

Magnitude and Determinants of Utilization of Skilled Birth Attendance among Women of Child Bearing Age in Loka-Abaya Woreda, Sidama Zone, South-East Ethiopia



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## **Abstracts**

**Background:** *The fifth Millennium Development Goal calls for a reduction of maternal mortality ratio by 75% between 1990 and 2015. A key indicator to measure this goal is the proportion of births attended by skilled health personnel. Skilled birth attendance is correlated with lower maternal mortality rates globally and in Sub-Saharan Africa. Moreover providing skilled care during labor, delivery and early post-partum period also could reduce deaths due to obstructed labor, hemorrhage, sepsis and eclampsia. However, the proportion of births with a skilled attendant is only 20.4% in Ethiopia. Therefore identifying the determinants of skilled attendance for delivery is a priority area to give policy recommendations.*

**Objective:** *The study aimed to estimate the prevalence and the effects of predisposing, enabling and need factors on the use of skilled assistance at delivery by pregnant women.*

**Methods:** *A community based cross sectional study that employed both quantitative and qualitative data collection method was conducted from April 18 to 28 ,2014 in Loka-abaya district, Sidama zone, south east Ethiopia. Multi stage sampling technique was used for selection of study participants. A pre tested semi-structured questionnaires via interview was used to collect data on different variables. Bivariate and multivariate Logistic regression analysis was used to identify the determinants of skilled birth attendance. Focus group discussion (FGDs) was utilized for Qualitative data collection.*

**Results:** *550 mothers were included in the analysis. The respondents with age of 20- 34yrs were four hundred and fifty (82%) with [AOR (95% CI) =3.15 (1.01, 9.79)], About 263(48%) of the mothers having married to husbands who have attended secondary and above level of education [AOR (95%CI) = 14.79 (3.01, 65.60)], mothers having first birth [AOR (95%CI) = 7.01 (3.60, 13.63) Similarly, mothers who had ever given birth at health facility [AOR (95% CI) =67.03(31.8, 141.00)] and had known the risk of home delivery [AOR (95%CI) =7.79(2.29, 26.5)] were independent predictors of skilled birth attendance.*

**Conclusions:** *The prevalence of utilization of skilled birth attendance is very low in the study area. Maternal age at interview, husbands' education, Birth order, ever use of health facility during previous delivery and maternal knowledge on risk of home delivery were found to be independent determinants of skilled birth attendance.*

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## **Acronyms and Abbreviations**

ANC-----Antenatal Care

WCBA---Women of Child Bearing Age

BEmONC-- Basic Emergency obstetrics and Neonatal care

CEmONC---Comprehensive and Emergency Obstetrics and Neonatal care

CI-----Confidence Interval

C/S ----- Cesarean Section

DHS--- Demographic and Health Survey

EDHS----Ethiopian Demographic and Health Survey

EmOC---- Emergency Obstetric Care

ETB----- Ethiopian Birr

HC----- Health Center

HEW-----Health Extension Worker

HF----- Health Facility

HH----- House Hold

HSDP----- Health Sector Development Program

MDG----- Millennium Development Goal

MMR----- Maternal Mortality Ratio

MOH----- Ministry of Health

PAD----- Professionally Assisted Delivery

PI----- Principal Investigator

RH----- Reproductive Health

SBA-----Skilled birth attendants

SZDFED---- Sidama zone department of finance and economy development

SZHD-----Sidama zone health department

SNNPR---- Southern Nation, Nationalities and Peoples Region

SPSS----- Statistical Package for Social Studies

SSA-----Sub Sahara Africa

SVD----- Spontaneous Vaginal Delivery

WHO-----World Health Organization

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background**

According to the world health organization, maternal health refers to the “health of women during pregnancy, childbirth and the postpartum period.” For too many women, pregnancy, childbirth, and the postpartum period can lead to death, in most cases because of complications that can be prevented or effectively managed .One of the eight Millennium Development Goals adopted by United Nations in September 2000 was improving maternal health. Despite proven interventions that could prevent disability or death during pregnancy and childbirth, maternal mortality remains a major burden in many developing countries (1),(2).

The maternal mortality ratio (MMR) is a measure that relates the number of maternal deaths to the number of live births. In global level the ratio in 2013 was 210 deaths per 100,000 live births down from 400 maternal deaths per 100 000 live births in 1990. Maternal mortality ratio was revealed in wider range between developing and developed regions. The burden of maternal mortality was 233 deaths per 100 000 live births in developing regions whereas developed regions accounted for only 12 deaths per 100,000 live births. This comparison between the burden of maternal mortality in developed and developing countries has long been cited as the “widest disparity in all statistics of public health”. Sub-Saharan Africa had the highest MMR at 387 maternal deaths per 100 000 live births, while Eastern Asia had the lowest among MDG developing regions, at 37 maternal deaths per 100 000 live births. The MMRs of the remaining MDG developing regions, in descending order of maternal deaths per 100 000 live births are Southern Asia (310), Oceania (200), South-eastern Asia (150), Latin America and the Caribbean (80), Northern Africa (78), Western Asia (71) and the Caucasus and Central Asia (46) (3)

Worldwide maternal mortality has been fallen by 45% between 1990 and 2013 even though Complications of pregnancy and childbirth are the leading cause of disability and death among women between the ages of 15-49. Among low income countries, Southern Asia has made steady progress, with a 64% decline in maternal mortality between 1990 and 2013. In contrast, the ratio has fallen by only 49% in Sub-Saharan Africa, though evidence suggests that progress has picked up speed since 2000 (4). Even though the vast

majority of maternal deaths are avoidable, the majority of African countries including Ethiopia are failing to make sufficient advancements toward improving their Maternal Mortality Ratios; in contrast, some countries are implementing innovative initiatives to accelerate progress toward Millennium Development Goal 5 (5).

Every day, pregnancy- and childbirth-related complications account for approximately 800 maternal deaths around the world. Every minute, 110 women in the world experience a complication in their pregnancy and one of them will die. For each woman that dies, more than 25 others suffer a debilitating injury, often with life-long consequences. Millions of women lack the means to prevent unwanted pregnancies, and to prevent and address complications and disease during pregnancy. Further, the global adult lifetime risk of maternal mortality (i.e. the probability that a 15-year-old woman will die eventually from a maternal cause) is 1 in 180. The adult lifetime risk of maternal mortality in women from sub-Saharan Africa was the highest at 1 in 39, in contrast to 1 in 130 in Oceania, 1 in 160 in Southern Asia, 1 in 290 in Southeastern Asia and one in 3800 among women in developed countries (4).

Ethiopia is one of the countries with the highest rates of maternal deaths in the developing world. Moreover, maternal death is expected to be reduced by two-thirds from levels recorded in 1990 to reach the MDG target of 267 deaths per 100,000 deliveries by the end of 2015 (6). The most recent (2013) estimate of Ethiopia's maternal mortality ratio was 497 per 100,000 live births that remains among the highest in the world (3). In 2010/2011, maternal deaths represent 30% of all deaths to women age 15–49, compared with 21% in the 2005 and 25% in the 2000. In spite of the fact that the fifth MGD calls for a reduction in the maternal mortality ratio by 75% between 1990 and 2015, the country is clearly off-track on goal five with the MDG target of 267 per 100,000 births by 2015 (7,8,9). The major causes of maternal death are obstructed/prolonged labor (13%), ruptured uterus (12%), severe pre-eclampsia/ eclampsia (11%) and malaria (9%). Moreover, 6% of all maternal deaths were attributable to complications from abortion (10).

## **1.2 Statement of the problem**

Globally there were an estimated 292,982 maternal deaths in 2013 during and following pregnancy and childbirth in spite of some progress in tackling maternal mortality. Developing countries accounted for 291,171 (99 %) of maternal death. Sub-Saharan Africa (54%) and Southern Asia (27%) accounted for 81% of the global burden (235,852 maternal deaths) in 2013. At the country level, two countries account for a third of global maternal deaths: India at 19% (56 000) and Nigeria at 14% (40 000). Additionally, the following seven countries account for 3% to 5% of global maternal deaths each: Democratic Republic of the Congo (15 000), Pakistan (12 000), Sudan (10 000), Indonesia (9600), Ethiopia (9000), United Republic of Tanzania (8500) and Bangladesh (7200). Together with Afghanistan (6400), these 10 countries comprised 60% of the global maternal deaths reported in 2010 (3).

The largest proportion of such deaths are caused by obstetric haemorrhage, mostly during or just after delivery, followed by eclampsia. Sepsis and complications of unsafe abortion combined account for 17%, and indirect causes including deaths due to conditions such as malaria, HIV/AIDS and cardiac diseases, account for about 20% (11). Evidence suggests that skilled attendance at birth and access to emergency obstetric care are key factors in reducing the risk of maternal death, in both industrialized and developing countries (3).

WHO has defined a skilled attendant as, an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns(12). Trained health-care worker during delivery is crucial in reducing maternal deaths whereby estimates between 13%–33% of maternal deaths could be averted by the presence of a skilled birth attendant (13). The proportion of births attended by skilled health personnel is a key indicator to measure MDG goal (14) in addition, studies justified that it is also correlated with lower maternal mortality rates in SSA (15) and can administer interventions to prevent and manage life-threatening

complications like heavy bleeding and referring patients to a higher level of care when needed (16).

