SELINUS UNIVERSITY
OF SCIENCES AND LITERATURE

UTILIZATION OF HEALTH INSTITUTION DELIVERY AND FACTORS AFFECTING THE UTILIZATION AMONG WOMEN OF REPRODUCTIVE AGE GROUPS IN DAMOT GALE WOREDA, SOUTH ETHIOPIA

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A DISSERTATION

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STATEMENT OF DECLARATION

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LIST OF ACRONYMS AND ABBRIVATIONS

ANC……..Antenatal Care

APH……..Antepartum Hemorrhage

CI…… Confidence interval

CSA…….Central Statistical Agency

EDHS…… Ethiopia Demographic and Health Survey

EmONC……Emergency Management of Obstetrics and New Born Care

ETB……Ethiopian Birr

FGD…….Focused Group Discussions.

FMOH……Federal Ministry of Health

IRB…….Institutional Research Board

MMR…….Maternal mortality Ratio

NGO……..Non-Governmental Organizations

PPH……Post-Partum Hemorrhage

PHCU……Primary Health Care Unit

SD……..Standard deviations

SBA……Skilled Birth Attendant

SNNPR…….Southern Nations and Nationalities People Region.

SPSS…….Statistical Packages of Social Sciences

UNFPA……..United Nations Fund for Population Agency

UN…….United Nations.

UNICEF……..United Nations Children's Fund.

WHO…….World Health Organizations

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ABSTRACT

Background: The reduction of maternal morbidity and mortality is a global priority particularly in developing countries including Ethiopia where maternal mortality ratio is one of the highest in the world. The key activities to reduce maternal mortality ratio and improving maternal and neonatal health is increasing institutional delivery attended by skilled health personnel in the health facilities. However, the utilization of institutional delivery is lower in SNNP Regional State, Ethiopia. Thus, the objective of this study aimed to assess the utilization of institutional delivery and factors affecting institutional delivery utilization among women of reproductive age who gave birth in the last 24 months in Damot Gale Woreda, SNNPR, Ethiopia.

Methods: Community-based cross-sectional quantitative study supplemented by qualitative study on key informants was conducted among women who gave birth the last 24 months at Damot Gale Woreda, South Ethiopia. A Multistage sampling technique was used to select 770 women of study participants. A pre tested and structured questionnaire was used to collect data. Data were collected using an interviewer administered questionnaire and entered into Epi Data version 3.5.4 and then exported to SPSS version 24.0 for analysis. Binary logistic regression model was used to determine factors associated with dependent and expected independent variables. Adjusted odds ratios with 95% confidence interval were computed to measure the strength of association and Statistical significance was declared at p-value < 0.05 in the multivariable logistic regression analysis.

Results: The prevalence of institutional delivery service utilization in the Woreda was 71%, 95% CI (68.5%-74.9%). The study showed that place of residence being Urban (AOR = 2.50, 95% CI [1.15–4.62]), Women educational status-able to read and write (AOR= 1.52, 95% CI [1.25–2.64]), attended primary education (AOR= 2.34, 95% CI [1.17–3.85]) attended secondary education and above (AOR= 3.61, 95% CI [1.19–6.63]), Husbands educational status- attended primary education (AOR= 2.5, 95% CI [1.3–4.9]) attended secondary education and above (AOR=2.7, 95% CI [1.2–4.5]), ANC visit during last pregnancy (AOR=3.14, 95% CI [1.35–6.36]),Number of ANC visit, ANC 2-3 times (AOR= 3.68, 95% CI [2.56–5.94]), ANC four times and above (AOR= 7.05, 95% CI [5.76–8.54]), Knowledge of mothers on danger signs of pregnancy and delivery (AOR= 5.54, 95% CI [3.48–10.60]), Time taken to nearby health center/hospital – Less than 1 hour distance (AOR= 3.61,95% CI [2.19- 5.71]), between 1 hour to two hours distance from facility (AOR= 1.52,95% CI [1.32–2.61]), availability of well-equipped maternity waiting home in Health Facilities (AOR= 7.50,95% CI [4.13–9.65]), and husbands supportive attitude to deliver in health institution (AOR= 5.72,95% CI [3.75-17.38]) were significantly associated with institutional delivery.

Conclusion and Recommendations: The utilization of institutional delivery service was good among women of reproductive age groups in Damot Gale Woreda, South Ethiopia. However, further effort is needed to increase institutional delivery service utilization

to 100%. The statistically significant factors associated with the utilization of institutional delivery were women's educational status, husbands' educational status, Antenatal care follow up, women's knowledge on danger signs of pregnancy, availability of well-equipped maternity waiting home in the health facility and husbands positive attitude on the institutional delivery service were significantly associated factors for the utilization of institutional delivery service. The provision of continuous house to house health education regarding institutional delivery is an essential part of intervention that can be performed through health extension workers. Moreover, counseling mothers on the importance of institutional delivery by health professionals at each ANC follow-up visit, increasing the awareness of husbands to support the women and equipping the maternity waiting home for institutional delivery service plays paramount importance.

Keywords: Utilization of institutional delivery service, Home delivery, Associated Factors, Reproductive age Women, Damot Gale Woreda, Wolaita Zone, South Ethiopia

CHAPTER ONE: INTRODUCTION

1.1 BACK GROUND

Maternal mortality remains a major challenge to health care systems worldwide. Hence, improving maternal health has been on the global health agenda for many years **(1).**

Globally, there were an estimated 289,000 maternal deaths in 2013, yielding a maternal mortality ratio (MMR) of 210 maternal deaths per 100,000 live births. Developing countries account for 99% (286,000) of the global maternal deaths. Hemorrhage and hypertensive disorders are the leading causes of maternal mortality in developing countries **(2).** However, most of the maternal deaths are preventable if deliveries were overseen by skilled personnel **(3).** International conference on population and development aims at having at least 90% of deliveries attended by skilled health care providers by 2015 as a strategy in reducing maternal mortality (**4**, **5).** However, in developing regions, 40 million births were not attended by skilled health care personnel, in which over 32 million occurred in rural areas in 2012. Delivering at health care facilities enables women receive proper medical attention and care during childbirth. This is fundamentally encouraged as a single most important strategy in preventing maternal and neonatal deaths. In almost all countries where 80% of deliveries are attended by health care professionals, MMR is 200 per 100,000 live births **(6).** There is disparity between developing and developed countries regarding maternal health care service utilization. In developed countries, 97% of the pregnant women receive ANC and almost all births (99%) use skilled obstetric service during delivery, where as in developing countries only 52% of pregnant women had four or more ANC visits during their pregnancy and skilled health personnel attended 68% of deliveries in 2012.

1.2 STATEMENTS OF THE PROBLEM

Sub-Saharan Africa is the region with the lowest coverage of skilled delivery service utilization, with 53% of women having skilled delivery attendants **(7).** Despite the Ethiopian government's efforts to expand health service facilities and promote institution-based delivery service in the country, an estimated 50% of births still take place at home. This underutilization of maternal health care services by a sizeable proportion of women in Ethiopia results in insignificant decline of maternal mortality ratio **(8, 9).** No substantial reduction in home or unskilled deliveries was observed, especially in the rural community of Ethiopia in which urban births are more likely than rural births to be delivered in a health care facility (63% versus 10%) and MMR in Ethiopia is 412 per 100,000 live birth **(10).** One critical strategy for reducing maternal morbidity

and mortality is to ensure that every baby is delivered in a health care facility with the assistance of a skilled health care attendant. Hence, to reduce maternal deaths, the most efficient strategy for lower-income countries is to promote childbirth at health care facilities with a referral capacity, as timely management and treatment can make the difference between life and death **(11)**

As evidenced from previous studies, utilization of institutional delivery service was determined by educational status of mothers and their husbands, knowledge of health problems during pregnancy, ANC visits, mothers' place of residence, age of the mothers, and perceived distance to the nearest health care facility **(12**, **13).** However, there are several inconsistent reports of the findings regarding educational status of mother and maternal age, ANC visits, (**14**, **15)** mothers' place of residence **(16-19)** knowledge of health problems during pregnancy, perceived distance to the nearest health facility **(20)** women's autonomy (**15,21, 22)** and availability of radio or television (TV) (**20,23,24)**

CHAPTER TWO

2.1 LITRATURE REVIEW

Maternal mortality remains a global problem with nearly all (99%) of maternal death occur in the developing countries and 56% of the burden accounted for sub-Saharan countries **(25, 26).** Pregnancy and childbirth are important periods in women's life. However, millions of women living in developing countries die of complications related to childbirth **(27, 28)**. Despite the global maternal mortality ratio (MMR) fallen by nearly 44% from an estimated 385 maternal deaths per 100,000 live births in 1990 to an MMR of 216 in 2015. Ethiopia is still with highest MMR in the world and is one of 10 countries that contributed 60% of the global maternal death burden in 2010 with an estimated 420/ 100,000 live births, which is far from the World Health Organization (WHO) target (267/100,000) for 2015 **(29, 30).**

Maternal deaths have both direct and indirect causes. About 80% of maternal deaths are due to causes directly related to pregnancy and childbirth **[31]**. Worldwide, the major causes of maternal mortality are hemorrhage (24%), infection (15%), unsafe abortion (13%), prolonged labour (12%) and eclampsia (12%) whereas primary causes of maternal mortality in Africa are hemorrhage (34%), other direct causes (17%), infection (10%), hypertensive disorders (9%) and obstructed labour (4%), abortion (4%) and anemia (4%) **[32].**

Major causes of maternal deaths in Ethiopia are similar to most developing countries such as infection, hemorrhage, obstructed labour, abortion and hypertension in pregnancy **[33].** At the health facility level hemorrhage (PPH) is responsible for 11% of all maternal deaths due to direct obstetric complications. The major direct obstetric complications include hemorrhage (APH & PPH), prolonged/obstructed labour and ruptured uterus, severe pre-eclampsia and eclampsia, sepsis, complications of abortion and ectopic pregnancy which account for 69% of the deaths. The proportion of deaths due to PPH that occurred in facilities is most likely due to the fact that over 50% of births take place at home, and women with PPH may not be arriving at a health facility in time **[34].**

