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Institutional Delivery Service Utilization and its Associated Factors Among Reproductive Age (15-49years) Women in Guba District, Benshangul, Gumuz Region, Western Ethiopia.

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INSTITUTIONAL DELIVERY SERVICE UTILIZATION AND ITS ASSOCIATED FACTORS AMONG REPRODUCTIVE AGE (15-49YEARs) WOMEN IN GUBA DISTRICT, BENSHANGUL, GUMUZ REGION, WESTERN ETHIOPIA.

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Acronyms

ANC	Ante Natal Care
BEmONC	Basic Emergency Obstetric and New-born Care
CEmONC	Comprehensive Emergency Obstetric and New-born Care
EDHS	Ethiopian Demographic and Health survey
HEWs	Health Extension Workers
MDG	Millennium Development Goal
MDSR	Maternal Death Surveillance Report
MHS	Maternal Health Services
MMR	Maternal Mortality Rate
PNC	Post Natal Care
SDGs	Sustainable Development Goals
WHO	World Health Organization

Abstract

Background: Labor and delivery is a normal physiologic process that most women experience without complications. Improving the health of mothers and children through well-organized institutional delivery service is central to achieve reduced maternal and child morbidity and mortality. So, factors that underlie the level of institutional delivery service utilization need to be investigated, especially in areas where little is known about the problem. This study is an attempt to fill this gap by find out magnitude of facility delivery and identify major determinant factors of institutional delivery service utilization that affect service utilization.

Methods: Community based cross sectional study was done on 512 samples from to March 2022. Sampling survey was carried out in 8 rural kebeles to identify mothers who gave birth with in the past one year. Mothers were selected by using systematic random sampling technique. Data were collected using a pre-tested and structured questionnaire by face-to face interviewing, EPI-Data was used to enter the data and SPPS version 23.0 was employed for analysis. Simple and multivariate binary logistic regressions were used with cutting points to determine candidate variables and identify factors associated with outcome variables respectively.

Results: In a survey of 512 women participants, 313 (61.1%) had their last birth in health institution. From the result of the binary logistic regression analysis, we were able to figure out that education status of husband [(AOR = 2, 95%t CI = (1.0–3.3)], ANC visit during recent pregnancy [(AOR = 22, 95% CI = (11–44.6)], personal assist in health facility [(AOR = 0.47, 95 % CI = 0.37–0.61)], Delivery Practice during pregnancy [(AOR = 2.7, 95 % CI = 1.2–6.4)], attitude of mothers delivered at health facility towards institutional delivery [(AOR = 0.46, 95% =(0.23–0.86)] and government employee status[AOR=1.6, 95%CI (1.2-2.4)] were found to be significantly associated with institutional based health facility delivery.

Conclusion and recommendation: Although, the prevalence of institutional delivery is still low in the study area compared to government initiatives. Antenatal care visits, educational status of husband, at health facility visit health personnel assisted you recently; participant occupational status, delivery Practice and attitude mothers delivered at health facility were found to be significantly associated with low institution based health delivery of the service. Strategies which focus on increasing Antenatal care uptake, maternal monthly panel discussion, and increasing husband educational level help to increase health facility delivery service utilization.

Key words: Institutional delivery, Utilization, Reproductive women, Guba, Ethiopia.

1. Introduction

1.1. Background

Pregnancy is a normal healthy state which most women aspire to at some point in their lives. Yet this normal, life affirming process carries with it serious risks of death and disability(1, 2).

Labor and delivery is a normal physiologic process that most women experience without complications. The goal of the management of this process is to foster a safe birth for mothers and their newborns. Additionally, the staff ought to attempt to make the patient and her support person(s) feel welcome, comfortable, and informed throughout the labor and delivery process(3).

Antenatal care is a perquisite for a healthy delivery. Medical facility with trained staff and advanced facilities provides all services related to antenatal check-ups and counseling(4). In a health institution, trained healthcare professionals provide specific care and attention to newborn babies with special needs in order to improve their survival chances and reducing the risk of maternal mortality(4).

Women seeking assistance of medical institution for delivery are the ones given ample support to conceive at the right maternal age without delaying childbearing. Hygienic conditions and surroundings are also important for safe delivery, which are mostly ignored in non-institutional setting for a delivery. safe delivery by labor monitoring, active management of the third stage of delivery, immediate attention of the newborn, postpartum monitoring, addressing complications of mother and infant post-delivery. Institutional medical facility also provides personnel and equipment's to handle emergency circumstances which necessitate immediate medical attention(5).

Giving birth in health facilities under the care and supervision of trained health care providers promotes child survival and reduces the risk of maternal mortality. Worldwide, it is estimated that about one in every four births (25.0%) occur without the assistance of a skilled birth attendant.Ninety percent (90.0%) of these occurred in south Asia and subSaharan Africa(6).

Despite progress, 57% of all maternal death occurs on the Africa continent, giving Africa the highest maternal mortality ratio in the world. A maternal mortality rate varies from country to country. While the lifetime risk of dying from pregnancy-related complications is 1 in 4,700 in the industrialized world, the life time risk of an African woman to dying from pregnancy related complications is 1in39(7).

Even though health facility delivery is encouraged as a single most important strategy in preventing maternal and neonatal morbidity and mortality(8), low use of utilization of institutional delivery services is still one of the reasons why maternal mortality is considerably high among adolescent mothers(9).

Though pregnancy is considered to be a normal healthy state, every woman is at risk of developing a serious complication, and therefore disability and death, during pregnancy and childbirth (10).

Ethiopia is one of the developing countries with the poorest health status and the institutional health services utilization is generally low with different patterns in different regions of the country. Evidence demonstrates that even when skilled formal healthcare is accessible, not all women utilize these services, suggesting that demand-side barriers, including cultural beliefs, women's preferences, and other factors which influence the demand for institutional delivery services utilization, play an important role in determining the probability that women will use formal services(11).

In Ethiopia, institutional delivery services utilization have received attention for the last two decades. Currently, reducing maternal mortality is one of the goals of the health service development program of the country and maternal and newborn health is also among the six priority areas in the reproductive health strategy(8). In additions, more than 85 million people living in a geographically rural and divers environment carries a high burden of maternal ill health(7). Studies have shown that in Ethiopia, institutional delivery services utilization is below acceptable standards. Most of the aforementioned barriers are related to community norms toward institutional delivery services utilization, women's autonomy, poor health system provisions and other factors have received little attention in rural area previously(12).

Although pregnancy is a physiological process, there is a high risk of maternal mortality and morbidity by pregnancy related complications during labor, delivery and postnatal period(13). Despite major strides to improve the health of the population in the last one and half decades, Ethiopia's population still face a high rate of morbidity and mortality and the health status remains relatively poor(14).

Factors influencing institutional delivery services utilization operate at various levels -individual, household, community and state. Depending on the indicator of institutional delivery services utilization, the relevant determinants vary. Effective interventions to promote institutional

delivery service utilization should target the underlying individual, household, community and policy-level factors(1)

Reducing unmet need of family planning, improving institutional delivery, strengthening quality basic emergency obstetric and newborn care (EmONC) and referral system coupled with community awareness efforts are expected to eliminate the low coverage of institutional delivery service utilization in the near future(10).

1.2. Statement of the problem

Worldwide, it is estimated that about one in every four births (25.0%) occur without the assistance of a skilled birth attendant. According to the 2015 World Health Organization (WHO) report, 303,000 women worldwide died during pregnancy or after childbirth, and most of these deaths occurred in sub-Saharan Africa(6).

Globally every day, approximately 800 women die from causes associated to pregnancy and childbirth. Ninty nine percente of maternal deaths happened in the developing countries. The maternal mortality ratio in developing countries is 240/100,000 live birth live birth whereas in developed countries it is 16/100,000. Sixty one percent of maternal mortality occurred in 10 countries including Ethiopia(15). Low and middle-income countries altogether account for overwhelming ninty nine percente of worldwide cases of maternal mortality, of which an estimated 80% are considered avoidable. In addition to the high maternal mortality rate (MMR), another significant challenge for upholding institutional delivery services utilization in the Low- and middleincome countries is increasing the facility and utilization of essential maternal healthcare services (MHS)(16).

Among the 122 million women who have a live birth annually, Ten percent suffer complications and disability. Maternal mortality is the “tip of the iceberg” of a broader array of maternal ill-health that adversely affects both childrens’ and mothers’ health, development, and ability to productively contribute to their communities and societies(17)

Although most maternal deaths are preventable, the most recent available data indicate that the maternal mortality rate in Africa is among the highest worldwide(18), in Africa maternal mortality rate per 100,000 population in some country are: Uganda 360, South Sudan 730, Ethiopia 420, Kenya 400, Tanzania 410, Rwanda 730, Malawi 510, Zambia 280, Madagascar 440, Mozambique 480, Nigeria 560, Ghana 380 and Senegal 320(17).

Since most maternal deaths occur during delivery and during the postpartum period, emergency obstetric care, skilled birth attendance, postpartum care, and transportation to medical facilities if complications arise are all necessary components of strategies to reduce maternal mortality(19).

Institutional delivery service utilization is one of the solution and established interventions to reduce maternal death. It ensures safe birth, reduce both actual and potential complications and maternal death and increase the survival of most mothers and newborns. But most deliveries in developing countries occur at home without skilled birth attendants(7).

Utilization of maternal healthcare services such as antenatal and prenatal care, and institutional delivery has proven to be significantly correlated with reductions in maternal mortality(20). So that, we took maternal mortality, deaths due to pregnancy complication, birth or the post-partum period, is considered as a key indicator of women's health status(21).

Despite the Federal Ministry of Health has set ambitious targets for 2015 including availability of Basic and Comprehensive Emergency Obstetric and Neonatal Care (BEmONC and CEmONC) at 100 percent of hospitals and health centers in the country; increase skilled birth attendance rate to 62 percent of total deliveries and universal access of mothers and neonates for antenatal and postnatal care(20), The key factors attributable for the death of mothers in the country are related to low facility deliveries, poor competence of providers, lack of emergency obstetric services at facilities, and inefficient referral systems for obstetric emergencies(21).

Institutional delivery service utilization in Benishangul-Gumuz, were maternal antenatal care from a skilled provider (68%), delivered by a skilled provider (42%) and women who had a postnatal checkup in the first 2 days after birth (14.5%) were reported from Ethiopian demographic and health survey(EDHS) 2016(1).

Recent information from 2019/20 bi-annual regional health bureau report revealed that number of pregnant women that received antenatal care at least fourth (58%), number of births attended by skilled health personnel(52%) and early first postnatal care attendances 0-48 hrs (0-2days) (39%)(9). Maternal death surveillance and respose (MDSR) 2020 report of the region reveal that a total of 29 maternal deaths were reported. Among this Postpartum (68%), Ante partum (25%) and interapartem (7%) and regarding place of death majority (64%) were in health facility. Direct obstetric (hemmorige and sepsis)(72.4%) were the leading causes of death and the contributory factors towards for maternal deaths in the region as verbal autopsy indicated were, individual and family factor(lack of decision, failure to recognize the problem, delayed referral

from home, lack of money for transportation)(48%), Government factor(lack of road, health inaccessibility)(7%) and health system(delayed referral and arrival to the next facility, lack of supply and equipment, delayed management of the case and mismanagement)(45%).

To reduce maternal mortality and improve on prenatal outcomes for early born, strategies such as seeking skilled assistance during childbirth, effective postnatal care within the first 24 hr`s of delivery and readily available, accessible and appropriate care in cases of complication have beenidentified(21).

Given the low institutional delivery service utilization among women of the reproductive age (15-49 years). Therefore, considering regional variation in proportion and major factories for institutional delivery service utilization; this is a great initiative to prepare this research to show the gap on the low proportion and contributing factors in one of the developing region(Benishangul-Gumuz).

1.3. Significance of the study

Result from different literature review reveals that there were commonalities and differences in the predictors of the three indicators of institutional delivery service utilization from region to region and from ethnicity to ethnicity; there were no published researches done on the area before in the region, institutional delivery is currently get high political concern and it's the front line strategic objective in the health transformation plan ; Despite many activity done to improve maternal health in the region, institutional delivery service utilization is still very low in the country as Ethiopia demographic health survey 2016 report revealed. Maternal death reduction is a public health priority and most maternal deaths are avoidable.

The information generated by this study will be disseminated to relevant authorities and other relevant agents to help initiation of strategies increase numbers of ANC visits, partners better education status, mothers good knowledge on dangers signs of labour, increased income status and lesser travelling distance to reaching to health facility have significantly increased the institutional delivery service utilization.

It is believed that, the result of this study will help all pregnant women are encouraged and supported to replace home delivery by institutional delivery with skilled attendants and as aresult reduce maternal mortality that are related to pregnacy and child birth.

Knowing factors that are responsible for low institutional delivery services utilization in Guba district will help program managers and implementers to design a tailored intervention at district

level, primarily Guba district women of reproductive age will be benefited from this study and further other district in Benishangul Gumuz, Metekel zone will be one of the beneficiaries.