Maternal mortality in SSA is likely linked both to extremely low utilization of skilled birth attendants, low facility delivery and to even lower use of emergency obstetric care (17). Proportion of deliveries attended by skilled health personnel in developing regions overall rose from 55% in 1990 to 65% in 2009, whereas nearly all births were attended by skilled health personnel in developed country settings. In Africa and Asia, only 46.5% and 65.4%, respectively, of women gave professionally assisted deliveries. In less developed regions, the lowest levels of skilled attendant at birth were in Eastern Africa (33.7%), followed by Western Africa (41.2%) and South central Asia (46.9%) with the highest levels in Polynesia (99.8%), Eastern Asia (98%) and South America (92.7%). “Africa and Asia are lagging behind in terms of the ICPD +5. World Health Organization therefore has set targets for skilled attendance at birth of 80%, 85% and 90% by 2005, 2010 and 2015 respectively. In addition special and intensive efforts are needed to accelerate progress in under developed regions (10).

Even though one of the targets of the Ethiopian reproductive health strategy is to increase the proportion of births attended by skilled health personnel in a health facility to 60% by 2015 (18), the proportion of births with a skilled attendant is very low even for women who have access to the services. This is because of the major supply side constraints affecting maternal health: - shortages of skilled mid wives, weak referral system at health center levels, inadequate availability of BEmONC and CEmONC equipment, and under-financing of the service. On the demand side, cultural and societal norms, distances to functioning health centers and financial barriers were the major constraints (10). In Ethiopia, underutilization of the existing health service was a major problem. However, study on the determinants of utilization of skilled birth attendance at delivery was scarce.

The proportion of deliveries attended by skilled health personnel in Ethiopia is very much lower in Sub Sahara Africa. According to Ethiopia Demographic and Health Survey, 2011, only 34% of all Ethiopian mothers living in rural areas received any antenatal care from health professionals in their last pregnancy (7). In addition, according to report from ‘assessing progress towards the MDGs in Ethiopia 2012’ only 20.4 % of mothers gave

birth by assistance of skilled birth attendants and less than 2 percent delivered by Caesarean section (11).

In the same year, Federal Ministry of Health on its report also indicated that out of expected, 420,000, deliveries in SNNPR, the proportion of births assisted by a skilled provider was only 6% as compared to 84% of deliveries were assisted by skilled attendants in Addis Ababa. These might cause high prevalence of maternal as well as neonatal morbidity and mortality among mothers in the region (16). In spite of the fact that there was relatively better access to skilled attendance information and service utilization, report of Sidama zonal health department showed considerably low prevalence rate of skilled attendance at delivery in the study area in 2012. According to the report, the prevalence of mothers assisted by skilled attendants during delivery was only 12% in the district (19) , due to this fact, the district is selected for the study.

## **CHAPTER TWO: REVIEW OF THE LITRATURE**

### **2.1 Magnitude of Maternal Morbidity and Mortality**

Maternal death is defined by WHO as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration or site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental causes” (4). Maternal mortality and morbidity are major public health problems in developing countries, where between one-quarter and one-third of the deaths of women in their reproductive years can be attributed to pregnancy-related causes. For every woman who dies from pregnancy-related causes, it is estimated that 16–17 women will suffer complications that seriously affect their health, often permanently. Maternal mortality is the leading cause of premature death and disability among women of reproductive age in developing countries. Among women who die of pregnancy-related causes, 25 percent of women die during pregnancy, 16 percent die during delivery, and 61 percent die after delivery, with most of these deaths occurring within one week of delivery (20).

### **2.2 Impacts of Maternal Mortality, Disabilities and deaths**

Maternal death has implications for the whole family and an impact that rebounds across generations. The complications that cause the deaths and disabilities of mothers also damage the infants they are carrying. Of nearly 8 million infant deaths each year, around two-thirds occur during the neonatal period, before the age of 1 month; 3.4 million of these neonatal deaths occur within the first week of life and are largely a consequence of inadequate or inappropriate care during pregnancy, delivery, or the first critical hours after birth. Moreover, for every neonate who dies at least one other infant is stillborn(12).

Declining fertility and improved RH ultimately have a positive impact on income, growth and asset accumulation at both the household and country levels. Lower fertility and improved health may improve a household’s economic well-being through several channels. To begin with, healthier people work more and are physically and cognitively stronger, and are therefore more likely to be productive, to earn higher incomes, and to accumulate more assets. Secondly, healthier people live longer and consequently have more opportunities to benefit economically from human capital investments(21).

Women are important contributors to the global economy: About 40% of the global and 70% of Africa's labour force and more than 60% of workers in agriculture in sub-Saharan Africa are women. Women are also overrepresented in agriculture sector –producing 80% of food in rural areas. Death and disability is a direct cost to the economy in these region (22).Improving the reproductive health of women around the world is vitally important not just for the health benefits that will ensue but also for the substantial social and economic benefits, for women, their families, and their communities. Poor health reduces labour supply and contributes to lost wages, so improved reproductive health outcomes can increase female labour supply and productivity and therefore should be of great concern to policy makers (23). The study exploring the economic consequences of maternal ill health conducted in the context of a rural population in Bangladesh. The finding of the study suggested that there was a large reduction in household resources associated with maternal illness, driven almost entirely by spending on health care (24).

### **2.3 Maternal health service utilization**

Poverty and limited access to appropriate care pose major challenges to improving maternal health and reducing maternal mortality. Poor women have limited access to appropriate information and health services. Likewise, poorer women are disproportionately affected by higher mortality rates owing to lower access and use of health services. A combination of social, economic and cultural barriers also prevents poor women from easy access to care and health services even when quality health services are geographically within reach (2). According to EDHS 2011, information on such factors is particularly important in understanding and addressing the barriers women may face in seeking care during pregnancy and at the time of delivery (7).

When it comes to preventing maternal mortality disability, timing is critical: although postnatal haemorrhage can kill a woman in less than two hours, most other complications have a window of 12 hours or more during which to obtain lifesaving emergency care. The delay model is useful yardstick to manage obstetric complication, and to design programs to prevent maternal death or injury. Delay in seeking appropriate medical help for an obstetric emergency for reasons of cost, lack of recognition of an emergency, poor education, lack of access to information and gender inequality. Delay in reaching an



appropriate facility for reasons of distance, infrastructure and transport. Delay in receiving adequate care when a facility is reached because there are shortages in staff, or because electricity, water or medical supplies are not available (25).

The first two relate to directly issue of access to care including family pressure to give birth at home because of social or community pressure or owing to inadequate funds for transportation. Reaching a health facility does not necessarily mean the end of the journey as the nearest facility may not be equipped to treat conditions or administer essential first aid so patients referred to another facility that is better equipped. The third relates inadequacies within the health care system itself. This could be lack of properly trained personnel, transfusion equipment and other infrastructural inadequacies. Late or wrong diagnosis and incorrect action by staff are other factors that contribute to the delay in the timely provision of needed care. Unless the three delays are addressed, no safe motherhood program will succeed (26).

### **2.3.1 Skilled Birth Attendants at Delivery**

The term 'skilled attendant' refers exclusively to people with midwifery skills (for example, doctors, midwives, nurses) who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage or refer complications. Ideally, the skilled attendants live in, and are part of, the community they serve. They must be able to manage normal labour and delivery, recognize the onset of complications, perform essential interventions, start treatment, and supervise the referral of mother and baby for interventions that are beyond their competence or not possible in the particular setting (13). A Skilled attendance at birth has been described as a partnership of skilled attendants and an enabling environment of equipment, supplies, drugs and transport for referral (20).

The proportion of births attended by skilled personnel is crucial for reducing maternal and neonatal death at prenatal, perinatal and postnatal periods. This suggests that between about 16% and 33% of all maternal deaths could be avoided through skilled attendance, assuming certain competencies as well as the availability of essential drugs, equipment and referral (27). Research findings suggest that although all women and babies need pregnancy care, care at childbirth is most important for the survival of pregnant women

and their babies (20). For example, by providing professional midwifery care at childbirth, industrialized countries halved their maternal mortality ratios in the early 20th century (28). Up to 60% of maternal deaths could be prevented by universal access to adequate reproductive health services, and it is critical that women with serious complications receive care from a skilled birth attendant in an emergency obstetric care (EmOC) facility with the facilities, drugs, supplies, equipment. Because most maternal deaths occur at labor and delivery or within the first week following birth, EmOC is the most important action that can be taken to reduce maternal mortality (27).

### **2.3.2 Determinants of the use of skilled birth attendants**

Several factors affecting maternal care in general and skilled attendance at delivery utilization in particular had been identified through many studies. Most of these factors those were identified through studies conducted on maternal care utilization in developing countries:- Socio demographic factors, Obstetric determinants, maternal knowledge and attitudes on obstetric risks, health service factors and woman's decision making [(29)(30),(31)].

Age, education, occupation, residence and economic status of the mothers were the most common socio demographic determinants of maternal care utilization in most of the developing countries including Ethiopia. A study conducted in Nepal suggested women over 35 years of age are in a better position to access health care because they are more empowered to voice their needs and had more control over family resources (32). On the other hand, the new generation younger women could have formal education and have significant association on delivery care as compared to the older generations; as suggested by the study conducted in Tanzania (33). Furthermore, those mothers who are younger than 35 years, attended at least primary education, employed, and reside in urban are commonly found to be significantly associated with safe delivery service utilization and more likely to use safe delivery service than their counterparts (31).

In addition , studies conducted in different regions of Ethiopia indicated that maternal education family size, husband occupation and education were all significantly associated with health facility delivery [(30), (34), (35),(36),(37)]. According to EDHS 2011, The proportion of births delivered in a health facility is only 4 % among uneducated mothers as

compared to 74 percent among highly educated mothers (7). Studies conducted in Nigeria revealed maternal education is a very significant determinant of maternal deaths. Education improves personal ability and skills; it helps women to overcome barriers posed by tradition, low autonomy, low social status and low economic status [(38), (39)]. Likewise, the study conducted in Indonesia, mother's educational attainment was the strongest significant determinant for the use of a skilled attendant. The use of facilities and/or trained providers for obstetric complications were positively associated with women's and their husband's education (31).