The majority of Ethiopian women give birth at home without skilled attendants **[35].** According to the Ethiopian health system policy, the health service delivery structure has three tier system. This includes Primary level Health Care (Health post, health center and primary hospital), Secondary level health care (Zonal Hospital) and Tertiary level health care (Specialized Hospital), The PHCU includes health center, health posts and primary hospital. Each health post provides services to 5,000 people and is staffed by health extension workers. Health center serves a total 25,000 people and is led by a health officer. The PHCU provides comprehensive, integrated and community-based preventive and basic curative services. Primary Hospital functions as a referral and training center for PHCUs. Zonal Hospitals provide specialist services and training while Specialized Hospitals provide comprehensive specialist services, and in some instances serve as centers for research and post basic training. Maternal health services, especially delivery care are given in health centers and at hospital level but not in health posts **[36]**

The two best strategies promoted to reduce maternal mortality are institutional skilled birth attendance delivery and emergency management of obstetric care **(37)**. However, even if the capacity to supply emergency obstetric care (EmOC) is the minimum starting point, reduction of delay in receiving service and increasing coverage of the service shall be united with the strategies. Therefore, the delivery care approach constitutes to date, the mixture of interventions best matched to produce substantial declines in maternal mortality rates with the aims of guaranteeing deliveries in health facilities with midwives/skilled health provider and their assistants **(38).**

The Midwives with their assistance skill are able to provide adequate essential obstetric care to women. However, they must also be able to notice complications and handle them, either by giving basic EmONC or by referring the most complicated cases to well-equipped hospitals. The performance of any health system, and thus the improvement of a population's health, depends on the productivity, competence, and availability of Quality services and responsiveness of health professionals **(39).** Institutional delivery means when a pregnant mother gives birth at health institution (Health center and hospital) equipped for conducting labor, delivery and immediate postnatal care after

delivery. Proper medical attention and accessing quality institutional delivery services can reduce the risk of complications and infections that can cause the death or serious illness of the mother and/or the newborn baby. Globally, coverage of skilled attendance at birth was estimated to have reached 73% in 2013. However, more than 40% of births in African and South-East Asia Region were not attended by skilled health personnel, and even disparities among countries associated with differences in socioeconomic status persisting. In Ethiopia, there is only **50%** of mothers who has access to skilled

Attendant **(40).** Factors for low coverage of institutional delivery service, identifying the problems and knowing magnitude of utilization is crucial for both maternal and prenatal health. Existing evidence suggests that in any population, 1 to 2% of pregnant women were developing life-threatening obstetric conditions during childbirth. If they are unable to receive rapid medical interventions, it is likely to result in a maternal death while complications responsible for most maternal deaths are often unpredictable **(41)**. Many factors affect the outcome of pregnancy from the onset of any obstetric complication. The outcome is most adversely affected by delayed treatment. Delay in treatment is the result of many factors that are described as the three phases of delay **(42).** Researchers have devoted considerable attention to the importance of accessibility to health services on health outcome in the country, according to the investigator little is known about the status and determinants of use of delivery service in rural area particularly in SNNPR Region. Studies have found that care during pregnancy, delivery, and postnatal period can positively improve the health of the mother and infant; however, the existence of gap among regions in health facilities delivery being low in SNNPR region (26%) compared to some other advanced regions like Addis Ababa **(97%),** Tigray **(57 %),** Dire-Dawa **(56)** and Harari **(50) [43].**

2.2 SIGNIFICANCE OF THE STUDY:

Home delivery is one of the leading causes of maternal and neonatal morbidity and mortality in developing countries. Ethiopia is being one of these countries' in which maternal death is an important public health problem. Hence, conducting this study in SNNPR, Wolaita Zone especially in Damot Gale Woreda was essential. The research

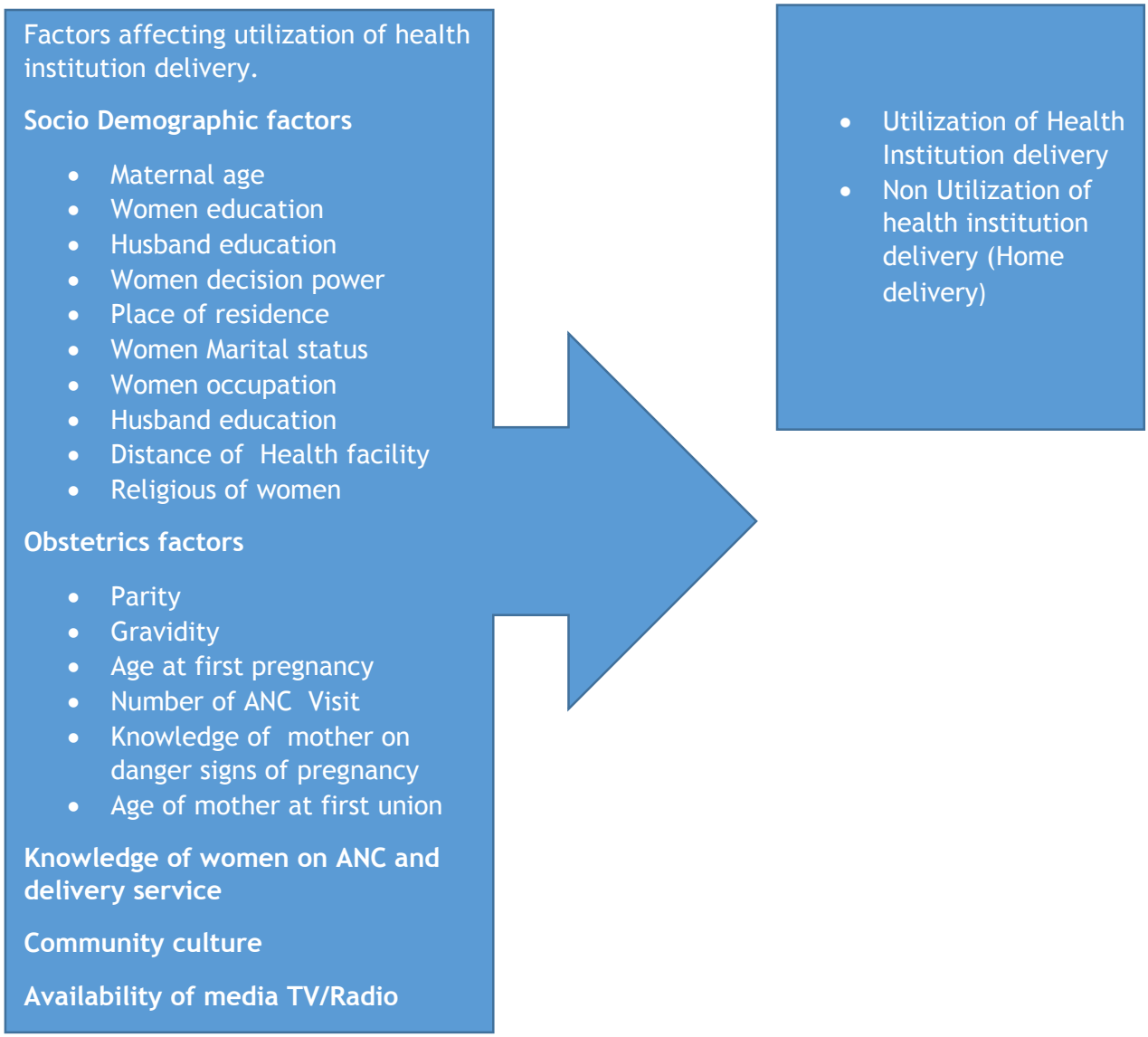
finding obtained will be use full for the community and decision makers at the district Zonal and regional level in planning, implementing and evaluating various interventions related to research findings to increase institutional delivery, in further to reduce maternal morbidity and mortality. Thus, this study was conducted to determine the utilization status of institutional delivery and factors affecting the utilization among women of reproductive age groups in Damot Gale Woreda, South Ethiopia.

2.3 CONCEPTUAL FRAMEWORK:

The framework recognizes that the most important factors associated with the utilization of institutional delivery such as socio-demographic, obstetrics related factors, Knowledge of women on ANC visit, Knowledge of women on institutional delivery, the community culture and availability of radio/TV are important factors associated with the utilization of institutional delivery.

Fig-1:

Fig-1: Conceptual Frame H



2. Study objectives

Figure1 above: Conceptual Frame Work of Factors Associated with the Utilization of Institutional Delivery, 2023 (Self-developed From Different Literatures)

2.3: Objectives

2.3.1: General objective:

- To assess utilization of institutional delivery and factors affecting the utilization among women of reproductive age groups in Damot Gale Woreda, Wolaita Zone, South, Ethiopia.

2.3.2: Specific Objectives:

- To determine the utilization of institutional delivery among women of reproductive age groups in Damot Gale Woreda, Wolaita Zone, South Ethiopia.
- To identify Main factors affecting utilization of institutional delivery among women of reproductive age groups in Damot Gale Woreda, Wolaita Zone, South Ethiopia.

CHAPTET THREE: METHODS AND MATERIALS

3.1. Study Area: The study was conducted in Damot Gale Woreda. The Woreda is located in Wolaita Zone, SNNPR at a distance of 305 KM South of Addis Ababa. The weather condition of Woreda is dega, Wayne dega and Kola. Administratively the Woreda is structured in 29 kebeles. The total population of the Woreda is estimated to be 143,255 with about 49:51 male to female ratio. Among this, Wolaita and Amhara are the commonest ethnic groups, but most of residents are Wolaita. Most of the Woreda population is followers of Christianity. Inset, barely, potato, wheat, beans, maize & teff are the most native food stuffs that people in the Woreda use. Concerning the health facility, there are seven health centers & 29 health posts in the Woreda & also there is a main road from Addis Ababa to the main town of the Woreda (Boditti). Electricity facilities, roads, mobile network & safe water supply are main infra structures found in the town.

3.2 Study Period: The study data was collected from December 1, 2022 to January 5, 2023.

3.3 Study Design: A community based cross-sectional quantitative study design supplemented by qualitative study on key informants and in-depth interview was used.

3.4 Source Population: women of reproductive age groups (15-49 years) found in the Woreda who gave birth the last two years in the district regardless of their birth outcome were included in the study sample.

3.5. Study Population: The study population were reproductive age groups of women in the selected Kebele's and the study participants were women of the reproductive age groups who were selected from the sampling frame of the Kebele's by systematic sampling method who meet the inclusion criteria. The sampling frame was those households with reproductive age groups registered by health extension workers and found in selected Keeble's.