The outcome of the study would be helpful for NGOs in understanding the potential determinants clearly and to plan a new strategy to come up with a solution and implementation of different maternal health care related services and promoting institutional delivery.

The result of this study may help the local government, regional health bureau and district health centre to understanding and describing the main factors that contribute to low institutional delivery service in the study area. To promote the utilization of institutional delivery services and mitigate the factors that hinder the community to use the utilization of institutional delivery services in the study area.

1.4 Rational of the study

In Ethiopia the levels of maternal mortality is the highest in the world. One explanation for poor health outcome among women none use of modern service by sizable proportion in the country. The proportion of births attended by skilled personnel is low even in areas where women have access to the services. However, it is not known why majority of pregnant women do not deliver their babies in a health institution.

This study aimed to identify barriers for attending skilled birth attendants in order to develop a comprehensive and multidisciplinary approach to increase institution delivery services utilization in resource limited settings. We also aimed to estimate the proportion of institutional service delivery up take in Guba district, West Ethiopia.

1.5 Research questions

1) What are major factors are associated with institutional delivery service?
2) What are the major reasons for home and institutional delivery?
3) What proportions of mother delivered at health institution?

2. Literature review

2.1 Global Situation of the- magnitude of Institutional delivery

Worldwide, approximately 830 women died every single day due to complications during pregnancy or childbirth in 2015(6).

The annual number of maternal deaths decreased by 43% from approximately 532, 000 in 1990 to an estimated 303, 000 in 2015.The approximate global lifetime risk of a maternal death fell considerably from 1 in 73 to 1 in 180(6).

An estimated global total of 10.7 million women have died in the 25 years between 1990 and 2015 due to pregnancies related causes. Over the course of that time, however, the world has made steady progress in reducing maternal mortality(6). Nevertheless, there is evidence that effective interventions exist at reasonable cost for the prevention or treatment of virtually all life-threatening maternal complications (22).

Complications in pregnancy and childbirth are the leading causes of death among adolescent girls ages 15-19 in low- and middle- income countries, resulting in thousands of deaths each year. In developing countries, there are too few properly equipped health facilities, and those that do exist rarely provide all of the care that women and babies need (23).

Women are dying needlessly and suffering disabling conditions as a result of pregnancy and childbirth. Every year, more than 289,000 women die during pregnancy or childbirth. The chance of dying is much greater in poor countries; developing countries account for ninty nine percente of the global maternal deaths, the majority of which are in sub-Saharan Africa and southern Asia(7).

2.2 The magnitude of Institutional delivery service in Sub-Saharan Africa

Developing regions account for approximately 99% (302,000) of the global maternal deaths in 2015, with sub-Saharan Africa alone accounting for roughly 66% (201,000), followed by southern Asia (66,000). Estimated maternal mortality rate (MMR) declined across all millennium development goals (MDG) regions between 1990 and 2015, although the magnitude of the reduction differed significantly between regions. The greatest decline over that period was observed in eastern Asia (72%). As of 2015, the two regions with highest maternal mortality rate were sub-Saharan Africa 546 per 100,000 and Oceania 187/100,000(6).

Despite progress fiefty seven percente of all maternal death occurs on the Africa continent, giving Africa the highest maternal mortality ratio in the world. Maternal mortality rates varies from country to country. While the lifetime risk of dying from pregnancy-related complications is 1 in 4,700 in the industrialized world, the life time risk of an African woman to dying from pregnancy related complications is 1in39(7).

At the country level, Nigeria and India are estimated to account for over one third of all maternal deaths worldwide in 2015, with an approximate 58,000 maternal deaths (19%) and 45,000 maternal deaths (15%), respectively. Sierra Leone is estimated to have the highest maternal mortality rate at 1360 per 100,000 live births (6, 12).

2.3 The magnitude of Institutional delivery service utilization in Ethiopia

Institutional delivery is the key intervention to reduce maternal mortality and morbidity.

However, most of the mothers in developing country including Ethiopia are giving birth at home (24).

Health is a major challenge to Ethiopia's development. Half the population lack access to basic health services; health care delivery systems are weak, and the population is largely rural, spread across large regions that often lack roads. Women are exposed to the risks of early and frequent childbearing (25).

Maternal health remains a major public health problem in Ethiopia. In spite of the government's actions to ensure institutional delivery assisted by skilled attendants, home delivery leftovers high,estimated at over 73% of all pregnant women (10).

A study from Dima district of Gambella region(26) found that better place for them and their babies health, got advised with health care providers during their ANC follow-up period, to private and minimize bad/traditional/ habits which is performed while giving birth in the home, facility is near their home, get problem while they are trying to give birth in their home, in order to prevent maternal related problems were more likely to deliver at health facility. The same study found further that lack of respect from health care provider, fast labour time, low incomes, and lack of transport access increased the odds of home delivery.

Maternal education, economic status, distance from health facility, woman's autonomy, Anti natal care attendance, lack of transportation, cultural beliefs inculcating a preference for home

births, community norms toward maternal healthcare services, poor service delivery at the facility level, women's residence, perceived poor competence of providers and limited availability of supplies and equipment have also been shown repeatedly to be factor associated with the utilization of institutional delivery services in most developing country including Ethiopia.(12, 27).

Despite many achievements in the health system, low of institutional delivery services utilization is observed in Ethiopia due to several factors that influence institutional delivery services utilization operate at various levels-individual, household, community and health system(28, 29). In Ethiopia, studies addressing the factors influencing institutional delivery service utilizations are scant, especially, after 2013. The few studies that do exist focused predominantly on urban areas and have identified some important determinants of use of institutional delivery services utilization in the country. Socio demographic factors including parity, age, and education appeared to influence the use of institutional delivery service utilization in urban areas. In contrast, distance and travel time were identified as important factors in the rural parts of the country. Since utilization of maternal healthcare services such as antenatal prenatal care, and postnatal care, and institutional delivery services utilization have proven to be significantly correlated with reductions in maternal mortality(30).

Furthermore, the reviewed literature on magnitudes of health facility delivery reports that the prevalence was varies across region and even different within the same region and rages from 12.3% and 12.1% (Sekela and Dodota district) to 78.8% (Bahir Dar, Ethiopia).

Despite government launched a community-based health-care system to improve health facility delivery and stipulate strategies like user-fee exemption for delivery and associated cares including ambulance service on its health policy to enhance access, efficiency, coverage, utilization and comprehensiveness of health service delivery, barriers still exist as health facility delivery magnitudes remains intangible.

2.4. Individual level factors associated institutional delivery service utilization

2.4.1.Socio-demographic factors associated with institutional delivery service utilization

A review of the literature implies that in developing countries, the use of modern health care such as maternal health services can be predisposed by the socio-demographic characteristics of women, the cultural context, and the accessibility and quality of these services (31).

A review of the literature implies that in developing countries, the use of modern health care such as maternal health services can be predisposed by the socio-demographic characteristics of women, the cultural context, and the accessibility and quality of these services(23).

Skilled birth attendance is known to save maternal and neonatal lives. Women who are delivering at health institutions are more likely to get skilled birth attendance than women who are delivering at home. This is particularly true in developing countries like Ethiopia where trained skilled birth attendants like doctors, health officers and mid-wives, are obtained in health institutions only. There are various factors that are associated with delivering at health institutions. Demographic factors, Socio-economic factors, Obstetric factors, health facility factors and women's autonomy factors are some of the already known factors that affect utilization of health facility of delivery services.

2.4.1.1 Mother's level of education

A study done in North Gonder Zone indicates Maternal education was a strong predictor of preference to place of delivery mothers whose educational status was secondary high school and above were about 11 times more likely to give birth at health institutions than women with other level of education(32).

Educated mothers, mothers who access to health facility, and ANC (Ante Natal Care) attendant mothers found to be high tendency to deliver in the health facilities(33).

Longitudinal data analysis on Ethiopian demographic and health survey (EDHS) data from 2000 to 2016(34) shows women in the richest quintiles women who completed secondary and above education were consistently significant predictors for health facility delivery. On the same study gap on wealth and education related inequalities increased linearly during 2000–16(34).

Similarly Study done in Kenya showed women with secondary or higher education is significantly likely to use appropriate health facilities for delivery than those with no formal education(35).

2.4.1.1 Husband's level of education

Husbands' educational level was also one of the factors that predicted health institution delivery. Women whose husbands had secondary and post-secondary education were about 2.8 times

(AOR = 2.77, 95%CI: 1.07, 7.19) more likely to deliver in health facilities as compared to those whose husbands were unable to read and write(11).

2.4.2. Socio-cultural factors associated with institutional delivery service utilization

Each and every mother and each and every new born needs skilled maternal and neonatal care provided by professionals at and after birth – care that is close to where and how people live, close to their birthing culture, but at the same time safe, with a skilled professional able to act immediately when largely unpredictable complications occur. cultural beliefs inculcating a preference for home births, community norms toward institutional delivery service utilization(12).

2.4.3. Socio-economic factors associated with institutional delivery service utilization

Household economic status can also affect both ante natal care attendance and skilled delivery service utilization. Study has shown that a household socio-economic status is positively related with use of antenatal services such that the odds of reporting use are almost six times as high among women from the richest households compared to their counterparts from the poorest households(13).

Likewise a study done on Factors Associated with Non-use of Maternal Health Services in Botswana indicates the majority of women who did not use maternal services were of low Socio economic status. For instance, 23% of women with low socioeconomic status did not seek a postnatal check-up compared to 13% of women with a high. Another notable observation was that 22% of women with low socioeconomic status had non-institutional delivery compared to only 2% of women in the high socio-economic(36).

2.4.3.1 Economic status of a family

Household economic status of a family could positively affect skilled delivery utilization because high economic families can afford to pay for transport, hospital charges and medications as opposed to poor families. A study done in Afghanistan revealed that household wealth were associated with higher use of skilled birth attendants, including being high economic status, having motorized transport, and having had a family member previously visit the health facility(37).

2.5. Obestatric factors associated with institutional delivery service utilization

Obstetric factors are other predictors of health facility delivery service utilization. Study done in Rwanda shows there is a strong association between birth order and use of health care services. The same study indicated that compared to the first child, subsequent children are more likely to be born at home without assistance or at home with professional assistance rather than at health facility(38).

A study done on institutional deliveries in rural India indicates the probability of an institutional delivery raises from 9% in high order births to 39% in first births(39).Another study which was done in Nepali showed that women who never visited ANC had 5.5 times and those who made1–3 visits were 2 times less likely to have had institutional delivery than women who had more than four ANC visit (40).Women with obstetric problems are more likely to use institutional delivery service those who had no obstetric problems. Astudy done in Metekel Zone of Ethiopia indicates that women who had problems during labour were six times more likely to use institutional delivery compared to those who did not have obstetric problem(41).

2.5.1 Women decision making

Household decision making power is another important predictor of skilled birth service utilization. In countries where decision making power is limited to the head of the house hold (usually male) skilled delivery services utilization is very low. On the contrary where decision making power is left to women themselves the health care service utilization in general and delivery service utilization in particular is found to be high(42).

In Ethiopia, determinants like absence of transport facility or lack of money for transportation, lack of decision making by women, normal previous home/Traditional Birth Attendant (TBA) assisted deliveries are the major reasons cited for low institutional delivery in the country.

2.6. Health facility level factors associated with institutional delivery service utilization

Another important consideration for health facility service utilization is the technical capacity of staff members in addition to the availability of quality services and medications.Women do not want to face unfriendly and hostile environment particularly during delivery. A study done in Nigeria indicated that unsatisfactory services at health facility, unfriendly attitude of staff of the health facility and unavailability of staff at health facility were some of the reasons for not using health facility for delivery purposes(43).

2.7. Availability and Accessibility factors associated with institutional delivery service utilization.

It is logical to view distance from the health facility as one of the barriers to utilization of health facility for skilled delivery purposes. Mothers who are closer to the health facility may use skilled delivery more than those who are far away. Families who cannot afford to pay for transport or service are less likely to use institutional delivery services. A study done in Nigeria showed that long distance to health facility, unavailability of means of transportation and lack of money for transportation were among the factors that were responsible for non-utilization of health facilities for skilled birth(43).