On the other hand, 84 percent of women who have completed secondary or higher education had been assisted by skilled personnel during childbirth more than twice as compared to mothers with no formal education [(30), (34)]. In line with many studies conducted in similar settings, mothers whose husbands attended at least primary school and employed had higher odds of giving birth at health facilities compared to those whose husbands are uneducated and unemployed [(32),(40),(41),(42),(43)]. Similarly, EDHS 2011 showed that women residing in Addis Ababa and other urban areas are notably more likely than rural births to be delivered in a health facility (50 percent versus 4 percent) in addition to that, in rural areas the most common birth attendant was a relative or other person. Besides to that, living standard and cultural rituals were said to be inhibiting mothers from using safe childbirth services (7).

A Study in Indonesia showed that there was a 3.19 (95% CI 1.56-6.51) increased chance of using a skilled attendant among women in families with middle to richest family wealth index scores compared to those women in families with poorest to poorer wealth index scores (31). Many studies conducted in different parts of the world concerning obstetric determinants for safe delivery service utilization. Almost all of the studies indicated that obstetrics determinants of safe delivery had significant association with skilled birth attendance. Mothers with lower age at first pregnancy, having more than one previous pregnancies, with in more than one birth order, received ANC service, birth complications in previous and immediate pregnancies and had ever used professionally assisted delivery in preceding delivery were commonly found to be significantly associated with safe delivery service utilization [(32),(33),(43),(44)].

A study in Cambodia indicated that delivery with skilled attendant at the preceding delivery was a significant determinant for subsequent use of skilled attendant. Once a woman has delivered with the aid of an unskilled attendant, she is five to seven times less likely to seek skilled help than a primipara (44). In Ethiopia, the nationwide DHS in 2011 indicated that delivery in a health facility is more common among mothers who have had at least 4 antenatal visits and mothers with first births than births orders six or higher (21 percent versus 4 percent) (7).

A community based study in Gondar indicated women who did not have any registered antenatal visit were less likely to give birth at health facilities (OR 0.09, 95% CI: 0.06, 0.15) than those received antenatal care. Moreover, mothers who have had past history of intra partum complication were more likely to seek safe delivery care than those with no such history (OR 1.63, 95% CI: 1.1, 2.24) (43) . A study in India showed women with a relatively high level of antenatal care had almost four times higher odds of using trained assistance at delivery than women with a low level of care (40). On the other hand, attendance at antenatal care actually may discourage delivery in a health unit; women who were told that their pregnancy is normal see no reason to deliver at the health unit. Many women, even if they received antenatal care services at a facility, they preferred to deliver at home in a familiar environment, often with the assistance of someone known to them and feeling that birth is a normal phenomenon that does not need an institutional setting (45).

Maternal parity is an independent predictor of utilization of delivery care services in rural Ethiopia. Women with 2-4 and 5+ children are 60 percent and 50 percent respectively, less likely to receive delivery care than parity one women (46). Recognizing danger signs and deciding to seek care are influenced by a woman's knowledge of pregnancy-related health risks (47). Several studies showed that women who knew risks of pregnancy, warning signs of pregnancy and labor, life threatening birth complications, existence of delivery service at health facilities, and who had positive attitudes towards health facility delivery care had higher probability of using modern health facilities for child birth [(45)-(46)].

Progress in preventing and seeking care to reduce maternal deaths in rural Malawi depends on women's and communities' knowledge and attitudes to maternal health. It has been

shown that women individually have little knowledge of maternal health problems (48). A study in a semi-urban community of Nigeria found that women and their birth attendants did not seek help promptly because they lacked knowledge of warning signs, believed that supernatural forces caused complications, faced transportation difficulties, and believed that hospitals provided poor care (49).

The use of health services is affected by the characteristics of the health delivery system: - accessibility, quality, and cost of the services. Factors preventing women in developing countries from seeking life-saving healthcare services they need include: distance from health facilities, cost for service fees and associated with transportation, drugs and supplies, demands on a woman's time and decision-making power within the family (50) . According to the 2011 EDHS report, getting permission and money for treatment and transport, distance to health facility, wanting accompany and female provider were among the most common barrier to women access to health services. Concerning the individual factors determining health service utilization, workload inside and outside the house is the most important barrier to women's access to health services (7). As studies in different parts of developing countries suggested women who live closer to health facilities, discuss with their partner on the place of delivery, and able to pay user fee are more likely to use safe delivery(43) (49) . Moreover studies also indicated that lack of transport, the need to secure husband approval, poor road condition, poorly staffed and equipped institutions were the most common factors to decrease maternal motivation to visit health facilities for care (41)-(51).

### **Conceptual Framework**

The conceptual framework is adapted from Anderson and Newman health service utilization. As depicted in the diagram the determinants of the use of skilled birth attendances services are influenced by three sets of determining factors: predisposing factor, enabling factors and need factor as independent variables and Utilization of SBA as outcome variable.

**Predisposing factors-** are the combination of demographic and obstetric characteristics, social structure, health beliefs, governmental policies, regulations on health and related sectors. Demographic characteristics are the tendency of the individual to use services that

include gender, number of previous pregnancies, marital status, and maternal age. Obstetrics characteristics include maternal age at first pregnancy, gravidity, parity, birth order, Ante natal care use and childbirth complications. Social structure such as ethnicity, religion, income, family size, residence, educational status (women/husband) and occupation (women/husband) measures the coping ability of the individual with the problem and availability of the resources. Health beliefs are the knowledge about health and health care system; for example, attitudes towards disease and medical care such as obstetric risks, HF delivery service, danger signs of pregnancy and labor, benefits of safe delivery, risks of home delivery.

**Enabling factors-** Are personal as well as family factors that make the individuals able to obtain health care services. The means and know how to access health services, income, health insurance, a regular source of care and travel, extent and quality of social relationships. Availability of health personnel and facilities, and waiting time, possible additions: - Genetic factors psychological characteristics and community.

**Need factors** –Are considered to be the immediate cause of health service utilization from functional and health problems that generate the need for health care services. They are the perception of one’s own health status and expectation of benefit from the treatment. "Perceived need” will better help to understand care-seeking and adherence to a medical regimen, while evaluated need will be more closely related to the kind and amount of treatment that will be provided after a patient has presented to a medical care provider (52).

1. Predisposing factors

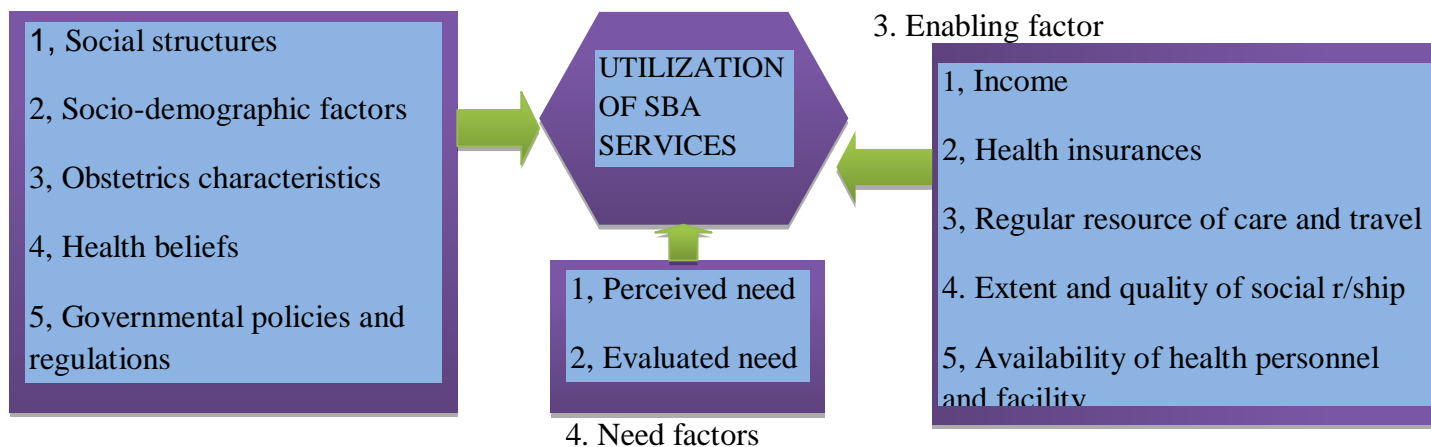


Figure 1 Conceptual framework of variables adapted from Anderson and Newman framework (1999) of health service utilization in Loka abaya,Sidama zone south east Ethiopia, April 2014

## **SIGNIFICANCE OF THE STUDY**

In Ethiopia, studies addressing determinants of maternity care services utilization are scarce particularly in sidama zone. Furthermore, little is known about the determinants that influencing the utilization of skilled birth attendances services in the study area. This study therefore aimed to fill this gap by assessing the determinants of utilization of skilled attendances among women in childbearing age in the study area. The study will have contribution towards maternal health improvement in the region as well as in the study area. The findings will be relevant and useful to the planners of reproductive health services for appropriate and effective interventions. Furthermore, the study will provide more information on efficient and effective utilization of the scarce resources available for health to address issues of reducing maternal morbidity and mortality.