3.6 Inclusion and Exclusion Criteria: Women of reproductive age groups who were in the selected Keeble's and institutional delivery utilizers or non-utilizers prior to the time of data collection in the selected Kebele's were included. Women who lived <6 months in the study area and mothers who were critically ill during the time of data collection were excluded.

3.7 Sample size determination: the sample size determined by using a single population formula considering 65% of proportion of health institution delivery in SNNP region from EDHS 2016 at 95% confidence level, 5% margin of error and 10% non-response rate and design effect of 2 was used to calculate the sample size.

The sample size calculation used was the single population proportion formula and it became:

$$n = \frac{(Z\alpha/2)2 * P(1-P)}{d^2} = 350$$

$$n = \frac{(1.96)2 \text{ X } 0.65(1-0.65)}{(0.05)2} = 350$$

Where, **(Zα/2)** is the reliability factor for a given confidence level that is **1.96**.

"P" is expected health institutional delivery users that is **0.65** according to EDHS 2016 in SNNPR.

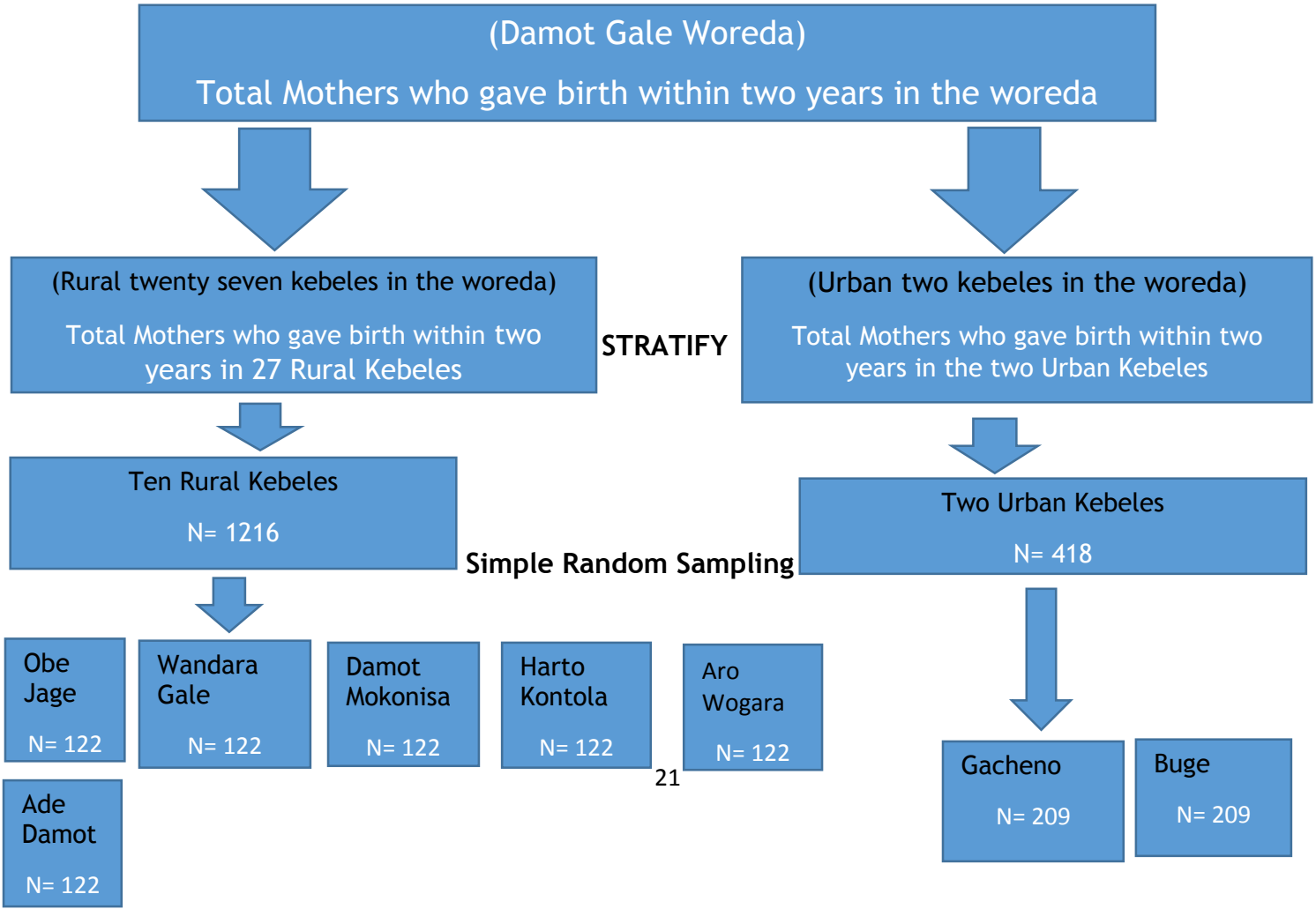
"d" is margin of error to be tolerated by researchers, that is **5%=0.05**. By adding **10%** of non-respondents' rate, the calculated sample size was **385**. Since I used a multistage for sampling technique, and as a result, I multiplied the sample size by design effect of **2** and the final sample size was **770** in Wolaita Zone, Damot Gale woreda.

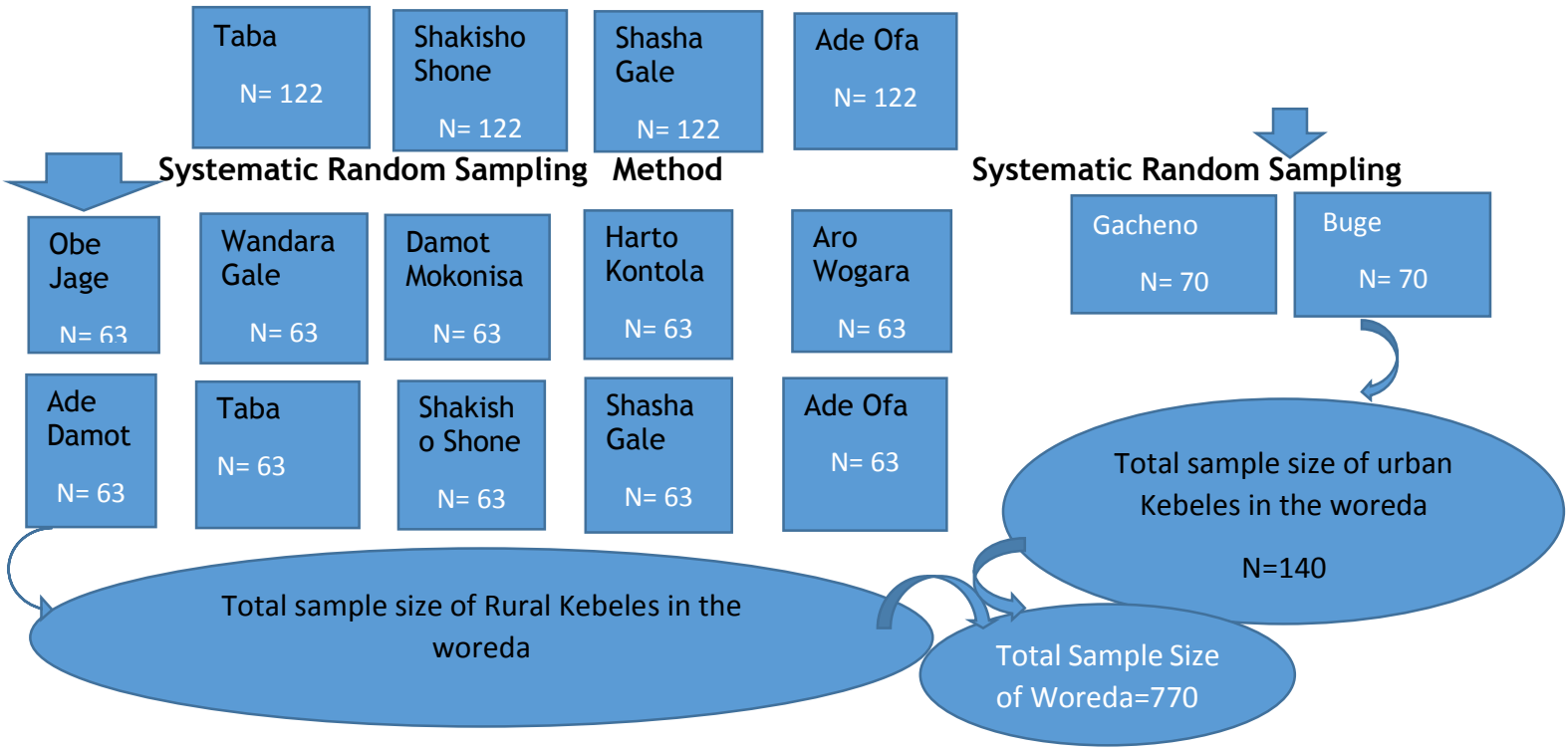
3.8 Sampling Procedure

Two stage cluster sampling technique was used to select the study units. Primarily, the study area was divided into two clusters, urban and rural Kebeles. Urban consists of two administrative kebeles and the rural consists of twenty seven administrative

kebeles. Lottery method was used to select ten administrative kebeles from twenty seven rural kebeles and two town administrative kebeles from urban areas were included directly in the study to make the sample representative for the study. The study population was divided proportionally among the selected kebeles. Having the numbered list of the households from kebeles health extension logbooks, and systemic random sampling method was used to reach the selected (770) households in the kebeles. Whenever more than one eligible respondent was present in the same sampled household, only one respondent was taken by lottery method. If the houses were closed or the mothers were not present at the time of data collection, frequent visits were made until we get them throughout the data collection period. The next houses were considered in place of the houses which could not be accessed for collecting mothers' data regarding institutional delivery utilization and factors affecting the utilization.

Fig-2: Schematic presentation of sampling procedure for the study participants, 2022.





3.9 Data Collection Tool, Procedure, and Quality Control

Data were collected from **December 1, 2022 to January 5, 2023**. A structured questionnaire was used to collect data. The questionnaire was prepared by reviewing related previous literatures. Data were collected on mothers' age, marital status, place of residence, family income, educational status, maternal occupation, educational status of the husband, occupation of the husband, institutional delivery service utilization, distance from health facility, family size, ANC visit, gravidity, parity, communication media possession, knowledge about danger signs of labor, reasons for choosing a particular place of birth, decision power on place of delivery and presence of maternity waiting home in the health facility. The data collection tool used was a standard tool taken from Ethiopian Demographic and Health Survey (EDHS 2016) questionnaire. The questionnaire was initially prepared in English and translated to the local language Wolaitegna and translated back to English by language experts to check consistency.