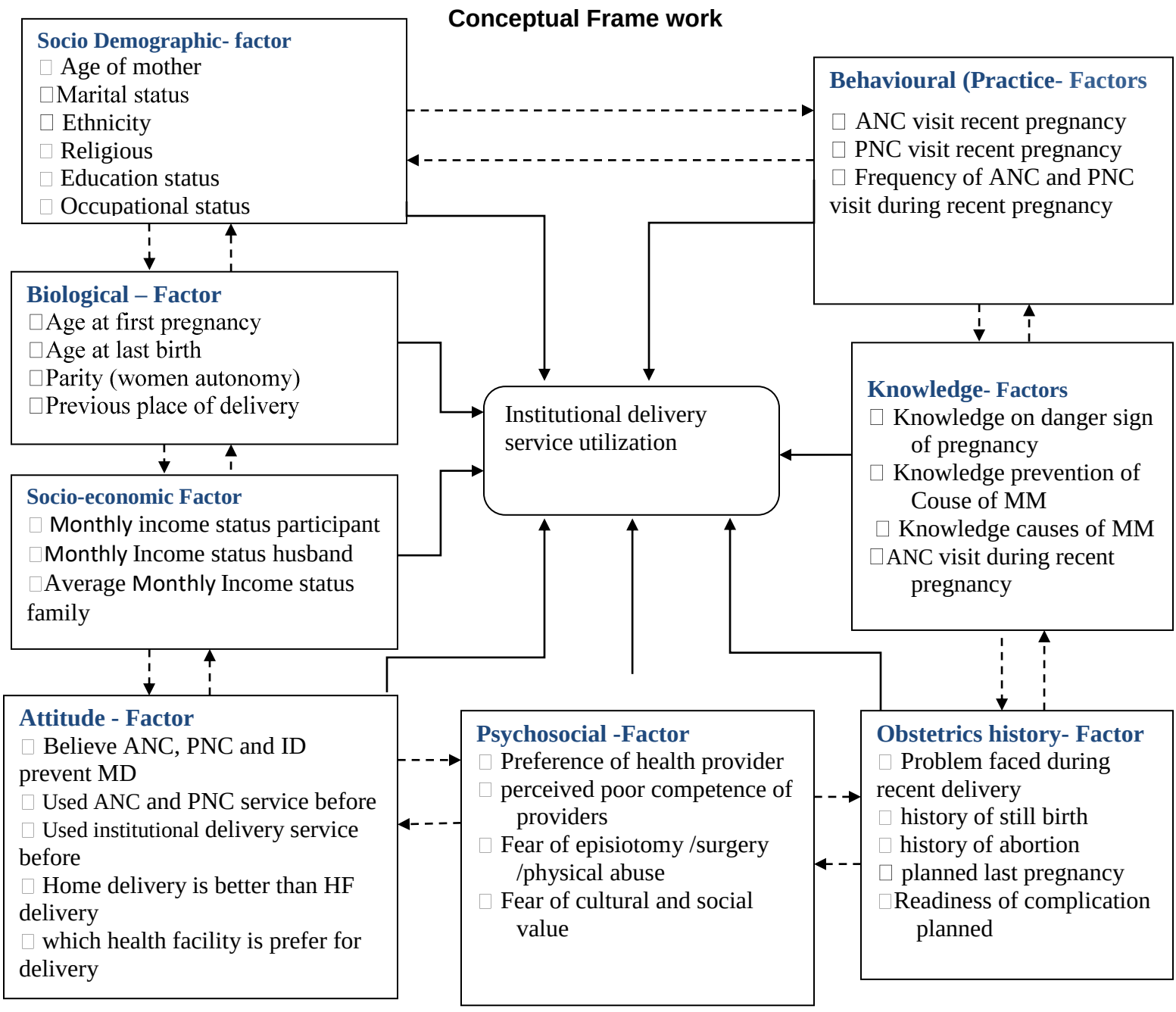


Figure 1: Conceptual framework for factors influencing utilization of institutional delivery adapted from assessment of factor save delivery service utilization 2022.

3. Objectives

3.1 General Objective

The aim of this study is to assess the magnitude of institutional delivery service utilization among women of reproductive age (15-49 years) groups and associated factors in Guba district, North West Ethiopia, 2022.

3.2 Specific Objectives

- To determine the magnitude of institutional delivery service utilization among women of reproductive age groups in Guba district, North West Ethiopia, 2022.
- To identify factors associated with institutional delivery services utilization in Guba district, North West Ethiopia, 2022.

4. Methods and Materials

4.1 Study design and period

Community based cross sectional study design has been conducted to assess magnitude of institutional delivery service utilization among women and factors associated in North West Ethiopia from October, 2021 to January, 2022.

4.2 Study area

Guba district is located in Metekel Zone, Benishangul Gumuz Regional state. It is located 872 km far from the capital city of Ethiopia, Addis Ababa and 240 km from the regional city of Benishangul Gumuz, Assosa. The district has boundaries, bordered by Quara Woreda Amhara Region in North, Wombera and Sedal Woreda in South, Dangur in East and Sudan in West. According to data obtained Guba district Health office, total population of the district was 26,416 out of which females are 12995 (49.2%), women of reproductive age 6806 (26 %).

4.3 Source population

This consists of all mothers of reproductive age group (15 to 49 years) in Guba district and gave birth with in the last one year.

4.4 Study population

All childbearing women who live in the selected kebeles and who gave birth with in the last one year.

4.5. Sample size determination and Sampling techniques

4.5.1 Sample size determination for magnitude of institutional delivery service utilization.

The sample size has been determined by using single population proportion formula by considering the following assumption, For the first objective, we assumed a 95% confidence level, a margin of error of 5%, and a design effect of 1.5. A proportion of mothers who gave birth at health facility are 72%; taken from recent study done in Dejen district(44). Sample size for the study has been determined using the following formula:

$$n = \frac{DE\left(z\left(\frac{\alpha}{2}\right)\right)^2 \times P(1-P)}{d^2} = \frac{1.5(1.96)^2 \times 0.72(1-0.72)}{(0.05)^2} = 465$$

The required sample size is about 512 including 10% (47) non-response rate.

4.5.2 Sample size determination for associated factors of institutional delivery service utilization.

With an assumption of power = 80%, 95 % level of confidence, and design effect = 1.5, the sample size for the second goal was estimated using the double population proportion formula with substantially associated variables from the prior study. Women who use institutional delivery services have been labelled as "vulnerable." Those who did not use institutional delivery services or those who did not use them as a result of interest. Those who deliver outside of a facility are thought to be unaffected by the outcome. Educational status is a major element used in the sample size calculation (9), the number of times anti-natal care was used (9), the number of intended/unintended pregnancies (9), and the distance travelled (9) from a medical facility (10). Applying Epi-Info to compute sample size by double the population proportion, we get the following result: (Table 1).

Table 1:-Sample size determinations for selected factor for institutional delivery service utilization, 2022.

S NO	Factors	Exposure status	Percent of outcome	Power	AOR	Unexposed to Exposed Ratio	Sample size with 95% confidence level	Final [(sample size*1.5)*1%=?]
1	**Secondary and above educational status**	Exposed	64.7	80	3.3	0.55	112	185
		Unexposed	35.3					
2	**Four or more ANC visits**	Exposed	45.6	80	2.7	1.19	166	274
		Unexposed	54.4					
3	**Last pregnancy planned**	Exposed	40.9	80	2.4	1.45	227	375
		Unexposed	59.1					

*Using the largest sample size is more appropriate for maintaining sample size adequacy. Therefore, the final sample size is decided to be **512**.*

4.6. Sampling procedure and techniques

Multistage sampling was employed to select 8 Kebeles were identified by simple random sampling technique (lottery method). Women who gave birth during the last 12 months at any of those eight Kebeles were recruited. House to house registration of mothers who gave birth in the last one year was conducted. There were a total of 4,265 women of reproductive age and amongst these 1,045 mothers who selected from eight kebeles by house to house survey have gave birth within the last 12 months. We were use proportional allocation of study participants to each Kebele per their size. Systematic random sampling with sampling interval of two was used to pick 512 respondents (study units).

$$Sampling\ interval = \frac{Total\ number\ of\ basic\ sampling\ units(BSU)in\ the\ population}{Number\ of\ sampling\ units\ needed\ for\ the\ sample}$$

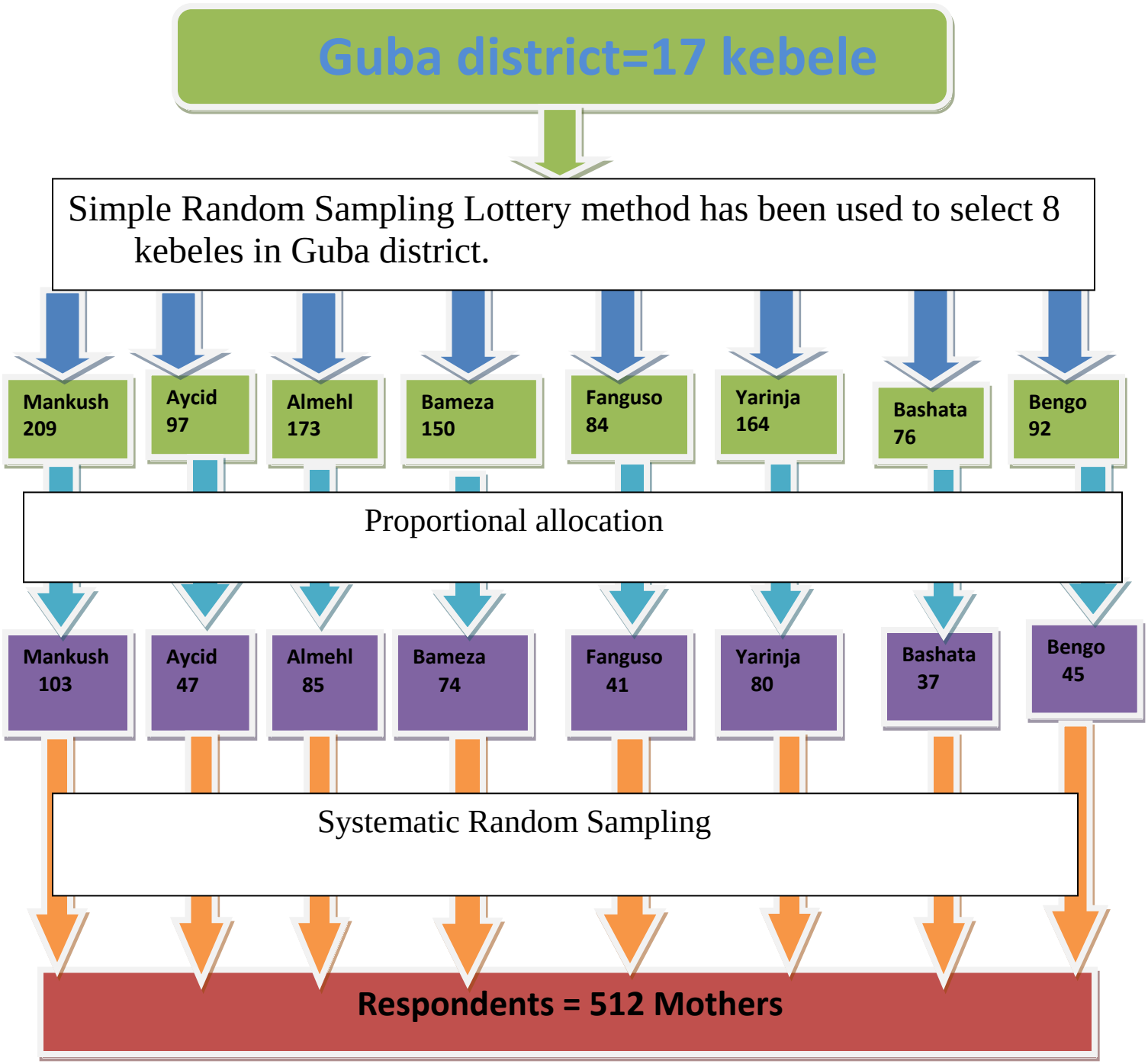


Figure 2: a schematic presentation of the sampling procedure or technique.

Missed/empty house holed well be visited at least 2 times at different visits to confirm non-respondent. The next house will be consider in place of the house which could be not be accessed for collecting mothers data about institutional delivery during 2 times re-visit.

4.7. Inclusion and exclusion criteria

Inclusion criteria

Childbearing women who gave birth in the last one year before the survey irrespective of the place and outcome of delivery and who were reside in the study area for at least the last twelve month were included in the study.

Exclusion criteria

Childbearing women, mothers who had gave birth in before past one year and women who had birth at the age above 49 years.

4.8. Study variables

4.8.1. Dependent variable

The dependent variable was the place of delivery and dichotomized in the following way, (**1**) Health Institutional and (**0**) Non- institutional.

4.8.2. Independent variables

- **Socio-demographic characters:** such as; Age of mother, Marital status, education, ethnicity, religion, occupation and monthly income.
- **Biological – Factor;** such as**,** Age at first pregnancy, Age at last birth, Parity (women autonomy) and previous place of delivery**.**
- **Socio-cultural factors**: such as; the wish to have family members nearby, the wish to follow traditional birth practices, history of home delivery or history of institutional delivery by considering place of delivery.
- **Personal factors**: such as; knowledge of the mother towards Antenatal care and post natal care, bad practice, abortion care, planned last pregnancy, planned last pregnancy and readiness of complication**.**

Obstetric Factors; such as; Age at first pregnancy, Age at last birth, Parity (women autonomy), and previous place of delivery

- **Health service factor and information;** such as**;** Cost of services, and Health worker's behaviour Social Related factor.