## **CHAPTER THREE: OBJECTIVES OF THE STUDY**

### **3.1 General objective**

To assess magnitude and determinants of utilization of skilled birth attendance among mothers who had given birth in the last five years in Loka abaya district, Sidama Zone, South east Ethiopia, April 2014

### **3.2. Specific objectives**

1. To identify the prevalence of skilled birth attendance
2. To identify predisposing factors affecting skilled birth attendance
3. To identify enabling factors affecting skilled birth attendance
4. To identify need factors affecting skilled birth attendance



## **CHAPTER FOUR: METHODS AND MATERIALS**

### **4.1 Study Area and period**

The study was conducted in Loka-abaya woreda from April 18 to May 18, 2014. The woreda is one of the 21 woredas in sidama zone, Southern Nations and Nationalities Regional State. Based on projection from the 1999 E.C population and housing Census, in 2013 total population reside in the woreda is estimated to be 117,269 with 57462 (49%) females and 59807 (51%) males. Administratively the district is divided in to 24 kebeles. The majority of the populations are farmers and Protestants religion followers. Women of reproductive age group make up about 23.3% of the population and approximately 3.6% becomes pregnant annually. Loka –abaya district is located on the west of the main road between Addis Ababa and Moyale at a distance of 337km from Addis Ababa ,62 km south of Hawassa cities and at the eastern shore of Lake Abaya [52].

Based on the information from the zonal health department, the potential health services coverage of the woreda is 92%. Regarding health institutions, one district hospital (under construction), seven health centers (all are government owned), 24 health posts, 01 diagnostic laboratory, two medium clinics and 1drug vendor in the woreda serving the community. With regard human power, the district consists of 6 health officers, 7 midwives, 135 nurses of all types, 3 pharmacists, 8 laboratory technologists, 48 HEWs and 9 environmental health workers [53]. Concerning other facilities, there are automatic digital telephone and frequently interrupting electric services in center of the district. There are eight all weather road connecting the Woreda to the zonal capital, neighboring districts and zones. Majority of the kebeles do have access to vehicle transportation (53).

**4.2. Study design:-**A community based cross-sectional study was employed using both quantitative and qualitative data collection methods

### **4.3 Source& Study population**

**4.3.1.1 Source population:** - It comprised of all women in childbearing age who were permanent residents at least for one year in the study area.

**4.3.1.2. Source population for FGD:-**It comprised of all currently married men and women; and all religious leaders who were permanent residents at least for one year in the study area

**4.3.2 Study population:-**It comprised of all women in childbearing age that had given birth in the five years before the survey residing in randomly selected kebeles.

#### **4.3.3 Study subjects**

It comprised of women of childbearing age those had given birth in the past five years preceding the study period proportionally allocated in selected kebeles.

### **4.4. Sample size determination and Sampling technique/sampling procedure**

#### **4.4.1. Sample size determination and Sampling technique**

In the survey, multistage sampling technique was used. Different nationwide and pocket studies had been identified maternal literacy, birth order, Ante natal care use, maternal age and family living standard, place of residence and previous birth complication as determinants of skilled birth attendance utilization [16, 34, and 35].The optimum size of sample was taken considering logistics and resource constraints. The following assumption and formula were considered in calculating the size of the sample. Proportion ( $p=20.4\%$ ), proportion of women used skilled birth attendance in Ethiopia according to “Millennium Development Goals report Ethiopia 2011/2012” [6], 95% confidence interval, 10% of non-response rate and a design effect of 2 were considered. Finally, 550 sample women of childbearing age were drawn. The sample was calculated using single Population proportion formula, where:-

$N$ =sample size of women who gave birth at health institution by skilled attendants

$Z_{\alpha/2}$  = is the corresponding Z value to 95% significance level = 1.96

$P$ = Proportion of women who had given birth at health facilities by skilled attendants in Ethiopia according to “Millennium Development Goals report Ethiopia 2011/2012” =20.4 % [6].

$d$ =degree of freedom=5%.

From the calculation, a sample of 250 women who delivered at HF by skilled attendants is required. Finally, considering a design effect of two and non-response of 10%, a sample of 550 women delivered at HF by skilled attendants had been drawn.

#### **4.4.2.1 Sampling procedure**

Loka abaya woreda is selected in purposive sampling technique. All the twenty-four kebeles in the woreda administration found to be considered. For logistic and cost reasons only seven (30%) of the kebeles were included in the study using simple random sampling

technique. From the selected kebeles, households with women who had given birth in last five years preceding the survey were identified by using the registration at health post. The total sample size had been then proportionally allocated from total women of childbearing age in each kebele. In cases where a woman had given birth more than once, the most recent pregnancy was considered for the present study. Based on this, a sampling frame that enlists all eligible mothers had been prepared and 550 women were included in the study using probability sampling technique

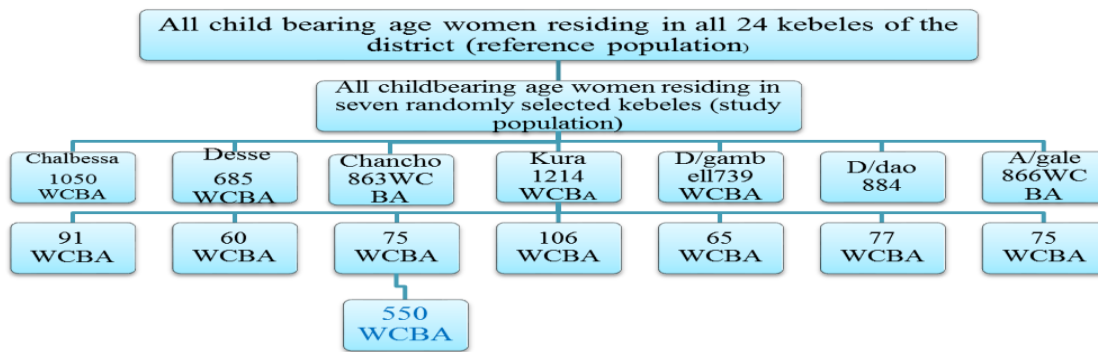
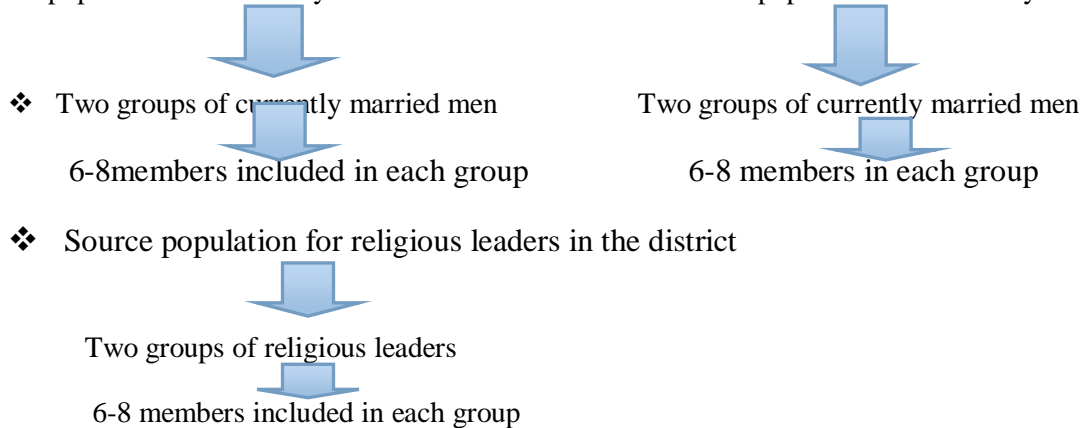


Figure 2 schematic presentation of the sampling procedure in Loka abaya woreda, Sidama zone south east Ethiopia, April 2014

#### 4.2.1.2 Sampling procedure for focus group discussion

Source population for currently married men in the district      Source population for currently m/men



### 4.5. Eligibility criteria

#### 4.5.1. Inclusion criteria

1. Women in reproductive age group who are residing in the study area for at least one year.

2. Women in reproductive age group who have given at least one birth within five years preceding the survey.

#### **4.5.2. Exclusion criteria**

1. Women who were mentally and physically non-capable

### **4.8. Variables of the study**

#### **4.8.2. Dependent Variable**

1. Utilization of skilled birth attendance (SBA) services

#### **2. 4.8.1. Independent Variables**

1. Socio demographic variables- maternal age, marital status, age at marriage, ethnicity, religion, income, Family size, residence, educational status (women/husband), occupation (women/husband)
2. Obstetrics characteristics - age at first pregnancy, gravidity, parity, birth order, frequency and use of antenatal care, child birth complications
3. Women's knowledge and attitude on - obstetric risks, healthy facility delivery service, danger signs of pregnancy and labor, benefits of safe delivery, risks of home delivery , decision-making of mothers to utilize skilled birth attendance
4. Health facility factors and women decision making- distance of health facility from their home, affordability of services and supplies, availability of health facility and health care providers, supplies and equipment and transportation facilities and affordability of service and supplies.

### **4.6. Data collection procedure**

Face-to-face interview with semi- structured questionnaire that was adapted from Ethiopian demographic and health survey and related thesis works [16, 35]. Women in the age range of childbearing had been interviewed by going house to house in the randomly selected kebeles. The English version of the questionnaire was translated in to a local language, sidamiffa, by teacher of sidamiffa language for better understanding by both data collectors and respondents. Consistency of the tools was checked by translating the sidamiffa version back to English by another individual expert in both languages. Seven health professionals holding diploma, who are fluent speakers of sidamiffa and who were working outside the health center of that catchment kebeles were recruited and oriented for two days by the principal investigator prior to data collection. One data collector was

assigned per kebele. One supervisor with health background holding first degree was assigned per two kebeles in order to supervise and assist data collection process. Mothers who were not present during first visit had been revisited twice and the result of visiting was recorded on the tool.