The questionnaire was pretested on 39 mothers (5% of the total sample size) with similar contexts out of the actual study areas. To collect the data, 10(ten) degree graduate health professionals selected and supervised by four BSc graduate public health officers throughout the data collection period. The training was given to data collectors and supervisors for three days on the objectives and data collection process by the principal investigator. The collected data was checked for accuracy and consistency on a daily basis. Data cleaning and crosschecking were made by the principal investigator closely.

Ethical clearance was obtained from the Faculty of Natural Health Sciences of Selinus University, Research and Ethical Review Committee (RERC). Permission to conduct the study was also obtained from the Zonal Health Department and Damot Gale Woreda Health Office. Informed consent was obtained from each study participant. Each respondent was informed about the purpose of the study that the findings of the study will inform policy makers and other concerned bodies. Any involvement in the study was after their complete verbal consent was obtained. Mothers were also informed that all data obtained from them would be kept confidential by using codes instead of any personal identifiers.

Semi-structured and open-ended FGD and interview guides were developed to guide the data collection. Separate guidelines were prepared and pre-test conducted with different participants out of study districts in the Zone. The main focus was on the factors for utilization of institutional delivery or choosing home delivery. The six midwives who were fluent in the local language conducted the FGD sessions and key informant interviews after receiving a thorough training. The training was provided by the principal investigator and was focused on facilitation and interviewing techniques. FGDs and KIIS (key informant interviews) were conducted in the language and were intimately supervised by the principal investigator.

FGDs were conducted in a place agreed by participant and took up to 2 hours while key informant interviews (KIIs) took up to 60 minutes. The FGDs were conducted by two midwives; one serving as moderator and the other as note taker. Written informed consent was obtained from all participants. All FGDs and KI interviews were recorded

using a digital recorder. Audio records were transcribed verbatim and field notes were later integrated into the transcript.

CHAPTER FOUR

4. Data Processing and Analysis

The collected data was cleaned and checked visually for its completeness, consistency and the presence of missed values and variables. Then, the data was entered into a pre-designed format in **Epi-info version 3.5.4** and exported to statistical package for social sciences **(SPSS) version 24** for further analysis. To observe the descriptive result, frequency, mean and standard deviation were done. First, bivariate analysis between independent and dependent variables was done, all independent variables that showed statistical significance with p-value **< 0.2** in the bivariate analysis was included in the multivariable model. Those determinants with P-value **< 0.05** in the multivariable analysis were considered as independent variable and significant factors associated with the utilization of health institution delivery. Significance was also determined using unadjusted and adjusted odds ratio with 95% CI and P value respectively. The strength of statistical association was also measured by adjusted odds ratios and 95% confidence intervals. The results were presented in the form of texts, tables and graphs based on the types of data collected.

4.1 Study Variables

The dependent variable was utilization of institutional delivery. The independent variables of the study were socio-demographic related factors (Mothers age, marital status, women's occupation, women's education, Educational status of husband, place of residence, distance from health facility, family size, decision power on place of delivery, and family income), obstetric related factors (gravidity, parity, and experience of danger signs), health service related factors (ANC follow up, and frequency of ANC visit),presence of maternity waiting home in the health facility and knowledge of mother on obstetric danger signs.

4.2 Operational definitions:

Institutional delivery: is a delivery assisted by skilled birth attendant in the health facility and it had yes or no response.

Home delivery: When a mother gave birth at her home or others' home (neighbor, relatives, or family) or when a birth takes place outside of health institution **[17].**
Woman's decision power: If a woman decided where to give birth by herself or with her husband jointly.

Prevalence: It **is** defined as the frequency of study participants who had a history of institutional delivery in their last delivery.

Knowledgeable: The knowledge of pregnancy danger signs was assessed by asking key pregnancy danger signs **(28).** They are asked "Did you know pregnancy danger signs?" If yes, mention? Those who mentioned at least **three** pregnancy danger signs (**Vaginal bleeding, Severe headache, Lower abdominal pain (not discomfort), Blurring of vision, Convulsions, Leakage of fluid per vagina, Decreased or absent fetal movement**) spontaneously considered as knowledgeable, otherwise not knowledgeable.

History of pregnancy danger sign(s): It is refers to any sign of pregnancy danger sign(s) reported by women which may occur during her pregnancy period.

Close to health facility: It is considered as close to health facility, if a woman reported to travel **< 1 Hour** on foot to reach the health care facility [19]

Parity: is the number of children a woman has; if she has just one child she was considered as **"prim parous"** and if she has more than one child but fewer than five, she was considered as **"multipara**," and if she has five/more child she was considered as "**grand multipara**."
Gravidity: is the number of times that the woman becomes pregnant; if she was pregnant just one times she was categorized as "**prim gravida**" and if she was pregnant

more than one but fewer than five times, she was categorized as "**multigravida**," and if she was pregnant five/more times she was categorized as "**grand multigravida**."

Age at first birth: if the women was <20 years old when she gave birth to her first child, it was labeled as **"<20 years"** otherwise labeled as **"≥20 years."**

Ante Natal Care (ANC): if the pregnant women visited an ANC unit at least once during her last pregnancy, researchers labeled it as **"Yes"** otherwise **"No".**

Birth Attendant: is the person who provides basic and emergency care to women and their newborns during last delivery.

Maternal Educational Level: Maternal educational level was categorized as "Unable read and write", "Able to read and write", "attended primary school (1-8)", "attended secondary school and above (12 and above," were used to measure the educational status of women and their husbands in the study Woreda.

4.3 Dissemination of Results

The finding of the study will be presented to Department of public health, Faculty of Natural Health Sciences, Selinus University. The copy of the thesis results will be provided to Wolaita Zone Health Department and Damot Gale Woreda Health Office who were take a part in the study.

CHAPTER FIVE: RESULTS

5.1 Socio Demographic Characteristics of Respondents

A total of **770** mothers who gave birth the last 24 months before the period of data collection in the Woreda were participated in the study; of these, 630 (81.8%) were rural and **140 (18.2%)** were urban residents with 100% participation rate. The mean age of the respondents was **26.41 ± 5.66 SD**. Four hundred twenty seven (61.3%) of the mothers were in the age range of 20–29 years. Concerning their marital status, the majority **538 (69.9%), 128 (16.6%) and 104 (13.5%)** of mothers were married, widowed and separated respectively.

The educational status of mothers shows that **245(31.8%)** unable to read and write, **241(31.3%)** able to read and write, **184(23.9%)** attended primary school and **100(13%)** of mothers were attended secondary and above education. Among the respondents, **496 (64.4%)** of mothers were housewives, **172(22.3%)** were merchants, **59(7.7%)** were students and **43(5.6%)** of mothers were government employee. Regarding their husbands educational status, **160 (20.8%)** of husbands were unable to read and write, **228 (29.6%)** were able to read and write, **216(28.1%)** of husbands were attended primary school and **166(21.6%)** of husbands were attended secondary and above education. As to the occupational status of husband's, the majority **463 (60.1%)** were farmers, **102(13.3%)** were merchants, **95(12.2%)** were government employee, **65(8.4%)** were student and **45(6%)** of husbands were daily laborers. Concerning the religion of the participants Protestant, Orthodox and Muslim makes the majority of **441(57.30%), 302(39.20%)** and **27(3.50%)** respectively.

Economically, **501 (65.1%)** of the households had monthly income of less than or equal to **2500** ETB and **269 (34.9%)** of households had monthly income of more than **2500 ETB.** Majority of respondents, **426(55.3%)** had radio/TV to get health related information's and for proper media communication and **344(44.7%)** of respondents did not possess radio/TV for media communication. Concerning the time they travelled on foot to reach the nearby health center/hospital, **264 (42.2%)** of them said less than one hour, **272 (29.4%)** said between one to two hours and **234 (18.4%)** said more than

two hours. Four hundred forty four **(57.7%)** of mothers had family size of 2–5 and **326(42.3%)** had more than five individuals within the household.

Table 1 Socio-Demographic Characteristics of the Reproductive-Age Women (N = 770) in Damot Gale Woreda, South Ethiopia, March,2023

Socio Demographic Variables	Number	Percent(%)
Place of residence		
Urban	**140**	**18.2%**
Rural	**630**	**81.8%**
Age of mothers during interview		
15-19	**208**	**27%**
20-24	**227**	**29.5%**
25-29	**200**	**26%**
30-34	**52**	**6.8%**
35-39	**48**	**6.2%**
40+	**35**	**4.5%**
Religion of reproductive age women		
Orthodox	**302**	**39.2%**
Protestant	**441**	**57.3%**
Muslim	**27**	**3.5%**
Others	**0**	**0%**
Marital status of reproductive age women		
Single	**0**	**0%**
Married	**538**	**69.9%**
Separated	**104**	**13.5%**
Widowed	**128**	**16.6%**
Occupational status of reproductive age women		
House wife	**496**	**64.4%**
Student	**59**	**7.7%**
Merchant	**172**	**22.3%**
Daily Laborer	**0**	**0%**
Government Employee	**43**	**5.6%**
Non-government Employee	**0**	**0%**
Occupational status of Husband		
Farmer	**463**	**60.1%**
Student	**65**	**8.4%**
Merchant	**102**	**13.3%**
Daily Laborer	**45**	**6%**
Government Employee	**95**	**12.2%**
Non-government Employee	**0**	**0%**
Educational Status of reproductive age Women		
Unable to read and write	**245**	**31.8%**

Able to read and write	**241**	**31.3%**
Primary education(1-8)	**184**	**23.9%**
Secondary education and above(9-12+)	**100**	**13%**
Educational Status of husband		
Unable to read and write	**160**	**20.8%**
Able to read and write	**228**	**29.6%**
Primary education(1-8)	**216**	**28.1%**
Secondary education and above(9-12+)	**166**	**21.5%**
Family size		
2_5	**444**	**57.7%**
>5	**326**	**42.3%**
Time taken to nearby health center/hospital		
<1 our	**264**	**42.3%**
1-2 hours	**272**	**29.3%**
>2 hours	**234**	**18.4%**
Income in Month in ETB		
<2500	**501**	**65.1%**
>=2500	**269**	**34.9%**
Media source for respondents either TV/Radio		
Yes	**426**	**55.3%**
No	**344**	**44.7%**