4.9. Operational Terms

Anti Natal Care follow-up-Any pregnant women who visit health facility at least once to check her pregnancy and her fetus condition; and she must took at least iron and tetanus toxin vaccination.

Good attitude of mothers delivered at health facility: Respondents who had got 50% or more right answer on attitude related question.

Poor attitude of mothers delivered at health facility: Respondents who had got less than 50% or more right answer on attitude related question.

Good delivery practice during last pregnancy: Respondents who had got above 50% right answer on delivery service practice related questions.

Poor delivery practice during last pregnancy: Respondents who had got less than 50% right answer on delivery service practice related questions.

Institutional delivery service utilization: Is expressed as the proportion of women in need of safe delivery service who actually receive the care during her recent delivery at health facility (Hospital, Health centre or Health post).

Institutional delivery: Is any delivery service, women who gave birth in the health facilities, including health posts attended by health extension workers.

Knowledgeable: Respondents who had got 50% or more right answer on knowledge related questions.

Lack of knowledgeable: Respondents who had got less than 50% right answer on knowledge related questions.

Maternal death: is defined as the death of a woman while pregnant or within 42 days of the termination of pregnancy irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Non-Institutional delivery: For deliveries occurring on their way to the health facility, at her home, at respondents' or relatives' homes, or in other non-professional facilities.

Planned pregnancy: which the woman becomes pregnant after intending to be pregnant or a pregnancy which a woman and her partner had discussed and decided in advance

Skilled Birth Attendant: is a health care professionals (Doctor, nurse , midwife, health officer and trained health extension worker), who provides basic and emergency health care services to women and their new-borns during pregnancy, childbirth and the postpartum period.

Unplanned pregnancies: a pregnancy which the woman becomes pregnant without intending to or a pregnancy a woman and her partner had not discussed and decided in advance

4.10. Data collection procedure (instrument, personnel, data quality control)

Data collection tools **(**questionnaire) were adapted from tools used to assess institutional delivery service utilization used by different studies that possibly assured the objectives of the study and variables under study,

A questionnaire were organized based on socio-demographic information, Knowledge and personal related, Service utilization and attitude related question, Practice related question, History of the recent delivery and obstetric history related information. Mothers of childbearing age who give birth within the last one year were interviewed to collect the information.

The questionnaire was initially prepared in English, translated to common language, Amharic, and back to English by different individuals to check its consistency. Finally, the questionnaires were translated back to English for analysis. For some variables that are likely to change over time, we were including questions about past as well as current exposures status.

Questionnaire was pre-tested on 10% of sample size of non-participating Kebeles with similar setup to study population and the feedbacks from the pre-test were included and essential correction, i.e. addition, deletion and modifications, in the questionnaire was made.
Two-day training on the questionnaire was given to the 6 data collectors (teachers) and one supervisor (BSc environmental health) by the investigator. All teachers were fluently spoken and write Amharic and all were Gumuz ethnically. We select teachers for data collection due the fact

that to allow all participants to respond their idea freely and to avoid ashamed feeling. The training was mainly focused on the objectives of the study, understanding of the questionnaire and basic techniques of interviewing.

To assured data quality, in addition to adequate training and orientation for supervisors and data collectors, the collected data were checked daily during the data collection period. After translated the questioners back to English, data was cleaned and checked for inconsistencies and missing values. This cleaning was done by running frequency of variables using Epi- Data, by the principal investigator before the actual analysis.

Data were collected by house-to- house visits. The first respondent was selected from one to the first sampling interval by simple random sampling using lottery methods. If the houses were closed or the mothers were not present at the time of data collection, frequent visits (at least twice) were made until data collectors could communicate them throughout the data collection. The nearest houses with eligible mother were considered in place of the houses which could not be accessed for collecting mothers' data concerning institutional delivery service utilization. Before started the interviewing, data collectors were checked that whether the respondent was in the condition of transient factors like fatigue, boredom, anxiety, etc. which might limit the ability of the respondent to respond accurately and fully. If the respondent was at this condition, the interview was postponed and next house was continued.

4.11. Data processing and analysis

The collected data was coded, checked, reviewed, and organized daily for completeness. Coded data was entered in Epi-Data and was exported to SPSS (Statistical package for social sciences) version 23.

Summarization/descriptive statistics/ were presented using frequencies, percentage, tables, figures, mean and standard deviation. Associations between dependent and independent variables was assessed using binary logistic regression since our dependent variable (place of delivery) was categorical (have binary outcome). Multivariable binary logistic regression analyses were conducted to identify associated factors respectively. Variables with a p-value of ≤ 0.2 in the uni-variate logistic binary regression were remained in multivariable binary logistic regression analysis to control the effect of confounding variables and to identify associated

factors of institutional delivery service utilization. Multivariable binary logistic regression analysis was done using back-ward stepwise logistic regression to assess individual effect of variables on institutional delivery services utilizations. The assumption of the model was assessed thought Pearson correlation to check multi-collinearly and Hosmer Lemenshow to test model goodness of fit. The significance level was set at p-value less than 0.05 which considered as statistically significant. Adjusted odds ratios with their 95% confidence intervals (CI) were computed to measure the strengths of associations between variables. A p-value of less than 0.05 was considered statistically significant.

4.12. Ethical consideration

Ethical clearance has been obtained from the Institutional Review Board of the Bahir Dar University College of Public Health Science, School of Medicine. An official letter has obtained from Metekel Zone health office and Guba district Health office. Participants have been informed that participation is on a voluntary basis and that they can interrupt the interview at any time if they are not comfortable about the questionnaire. Names or personal identifiers have not been included in the written questionnaires to ensure participants confidentiality. Interviews have been carried out privately. Then, before to interviewing, each participant gave written informed agreement, and opting out was made optional without any pressure at any time throughout the interview, and spouse approval was also obtained for the time being. The district health office and the respective kebeles granted permission to visit each kebele and consult with citizens.

4. Results

4.1 Socio Demographic Characteristics of the respondents

A total of 512 respondents who gave birth in the last one year were participated with response rate of 99%. Among the 354(69.1%) were in the age group of 20 - 34 years.

The mean age and (SD) of respondents were 29.4 ±5.7 years and about 87.5% of the respondents were married.

Among 512 respondents, about 206(40.2%) women and 187(36.5%) of their husband were unable to read and write. Of the total respondent 355(69.3%) were Muslims and with regard to the ethnicity, about 310(60.5%) were Gumuz ethnic.

In the study area half of the respondents and their spouse were farmers and 270(52.7) of their family had monthly income in the range of 500 – 1000 birr (Table 2).

Table 2: Socio-demographic of the respondents in Guba district, North-West Ethiopia, 2022.

			Recent place of delivery	
Variables	**Categories**	**Frequency (%) (N = 512)(%)**	**Non institutional (N=199)(38.9%)**	**Institutional (N=313)(61.1%)**
Age of the respondent	Less than 20years	40(7.8)	19(9.5)	21(6.7)
	20 -34 years	354(69.1)	136(68.3)	218(69.6)
	35-49 years	118(23)	44(22.2)	74(23.6)
Educational status of the respondent	Unable to read and write	206(40.2)	93(46.7)	113(36.1)
	Able to read and write	306(59.8)	106(53.2)	200(68.8)
Education status of husband	Unable to read and write	187(36.5)	83(41.7)	104(33.2)
	Able to read and write	325(63.5)	116(58.2)	209(66.8)
Religion	Orthodox	153(29.9)	50(25.1)	103(32.9)
	Muslim	355(69.3)	149(74.8)	206(65.8)
	Catholic	1(0.2)	0(0)	1(0.3)
	Protestant	2(0.4)	0(0)	2(0.6)
	Others	1(0.2)	0(0)	1(0.3)
Ethnic group	Gumuz	310(60.5)	134(67.3)	176(56.2)
	Amhara	135(26.4)	43(21.6)	92(2.8)

	Tigray	24(4.7)	10(5)	14(4.4)
	Agewe	41(8.0)	12(6)	29(9.2)
	Others	2(0.4)	0(0)	2(0.6)
Current occupation status of the respondent	Farmer	270(52.7)	110(55.3)	160(51.1)
	Government employed	242(47.3)	89(44.7)	153(48.8)
Occupation status	Farmer	298(58.2)	129(64.8)	169(53.9)
Of husband	Government employed	214(41.8)	70(35.2)	144(45.1)
Monthly income	<500 birr	274(53.5)	112(56.2)	162(51.7)
Of Respondent	501-1000 birr	125(24.4)	45(21.1)	80(25.6)
	1000-2000 birr	57(11.1)	19(9.5)	38(12.1)
	>2000 birr	56(10.9)	23(11.5)	33(10.5)
Monthly income of husband	<500 birr	162(31.6)	65(32.6)	97(30.9)
	501-1000 birr	122(23.8)	50(25.1)	72(23.6)
	1001-2000 birr	80(15.6)	30(15)	50(15.9)
	>2000 birr	83(16.2)	29(14.6)	54(17.2)
	System	65(12.7)		
Current marital status	Single	7(1.4)	3(1.5)	4(1.2)
	Married	448(87.5)	174(87.4)	274(87.5)
	Divorced	30(5.9)	12(6)	18(5.7)
	Separated	18(3.5)	6(3)	12(3.8)
	Windowed	9(1.8)	4(2)	5(1.5)
Average income of family	<500 birr	22(4.3)	12(6)	10(3.1)
	501-1000 birr	190(37.1)	70(35.1)	120(38.3)
	1001-2000 birr	137(26.8)	55(27.6)	82(26.1)
	>2000 birr	163(31.8)	62(31.1)	101(32.2)

4.2 Obstetric characteristics of the respondents

About 136(26.6) of the respondents had ever visited health facilities during pregnancy and 248 (66.8%) of them visited health facilities for ANC purposes during their last pregnancy, 136(26.6), 97(18.9), 75(14.6) and 59(11.5) was four times, twice, three times and once time of mothers used ANC service follow up while 145(28.3) didn't follow.

(Table 3).

Table 3: Obstetrics characteristics of the respondents in Guba districts, North-West, Ethiopia, 2022.

			Place of delivery	
Variables	**Categories**	**Frequency (%) (N =512)(%)**	**Non institutional (N=199)(39.9%)**	**Institutional (N=313)(61.1%)**
Institutional delivery before	No	212(41.4)	109(54.7)	103(32.9)
	Yes	300(58.6)	90(45.2)	210(67)
Frequency of institutional before	Once	124(24.2)	39(19.5)	85(27)
	Twice	121(23.6)	35(17.5)	86(27.4)
	Three times	55(10.7)	16(8)	39(12.4)
Place of delivery in previous pregnancy	Health post	148(28.9)	46(23.1)	102(32.5)
	Health center	133(26.0)	40(20.1)	93(29.7)
	Hospital	19(3.7)	4(2)	15(4.7)
	Home	212(41.4)	109(54.7)	103(32.9)
ANC visit in last pregnancy	No	131(25.6)	77(38.6)	54(17.2)
	Yes	381(74.4)	122(61.3)	259(82.7)
ANC follow-up during the last pregnancy	Hospital	12(2.3)	1(0.5)	11(3.5)
	Health center	240(46.9)	74(37.1)	166(53)
	Clinic	129(25.2)	48(24.1)	81(25.8)
Frequency of ANC visit in the last pregnancy	Once	48(9.4)	15(7.5)	33(10.5)
	Twice	323(63.1)	104(52.2)	219(69.9)
	Three times	10(2.0)	4(2)	6(1.9)
Was the last pregnancy planned	No	334(65.2)	151(75.8)	183(58.4)
	Yes	178(34.8)	48(24.1)	130(41.5)

Preparedness and complication readiness plan	No	323(63.1)	143(71.8)	180(57.5)
	Yes	189(36.9)	56(28.2)	133(42.5)
history of abortion in the life time	No	436(85.2)	166(83.4)	270(86.2)
	Yes	76(14.8)	33(16.6)	43(13.7)
History of stillbirth in life time	No	428(83.2)	154(77.3)	274(87.5)
	Yes	84(16.4)	45(22.6)	39(12.4)
Frequency of still birth in life time	Once	73(14.3)	39(19.5)	34(10.8)
	Twice	9(1.8)	6(3)	3(0.9)
	Three times	2(0.4)	0(0)	2(0.6)

4.3 Knowledge, Attitude and practice on institutional delivery

Among the respondents only 188(36.7) were knowledgeable about the advantage of institutional delivery service. When the women who were knowledgeable about the advantage of institutional delivery compared with those who used the service they were below half of them. Regarding attitude of mothers who delivered at health facility towards institutional delivery, 315(61.5) were having good attitude while 197(38.4) had bad attitude. Regarding delivery practices during last pregnancy, 232(45.3) were having good attitude while 280(54.7) had bad practices (Table 4).

