	1.አወ 2.የለም
80 7	የሚጠቀሙበት የውኃ ምንጭ ምንድን ነው	1. በግቢው ውስጥ ካለ ቧንቧ 2. የጉድጓድ ውኃ ከነጋንጥ 3. ኩሬ/ወንዝ/ወራጅ/ምንጭ 4. የጋራ ጉድጓድ 5. ሌላ.....
90	ቤት ውስጥ ከዚህ በታች የተዘረዘሩት አሉ? አወ ካሉ ቁጥራቸው ምን ያህል ነው	

1				
	የአቃው አይነት	አዎ	በቁጥር	የለም
	ሬዲዮ ወይም ቴፕ	1. አወ		2. የለም
	አልጋ ፍራሽ /የጥጥ/ ስፖንጅ/ስፕሪንግፍራሽ	1. አወ		2. የለም
	የሞባይል ስልክ	1. አወ		2. የለም
	የውኃ ጄኔሬተር	1. አወ		2. የለም
	የሶላር ሀይል	1. አወ		2. የለም
	በሬ/ላም /ጥጃ	1. አወ		2. የለም
	ትራክተር/ ጊኒደር/ ሌሎች ...	1. አወ		2. የለም
	አህያ ፈረስ/በቅሎ	1. አወ		2. የለም
	ፍየል/በግ	1. አወ		2. የለም
	ደሮ	1. አወ		2. የለም
	የንብ ቀፎ	1. አወ		2. የለም
10 01	ከዚህ በታች የተጠቀሱት የአርሻና የጓሮ ምርት ባለፈው አመት(2011) አምርተዋል አወ ካሉ በኩንታል ምን ያህል አመረቱ		በኩንታል	
	የምርት አይነት			
	ጤፍ	1. አወ		2. የለም
	ገብስ	1. አወ		2. የለም
	ስንዴ	1. አወ		2. የለም
	በቆሎ	1. አወ		2. የለም
	ማሽላ	1. አወ		2. የለም
	ሰሊጥ	1. አወ		2. የለም
	ባቄላ	1. አወ		2. የለም
	አተር	1. አወ		2. የለም
	ሽንብራ	1. አወ		2. የለም
	ምስር	1. አወ		2. የለም
	ለውዝ	1. አወ		2. የለም
	ዳገጥ	1. አወ		2. የለም
10 11	ሌሎች ምርቶች ካሉ የጥቀሱ			
	1. _____	3. _____		
	2. _____	4. _____		
	—			

ስለነበረን ጊዜ አመሰግናለሁ