In order to explain the result of quantitative study and to obtain information that was much more detail or important issues that could not be quantified, qualitative method of data collection was considered using FGD. Focus group discussion [FGD] had been held with three focus groups each containing two subgroups, and consisting of six to eight participants those had been selected from the respective study sites. The participants of the FGDs had been selected from different groups including: - currently married men and women in the reproductive age group and Religious leaders. A focus group discussion guide was prepared to guide the discussion in such way to provide relevant information. FGD had been held in a quiet and comfortable place. It was taken one and half-hours with each group. The principal investigator was the moderator and there was one trained note-taker. All discussions had been recorded using a tape recorder and notes were taken during discussion.

#### **4.7. Data quality management**

The questionnaire was pre tested on 5% of the respondents in Jirmancho kebele that was randomly selected for this purpose. The kebele is similar with socio demographic characteristics with the people in the study areas. Findings had been discussed among data collectors and supervisors in order to ensure better understanding to the data collection process so that the tool was modified before actual data collection. Data quality had been ensured during collection, coding, entry and analysis. During data collection, adequate orientation and follow up had been provided to data collectors and supervisors. Supervision of data collectors included observation of how the data collectors were going to administering questions. Codes were given to the questionnaires and HH during the data collection so that any identified errors had been traced back using the codes. Data collectors and supervisors on a daily basis had checked the filled questionnaires for completeness, clarity, and proper identification of the respondents. Consequently, any problem encountered had been discussed among the survey team and been solved

immediately. Then, the principal investigator had double-checked randomly the questionnaire for the completion each day.

#### **4.9. Data processing and analysis**

Finally, the quantitative data had first been checked manually for completeness then recoded, edited and entered into Epi data version 3.1 statistical software and had been cleaned thoroughly before transferred to SPSS version 16.0 for further analysis. The data had further been cleaned by visualizing, calculating frequencies and sorting. Correction was made according to the original data. Data exploration was done to visualize the general feature of the data.

After exploration, univariate, bivariate and multivariate analyses had been computed step by step. Univariate analysis was done to describe some important characteristics of study subjects and then expressed in percentages, graphs, means and standard deviations. The bivariate analysis using logistic regression had been computed to see the crude association between dependent and independent variable so that used to select the candidates for multivariate analysis if the “p” value is  $<0.05$ . The strength of association between dependent and independent variables (covariates) was expressed in odds ratio (OR). Finally, multivariate analysis using backward stepwise multiple logistic regression technique had been done to evaluate independent effect of each variable on skilled attendance service utilization by controlling the effect of other confounders.

Qualitative data from FGD was analyzed by thematic analysis technique. Recorded responses collected from the respondents were transcribed. Contents had been analyzed by Atlas ti 7.1 & thematized in the main thematic area.

#### 4.10. Operational Definitions

1. **Skilled attendant:** a professionally trained health worker usually a doctor, health officers, midwife, or nurse with the essential skills to manage normal labor and delivery, recognize complication early and perform any essential interventions.
2. **Skilled birth attendance:** normal labor and delivery that is attended by professionally trained health workers usually doctors, health officers, midwives and nurses with the essential skills.
3. **Skilled birth attendance utilization:** expressed as the proportion of women who actually receive the care within a given period in a health facility by professionally trained health workers.
4. **Health care institutions:-** institution providing acute and long term medical and nursing care for people with the need that includes health posts, health centers and hospitals.
5. **Safe delivery:** normal labor and delivery attended in the health facilities by health care providers including health extension workers
6. **Safe delivery service utilization-** expressed as the proportion of women in need of safe delivery service who actually receive the care within a given period in a health facility including health posts.
7. **Traditional birth attendant:** who initially had acquired her ability by delivering babies by herself or through apprenticeships to other TBAs
8. **Births in the last five years:** - All births within five years irrespective of outcome of delivery (live birth, abortion, stillbirth and death after live birth).
9. **Permanent residence:** - Women who have been residing in the study area, at least one year prior to data collection.
10. **Currently married men:** - Men who have been residing in the study area and married one year or less prior to the data collection.
11. **Know danger signs of pregnancy-** at least three of the accepted danger signs mentioned
12. **Know danger signs of labor-** at least three of the accepted danger signs mentioned.
13. **Bad obstetrics outcome** –Those out comes related with abortion, still birth, obstructed and prolonged labour

#### **4.11. Ethical consideration**

Ethical clearance was obtained from institutional Review Board of Jimma University College of Public Health and Medical Sciences. Permission letters to conduct the study was obtained from south nation nationalities and people region health bureau, sidama zone health department, Loka abaya woreda health office and respective kebele administrations. Objective of the study was explained, informed and written consent had been obtained from each participant. Confidentiality was maintained by using codes that is only known by the respondent. Participants who were unwilling to participate in the study and those who wanted to abstain from their participation at any stage were informed to do so without any restriction.

#### **4.12. Dissemination plan**

The primary objective of this thesis is a requirement for master in public health and presentation for defense at Jimma University College of Public Health and Medical Sciences, Department of Health services Management. A report will also be communicated to south nation nationalities and people's regional government health bureau, sidama zone health department and any other respective bodies. Presentations at professional, local, national and international meetings and publication in peer reviewed, national or international journals will be attempted.



## **CHAPTER FIVE: RESULTS**

### **5.1. Socio-demographic characteristics of the respondents**

A total of 550 women who had given birth in the preceding five years before the survey were interviewed giving response rate of 100 percent. All of the respondents reside in rural area and 279 (50.7%) of them were within the age range of 20- 34yrs. Majority, 545 (99.1%) of the respondents belong to Sidama in ethnicity and five hundred forty eight (99.6%) were currently married with mean age and standard deviation (SD) at first marriage 18.61+ (2.269) years respectively. Regarding the religion of the respondents, Majority, 86.5% were protestant Christians while Muslim religion followers were only 4.7%.

Two hundred forty three (41.2%) of the respondents have attended 0 – 6 grade, one hundred sixty seven (30.4%) have attended seven and above grade and only seven of them have attended technical and vocational school. With regard to the occupation of the respondents, Only 8% were engaged in paying jobs and almost all, 95%, of the respondents were house wives and having no their own income. Regarding husbands' educational and employment status 43.8% of them completed at least secondary school and only 4.9% were employed in either governmental or private firms while majority (89.8%) were farmer. With regard to number of persons in households, 25.4% do have more than four family members per households with mean of 4.81.

Three FGDs were conducted involving eighteen to twenty four participants, approximately 6-8 in each group with the age range of 21-50 years old and one group being from religious leaders, one from currently married men and the other group from currently married women. All the respondents were from respective kebeles that were included in quantitative survey. The contents of the interview included patterns of maternal health service utilization, status of delivery care and factors affecting utilization of skilled birth attendances.

Table 1 details of selected socio demographic characteristics of the respondents in Loka abaya district, Sidama Zone, South East Ethiopia, and April 2014.

Variables	Frequency	Percent
<b>Occupation (n=550)</b>		
House wife	527	95.8
Merchant	14	2.5
<b>Religion of the respondents(550)</b>		
Protestants	476	86.5
Others	74	13.5
Gov't employee	9	1.5
<b>Husband occupation(n=548)</b>		
Farmer	492	89.8
Gov't & private employee	27	4.9
Merchant	25	4.6
Daily laborer	4	0.5
<b>Respondent's educational level (n=550)</b>		
Secondary and higher	177	32.2
Primary	272	49.5
No formal education	101	18.4
<b>Husband's educational status(n=548)</b>		
Secondary and higher	263	48
Primary	239	43.4
<b>No formal education</b>	<b>46</b>	<b>8.4</b>

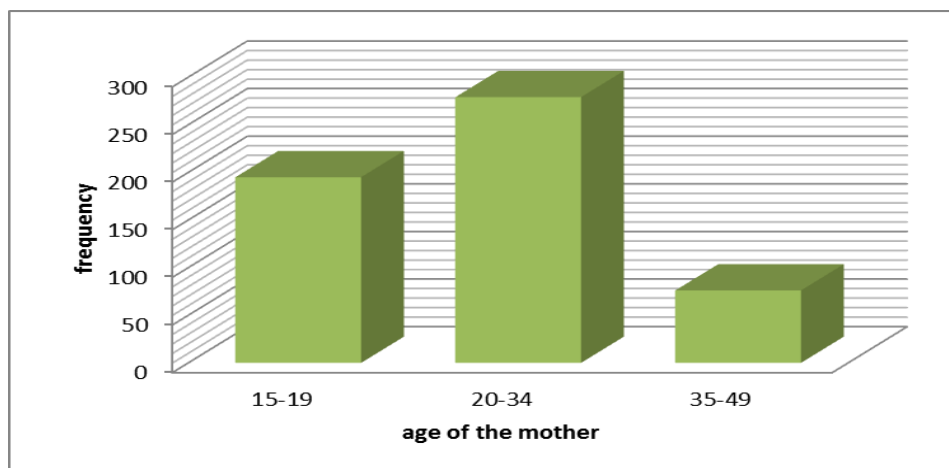


Figure 3 Maternal age at the time of interview in Loka abaya district, Sidama zone, south east Ethiopia April 2014

## **5.2 Obstetric characteristics of the respondents**

Two hundred seventy five (50%) of the women were below 20yrs at their first pregnancy. At their last birth 361 (66%) of the mothers were 20-29 years old and 139 (25.5%) were older than 30 years. Regarding their pregnancy profile, most of the mothers, 438 (80.8%) had been pregnant one to four times and only 96 (8%) had been pregnant more than eight times in their life.