Table 4: Knowledge, Attitude and practice on institutional delivery services Utilization, Guba District, 2022.

			Place of delivery	
Variables	**Categories**	**Frequency (%) (N =512)(%)**	**Non institutional (N=199)(39.9%)**	**Institutional (N=313)(61.1%)**
Knowledge about the advantage of institutional delivery	Poor Knowledge	324(63.2)	144(72.3)	180(57.5)
	Good Knowledge	188(36.7)	55(27.6)	133(42.4)
Attitude of mothers at health facility	Poor Attitude	197(38.5)	101(50.7)	96(30.6)
	Good Attitude	315(61.5)	98(49.2)	217(69.3)
Delivery practices during last pregnancy	Poor Practices	280(54.7)	146(73.3)	134(42.8)
	Good Practices	232(45.3)	53(26.6)	179(57.1)

4.4 Reasons for Home Delivery

Reasons mentioned by mother for preference of home delivery includes, 135(26.4) mother reported that Poor knowledge, 70(13.7) reported that they fulfil cultural obligation, 30(5.9) mothers reported that home delivery fulfils when labour is sudden onset, 18(3.5) mothers were protect privacy needing the support of their relatives at home, 17(3.3) mothers reported that home delivery fulfils for the wish to have family member, 7(1.4) mothers reported that home delivery fulfils for fear of episiotomy/surgery, and 4(0.8) mothers reported that home delivery fulfils for fear of cleanliness (Table 5).

Table 5: Reason for home delivery in Guba district, 2022.

Reasons for home delivery	No (%)
Fulfil cultural obligation	70(13.7)
The wish to have family member n	17(3.3)
Save money	2(0.4)
Poor knowledge	135(26.4)
Fear of episiotomy/surgery	7(1.4)
When labour is sudden onset	30(5.9)
Protect privacy	18(3.5)
Cleanliness	4(0.8)
Total	283(55.3)

4.5 Utilization of maternal service

Concerning place of last delivery, 31.8% of the deliveries took place at home and other place [home 158(96.9%), and on the way to health facility 5(3.1%)] and 68.2% at health institutions. Among the home deliveries 92.2% were attended by relatives and/or neighbors.

The study subjects gave different reasons for their preference to deliver at home. The most frequently mentioned reasons for delivering at home were “easy labour” (70%), “sudden onset of

labour" (61%), "transport problem" (60%), "closed health facility" (38%) and "husband interests" (15%). Antenatal care utilization was familiar, with 95.3% of women reporting that they attended skilled antenatal care sessions and 71% attending more than four ANC sessions.

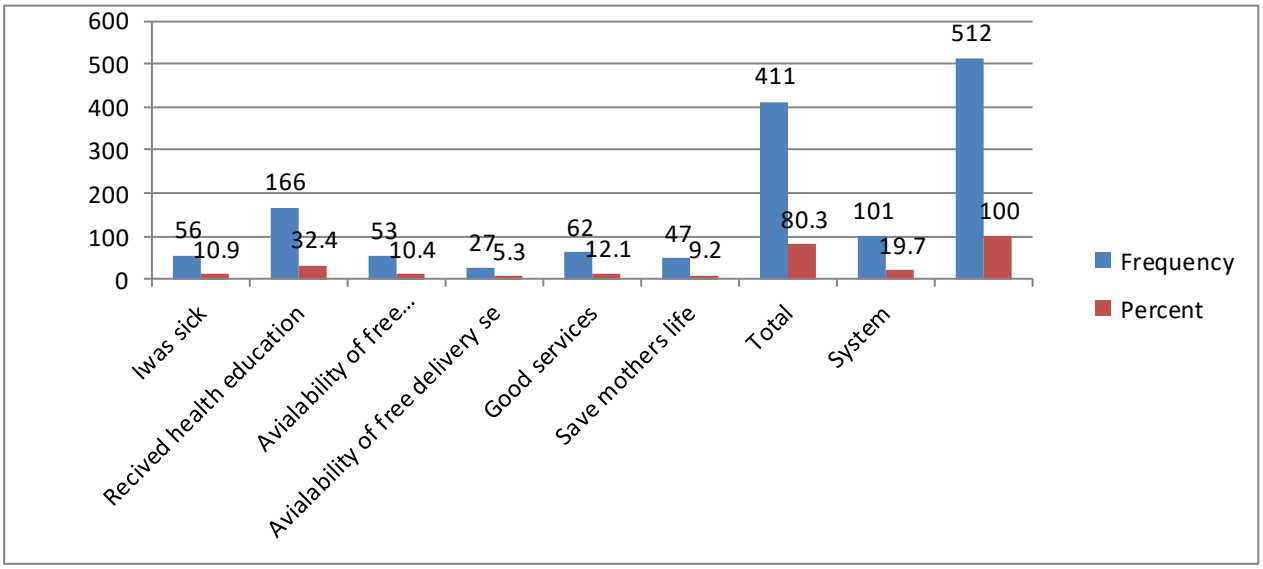
The proportion of women who received four and above ANC and utilized skilled delivery services were 80%.Nearly one in every 10 women had less than four ANC visit and among this around one in every five women (20%) give birth at health facility.

Mothers whose last delivery was at a health institution [Health post 38(13.2%), health centre 275(79%) and hospital 35(10%)] frequently reported that they had favoured for an institutional delivery only because of obtain information on its advantage (70%), its prevention of maternal death (61%), and existence of free delivery service.

Table 6: Utilization of maternity service by using some characteristics, Guba, 2022

Characteristics		Frequency (%) (N = 512)(%)	Place of last baby delivery	
			Institutional (N=313)(61.1%)	Non institutional (N=199)(38.9%)
ANC service before	No	145(28.3)	66(21)	79(39.6)
	Yes	367(71.7)	247(78.9)	120(60.3)
Frequency of ANC service before	Once	59(11.5)	40(12.7)	19(9.5)
	Twice	97(18.9)	64(20.4)	33(16.5)
	Three times	75(14.6)	49(15.6)	26(13)
	Four times	136(26.6)	94(30)	42(21.1)
Health facility visit during pregnancies period	No	110(21.5)	46(14.6)	63(31.6)
	Yes	402(78.5)	266(84.9)	136(68.3)
PNC service before	No	246(48.0)	130(41.5)	116(58.2)
	Yes	266(52.0)	183(58.4)	83(41.7)
Frequency of PNC service before	Once	97(18.9)	67(21.4)	30(15)
	Twice	96(18.8)	71(22.6)	25(12.5)
	Three times	43(8.4)	28(8.9)	15(7.5)
	Four times	30(5.9)	17(5.4)	13(6.5)

Figure 3: Reason for health facility delivery in Guba, district, 2022.



Before relying on a model to draw inferences or forecast future outcomes, we should make sure that the model we have assumed is correctly described, to the extent possible. That is, the data do not contradict the model's assumptions. As shown by the pairwise Pearson Correlation of the independent variable above, the correlation between those variables was not significant at the 5% level of significance, implying that there is no multicollinarty among the independent variables. As a result, the assumption of no multicolinarty is satisfied.

Hosmer and Lemeshow test of model goodness of fit test

Step	Chi-square	df	Sig.
1	5.104	8	.746

The most common modeling strategy for binary outcomes is logistic regression. A chi-square value of a Hosmer-Lemeshow and a p-value are returned in the output above table. Large p-values indicate that the model is well-fitting. From the result of Hosmer and Lemeshow test of model goodness of fit test, the p-value is 0.746 which is greater than 0.05 implying that the model is well-fitting and that we can proceed with additional data analysis.

4.6 Factors Associated with Institutional Delivery Service Utilization

The association of dependent and independent variable using binary logistic regression analysis was performed for identified candidate variables for multivariable binary logistic regression using stepwise logistic regression; husbands educational status, ANC visit during recent pregnancy, women who had got assistance at health facility, practices about institutional delivery, and attitude about institutional delivery were found to have P-value <0.2 in which these variables were taken to multiple binary logistic regression analysis found to be significantly associated factors with institutional delivery service utilization.

A binary logistic regression analysis was performed to identify candidate variables for multiple binary logistic regression utilization.

Mothers whose husbands educational status was able to read and write were 2 times more likely to give birth in health facility deliver [(AOR = 2, 95% CI ((1.0-3.3)] than mothers whose husbands were unable to read and write.

Governmental employee mothers were 2 times more likely to give birth deliver in health facility than mothers whose husbands were unemployed [(AOR = 1.6, 95% CI (1.2-2.4))].

Women who had no assistant at health facility in recent pregnancy were 0.47 times less likely to give birth in health facility [(AOR = 0.47, 95% CI (0.37, 0.61)] when compared to mothers who had health facility assistant.

The odds of utilizing institutional delivery service among women who attend ANC visit during recent pregnancy was 24 times more likely to give birth in health facility than that of not attained ANC visit during recent pregnancy [AOR 24, 95% CI: (11 – 44.6)].

Those mothers who had practices of health facility delivery service utilization were 3 times more likely to give birth at health facility than those mother who didn`t ever utilized facility delivery service[(AOR=2.7, 95% CI (1.2, 6.1)].

Mothers who had poor attitude of health facility delivery service utilization were 0.4 times less likely to give birth in health facility when compared to mothers who good attitude[(AOR=0.4, 95%CI (0.2-0.8)] (Table 7).

Table 7: Result of Multi-variable analysis of institutional delivery service utilization among mother in Guba district, North- West, Ethiopia, 2022.

Variables	categories	Place of delivery		COR (95%.CI)	P-Value	AOR(95%.CI)
		Non institutional	Institutional			
Educational status of husband	Unable to read and write	83(41.7)	104(33.2)			
	Able to read and write	116(58.3)	209(66.8)	1.4(1.0- 2.0)	**0.2**	**2(1.1-3.4)***
Current occupation status of the respondent	Farmer	110(55.3)	160(51.1)			
	Government employed	89(44.7)	153(48.8)	1.3(1.1-1.4)	**0.00**	**1.6(1.2-2.4)***
ANC visit during recent pregnancy	No	128(64.3)	62(19.8)			
	Yes	71(35.7)	251(80.2)	7.3(4.9-10.9)	**0.00**	**24(11-44.6)***
Was the last pregnancy planned	No	151(75.9)	183(58.5)			
	Yes	48(24.1)	130(41.5)	2.2(1.5-3.3)	0.6	1.2(0.5-2.5)
Was there birth preparedness and complication readiness plan	No	143	180			
	Yes	36	133	2(1.3-2.8)	0.8	0.9(0.4-1.9)
Do you have any history of stillbirth in life time	No	154(77.4)	274(87.5)			
	Yes	45(22.6)	39(12.5)	0.5(0.3-0.8)	0.12	0.5(0.2 – 1.1)
Have you experienced health problem during recent pregnancy	No	79(15.4)	83(16.2)			
	Yes	120(23.4)	230(44.9)	1.8(1.2-2.6)	0.5	0.8(0.6-1.4)
Where were your place of recent delivery	No					
	Yes			1.7(1.4-2.1)	0.8	0.9(0.6 – 1.1)

At health facility who assisted	HEW	25	76			
	Nurse	33	85			
	Midwife	39	138			
	HO	6	5			
	Doctor	3	8			
	Others	0	14	0.7(0.6-0.8)	**0.00**	**0.5(0.4-0.6)***
Was there supportive attendance during recent facility delivery	No	50(9.8)	45(8.8)			
	Yes	149(29.1)	268(52.3)	2.0(1.3-3.1)	0.09	0.4(0.1-1.1)
What was the out-come of baby	Alive	176	30			
	Stillbirth	20	11	0.3(0.15-0.69)	0.3	0.39(0.06-2.36)
	Others	3	2	0.4(0.2-0.7)	0.11	0.4(0.2-1.2)
Knowledge about the advantage institutional delivery	Knowledgeable	144(72.3)	180(57.5)			
	Less Knowledgeable	55(27.6)	133(42.4)	1.9(1.3-2.8)	0.08	0.9(0.5-1.7)
Attitude of mothers delivered at health facility	Good Attitude	101(50.7)	96(30.6)			
	poor Attitude	98(49.2)	217(69.3)	2.3(1.6-3.3)	**0.02**	**0.4(0.2-0.8)***
Delivery Practices during last pregnancy	Poor Practices	146(73.3)	134(42.8)			
	Good Practices	53(26.6)	179(57.1)	3.7(2.5-5.4)	**0.01**	**2.7(1.2-6.1)***

6. Discussion

With the aim of reducing maternal mortality to 199 per 100,000 live births, a set of high impact interventions were being implemented, including antenatal care (ANC), skilled birth services and postnatal (PNC)(4)

In the current study, the proportion of institutional delivery service utilization in the study area was 61.1%, study participants delivered their most recent child at health facility (i.e. Health post or Health centre or hospital). This finding is lower than the result of the study done in India 95.2% and 84.9% (48); Tanzania 74.5%(9); Bahir Dar, Ethiopia 78.8% (49) and Woldeia. The possible reasons for this difference might be due to the differences of socio-cultural, socio-economic, educational status, study setting, study methods and due to study time.