5.2 Obstetric Characteristics of the Respondents

Among the respondents interviewed, No respondents were married before the age of 15years, **208 (27%)** of mothers married between the age of 15-19 years and **562(73%)** of mothers married after the age of 20 years. Concerning the mothers age at first pregnancy, **208 (27%)** of mothers became pregnant below the age of 20 years and **562(73%)** mothers were pregnant after the age of 20 years. The mothers minimum and maximum ages at first pregnancy were **18 and 29** years respectively with mean **23.5 years and ± 4.91 SD**. Regarding the gravidity of mothers, one hundred eighty five **(24%)** of mothers were gravida one, **four hundred twenty seven (55.5%) of** mothers were gravida two to four and **158(20.5%)** of mothers were gravida five and above. Among the interviewed mothers, **124(16.1%)** of mothers were experienced abortion in their life time and **176(22.9%) of mothers** were experienced still birth during their age. During the last pregnancy, **187 (24%)** of the respondents had never visited health facilities during their last pregnancy for ANC and **583 (76%)** of them visited health

facilities for ANC purposes during their last pregnancy. Among the mothers who attended ANC, **85 (14.6%)** of them visited health facilities only one times, **164(28.1%)** mothers attended two to three times and **334(57.3%)** of mothers attended ANC visit for four and above. Among the mothers who attended ANC, **563(96.6%)** mothers get information about institutional delivery during their visit and **20(3.4%)** of mothers were never get information about institutional delivery.

5.3 Health Institution Delivery Service Utilization

As regards to the health institutional delivery service utilization among the total respondents, **545 (71%)** of mothers gave birth at health facilities and **225 (29%)** of mothers delivered at home within the last two years (2021 and 2022 G.C) claiming that home was best place for giving birth, Health facility is too far from my home, having closer follow up from my family members, labor period was too short/urgent, absence of any problems to go to health facility, Husband or family did not allow me to go to health facility, health facility not equipped with necessary drugs and supplies, and the low service quality of health facilities . Out of those mothers who delivered at home, **194 (80%)** mothers were assisted by family members and **31(20%)** of mothers delivered without any support (themselves). Among the mothers who were interviewed, **692(90%)** of mothers were responded that they were favorable on health institution delivery service and **78(10%)** of mothers were unfavorable with health institution delivery service claiming that the low quality of health facility service and not customary approach of health professionals. Among these mothers who visited the health facilities, the reasons for visiting health facilities during their last pregnancy were **54% (315)** for ANC services, **12% (70)** for delivery, **19 %(111)** for pregnancy related problems and **15% (87)** for problems not related to pregnancy.

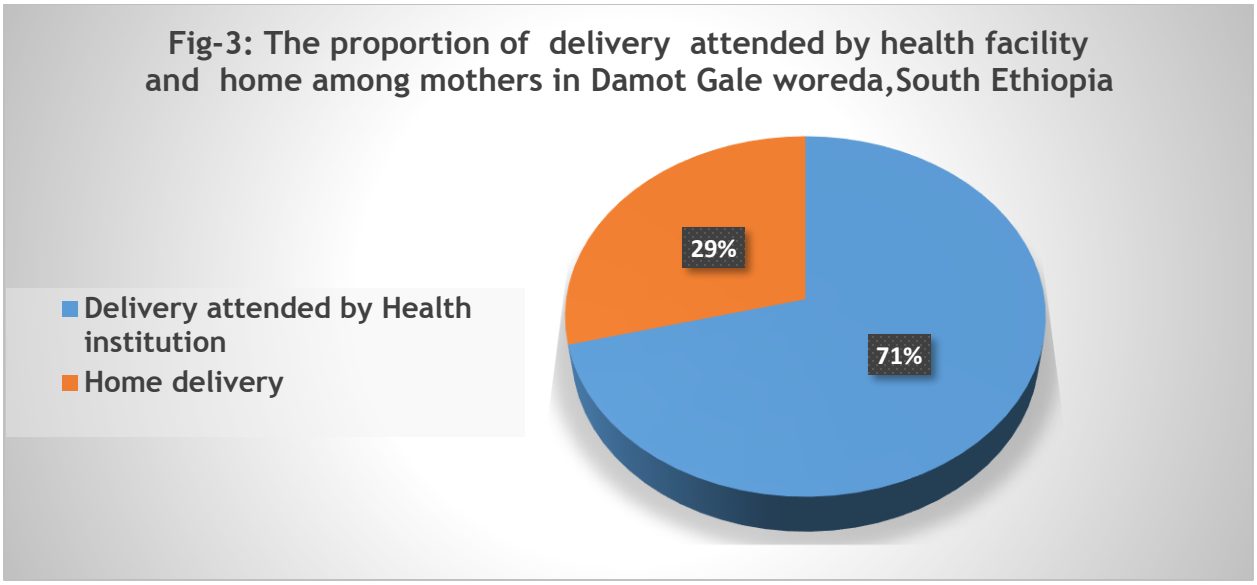


Table-2: Obstetrics characteristics of respondents (N=770) in Damot Gale district, South Ethiopia, March 2023.

Variables	Number	Percent(%)
AGE AT FIRST UNION		
<15 years	0	0%
15-19 years	208	27%
>20 years	562	73%
AGE AT FIRST PREGNANCY		
<20 Years	208	27%
>=20 Years	562	73%
Gravidity		
1	185	24%
2_4	427	55.5%
>=5	158	20.5%
ABORTION IN LIFE TIME		
Yes	124	16.1%
No	646	83.9%
STILL BIRTH IN LIFE TIME		
Yes	176	22.9%
No	594	77.1%
ANC VISIT DURING LAST PREGNANCY		
Yes	583	76%
No	187	24%
NUMBER OF ANC VISIT DURING LAST PREGNANCY		

One time	85	14.6%
Two to Three times	164	28.1%
Four and above	334	57.3%
PLACE OF LAST 24 MONTHS DELIVERY		
Health facility	545	71%
Home	225	29%
IF HOME,ASSISTANT DURING LAST DELIVERY		
Family member	194	80%
My mother	0	0%
TBA(untrained)	0	0%
Health worker	0	0
No one (myself)	31	20%
Others	0	0
GET INFORMATION WHERE TO DELIVER DURING ANC Vis		
Yes	563	96.4%
No	20	3.6%
ATTITUDES OF MOTHERS ON ANC and DELIVERY SERVICE		
Favorable	692	90%
Unfavorable	78	10%
Reasons of Mothers Visited the Health Facility during their last pregnancy		
For ANC service	315	54%
For delivery service	70	12%
For pregnancy related problems	111	19%
For problems not related to pregnancy	87	15%

5.4 Reasons of Respondents for Utilization of Health Institution Delivery Service:

Reasons for utilization of health institution delivery as stated by mothers were **161 (29.5%)** of mothers reported that they used health facility because they believed it is better place for them and their babies health, **142 (26.1%)** of mothers responded that because they were advised with health care workers (either while they were on ANC follow up or other time), **126(23.1)** of mothers reported that to avoid bad/traditional habits which is performed while giving birth in the home, **56 (10.3%)** of respondents used health facility because the facility is near their home, **28(5.1%)** of mothers said that they used the health facility because they faced problem while they were trying to give birth in their home, 18(3.3%) and 14(2.6 %) of mothers attended health facility

delivery in order to prevent maternal related problems and to prevent/ or shorten long labour time in the home respectively.

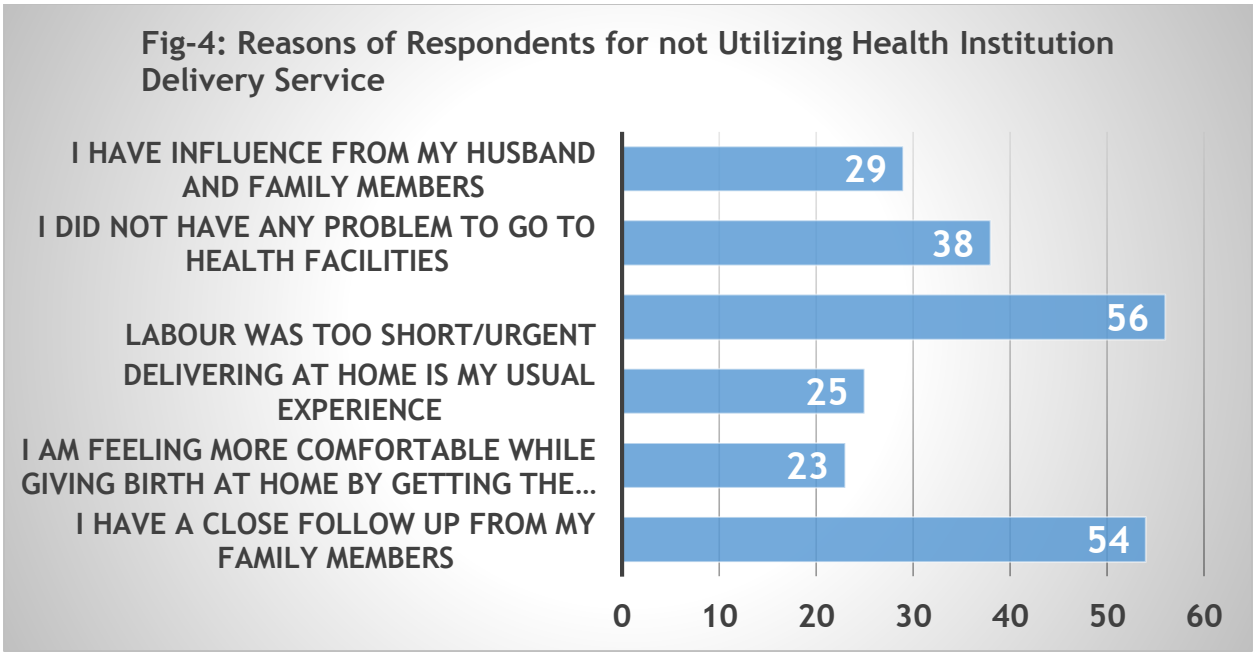
Table 3 : Reasons of Respondents for Utilization of Health Institution Delivery Service		
Variables	**Number**	**Percent (%)**
They believed that health facility delivery is a better place for her and her baby health	161	29.5%
I am advised by health care worker while I was for ANC or other medical issues	142	26.1%
To minimize harmful traditional practice that was performed during home delivery	126	23.10%
Health facility is near to my home.	56	10.30%
I faced problem while I was providing home delivery before	28	5.1%
To prevent maternal related delivery	18	3.3%
To shorten long labour time	14	2.6%