Majority of the mothers (73.3%) had never given birth at health facilities preceding five years of the study. Five hundred twenty seven (99.1%) of the respondents had at least one live birth and only seventy-one (13.9%) had encountered at least one bad obstetric outcome. Seventy-two (14.1%) of the mothers faced at least one complication of labor during next to last birth of whom 39 (56.5%) had excessive vaginal bleeding. The majority, 84% of the respondents had planned their last pregnancy. Among four hundred sixty six (85%) of the respondents who had received ANC, only 26.7% of them had been booked four or more ante natal visits while the majority, 58.4% had visited only once or never been booked to ante natal follow up in their pregnancy.

Similarly, Focus group discussion identified that all of the respondents mentioned pre natal care, delivery, family planning (FP), postnatal care and other related services have been provided in all public health facilities. Almost all maternal health services have been given free of charge except during shortage of contraceptives. Regarding the status of utilization, except delivery and postnatal care, all other services were being utilized in good manner.

*A 22 years old female from currently married women said; “Utilization of ante natal and family planning services is highly increasing because they are being provided in all health institutions at any time including outreach. However, delivery service is not provided in health posts even though all of them are staffed by two health extension workers. In addition, transportation facility is ready, health facilities are open for twenty four hours and the services are being provided free of charge all the time, most of the deliveries have been taken place at home”.*

The last birth was of order one and more than five in 29% and 24.3% mothers respectively. During their last birth only 141 (26.8%) of the mothers gave birth at health facilities and almost all of them 140 (99.2%) were attended by health professionals. Only seventy one

(13.9%) of the mothers encountered at least one childbirth complication during their last delivery, for which 50 (76.9%) were taken to hospitals and 26(12.1%) were referred further. Sixteen (45.7%) of the mothers were taken by vehicles to the first health facilities and the rest majority 54% went on foot, horse back and local stretcher. With regard to the mode of deliveries 514 (98.5%) had spontaneous vaginal delivery (SVD) and only four (0.8%) and three (0.6%) of the mothers assisted by instrumental delivery and cesarean section (C/S) respectively. Among the complications, excessive vaginal bleeding and prolonged labor occurred in 39 (56.5%) and 23(33.3%) of the mothers respectively immediately after labor and delivery.

Different reasons were mentioned for place of delivery for the last birth. The most commonly raised reason for home delivery was presence of traditional birth attendants, 198(52.8%) followed by short duration of labor 102 (27.2%). Reasons for using a health facility include being need for better care, 68.2% followed by occurrence of difficulty during labor and delivery.

Similar reasons were mentioned by FGDs respondents as various factors affecting provision of skilled attendance at birth. Probably, the reason behind may be peace full delivery in prior pregnancy at home, least knowledge on risk of labor and delivery and lower decision making power of women to choose where they would give birth and whom would give them care during labour and delivery. In addition, the informants claimed that shortage of equipment and supplies, low maternal knowledge on benefits of HF delivery and risks of HD, unwelcoming professional behaviors and lack of basic facilities at the existing institutions.

A forty four years old male participant from religious leaders suggested that *“The so called equipped facilities are located in towns outside of the woreda but vast majority of mothers reside in rural where the facilities are not attractive for mothers; they are unclean, with bad odor, lack of water and electric power. In addition, the professionals are negligent and with shortage of attending difficult labor therefore, mothers come to health facilities after they failed any alternatives at their home. Sometimes they even prefer dying at their home to delivering at HFs.”*

Table 2 details of selected Obstetric characteristics of the respondents in Loka abaya district, Sidama Zone, South East Ethiopia, and April 2014.

<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age at first Pregnancy(n=549)</b>		
15-19	275	50.1
20-24	48.1	48.3
25-34	9	1.6
<b>Gravidity (n=542)</b>		
1	123	22.7
4-Feb	315	58.1
>=5	104	19.2
<b>Birth order(n=550)</b>		
1	155	28.1
4-Feb	379	68.9
>=5	16	2.9
<b>Outcome of pregnancy (n=532)</b>		
Live birth	527	99.1
Other outcome*	5	0.9
<b>Received ANC at last pregnancy(n=548)</b>		
Yes	466	85
No	82	15
<b>ANC frequency(n=469)</b>		
3-Jan	322	68.7
4	124	26.7

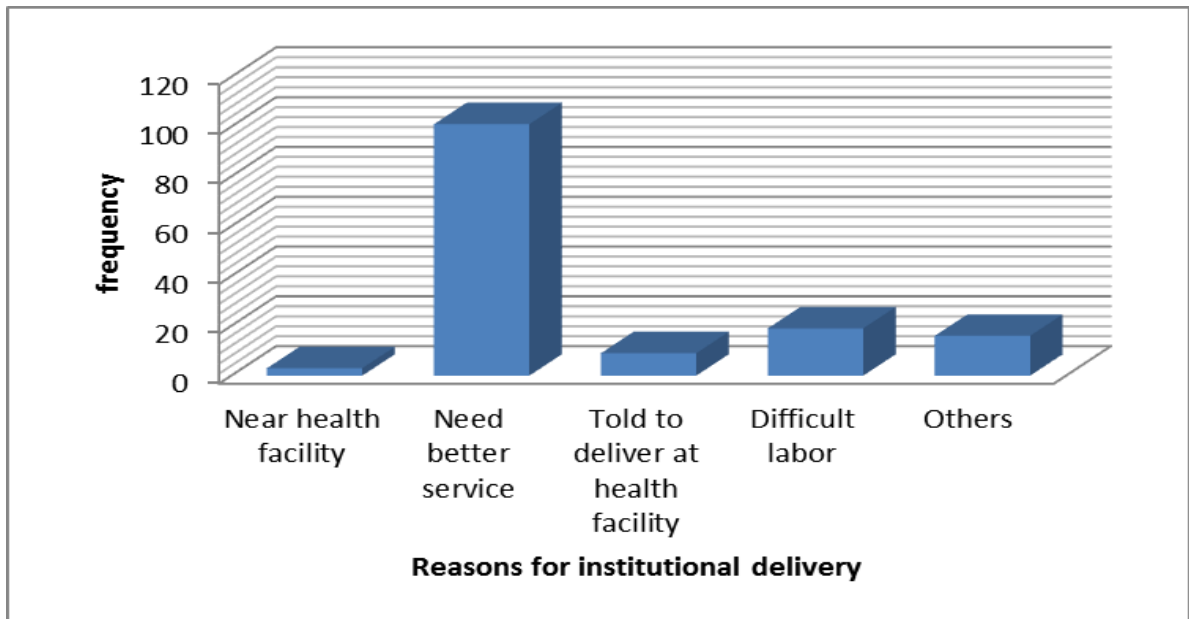


Figure 4 Reason for giving birth at health facility in Loka abaya district, Sidama zone, south, east Ethiopia April 2014

### 5.3 Knowledge and Attitude about pregnancy, labor and delivery service.

More than half of the mothers (51.7%) knew at least one of the risks of pregnancy. Of these 142 (48.1%), 121 (41%) and 29 (9.8%) mentioned pregnancy related diseases, maternal death and fetal death respectively are among the risks. One hundred thirty three (46%) of the respondents correctly named at least one pregnancy related danger sign. As shown in figure 6, swelling of leg and face, 133 (46%) followed by vaginal bleeding, 117 (40.8%) were the common mentioned signs. Two hundred eighty four (51.7%) of the mothers had mentioned at least three danger signs, therefore, were labeled as having good knowledge. One hundred thirty two (26%) of the mothers encountered at least one of the danger signs during their last pregnancy and 110(80.3%) consulted trained health professionals while 15(10.9%) had used traditional medicine for the sign.

Three hundred seventy five (68.3%) knew at least one key danger sign of labor. Of whom 223 (59.6%) had mentioned prolonged labor followed by early rapture of membrane, 80 (21.4%). Besides, 465 (84.7%) of the mothers were aware of the risks of delivering at

home in the absence of trained health professionals. On the other hand, 523 (95.3%) were aware of the benefits of delivering at health facilities. Regarding attitudes of respondents 493 (89.6%) and 521 (94.7%) of the respondents had favorable attitudes towards pregnancy risks and health facility delivery care respectively.

Table 3 Knowledge and attitudes of respondents towards pregnancy, labor and delivery danger signs, in Loka abaya district, Sidama zone, southeast Ethiopia, April 2014.