ANC visit during last pregnancy was highly significant factor, in which those visited ANC were about 24 times [AOR = 22, 95% CI 22 (11 – 44.6)] more likely to give birth at the health facility than those didn't followed ANC service. This finding is consistent with findings from Northern Ghana(50), Kenya(51), Goba district(52), Farta District(53), Dembecha district(54), Dima District(55), Dejen district(47), Ethiopia(56), and rural Hadiya zone, Southern Ethiopia(57).

The result was similar with the study done in Tanzania(58), women with follow ANC visit is significantly likely to use appropriate health facilities for delivery than those with who had no history of ANC visit during recent pregnancy Ghana(50). This result is higher than study done in Ghana which shows Women's with follow ANC visit were more likely to undergo health institutional delivery, which is two times more likely than those who have no follow ANC visit.

On the other hand a study done in Ethiopia indicates women who had history of ANC visit during recent pregnancy were more likely to use the service. This might be due to the fact that history of ANC visit women had better awareness about the benefits of preventive care and health services.

Husband educational attainment was other important factor associated with the institutional delivery service utilization. Women whose husbands can able read and write were 2 times more likely to utilized child birth at health facility[(AOR=2, 95%CI 1.0-3.3)] than those who husband are unable to read and writing. This finding was in line with the report from Nepal(59), Bangladesh(60), Nepal(61), Northern Ghana(62), Debra Birhane(63), Goba district(52), southwestern Ethiopia (64), Dima district (55), Dejen district(47), Rural Hadiya zone and Southern Ethiopia(57). The association between education and institutional delivery service

utilization is intuitively reasonable, as educated individuals tend to be more cautious of personal health issues, have higher self-care, and exhibit better adherence to healthy behavior to utilized child birth at health facility delivery.

Occupation of women was also associated with institutional delivery service utilization. Those mothers who were government employee were 2 times more likely to used institutional delivery [(AOR=1.6, 95%CI (1.2, 2.4)] than those women who were unemployed/farmers. This finding is consistent with the study result conducted in Nepal(59) *and* North West Ethiopian(65).

In our study, one of the most vital determinants of institutional delivery was the practice. We found that those who had delivery of good practice during pregnancy were 2.7 times more likely to give birth at health institution [(AOR=2.7, 95% CI, 1.2, 6.1)] than those who preserves poor bad practices. This finding is in line with the finding of the research conducted in Ethiopia on maternal and child health(66), Afar region(67) and Nepal (68). In the local community females strength are measured by giving child birth without any help around the forest, a bad practice called “Mukuwa“. It averts institutional delivery service utilization for those who practiced it for a century.

Attitude is a major task about facility delivery. Thus mothers who had no good attitude about facility delivery were 0.4 less likely to have birth in health institutions [AOR =0.4, 95 CI = (0.2 - 0.8)] as compared to those who had good attitude. The possible reason of this occasion for this finding could be some of the mothers may be a poor attitude of delivering at home, and may develop fulfil cultural obligation of ignorance hence be ambivalence in delivering at health institutions.

Hence similar studies in various settings to come up with more representative findings which will be helpful in planning and implementing more contextual interventions to improve the delivery service utilization in a country.

7. Conclusion and Recommendation

7.1. Conclusion

The proportion of institutional delivery service utilization was about 61.1% in the study area.

Women who understand the benefits of having ANC follow-up during a recent pregnancy, their husband's educational status, participant's occupational status, the health facility where they delivered, their attitude toward institutional delivery, and their practice regarding institutional delivery are all potential significant factors linked to institutional delivery service utilization. The deep rooted poor practices related to pregnancy and childbirth in the region especially in the study area play a role in exposing mothers and their newborns to undesirable outcomes and refusal of institutional delivery service utilization and our review of the literature shows that the effects of cultural and political issues on maternal mortality are largely ignored.

This study revealed that more than half of women gave recent birth at health facility by skilled birth attendance in the study area. Having able to read and write educational status husband, Having ANC visit, Occupational status of participant and at health facility visit who assisted had significantly associated with increased institutional delivery, pregnant women to deliver in health facilities could increase institutional delivery service.

7.2. Recommendation

Improving husband educational status, providing adequate information about institutional delivery service and encourage taking women's care is essential to minimize the rate of home delivery.

The respective body, especially health professional should create awareness about the important of ANC visit during pregnancy to have birth in health institution delivery.

Every individuals should work on the women to had better attitude about health institution delivery service.

Improving the skills of health extension workers through training to assist women's during delivery.

The district need to build pregnant waiting room at health centre could increase institutional delivery service utilization and to accomplish the country's objective settled to create home delivery free nation.

8. Strengths of the study

This community-based study included participants from rural areas, interviewed outside health facilities. This gave women more freedom to express their feelings and report positive and negative experiences without fear that minimize loss of information which leads to bias. The use of local teachers who were known to the women and their communities for data collection was a factor in the study achieving a 99% response rate, and eliminated healthy worker bias.

The data were collected from eight among the seventeen kebeles in the district which increased the generalizability of the finding.

9. Limitations of the study

It is obvious that scientific effort cannot be completely free of constraints. Thus the finding of this study should be interpreted with the following limitations.

We did not include wealth status in our questioner because of the large amount of missing data variables report from our pre-test results. This was possibly due to women having insufficient information about household`s property. We tried to ask average monthly income, but we didn't include in our analysis due to being unable to report the exact value of their farm products in monetary terms.

Most of the studies were only based on mothers' information. It would be meaningful and powerful if the studies include participants from husbands, health workers, traditional birth attendants and responsible political leaders to identify the possible source of problem and perception of these different responsible actors.

The study conducted in a district where health facilities are optimally not available, the findings can only be generalized to similar settings with comparable socio demographic and health coverage profile.

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10. Appendix

Annex I: Participant information sheet and Informed Consent Form

Participant Information sheet Title of the research project:- of institutional delivery services utilization and associated factors among Chilled Bearing Age women in Guba district, Benishangul Gumuz Regional State, Western Ethiopia, 2022.

Name of principal investigator:

Bantayehu Zewedie (EFELTP Resident, Bahir Dar University, Ethiopia)

Name of organization: Bahir Dar University, Ethiopia

Introduction: This information sheet is arranged with the intended of explaining the research project that I would like to let know you this short information concerning on this study. Just before going to our interview, you are apply for to read very vigilantly to what I am going to interview you about the purpose and general condition of the study and may you tell me whether you agree or disagree to participate in this study.

Purpose of the interview: We are talking to childbearing women in the community to learn why some women didn`t utilized institutional delivery service while they are on labour or during or soon after giving birth.

What will happen during the interview: I will ask you questions about your current and previous delivery and other maternity care condition. I will ask about your background, your pregnancy and delivery previous history, Events during your most recent pregnancy and delivery, your knowledge and attitude towards institutional delivery service utilization as well as your practice about antenatal, postnatal and delivery services. I may also ask some questions about health service nearby. Majority of the questions have a choice of possible answers, but if your answer is not provided on the choice or if you have additional answer, you have to specify and we accept it on the space left blank (``other``).

Time required: Your interview will take approximately 25 to 45 minute.

Risks: It is possible that some questions could make you feel uncomfortable by talking about bad experiences. Some question may also need your memory of past event.

Benefits: There are no direct benefits; however, your participation will help us to dig-out some factor related to institutional delivery service utilization, which intern helps the government to adjust its intervention to improve maternal health standing on our recommendation.

Confidentiality: All information you provide will be kept not to be disclosed. Your responses will be assigned a code number and your name will not be used in any way.

Participation: Your participation is strictly voluntary. Refusal to participate will not affect whether or not you receive subsequent services. You may discontinue participation at any time.

Informed Consents

Hello, Good morning /Good Afternoon Sir /Ma/dam. My name is _____. I am member of the research team of Bahir Dar University College of Medicine and Health sciences Institute of Public Health department of Biostatistics and Epidemiology. The research is done on institutional delivery care services utilization and associated factors among chilled Bearing age women in your area. The study will be conducted through interviewer administered structured questionnaire. It has been designed to collect data from women who have been delivered in the past one year in this area.

You are selected to be one of the participants in the study. Your selection to participate in this study is by chance alone and your responses given will be confidential. The responses you give will not reveal your identity to anyone not part of this study. The information you give us will help us to know, factors associated with low utilization antenatal care to improve quality of services for the improvement maternal and chilled health. Any publication of such information will conceal your identity. The interview is voluntarily, you are free to withdraw/interrupt your participation at any time of the study without any penalty.

Are you agreeing to participate in this study?

1. Yes ( ) 2. No ( )

Data collector Name---------- Sign-------

Supervisor Name---------- Sign--------

Participant`s code_____

Assumption of multi-collinarity Test

		V1	V2	V3	V4	V5	V6	V8	V9	V10	V11	V12	V13	V14	V15	V16
V1	PC	1	-.350**	.019	.043	.022	.057	-.057	-.057	.147**	.089	-.038	.684**	.145**	.136**	.111
	Sig.		.000	.670	.336	.627	.200	.195	.516	.002	.065	.396	.000	.001	.002	.12
V2	PC	-.350**	1	-.016	-.014	-.016	.074	.053	.000	-.157**	-.058	-.047	-.161**	-.049	-.040	.005
	Sig.	.000		.714	.759	.724	.093	.234	.998	.001	.190	.288	.000	.267	.365	.905
V3	PC	.019	-.016	1	.000	.037	-.059	.041	-.120	.076	.108	.084	-.037	.041	.027	.098
	Sig.	.670	.714		.993	.397	.182	.349	.173	.113	.051	.057	.403	.359	.544	.27
V4	PC	.043	-.014	.000	1	.298**	.336**	.002	.020	.109	.234**	-.027	.035	.115**	.480**	.248**
	Sig.	.336	.759	.993		.000	.000	.966	.823	.23	.000	.535	.434	.009	.000	.000
V5	PC	.022	-.016	.037	.298**	1	.470**	.020	-.020	.046	.170**	-.113	.046	.074	.464**	.164**
	Sig.	.627	.724	.397	.000		.000	.653	.823	.344	.000	.11	.302	.097	.000	.000
V6	PC	.057	.074	-.059	.336**	.470**	1	.120**	.203	-.010	.233**	-.095	.035	.097	.474**	.206**
	Sig.	.200	.093	.182	.000	.000		.006	.230	.835	.000	.32	.426	.28	.000	.000
V8	PC	-.057	.053	.041	.002	.020	.120**	1	-.036	-.013	.143**	.276**	-.015	-.130**	.158**	-.007
	Sig.	.195	.234	.349	.966	.653	.006		.684	.795	.001	.000	.734	.003	.000	.868
V9	PC	-.057	.000	-.120	.020	-.020	.203	-.036	1	-.063	.062	-.166	-.094	-.020	.122	.165
	Sig.	.516	.998	.173	.823	.823	.20	.684		.548	.482	.058	.284	.823	.166	.059
V10	PC	.147**	-.157**	.076	.109	.046	-.010	-.013	-.063	1	.074	.038	.076	-.010	.162**	.100
	Sig.	.002	.001	.113	.23	.344	.835	.795	.548		.126	.434	.115	.833	.001	.39
V11	PC	.089*	-.058	.108	.234**	.170**	.233**	.143**	.062	.074	1	.286**	.097	.144**	.240**	.213**
	Sig.	.045	.190	.15	.000	.000	.000	.001	.482	.126		.000	.28	.001	.000	.000
V12	PC	-.038	-.047	.084	-.027	-.113	-.095	.276**	-.166	.038	.286**	1	-.039	-.012	-.044	-.062
	Sig.	.396	.288	.057	.535	.11	.32	.000	.058	.434	.000		.373	.786	.322	.158
V13	PC	.684**	-.161**	-.037	.035	.046	.035	-.015	-.094	.076	.097	-.039	1	.007	.119**	.083
	Sig.	.000	.000	.403	.434	.302	.426	.734	.284	.115	.28	.373		.871	.007	.062

V14	PC	.145**	-.049	.041	.115**	.074	.097*	-.130**	-.020	-.010	.144**	-.012	.007	1	.129**	.194**
	Sig.	.001	.267	.359	.009	.097	.028	.003	.823	.833	.001	.786	.871		.004	.000
V15	PC	.136**	-.040	.027	.480**	.464**	.474**	.158**	.122	.162**	.240**	-.044	.119**	.129**	1	.623**
	Sig.	.002	.365	.544	.000	.000	.000	.000	.166	.001	.000	.322	.007	.004		.000
V16	PC	.111	.005	.098	.248**	.164**	.206**	-.007	.165	.100	.213**	-.062	.083	.194**	.623**	1
	Sig.	.12	.905	.27	.000	.000	.000	.868	.059	.39	.000	.158	.062	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Where, V1,V2,V3,V3,5,V6,V7,V8,V9,V10,V11,V12,V13,V14,V15 and V16 are Education status your husband, Current occupation status of the respondent, age of the respondent, ANC visit during recent pregnancy, Was the last pregnancy planned, Do you have any history of stillbirth in life time, Reason for not advised, If at health facility who assisted you recently, Have you experienced health problem during recent pregnancy, did you have any history of difficult labor, educational status of the husband, Knowledge about institutional delivery, practices about ID and attitude about institutional delivery respectively.