5.5 Reasons of Respondents for not Utilizing Health Institution Delivery Service:

Regarding to home delivery, different reasons were received from the mothers interviewed. Among these, **Fifty four (24 %)** of mothers said having closer follow up from my family members, **Twenty three (10.2%)** of mothers reported I am feeling more comfortable while giving birth at home by getting the support from TBA, **Twenty five (11.1%)** said delivering at home is my usual experience, **Fifty six (24.9%)** said labour was too short/urgent, **Thirty eight (16.9%)** said they did not have any problem to go to health facilities, and **Twenty nine (12.9%)** said influence from my husband and family members

Table 4: Reasons of Respondents for not Utilizing Health Institution Delivery Service

Variable	Number	Percent (%)
I have a close follow up from my Family members	54	24%
I am feeling more comfortable while giving birth at home by getting the support from TBA	23	10.2%
Delivering at home is my usual experience	25	11.1%
labour was too short/urgent	56	24.9%
I did not have any problem to go to health facilities	38	16.9%
I have influence from my husband and family members	29	12.9%



5.6 Knowledge and Attitudes of Respondents:

Of the 770 respondents interviewed, **346 (44.9%)** of mothers were knowledgeable about pregnancy danger signs and **424(55.1%)** of the respondents were not knowledgeable about pregnancy danger signs. Among the interviewed mothers on the attitudes of health professionals **475(61.7%)** of mothers said that the health professionals attitude was good to serve the clients and **295(38.3%)** of respondents said that the health professional attitude was not good/customary during the provision of services.

Regarding the preference of mothers about delivery place during their last pregnancy, **78 (10.1%)** of mothers preferred to deliver at their mothers home, **692 (89.9%)** of mothers preferred to give birth in health facilities with the assistance of skilled professionals. Similarly, **25.6% of their husbands** preferred their wife to deliver at their own home, and the rest **(74.4%) of husbands** preferred their wife to deliver in health facilities with the assistance of skilled health professionals. As to the preference of mothers about delivery attendant, **225 (29.2%) of mothers** preferred to be attended by family members and **545(70.8%)** of mothers preferred to be attended by skilled birth attendants during their last pregnancies and **288 (37.4%)** of their husbands preferred their wives to be assisted by family members while **482(62.6)** of them preferred them to be assisted by skilled attendants. In line with this, majority **575 (74.7%)** of the family members and **542(70.4%)** of the community members preferred mothers to deliver at health facility by the support of skilled birth attendant during their last pregnancy

Table-5: Knowledge and Attitudes of respondents (N=770) among mothers in Damot Gale Woreda, South Ethiopia, March 2023.

Variables	Number	Percent (%)
Knowledge of mothers on danger signs of pregnancy		
Knowledgeable	346	44.9%
Not Knowledgeable	424	55.1%
Attitudes of mothers on ANC and Delivery service	**Number**	
Favorable	692	90%
Not Favorable	78	10%
Health providers' attitude in the clients observation	**Number**	
Good	475	61.7%
Not Good	295	38.3%
Husbands attitude in the health facility delivery	**Number**	
Supportive	573	74.4%
Not supportive	197	25.6%

5.7 Qualitative Results

Two Focused Group Discussions (FGDs) and two in-depth interviews were conducted for complementing the quantitative study. FGDs were conducted by comprising a total of 16 participants, 7 and 9 members in each group respectively with an age range of 20 to 49 years old. Key informants like health professionals who were currently working in Maternal, Neonatal and Child Health unit, health extension workers from the community and two mothers who gave birth within last two years back, and two community elder persons on each site, and religious leaders were involved on each group discussion. As regards to the in-depth interview conducted, two health center staff and two MNCH case team staffs were separately interviewed in four different catchment areas. In the conducted in-depth interviews, there was different issues raised during discussions. Most of the participants mentioned that for the questions "why mothers preferred home delivery or not prefer health facility to the delivery service utilizations?", and almost all who had given birth in recent years at home with the main reasons they stated as transportation problem/ distance away from nearby Health institution and too short period of labor; "if they want to take a woman to health facility the available means of transportation is "foot". From the discussion, the reasons given for not delivering at health facility: (1) Lack of road in some areas to use the available Ambulance (2) "Mothers waiting home present but not well-equipped in some health facilities with adequate bed, food, water and house-hold use utensils" (3) Decision maker for place of delivery was either her husband or family members, (4) Frequent interruption of electric source at night time in the health facility and absence of backup system like generator and its fuel to use during interruption of electric source in health facility. (5) Lack of awareness on health institution delivery benefit and thinking their home is a better place to give birth (6) The health facilities are not well equipped with the required drugs and supplies like IV antibiotics, gloves, vitamin k injection, oxytocin, IV fluids, syringes during mothers visit to health facility for the delivery as a result, we procure these drugs and supplies from private pharmacies during the absence of drugs and IV fluids from the health facilities and exposed to high unplanned expenses. (6) The long distance from health facility to mother home that

means the mother is far away from health facility and it took more than 2 hours on foot from her home to health facility (7) Long stay of Ambulance during maintenance in Garage and absence of another ambulance to replace during maintenance of ambulance.

A male community elder person of age 49 years said that: "mothers who give birth at their home and discussed during coffee ceremony/community gatherings in the community- session responds as some mothers plan to give birth in a health facility during their antenatal follow up time but due to long distances, too short time/urgency of labour and shortage or unavailability of transport, they give birth at home. I think, this is why most females fail to achieve their plan and gave birth in the home without supporter"

A female health extension worker of age 30 years old said that: "mothers who gave birth at their home were interviewed during the immunization session in the health post and responded that they have plan to give birth in health facility during their antenatal follow up in the health facility and their plan failed and delivered in their home due to long distance of residential kebele from health center/hospital and maternity waiting home is available but not well-equipped with house hold utensils such as water, bed and food items to use after term of pregnancy in the health facility until delivery.

5.8 Factors Associated with Institutional Delivery Service Utilization

The prevalence of institutional delivery was **71%** in the Woreda. After Bi-varaite analysis; place of residence, mothers educational status, husbands educational status, women educational status, husbands occupational status, husbands educational status, time taken to nearby health facility, media source for respondents either TV/radio, monthly income, Gravidity, ANC visit, Number of ANC visit, parity, Get information where to deliver during ANC Visit, health providers attitude, Husbands attitude in health facility delivery, final decision maker about place of delivery, availability of well-equipped maternity waiting home and knowledge of the mother on danger signs of pregnancy were candidate variables for multivariate analysis with a p-value of <0.2.

The multi-varaite analysis revealed that residence of women, women educational status, husband educational status, time taken to nearby health facility <1 hour and 1-2 hour on foot, husbands attitude in health facility delivery, availability of well-equipped maternity waiting home, ANC visit, Number of ANC visit, Gravidity, and knowledge of mothers on danger signs of pregnancy had a significant association with using institutional delivery. Women from urban areas were **2.50** times more likely to utilize institutional delivery service as compared to rural women (**AOR = 2.50, 95%CI: 1.15–4.62**) and Women who able to read and write were **1.52** times more likely to utilize health institutional delivery as compared to women who were unable to read and write (**AO=1.52, 95% CI: 1.05-2.64).** Similarly, women who attended primary education were **2.34** times more likely to utilize institutional delivery service as compared to women who were unable to read and write **(AOR =2.34, 95%CI:1.17-3.85).** Likewise, women who attended secondary education and above were **3.64** times more likely to utilize institution delivery service as compared to mothers who were unable to read and write **(AOR= 3.64, 95%CI:1.19-6.63).** Women whose husband attended primary educational were **2.61** times more likely to utilize institutional delivery service than mothers whose husbands unable to read and write **(AOR =2.61, 95%CI: 1.27–4.91).**Similarly, women whose husband's educational status was secondary and above were **2.26** times more likely to utilize institution delivery service than mothers whose husbands unable to read and write **(AOR= 2.26, 95%CI: 1.24-4.48)** Those mothers who were living in a place where less than one hour distance away from health center/hospital on foot were **3.61** times more likely to utilize institutional delivery service as compared to mothers who were living in a place greater than two hours distance on foot **(AOR= 3.61, 95% CI: 2.19- 5.71).** Similarly, those mothers who were living in a place where one to two hour distance away from health center/hospital on foot were **1.52** times more likely to utilize institutional delivery services as compared to mothers who were living in a place where greater than two hours distance on foot **(AOR= 1.52, 95% CI: 1.32–2.61).**Women who had ANC visit during their last pregnancy period were **3.14** times more likely to utilize health institution delivery service as compared to women who had no ANC visit during their last pregnancy period **(AOR= 3.14, 95%CI: 1.35-6.36).** Similarly, women who had two to three ANC visits

during their last pregnancy were **3.68** times more likely to utilize health institutional delivery service than attended ANC one times **(AOR = 3.68, 95%CI:2.56-5.94).** Likewise, women who had four and greater than four ANC visits during their last pregnancy period were **7.05** times more likely to utilize health institution delivery service as compared to those attended ANC one times **(AOR = 7.05, 95%CI:5.76-8.54).**

Women who had knowledge on danger signs of pregnancy and delivery related health problems were **5.54** times more likely to utilize health institution delivery service as compared to women who had no knowledge **(AOR = 5.54, 95%CI:3.48-10.60).** Likewise, availability of well-equipped maternity waiting home in the health facility had **7.50** more likely to attract mothers to utilize the health institutional delivery than health facilities with no well-equipped maternity waiting home in the health facilities **(AOR=7.50, 95% CI: 4.13-9.65).** Mothers who had support from their Husbands were **5.72** times more likely to deliver in health institution than those mothers who had no support from their husbands **(AO=5.72, 95%CI:3.75-17.38)** (Table -6)