<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>Know the benefits health facility(n=549)</b>		
Yes	523	95.3
No	26	4.7
<b>Know the risk of home delivery(n=549)</b>		
Yes	465	84.7
No	84	15.3
<b>Know risk of pregnancy(n=549)</b>		
Yes	284	51.7
No	265	48.3
<b>Know danger sign of pregnancy(n=550)</b>		
Yes	282	51.3
No	268	48.7
<b>Know danger sign of labor(n=549)</b>		
Yes	375	68.3
No	174	31.7
<b>Attitude to pregnancy risk(n=514)</b>		
Favorable	457	83.1
Unfavorable	57	10.4
<b>Attitude to health facility services(n=546)</b>		
Favorable	522	94.9
<b>Unfavorable</b>	<b>22</b>	<b>4</b>

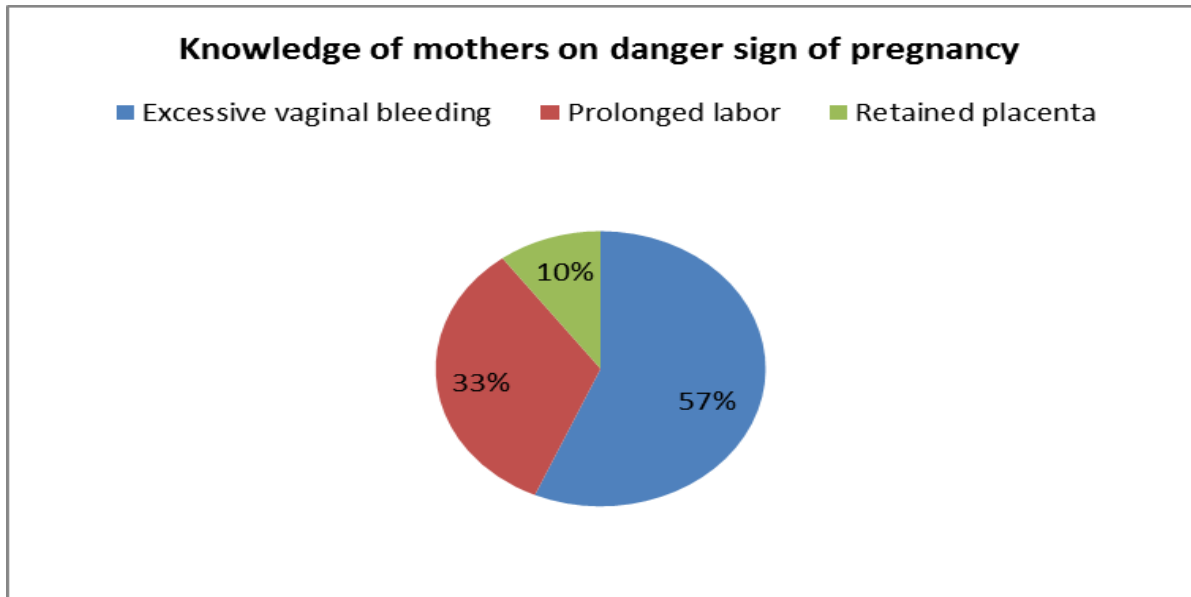


Figure 5 Danger signs during pregnancy, labor and childbirth in Loka abaya district, Sidama zone, south, east Ethiopia April 2014

#### **5. 4 .Health system factors and women decision-making**

The majority of the respondents (82.8%) lived within one to two hour walking distance of at least health center (HC) from their home and majority, 526 (95.6%) of the mothers agreed all the nearest health facilities were providing delivery care with skilled professionals. Among delivery service users majority, (96.8%) have received the services free of charge for the most recent health facility delivery. Concerning decision-making more than half (54.5%) of the women decided by themselves about health service utilization and 283 (51.7%) did the decision about where to deliver and who would assist them during labor and delivery.

In addition FGDs indicated there were readily available all-weather roads that access all villages to health facilities and free ambulance services to bring laboring mothers from their home to respective health centers and referring them to next higher level if the need is raised. There was also free supply of all-important medicine and medical equipment for obstetric service to boost up the utilization of skilled delivery.

A 25 years old participant from currently married men suggested that, *“despite the fact that the availability and accessibility of medical supplies and equipment free of charge in existing health facilities, providers had not have sufficient skills to manage basic and*



*emergency obstetric care and with unwelcoming characteristics besides poor referral linkage in all level of health system. The facilities setup also was unclean and non-attractive and with poor water and electric supply being the contributing factors for low performance.*

Table 4 Health service utilization and women decision making in Loka abaya district, Sidama Zone, South east Ethiopia, April 2014

<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>Walking hours to nearest HF (n=546)</b>		
1hr	482	82.8
>1hr	94	17.2
<b>Nearest HF providing delivery care (n=549)</b>		
Yes	526	95.6
No	14	2.6
<b>Ever used HF for delivery service(n=547)</b>		
Yes	526	96.2
No	21	3.8
<b>Delivery service provided (n=156)</b>		
Free of charge	151	96.8
On payment	5	3.2
<b>Decision maker about who would attend labor(n=550)</b>		
Self	283	51.7
Husband	264	48
Relatives	2	0.4
Other	1	0.1
<b>Decision maker for any expense(n=550)</b>		
Self	20	3.6
Husband	198	36
Me and my husband	332	60.4

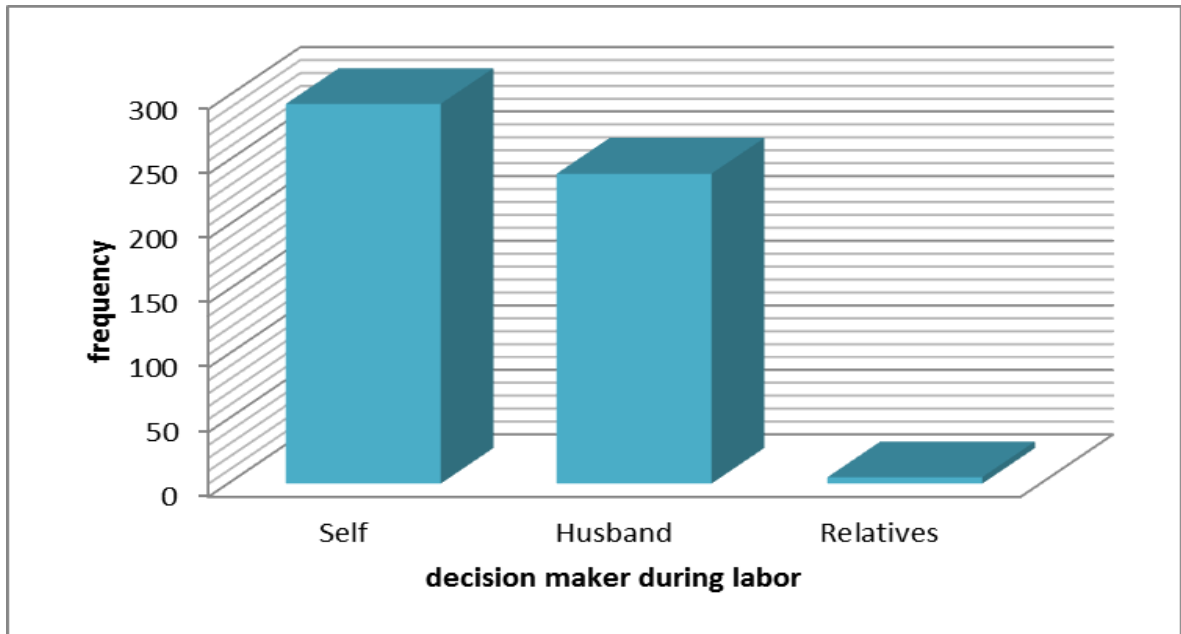


Figure 6: Decision makers for place of delivery in childbirth in Loka abaya district, Sidama zone, south east Ethiopia April 2014

### 5.5. Magnitude of skilled birth attendance

The study demonstrated that in the last five years, only 26.4% mothers gave birth in the health facilities for their recent child even though majority (85%) of the mothers used antenatal care. The majority of births, 73.6 % took place at home compared to attended skilled delivery care at different health facilities in the woreda. Out of those mothers who delivered at home, 284 (52 %) were assisted by family members and among those mothers who delivered at health institutions, only 2.3% had given birth at hospitals and the remaining had delivered at the health center.

Furthermore, reasons for preference of home delivery in the finding of this study as FGDs were presence of traditional birth attendants, smooth and short labor duration, husbands’ disapproval, maternal choice to deliver in the presence of relatives, lack of accompany and female providers in health facilities, and experience of previous normal home delivery and claiming that home was best place for giving birth.

## **5.6. Predictors of utilization of skilled birth attendances**

### **5.6.1 Bivariate Analysis**

In bivariate binary logistics regression analysis socio-demographic variables such as maternal age at interview and education, family size and husband's education were all significantly associated with delivery assisted by skilled health professionals at  $p < 0.05$ . On the other hand, residence, marital status of mother, ethnic group, maternal age at marriage and during first pregnancy, mothers and husband's occupation, ethnicity and religion of the respondents did not show statistical association with utilization of skilled birth attendances.

Concerning the obstetric variables, women's gravidity, birth order, utilization and frequency of ante natal care, experience of mothers having ever delivered at health facility, mothers experience to plan their pregnancy, presence of preceding birth complications, and having ever used skilled attendance were significantly associated with skilled birth attendances at delivery ( $p < 0.05$ ). On the other hand, age at first and last pregnancy and outcome of previous pregnancy were not significantly associated with utilization of skilled birth attendances.

Moreover, maternal knowledge on:- benefits of giving birth at health facility, risks of home delivery, danger signs during pregnancy and labor and having favorable attitude towards health facility delivery had significant association with attending skilled delivery care ( $p < 0.05$ ). Women who decided by themselves where to deliver and which services would they be able to utilize were more likely to give birth at health facilities where skilled birth attendants available besides to availability and distance of health facility from their home. In addition, mothers' decision on any expenses was associated with utilization of skilled birth attendances service. However mode of delivery during previous pregnancy and means of transportation to reach health facility were not significantly associated with births assisted by skilled attendants  $p > 0.05$ .