PC is Pearson correlation and Sig. Is the 2-tailed p-value

Annex: II English Questionnaires

Bahir Dar University College of Health Sciences School of Public Health Structured questionnaire for interview to assess the magnitude and factors associated with utilization of institutional delivery services in Guba district, Benishangul Gumuz West Ethiopia.

1.Household'sidentification

101.Questionnairecode

102.Kebelenumber

103.HouseNumber_____

General information

Region_____

Zone_____

Woreda_____

Kebele_____

Respondentcode_____

Interviewer name_____

Tel_____

Instruction: Circle the responses for questions with alternatives and write for open ended questions on the space provided

Part one: Respondents Socio-demographic characteristics

S. No	Questions	Alternative/choice of response	Skip
Q101	Age in completed years	.....Years	
Q102	Educational status	1. Illiterate 2. Grade 1-4 3. Grade 5-8 4. Grade 9-12 5. Diploma 6. Degree and above	
Q103	Religion	1. Orthodox 2. Muslim 3. Catholic	

		4. Protestant 5. Other (specify)	
Q104	Ethnic group	1. Gumuz 2. Amahara 3. Tigre 4. Agewe 5. Other specify	
Q105	Current occupation status	1.Unemployed 2.Private employed 3.Gevermental employed 4.Farmer 5.Others----------	
Q106	Your monthly income	1. < 500 birr 2. 501-1000 birr 3. 1001-2000 birr 4. .>2000 birr	
Q107	Current marital status	1. Single 2. Married 3. Divorced 4. Separated 5. Widowed 6. Others, specify	
Q108	Educational status of your husband?	1. Illiterate 2. Grade 1-4 3. Grade 5-8 4. Grade 9-12 5. Diploma 6. Degree and above	
Q109	Occupation of your husband	1. Unemployed	

		2. Self Employed 3. Government Employee 4. Farmer 5. Other (specify)	
Q110	Monthly income of your house band	1. < 500 birr 2. 501-1000 birr 3. 1001-2000 birr 4. >2000birr	
Q111	What is the average monthly income of the family(house hold) in Eth. Birr	1. < 500 birr 2. 501-1000 birr 3. 1001-2000 birr 4. >2000 birr	

Part Tow. Knowledge related questions

S. No	**Questions**	**Alternative/choice of response**	**Skip**
Q212	What are the major maternal health problems in your community?	1) Pregnancy related problems 2) Nutritional problems 3) inadequate health care 4) Far of Health facility 5) Frequent of pregnancy 6) Others specify…….	
Q213	Do you know the causes of maternal death?	1. Yes 2. No	
Q214	If yes for question 213 what it is?	1) Abortion complications 2) Ruptured uterus 3) Postpartum hamorrhage 4) Preeclampsia/ eclampsia 5) other (specify)……	

Q215	Do you know the method of prevention of maternal death?	1. Yes 2. No	
Q216	If yes for question 215 what it is?	1) Antenatal care utilization 2) Postnatal care utilization 3) Institutional delivery 4) other (specify)……	
Q217	Do you know the danger signs of pregnancy?	1. Yes 2. No	
Q218	If Yes for Q217, what are they?	1. Bleeding 2. Vomiting 3. Fever 4. convulsion 5. severe fatigue 6. severe headache 7. Other_____	
Q219	Do you know that Ambulance, antenatal care, postnatal care and delivery services are all free for pregnant mothers in government health facility?	1. Yes 2. No	
Q220	Which place of delivery is better to giving birth?	1. Home 2. Health facility 3. Other_____	
Q221	If you think Home delivery is better (question 220) why?	1. Fulfil cultural obligation 2. The wish to have family members and neighbors nearby 3. Save money 4. poor knowledge 5. fear of episiotomy /surgery 6. When labour is sudden onset 7. protect privacy 8. Cleanliness 9. other(specify)_____	

Part Three: Attitude related question

S.No	Questions	Alternative/choice of response	Skip
Q32 2	Do you believe that antenatal care, Postnatal care and Institutional deliveries service utilization are important to prevent maternal death?	1. Yes 2. No	
Q323	Have you ever used antenatal care service before?	1. Yes 2. No	
Q324	If yes how many times?	----------?	
Q324	Have you used postnatal care service before?	1. Yes 2. No	
Q325	If yes how many times?	----------?	
Q326	Have you used of institutional delivery before?	1. Yes 2. No	
Q327	If yes how many times?	----------?	
Q328	Where were your places of delivery in previous pregnancy?	1. Health post 2. Health centre 3. Hospital 4. Home 5. Other_____	
Q329	Do you think that giving birth at home and at health facility are the same?	1. Yes 2. No	
Q330	Have you attended prenatal follow up during the pregnancy of the last birth? Who do you think decide on place of delivery?	1. Husband 2. wife 3. Family 4. Both husband and wife 5. health care provider 6. All must be decided 7. Other_____	
Q331	Which health facility you prefer for delivery?	1. Health post 2. Health centre 3. Hospital 4. Other---------	

Part Four: Practice related question

S.No	Questions	Alternative/choice of response	Skip
Q432	Have you ever visit health facility during your pregnancies period?	1. Yes 2. No	
Q433	If yes for question Q430, why?	1. I was sick 2. To know my fetus status 3. To know my health status 4. To have some pregnant test 5. Other (specify) ……..	
Q434	Did you attend ANC follow-up before your last pregnancy?	1. Hospital 2. Health Centre 3. Clinic 4. Other specify	
Q435	If yes for question Q432, how many times till delivery?	1. at least once 2. four times(completed) 3. Other specify	
Q436	How many hours did you waited to gone home after delivery?	……?	
Q437	If ANC, yes question (Q432) during your visit did you receive any advice where to deliver and about postnatal care utilization?	1. Yes 2. No	
Q438	If no ANC, No for question 430 why?	1. No health problem 2. Work load 3. Don`t know its benefit 4. long waiting time 5. No service 6. No health facility 7. Unavailability of transportation 8. other (specify)……	

Part five: History of the Recent Delivery

S,NO	**Questions**	**Alternative/choice of response**	**Skip**
Q539	Do you have face delivery related problems during recent delivery/post delivery?	1. Yes 2. No	
Q540	Where were yours place of recent delivery?	1. At home 2. Health post 3. Health centre 4. Hospital 5. On the way to health facility 6. Other Specify	
Q541	If at health facility who assisted you?	1. HEW 2. Nurse 3. Midwife 4. Health officer 5. Doctor 6. other (specify)	
Q542	If you gave birth for the recent baby at home, why?	1. Uncomplicated labor 2. Transport problem 3. Husband refused 4. sudden onset of labor 5. Health facility was closed 6. Afraid user fee 7. other (specify) _____	

Q543	If you gave birth at health facility for the recent baby, what was the reason for health facility delivery?	1. I was sick 2. Received health education 3. Availability of free ambulance service 4. Availability of free delivery service 5. Good service 6. Save mothers life 7. Good health care provider approach 8. other (specify) _____	
Q544	What was the outcome of the baby?	1. Alive 2. Still birth 3. other (specify)	
Q545	Was there supportive attendance during recent facility delivery?	1. Yes 2. No	

Part Six: Obstetric History

Q646	Do you have ANC visit during recent pregnancy?	1. Yes 2. No	
Q647	Was the last pregnancy planned?	1. Yes 2. No	
Q648	Was there birth preparedness and complication readiness plan?	1. Yes 2. No	
Q649	Do you have faced history of abortion in life time?	1. Yes 2. No	
Q650	If yes Q649 how many times	----------?	
Q651	Do you have any history of stillbirth in life time?	1. Yes 2. No	
Q652	If yes Q651 how many times	----------?	
Q653	Did you have any history of difficult labor (obstructed labor)?	1.Yes 2. No	
Q654	Have you experienced health problems during recent pregnancy?	1.Yes 2.No	
Q655	Did you receive advice during ANC about place of delivery?	1.Yes 2.No	

Thank you very much for your time. I finished my questions

Dummy Tables

Table1: Socio-demographic characteristics Chilled Bearing Age (15-49) women in Guba district, Benishangul Gumuz Regional State, Western Ethiopia, 2022.

Variable	Frequency	Percent (%)
Educational status		
Illiterate		
literate		
Marital status		
Singled		
Married		
Divorced		
Windowed		
Occupation		
Unemployed		
Private Employee		
Gov. Employee		
Farmer		
Others		
Ethnicity		
Gumuz		
Amahara		
Agewe		
Tigray		
Religion		
Muslim		
Orthodox		
Others		
sex of child		
Male		
Female		

Annex: III Amharic version information sheet and consent form

በባህር ዳር ዩኒቨርሲቲ ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤናት/ቤት በጤና ድርጅት በነፍሰጡሮች ወሊድ አገልግሎት ላይ የሚያጋጥሙ ችግሮችን ለማጥናት የተዘጋጀ መጠይቅ፡፡

1. ለጥናቱ ተሳታፊ የሚሰጥ መረጃ፤

ጤና ይስጥልኝ፣ ስሜ---------- ይባላል፡፡ በባህር ዳር ዩኒቨርሲቲ የድህረምረቃ ጥናት ቡድን አባል ነኝ፡፡

የጥናቱ ዓላማ፡እናቶች በጤና ድርጅት የሚሰጠውን የወሊድ አገልግሎት አጠቃቀም ምን እንደሚመስል መዳሰስ ይሆናል፡፡

በዚህ መሰረት ከጥናቱ የሚገኘው ውጤት በወሊድ አገልግሎት ዙሪያ የእናቶች የአጠቃቀም ሁኔታና የሚታዩ ችግሮች ለወደፊቱ አገልግሎቱን ለማሻሻል የሚጠቅም የመፍትሔ ሀሳቦችን ለማመላከት ይረዳል፡፡የእርስዎ በዚህ ጉዳይ ላይ መሳተፍ ለጥናቱ ከፍተኛ አስተዋፅኦ ይኖረዋል፡፡ስምምነተዎት በማንኛውም መልኩ አይገለጽም፡፡የሚሰጡን መረጃ ሚስጥር የተጠበቀ ይሆናል፡፡ በጥናቱ መሳተፍ በእርስዎ ሙሉ ፈቃደኝነት ላይ የተመሰረተ ይሆናል፡፡

በጥናቱ ባለመሳተፍዎ የሚጎዱት ነገር ወይም በመሳተፍዎ ብቻ የሚያገኙት የተለየ ጥቅም የለም፡፡ ጥያቄውን በከፊልም ሆነ በሙሉ ለመመለስ ካልተመችዎት ማለፍ አሊያም በመሃል ማቁዋረጥ ይችላሉ፡፡

ጥያቄዎቹ በአማካይ ከ30-45 ደቂቃዎችን ይወስዳሉ፡፡መልካም ፈቃድዎ ከሆነ ወደ ጥያቄና መልስ ውይይት መግባት እንችላለን?