Table-6: Factors Associated with institutional delivery services in Damot Gale Woreda, SNNPR, Ethiopia, 2023 (N=770)

Variable	category	Place of delivery		COR(95%CI)	AOR(95%CI)
		Health facility	Home		
Residence	Rural	413	211	1	1
	Urban	132	8	6.32 (4.56–12.43)*	2.50 (1.15–4.62)*
Husband's Educational status	Unable to read and write	85	75	1	1
	Able to read and write	123	105	1	1
	Attended primary education(1-8)	182	34	2.23 (1.39–3.59)*	2.5 (1.3–4.9)*
	Attended secondary and above education(9-12+)	155	10	2.80 (1.09–5.52)**	2.7 (1.2–4.5)**
Gravidity	1	95	90	1	1
	2-4	344	83	4.10 (3.12–7.45)**	3.60(2.91-6.25)*
	5 and greater than five	106	52	2.42 (1.61–4.84)**	2.20(1.41-4.12)*
	Yes	470	113	3.82 (1.87–7.42)**	3.14 (1.35–6.36)**

ANC Visit during last pregnancy	No	75	112	1	1
Number of ANC visit	1 times	50	35	1	1
	2-3 times	162	2	4.37 (3.57–5.34) *	3.68 (2.56–5.94) *
	4 and greater than four times	333	1	3.55 (2.58–6.82) **	7.05 (5.76–8.54) **
Knowledge of mother on danger signs of pregnancy	Knowledgeable	340	6	7.09 (4.26–14.25)**	5.54 (3.48–10.60)
	Not knowledgeable	205	219	1	1
Time taken to nearby health center/hospital.	<1 Hour	224	40	4.87 (3.14- 6.92)**	3.61 (2.19- 5.71)**
	1-2 Hours	214	58	1.64 (1.41–2.86)*	1.52 (1.32–2.61)*
	>2 Hours	107	127	1	1
Women educational status	Unable to read & write	103	102	1	1
	Able to read & write	181	100	1.71 (1.24–2.57)*	1.52 (1.25–2.64)*
	Primary education (1–8)	165	19	2.56 (1.27–3.79)*	2.34 (1.17–3.85)*
	Secondary and above (9–12+)	96	4	3.80 (1.19–6.51)**	3.61 (1.19–6.63)**
Well-equipped maternity waiting home in HFs available	Yes	446	35	8.32 (5.56–12.43)**	7.50 (4.13–9.65)**
	No	99	190	1	1
Husbands attitude to deliver in health facility	Not supportive	116	172	1	1
	Supportive	429	53	6.74 (2.73-18.31)*	5.72 (3.75-17.38)*

*= P Value < 0.05, **= P Value < 0.01, COR= Crude odd ratio, AOR= Adjusted odd ratio, CI= Confidence Interval

CHAPTER SIX

6.1 DISCUSSION:

Institutional delivery service is the most confirmed intervention in reducing maternal and child Mortality and disability. The study result showed that the utilization of institutional delivery was 71% in Damot Gale Woreda, South Ethiopia **95% CI (67.4%-74.7%**). More than half of the mothers gave birth in the health facility with a support of trained health care providers. This finding is consistent with the study which was conducted in Bahir Dar City administration, Amhara region **(19)** and in Bench Maji zone, South West Ethiopia **(28)**. This may be because the Woreda has similar socio-demographic and Obstetrics characteristics to each other. It was higher than similar study conducted in Sodo town, Wolaita zone, South Ethiopia **(14)**, Institutional delivery utilization in Woldia, Ethiopia **(16)**, in Goba Woreda, Ethiopia **(21)**, in Holeta town, Central Ethiopia **(13)** and in Arsi Zone, South-East Ethiopia. The disparity observed may be due to socio-economic; educational and sociocultural profiles. In addition, the efforts of health extension workers to provide health education for the community regarding institutional delivery may play a great role in the increment of institutional delivery in the study Woreda.

Place of residence was significantly associated factor with health institution delivery service utilization. Urban women were more likely to give delivery at health institutions as compared to their rural counterparts. This finding was in line with previous studies conducted in Dodota Woreda, Oromia regional state, Ethiopia **(17),** in Munisa Woreda, South East Ethiopia **(20)**, in Goba Woreda, Ethiopia **(21),** in southwestern Ethiopia **(22),** in Assosa District, Benishangul Gumuz Regional State, West Ethiopia **(26)**, and **in** Bench Maji zone, Southwest Ethiopia **(28).** This might be urban women would have an increased access to health facility delivery service, transportation, and information as compared to rural women.

Husband's educational status was a significant factor associated to allow women to utilize health institutional delivery service. Women who had husbands with at least primary and above level of education were more likely to give birth in health

institutions. This finding was in line with studies done in Munisa Woreda, South East Ethiopia **(20)**, in Sodo town, Southern Ethiopia **(14)**, and in western Ethiopia **(24)**. This could be educated husbands might have a good understanding about the complication of home delivery and the advantage of institutional delivery. Thus, they might assist their partner in deciding on the place of delivery that could be understood the increasing level of education in the community had a contribution to increasing institutional delivery service utilization.

Respondents who had ANC visits during pregnancy were more likely to utilize health institution delivery as compared to those who did not have ANC visits. Having ANC visits during pregnancy was significantly associated with the increased use of institutional delivery. This finding was strongly supported by studies done in Arsi Zone, South-East Ethiopia **(12),** in Holeta town, central Ethiopia **(13)**, in Sodo town, Southern Ethiopia**(14),** in Wukro and Butajira districts in the Northern and South Central part of Ethiopia(18), in Munisa Woreda, South East Ethiopia(20) and Ethiopia Mini EDHS conducted in 2019 **(10).** This might be due to the counseling of birth preparedness and place of delivery by the health care providers during ANC follow up in every visit of antenatal care.

Women who had knowledge of pregnancy danger signs and delivery related problems were more likely to utilize institutional delivery as compared to those who had no knowledge. This result was in line with previous similar studies conducted in Sodo town, South Ethiopia **(14),** in Banja district, Awie Zone, Amhara Regional, Ethiopia **(23)** Benishangul Gumuz Regional State, West Ethiopia **(26), in** Bench Maji zone, Southwest Ethiopia **(28),** in Sodo town, South Ethiopia (14)**,** and in Holeta town, central Ethiopia **(13).** This revealed that knowledge on pregnancy danger signs was an important factor that affects attitude, practice, and health seeking behavior of the women. Therefore, women who had knowledge about danger signs of pregnancy would speculate the potential adverse effect of pregnancy and delivery outcomes; as a result they would be motivated to deliver at the health facilities.

Those mothers who were living in a place where less than 1 hour distance and less than 1– 2 hours distance away from nearby Health institution were more likely to utilize

health institutions delivery as compared to those who were living in a place where greater than 2 hour distance away from nearby Health institution. This finding was also supported by other studies conducted in Holeta town, central Ethiopia **(13),** in Ethiopia **(15)** and in southwestern Ethiopia **(22).** This is because mothers who were living near health institutions may have access to health education, ANC service and nearby presence of infrastructure including transport service.

Women who attended antenatal care visits at least two and more times were more likely to use institutional delivery as compared to women who attended one time or and not attended at all. This finding was supported by different studies conducted in Sodo town, South Ethiopia **(14),** in Wukro and Butajera districts in the Northern and South Central Ethiopia **(18), and** in western Ethiopia **(24).** This is due to women who had good numbers of Antenatal care prefer to use health institution as compared to those who are one times or did not attend ANC visits.

Women educational status had significant association with health institution delivery service utilization. Mothers who were able to read and write and attended primary and secondary education and above were more likely to utilize health facility delivery service as compared to those mothers who were unable to read and write. This finding was in line with various studies conducted in Arsi Zone, South-East Ethiopia **(12)**, in Holeta town, central Ethiopia **(13)**, in Sodo town, Southern Ethiopia **(14)**, in Woldia, Ethiopia **(16)**, in Wukro and Butajira districts in the Northern and South Central Ethiopia **(18)**, and in Bahir Dar City administration, Amhara region, Ethiopia **(19)**. This showed that women able to read and write and above educational status were more likely to utilize health facility delivery service than women who were unable to read and write.

Health facilities with well-equipped maternity waiting home were **7.5** times more likely to attract women and enable women to utilize health facility delivery service as compared to health facilities with no well -equipped maternity waiting home. This might be due to the availability of well -equipped maternity waiting home in the health facility encourages women residing in hard to reach areas or with low infrastructures like transportation inaccessibility areas and living in far distance from the health facility

to utilize immediately after term of pregnancy the maternity waiting home and enable women to give birth in the health facility.

The summary from FGD and in-depth interview showed that too short period of labor, and distance away from nearby Health institution; “if they want to take a woman to health facility the available means of transportation is “foot”. In addition to the mentioned reasons above, some of the discussed points for not delivering at health facility were “Lack of infra structure like road in some areas to use the available Ambulance”, “Mothers waiting home present but not well-equipped in some health facilities with adequate bed, food, water and house-hold use utensils”, “ Decision maker for place of delivery was either her husband or family members in some kebeles ”, “Frequent interruption of electric source at night time in the health facility and absence of backup system like generator and its fuel to use during interruption of electric source in health facility” , “ mothers Lack of awareness on health institution delivery benefit and thinking their home is a better place to give birth “ The health facilities are not well equipped with the required drugs and supplies like IV antibiotics, gloves, vitamin k injection, oxytocin, and IV fluids during mothers visit to health facility for the delivery, as a result, we procure these drugs and supplies from private pharmacies during the absence of drugs and IV fluids from the health facilities and exposed to high unplanned expenses which demotivates the mother for utilization of health facility delivery.

6.2 CONCULUSION

In this study, the utilization of institutional delivery service was good among women of reproductive age groups in Damot Gale Woreda who gave birth within the last 2 years before the study period. However, further effort is needed to increase institutional delivery service utilization to 100%. The statistically significant factors associated with the utilization of institutional delivery in the district were place of residence; women’s educational status, husbands’ educational status, Antenatal care follow up, two and more visit for antenatal care, women’s knowledge on danger signs of pregnancy and delivery related problems, the accessibility of health facility(lesser time taken to visit

the nearby health center/hospital), well-equipped maternity waiting home in the health facility and husbands positive attitude on the institutional delivery service have significantly increased the utilization of institutional delivery service in the district. Hence, attending antenatal care, Promoting the education of women as well as their husbands, equipping the maternity waiting home with the required items, achieving positive attitude of husbands on institutional delivery by the strengthened awareness creation activities at community level, and addressing the infrastructure issues will significantly contribute to increase the number of mothers giving birth at health institutions. Besides, improving the infrastructure for accessibility of health care facilities, and ensuring women's knowledge towards danger signs during pregnancy and benefits of institutional delivery are the preliminary actions to be considered by the health care providers, district health office and Zonal health department.