1. ፍቃደኛ ከሆኑ የቃለመጠይቁ ጠያቂ ስም ---------- ፊርማ ----------

2. ፈቃደኛ ካልሆኑ ወደሚቀጥለው ተሳታፊ ይሂዱ

ለተጨማሪ መረጃ፤ ጥያቄወይም አስተያየት ካለዎት በሚከተለው አድራሻ ማግኘት ይቻላል፡፡

ባንታየሁ ዘውዴ

ስ.ቁ. 0913490142

ኢ..ሜይል bantayehuzewde95@gmail.com

2. የእናቶች የተሳትፎ ስምምነት መግለጫ ቅጽ፤

እኔ----------በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ቤት የድህረ ምረቃ ቡድን አባል የእናቶች በጤና ድርጅት የሚሰጠውን የወሊድ አገልግሎት አጠቃቀም ምን እንደሚመስል ለማዳሰስ በሚደረግ ጥናት ላይ የጥናቱ ዓላማና ጠቀሜታ፤በፈቃደኝነት ላይ የተመሰረተ ተሳትፎ መሆኑ፤ በጥናቱ መሳተፍም ሆነ ያለመሳተፍ የተለየ ጥቅም የማያስገኝ መሆኑንና መጠይቁ ከ30-45 ቀዲቃ ያህል የሚፈጅ መሆኑ ተገልያልኛል፡፡እኔም ከላይ የተሰጠውን ማብራሪያ ሰምቼ ለመሳተፍ ፈቃደኛ መሆኔን እገልፃለሁ፡፡

ጠያቂ ስም ---------- ፊርማ ----------

አጠቃላይ የቤተሰብ መረጃ

101. የመጠየቂያ መለያ ቁጥር

102. ቀበሌ ስም 1. ሁለት ------- 2. ሦስት -------- 3. አራት

103. የቤት ቁጥር፤

መጠይቆች፡ ክፍል አንድ የተጠያቂው አጠቃላይ የማህበራዊና ኢኮኖሚያዊ መረጃ በተመለከተ የተጠያቂውንመልሶች በመልስ መስጫው ቦታላይ አክብብባቸው፡፡

ተ.ቁ	ጥያቄ		እለፍ
101	እድሜዎ ስንት ነው;	----- ዓመት	
102	የትምህርት ደረጃዎ እስከ ስንት ነው	1. የልተማረ 2. የመጀመሪያ ደረጃ 3. ሁለተኛ ደረጃ 4. ዲፒሎማ ከዚያ በላይ	
103	የየትኛው ሃይማኖት ተከታይ ነዎት	1. ኦርቶዶክስ 2. እስላም 3. ካቶሊክ 4. ፕሮቴስታንት 5. ሌላ ካለ	
104	የየትኛው ብሄረሰብ አባል ነዎት	1. ጉሙዝ 2. አማራ 3. ትግሬ 4. አገው 5. ሌላ ካለ	
105	የመተዳደሪያ ሥራዎ ምንድነው	1. ሰራ አጥ 2. የግል ተቀጣሪ 3. የመንግስት ተቀጣሪ 4. ግብርና 5. ሌላ ካለ ጥቀስ 6. አላውቅም	
106	ከዚህ ስራ በወር ምን ያህል ገቢያገኛሉ_	1. ‹500 ብር 2. 501-1000 ብር 3. 1001-2000 ብር 4. › 2000 ብር	
107	የጋብቻ ሁኔታ ቢገልጹልን	1. የላገባ 2. ያገባ 3. የተፋቱ 4. የተለያዩ 5. የሞተባት	

108	የባለቤትዎ የትምህርት ደረጃ እስከ ስንት ነው	1.የልተማረ 2. 1-4 ክፍል 3. 5-8 4. 9-125. ድፒሎማ 6. ዲግሪና ከዚያ በላይ 7.አላውቅም	
109	የባለቤትዎ መተዳደያ ስራ ምንድ ነው	1. ሰራአጥ 2. የግልተቀጣሪ 3. የመንግስትተቀጣሪ 4. ግብርና 5. ሌላካለይጥቀሱ	
110	ባለቤትዎ ከዚህ ስራ ምን ያህል ገቢ ያገኛሉ	1. ‹500ብር 2. 501-1000 ብር 3. 2000 ብር 4. ›20000 ብር	
111	አጠቃላይ ወርሃዊ የቤተሰብ ገቢዎ ምን ያህል ነው	1. ‹500ብር 2. 501-1000 ብር 3. 1001-2000 ብር 4. ›20000 ብር	

ክፍል ሁለት ስነ- ተዋልዶና ፅንስ ያላቸው ግንዛቤ

212	በማህበረሰበዎ ከፍተኛ የሆነ የእናቶች ጤና ችግር ምንድን ነው	1.እርግዝና ጋር የተያያዘ ችግር 2.የሰርዓተ ምግብ ችግር 3.የጤና ክትትል ችግር 4.የጤና ተቋማት ርቀት 5.ተከታታይ ወሊድ 6.ሌላ----------	
213	ስለ እናቶች ሞት ያውቃሉ	1. አዎ 2. የለም	
214	የላይኛውን ጥያቄ አዎ ካሉ ምንድን ናቸው	1.የተወሳሰበ ውርጃ 2.የማህጸን መቀደድ 3.ከወሊድ በኋላ ደም መፍሰስ 4.ከወሊድ በፊት እና በኃላ የሚመጣ ደም ግፊት 5.ሌላ---------	
215	ስለ እናቶች ሞት መከላከያ መንገድ ያውቃሉ	1.አዎ 2.አላውቅም	
216	የላይኛውን ጥያቄ አዎ ካሉ ምንድን ናቸው	1. ቅድመ ወሊድ ክትትል ማድረግ 2. ድህረ ወሊድ ክትትል ማድረግ 3. በጤና ተቋም መውለድ 4.ሌላ--------	
217	በእርግዝና ወቅት ስለሚታዩ አደገኛ ምልክቶች ያውቃሉ	1.አዎ 2.አላውቅም	
218	የላይኛውን ጥያቄ አዎ ከሆነ ምንድን ናቸው	1.ደም መፍሰስ 2. ማስታወክ 3.ሙቀት 4.መነቀጥቀጥ 5. ከፍተኛ ድካም 6.ከፍተኛ የራስ ምታት 7.ሌላ----------	
219	አምቡላንስ እርግዝናን	1.አዎ	

	በተመለከተ የነጻ አገልግሎት በመንግስት ተቋም እንደሚሰጥ ያወቃሉ	2.አላውቅም	
220	የት መውለድ የተሻለ ነው ብለው ያስባሉ	1ቤት ውስጥ 2. ጤና ተቋም 3. ሌላ----------	
221	በቤት መውለድ ጥሩ ነው ይላሉ ለምን	1በባህላችን መሰረት 2. የቤተሰብ ፍላጎት ስለሆነና በቅርብ ስለሚገኙ 3. ገንዘብ ለመቆጠብ 4.የውቀት ማነስ 5.ቀዶ ህክምናውን በመፍራት 6.ወሊድ ድንገት የሚመጣ በመሆኑ 7.ክብርን ለመጠበቅ 8.ንጽህናን በመፍራት 9.ሌላ----------	

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322	የእርግዝና ክትትል ድህረ ወሊድ ክትትል እና በጤና ተቋም በመውለድ የእናትን ሞት መከላከል ይቻላል	1. አዎ 2አላውቅም	
222	ከዚህ በፊት የእርግዝና ክትትል ያደርጋሉ	1. አዎ 2. የለም	
223	ለጥያቄ ቁጥር118 አዎ ካሉ ለምን ያክል ጊዜ		
224	ከዚህ በፊት ድህረ ወሊድ ክትትል ያደርጋሉ	1. አዎ 2. የለም	
0125	ለጥያቄ ቁጥር118አዎ ካሉ ለምን ያክል ጊዜ		
0126	ከዚህ በፊት በጤና ተቋም ነው የሚወልዱት	1. አዎ 2. የለም	
0127	ለጥያቄ ቁጥር118አዎ ካሉ ለምን ያክል ጊዜ		
0128	ከዚህ በፊት የነበረውን እርግዝና የት ነው የወለዱት	1. ጤና ኬላ 2. ጤና ጣቢያ 3. ሆስፒታል 4.በቤት ውስጠ 4. ሌላ ካለ---------	
0129	በቤት ውስጥ ና ጤና ተቋም መውለድ አንድ ነው ብለው ያስባሉ	1. አዎ 2. አይደለም	
0130	ለመውለጃ ቦታዎ የመጨረሻ ውሳኔ የሰጠ ማን ነበር	1. ባለቤቴ 2. እራሴ 3. ቤተሰብ 4. ሁለታችን ተነጋግረን 5. የጤና ባለሙያ 6. ሌላ ካለ ይጥቀሱ---------	

	ለእርስዎ ለወሊድ የትኛው ጤና ተቋም ይመረጣሉ	1. ጤና ኬላ 2. ጤና ጣቢያ 3. ሆስፒታል 4.ሌላ ካለ ይጥቀሱ--------	

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0133	በእርግዝና ወቅት ወደ ጤና ተቋም ሂደው ያውቃሉ	1.አዎ 2.የለም	
0134	አዎ ካሉ ለምን	1. አሞኝ 2. የእርግዝና ሁኔታ ለማወቅ 3. የጤና ሁሄታ ለማወቅ 4.እርግዝና መኖሩን ለማወቅ 5. ሌላ ካለ ጥቀሱ	
0135	እርግዝና ክትትል ከዘህ በፊት የት አደረጉ	1. ሆሰፒታል 2. ጤና ጣቢያ 3. ክሊኒክ 4. ሌላ ይግለጹ	
0136	ስንት ጊዜ አደረጉ እስከ ሚወልዱ	1.አንድ ጊዜ 2.አራት ጊዜ(ጨርሸ) 3.ሌላ----------	
0137	ከወሊድ በኃላ ወደ ቤት ሳይሂዱ ምን ያክል ሰዓት ቆዩ		
0138	የጥያቄ ቁጥር ---አዎ ካሉ ቅድመ ወሊድ ክትትል የት መውለድ እንዳለብዎት ና ድህረ ወሊድ ክትትል በተመለከተ ምክር ተሰጦዎታል	1.አዎ 2.የለም	
0139	የቅድመ ወሊድ ክትትል አላደረግኩም ካሉ ለምን	1. የጤና ችግር ስሌሌኝ 2. የስራ ብዛት 3. ስለ ጥቅሙ አለማወቅ 4.የቆይታ ጊዜው መርዘም 5.የአገልግሎት ችግር 6.የትራንስፖርት ችግር 7. ሌላ ካሌ ይጥቀሱ	
0140	በአሁኑ ወሊድ ያጋጠመዎት የወሊድ ችግር አለ ወይም ከወሊድ በኃላ	1. አዎ 2. የለም	

0140ለ	የአሁኑ ወሊድ የት ወለዱ	1. በቤት ውስጥ 2. ጤና ኬላ 3. ጤና ጣቢያ 4. ሆስፒታል 5.ወደ ጤና ተቋም ስሄድ መንገድ ላይ 6. ሌላ ካለ ይጥቀሱ	
0140መ	በጤናቋሙ ማን ድጋፍ አደረለዎት	1. ጤና ኤክስቴንሽን 2. ነርስ 3. አዋላጅ 4.ጤና መኮነን 5.ዶክተር 6. ሌላካለጥቀሱ	
0140ሐ	የአሁኑ ወሊድ ቤት ውስጥ ነው የወለዱት ለምን	1. የወሊድ ችግር ስሌለለብኝ 2. የትራነስፖርት ችግር 3. ባለቤቱ ስለማይፈልግ 4. በድንገት ወሊድ ስለመጣ 5.ጤና ተቋሙ ዝግ ስለነበር 6.ክፍያውን በመፍራት 5. ሌላካለይጥቀሱ	
(8)0141	የአሁኑን ወሊድ በጤና ተቋም ከወለዱ በምን ምክንያት	1. ስላመመኝ 2. የጤና ትምህርት ስለወሰድኩ 3. ነጻ አምቡላንስ አገልግሎት ስለነበረ 4. ነጻ የወሊድ አገልግሎት ስለነበረ 5.በጥሩ አገልግሎት አሰጣጥ 6. .በጥሩ የባለሙያ አገልግሎት አሰጣጥ 7. ሌላካለይጥቀሱ	

0142	የምሊድም ውጤት ምን ይመስል ነበር	1.በህይወት የተወለደ ልጅ 2. ሞቶ የተወለደ ልጅ 3. ሌላ ካለ ይጥቀሱ	
0143	በአሁኑ ወሊድ ጊዜ ጥሩ እገዛ ተደርጎታል	1. አዎ 2.የለም	

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0144	በአሁኑ እርግዝና ቅድመ ክትትል አደርገዋል	1. አዎ 2.አላደረግኩም	
0145 0145ሀ	አቅደው ነው የመጨረሻውን ያረገዙት	1. አዎ 2.የለም	
0145ሐ	ለወሊድ ና ለውስብስብ ችግር ቅድመ ዝግጅት አለዎት	1. አዎ 2.የለም	
0145መ	በህይወትዎ ውርጃ አጋጥመዎት ያውቃል	1. አዎ 2. የለም	
	አዎ ካለ ምንያክል ጊዜ		
	በህይወትዎ ሙቶ የተወለደ ልጅ አጋጥመዎት ያውቃል	1. አዎ 2. የለም	
	አዎ ካለ ምንያክል ጊዜ		
	ረጅም ምጥ ወይም አስቸጋሪ ወሊድ አጋጥመዎት ያውቃል	1. አዎ 2. የለም	

Declaration

I, the undersigned, declare that this thesis is my original work, has not been presented for a Degree in this or another university and that all sources of materials used for this thesis have been fully acknowledged.

Name: _____

Signature: _____

Date: _____

This thesis work has been submitted for examination with my approval as university advisor.

Name: _____

Signature: _____

Date: _____

Annex IV: Assurance of principal investigator.

I undersigned here agrees to accept responsibility for scientific ethical and technical conduct of the research project and for provision of required progress reports as per terms and the condition of the research I will communicate to my advisor and other stakeholders involved in this research publications office in effect at the time of grant is forwarded as the result of this application

Name of the student: Bantayehu Zewdie

Signature----------date: 20/4/2022 G.C

Approval of primary advisor

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