6.3 Recommendations

A Zonal and district level managers, health planners, and decision makers are vital to distinguish and act accordingly on the factors that negatively affect institutional delivery to further increase the uptake of institutional delivery in the Woreda. Awareness creation activities needs to be strengthened by health extension workers and service providers both at community and health facility level to increase women's knowledge on danger signs of pregnancy and delivery related problems, promote the education of women and their husbands, strengthen and increase the awareness of mothers on the benefits of antenatal care and institutional delivery, construct and equip well the maternity waiting home in the health facilities especially for pregnant mothers living far distance from health facility, address the infrastructure issues like road at the community level to increase the number of mothers giving birth at health institutions and Promote husbands to understand the benefits of institutional delivery and increase partners/husbands positive attitude on the institutional delivery service to increase the utilization of institutional delivery service in the Woreda. Programs aiming to improve institutional delivery service in the district have to consider the above mentioned factors to further increase the institutional delivery uptake in the health center/hospitals under the district.

Key Recommendations for Interventions in the Woreda to Increase Health Institution Delivery Service.

1. Awareness creation activities needs to be strengthened by health extension workers and service providers both at community and health facility level to increase women's knowledge on danger signs of pregnancy and delivery related problems.

2. Strengthen and increase the awareness of mothers on the benefits of antenatal care and institutional delivery.

3. Construct and equip well the maternity waiting home in the health facilities especially for pregnant mothers living far distance from health facility to live in waiting home after term of pregnancy.

4. Address the infrastructure issues like road at the community level to increase the number of mothers giving birth at health institutions by using Ambulance service.

5. Promote the benefits of institutional delivery to husbands to support their wife for institutional delivery utilization.

6. Promote the education of women and their husbands at community level

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ENGLISH QUETIONNAIRE

The research questionnaire for utilization of health institution delivery and factors affecting it among women of reproductive age groups in Damot Gale Woreda, Wolaita Zone, South Ethiopia.

CONSENT FORM

Dear Respondent: A study is to assess utilization of health institution delivery and factors affecting it among women of reproductive age groups in Damot Gale Woreda, Wolaita Zone,South Ethiopia.

Petros Gechere, a Philosophy of Doctorate (PhD) student in Italy, Selinus University is conducting a research study in utilization of health institution delivery and factors affecting it among women of reproductive age groups in Damot Gale Woreda, Wolaita Zone, South Ethiopia.

The purpose of the study is to assess the utilization of health institution delivery and determine the factors for low utilization of health institution delivery among women of reproductive age in Damot Gale Woreda with a view to recommend effective strategies which would increase the uptake of health institutional delivery among women of reproductive age in the Woreda.

All the information collected will be kept in a confidential manner. Only a summary of the results of the study will be shared with Italy Selinus University and other concerned

bodies. The interviewer does not write your name on any of the forms in order to protect your identity. You can withdraw from the study anytime you feel like doing so. Therefore, I kindly request you to respond the following short questionnaire regarding your utilization practices on health institutional delivery. It should take you no longer than 10 minutes. Although your response is the most important, your participation in the research is entirely voluntary. In case, you have any queries or comments regarding this research, you are welcome to contact me on the following cell phone: 0912143619

Thank you so much for your time in responding this questionnaire.

Yours Sincerely!!

PLEASE MARK THE FOLLOWING QUESTIONS BY CROSSING(X) MARK ON THE RELEVANT BOX COLUMON OR WRITE DOWN YOUR ANSWER IN THE SPACE PROVIDED.

Example how to fill the questionnaire?

Q1. What is your gender?

Male	
Female	**X**

Section A: Background information.

This section is refers to Socio-demographic characteristics of women. We are aware that some questions can be very sensitive. This will allow us to compare the various responses. We assure you again that your responses will remain anonymous.

Q.1: Place of residence?

Urban	
Rural	

Q.2: Age of mother during interview?

15-19 years	
20-24 years	
25-29years	
30-34 years	
35-39 years	
40+	

Q.3: What is your religion?

Orthodox	
Protestant	
Muslim	
Other	

Q.4: Marital status of woman?

Single	
married	
Divorced	
Widowed	

Q.5: Occupational status of woman?

House wife	
student	
merchant	
Daily laborer	
Government employee	
Non-government employee	

Q.6. Occupational status of husband?

Farmer	
student	
merchant	
Daily laborer	
Government employee	
Non-government employee	

Q7. Educational status of woman?

Unable to read and write	
Able to read and write	
Primary education(1-8)	
Secondary education and above(9-12+)	

Q8. Educational status of husband?

Unable to read and write	
Able to read and write	
Primary education(1-8)	
Secondary education and above(9-12+)	

Q9. Family size?

2-5	
>5	

Q10. Time taken to nearby health center/Hospital?

<1 hour	
1-2 hours	
>2 hours	

Q10. Income in month in ETB?

<2500	
>=2500	

Q10. Media source for respondent either TV/Radio?

Yes	
No	

Section B: Obstetric characteristics of respondents:

This section explores your obstetrics characteristics.

Q11. Age at first union?

<15 years	
15-19 years	
20 years and above	

Q12. Age at first pregnancy?

<20 years	
>=20 years	

Q13.Gravidity?

1	
2-4	
>=5	

Q14. Parity?

1	
2-4	
>=5	

Q15. Abortion in life time?

Yes	
No	

Q16. Still birth in life time?

Yes	
No	

Q17.ANC visit during previous pregnancy?

Yes	
No	

Q18. ANC visit during the last pregnancy?

Yes	
No	

Q19. Number of ANC visit during last pregnancy?

One times	

Two-Three times	
Four times and above	

Q20.Get information where to deliver during ANC visit?

Yes	
No	

Q21. Place of delivery within the last 24 months delivery?

Health facility	
Home	

Q22. If home delivery, Assistant during home delivery?

Family member	
My mother	
TBA(un trained)	
Health worker	
My self	
Others	

Section C: Knowledge and attitude of the respondents

The knowledge of pregnancy danger signs was assessed by asking key pregnancy danger signs. They are asked "Did you know pregnancy danger signs?" If yes, mention? Those who mentioned at least **three** pregnancy danger signs (**Vaginal bleeding, severe headache, Lower abdominal pain (not discomfort), blurring of vision, Convulsions, leakage of fluid per vagina, decreased or absent fetal movement**) spontaneously considered as knowledgeable, otherwise not knowledgeable.

Q23. Knowledge of the Mother on ANC and delivery services.

Knowledgeable	
Not Knowledgeable	

Q24. Attitude of mother on ANC and Delivery service?

Favorable	
Unfavorable	

Q25. Health providers' attitude?

Good	
Not good	

Q26. Husband's attitude to deliver in Health facility?

Supportive	
Not supportive	

Section D: Preference of the respondents, their husband, family members and the community about place and attendant of delivery during their last pregnancy.

This section explores yours and your relatives' preference for place of delivery?

Q27.Preference of the mother about place of delivery?

Health facility	
My home	
My mother's home	

Q28. Preference of the mother about attendant of delivery?

Family member	
Skilled birth attendant	
My mother	

Q29. Preference of the husband about place of delivery?

Health facility	
Home	

Q30. Preference of the husband about attendant of delivery?

Family members	
Skilled birth attendant	
Others	

Q31. Preference of other family members about place of delivery?

Home	
Health facility	

Q32. Preference of the community about place of delivery?

Home	
Health facility	

Q33. Final decision maker about place of delivery?

Myself	
My husband	
Both of us	
Others	

Q34. Reason for not utilizing institutional delivery services?

High cost in health facility	
Facility not opened	
Facility too far/no transportation	
Poor quality of service	
Husband or family did not allow	
Not necessary	
Not customary	

Q35. Maternity waiting Home in the health facility?

Present	
Not present	

Table-7: Work plan

S. No	Activity	Responsible body	Jun/ 2022	July/ 2022	Aug/ 2022	Sept/ 2022	Octo/ 2022	Novem 2022	Dece 2022	Janu 2023
1	Proposal finalization	Investigator								
2	Ethical	Wolaita-ERC								
3	Study tool developme	Investigator								
4	Training	Investigator								
5	Pretest	Investigator								
6	Data collection	Data collectors, Supervisor, Investigator								
7	Data manageme nt entry, cleaning	Investigator, data clerk								
8	Data	Investigator								
9	Draft	Investigator								
10	Final	Investigator								
11	Defense	Investigator								
12	Finalizing	Investigator								

Table-8: Budget of the research project

S.No	Item	Unit	Quantity	Cost (Eth Birr)
Personal cost(Training, census data collection and data management)				
1	Data collectors	Person	12	12*10*300=36000 ETB
2	Super visor	Person	2	4*10*400=16000 ETB
3	Data clerk	Person	1	1*5*500=2,500 ETB
4	Investigator	Person	1	1*15*500=7500 ETB
				Subtotal= 62,000 ETB
Materials and Equipment cost				
1	Notebook	No-	16	16*70=1,120
2	Photocopy	Page	5120	3*5120=15,360
3	Printing	Page	180	15*180=2,700
3	Pen	Number	20	20*15=300
4	Pencil	Number	20	20*10=200
5	CD rewritable for backup	Number	5	5*90=450
	Chalk	pack	3	300*3=900
	4A paper	Desta	5	5*1000=5000
				Subtotal =26,030 ETB
Communication				
1	Mobile card for data collectors	Number	12	12*5 round*50=4000
2	Mobile card for supervisor	Number	4	4*5 round*100=2000
3	Mobile card for Investigator	Number	1	1*5 round*100=500
4	Transport			17*10*200=34,000
5	Payment to PhD		1	144,620 ETB
				Subtotal =185,120 ETB
Total=273,150 ETB				
10% contingency =27,315 ETB				
Grand total= 300,465 Ethiopian Birr or 5365.5 USD				