Table 5. Variables significant in bivariate analysis in Loka abaya district, Sidama Zone, South east Ethiopia, April 2014

Variables	COR	95% CI
<b>Age of mother at interview</b>		
15-19	12.83	4.48-36.70
20-34	5.51	1.94-15.68
<b>Educational status of the mother</b>		
Secondary and higher	19.33	4.48-83.39
Primary	3.73	2.06-6.77
<b>Educational status of the husband</b>		
Secondary and higher	33.13	8.86-123-78
Primary	5.66	2.22-14-36
<b>Number of family members living together</b>		
4-Feb	5.06	1.74-14.7
7-May	1.96	0.66-5.82
<b>Parity</b>		
4-Jan	0.33	0.73-1.50
8-May	0.06	0.01-0.36
<b>Pregnancy planned</b>		
Yes	1.8	1.01-3.23
<b>Use ante natal follow up</b>		
Yes	5.57	2.36-13.10
<b>Frequency of ANC visit</b>		
3-Feb	4.6	1.02-20.98
4	5.96	1.30-26.62
<b>Birth order</b>		
First	0.29	0.162-0.52
Second	0.14	0.73-0.27
<b>Knew any danger sign during pregnancy</b>		
Yes	0.51	0.34-0.76
No	1	
<b>Knew any danger sign during labor</b>		
Yes	1.64	1.06-2.53
No	1	
<b>Every given birth at health facilities</b>		
Yes	<b>0.48</b>	<b>0.24-0.94</b>
No	<b>1</b>	

### 5.6.2 Multivariate Analyses

A multivariate analysis involving all associated variables was performed to identify independent predictors of utilization of skilled birth attendance. Consequently, age and educational status of the mothers, husband's education, frequency of antenatal care visit, birth order, and maternal knowledge on risk of giving birth at home and knowledge on benefit of giving birth at health facility, and prior experience of mothers having ever delivered at a health facility were independent predictors of skilled birth attendance. The details are summarized on table 6.

Mothers with the age range of 15-19yrs were about five times as likely to give birth at health facility where there were skilled birth attendants as compared to those aged above 35yrs (AOR=4.87, 95% CI=1.44-16.43). Women had not attended at least primary education were about 19% less likely to attend skilled delivery than their counterparts (AOR= 0.19, 95% CI (0.49-0.76). In addition women married to husbands completed at least secondary school were about fifteen times as likely to give birth at HF than those uneducated (AOR=14.79, 95% CI=3.01-65.67).

Women with birth order above four were 98 % less likely to give birth at HFs than those with first order births (AOR=1.98, 95%CI=0.161-0.52). Moreover mother who had received less than four ante natal care were 43% less likely to utilize skilled birth attendances as compared to those utilize four or more (AOR=0.43, 95%CI 0.27-0.67). Furthermore, mothers who had ever given birth at least once in prior birth at health facility tended to utilize skilled delivery services. Those who had given birth at health facility during their previous pregnancy were more than 6.70 times as likely to give birth at HFs than those who had not (AOR=6.70, 95% CI=3.18-14.16). In addition, Women those had known the risk of giving birth at home were more than seven times as likely to utilize skilled birth attendances than those who did not know (AOR=7.79, 95%CI=2.29-26.50).

**Table 6 Independent predictors of utilization of skilled birth attendance, in Loka abaya district, Sidama Zone, South east Ethiopia April 2014**

Variables	Place of deliver		Crud	Adjusted OR,95% CI
	Home(n= 405)	HF(n=145)	OR,95% CI	
<b>Maternal age at interview</b>				
15-19	72	4	12.83(4.48-36.7)	4.87(1.44-16.43)
20-34	212	65	5.52(1.94-15.6)	3.15(1.01-9.79)
>=35	101	72	1	
<b>Educational status of the mother</b>				
Secondary and higher			19.33(4.48-83.3)	0.05(0.12-0.22)
Primary school			3.73(2.06-6.77)	0.19(0.49-0.76)
Non educated			1	
<b>Educational status of the husband</b>				
Secondary and higher	71	5	33.13(8.86-123)	14.79(3.01-65.6)
Primary school	312	136	5.66(2.23-14.36)	2.33(0.86-6.36)
Non educated	0		1	
<b>Frequency of ANC follow up</b>				
3-Jan	227	73	2.29(1.50-3.49)	0.43(0.27-0.67)
>=4	84	62	1	
<b>Birth order</b>				
First birth	177	13	7.01(3.60-13.63)	1.98(0.161-0.52)
Second birth	88	20	4.54(2.32-8.90)	4.90(2.38-10.06)
Third birth	93	47	2.04(0.96-4.43)	
Fourth and above	77	60	1	
<b>Ever given birth at HF</b>				
Yes	350	117	2.08(1.06-4.07)	6.70(3.18-14.16)
No	23	16	1	
<b>Know the risk of home delivery</b>				
Yes	80	4	8.92(3.20-24.83)	7.79(2.29-26.5)
No	305	136	1	

## **CHAPTER SIX: DISCUSSION**

Majority of deaths from obstetric complications are preventable and that every pregnancy faces risk which may not always be detected through the risk assessment approach during ANC[42]. Delivery assisted by skilled providers is the most important proven intervention in reducing maternal mortality and one of the MDG indicators to track national effort towards safe motherhood [10] . However, the proportion of births attended by skilled health personnel was not increase substantially from 2000 to 2011/2012 in Ethiopia. This is also reflected by the high maternal mortality ratio observed in the 2011 EDHS [16]. In this study, only 26.4% of mothers attended skilled delivery for their recent child even though majority (85%) of the mothers used antenatal care. The prevalence was better as compared to the national report that was only 10% according to the year 2011 Ethiopian demographic and health survey[16].

However, it is expected to be much more utilization as per the favorable environment in the woreda as supported by the participants of the focus group discussion. The FGDs indicated there were readily available all-weather roads that access all villages to health facilities and free ambulance services to bring laboring mothers from their home to respective health centers and referring them to next higher level if the need is raised. There was also free supply of all-important medicine and medical equipment for obstetric service to boost up the utilization of skilled delivery. Despite the fact that the conducive environments, focus group discussion also explained providers had not have sufficient skills to manage basic and emergency obstetric care and had unwelcoming characteristics besides poor referral linkage in all level of health system. The facilities setup also was unclean and non-attractive and with poor water and electric supply being the contributing factors for low performance.

Regarding the independent predictors of the utilization of skilled birth attendance, there were a few socio demographic, obstetric and other factors having significant association. These include maternal age at interview, both maternal and paternal education, birth order, number of ANC visits, maternal knowledge on risks of home delivery and previous experience of giving birth at health facilities.

Most of the findings in the current study are consistent with most studies conducted elsewhere in Ethiopia and developing countries like Nepal and Tanzania. Age of the mother was an independent predictor of maternal delivery care utilization in this study; this is inconsistent with a study conducted in Nepal. The possible reason for the discrepancy might be due to differences in socio culture and study areas [31]. On the other hand, the current study suggested that the new generation younger women could have formal education and have significant association on delivery care as compared to the older generations; this is in line with a study conducted in Tanzania [32]. The two round EDHS also indicated that mothers younger than 35years are more likely to utilize delivery care than the older [16, 17].

The analysis of our results highlighted the effect of women's education. Having at least primary and secondary education was found to be an independent predictor of the utilization of skilled birth attendance. This result was consistent with the findings of several studies conducted in different regions of Ethiopia [34, 35, 33, 36] and other low-income countries [37, 54, 55]. Some of these studies indicated maternal education is a very significant determinant of maternal choice of birth place[34, 37].

This implies that education improves personal ability and skills; it helps women to overcome barriers posed by tradition, low autonomy, low social status and low economic status. Education enhances competence through knowledge and confidence. There is the tendency for educated women to reproduce at low risk ages because of postponement of marriage and earlier cessation of childbearing. Women's education improves the status of women, enabling them to make the decision to seek health care and to identify danger signs during pregnancy. Furthermore, it increases women's knowledge on where and how the best health care can be accessed and enhances women's capability of making autonomous decisions [34, 37].

In line with many studies conducted in developing countries [31,39,40, 41, 56,57] the finding in this study showed the importance of educational status of husband for the utilization of skilled birth attendance. Women who were married to husbands who have attended secondary school and above were about fourteen times more likely to utilize skilled professionals care during delivery as compared to those with non-formal education.



In addition, husband's acceptance of the maternal healthcare services is also one of the main factors identified according to WHO (2004), women's decision-making power is extremely limited in many parts of Africa, particularly in matters of reproduction and sexuality. In this regard, decisions about maternal care are often made by husbands or other family members[38].

Moreover, the finding in similar setting identified that more spouses of male partners with secondary level of education and above sought skilled care at delivery than the spouses of less educated male partners[56]. This can be explained in various ways. Male partners with some basic level of education better understand the complications associated with unskilled delivery. Educated husbands have higher level of health awareness, greater knowledge on available health services and could be able to decide timely. Education also enables men to discard the negative attitudes and cultural beliefs, and it is also likely that men with high level of education have some formal employment which enables them to raise funds that they can pay related fees required easily than their counter parts.

Birth order is another obstetric factor found to be significantly affecting the use of safe delivery services. This is consistent with many studies conducted in Ethiopia and abroad[42 31,54 and 39)]. One of the studies conducted in north west Ethiopia suggested probability of giving birth at health facilities decreased in grand multipara ( $\geq 5$  birth) mothers than births of four or less. As birth order increased the chance of giving birth at health institution decreased, implying that mothers tend to seek modern obstetric care for their first pregnancy than for the subsequent pregnancies [42].

The current study has also revealed that higher birth order mothers are less likely to give birth at HFs as compared to those with lower order births. A possible explanation for this could be women develop confidence and may believe that modern health care is not as necessary due to the experience, self-efficacy and knowledge accumulated from previous pregnancies and births. On the other hand, women who are pregnant for their first child are usually more likely to have difficulties during labor and delivery than women of higher parity are so that they tend to fear home deliveries. This may result in low parity women being more motivated to deliver in medical facilities than high parity women [32, 42].

Consistent with many studies conducted in developing countries [31,32,43], the current study had revealed that women who have not had antenatal visit were less likely to seek skilled delivery care than women who had the visit. This is in line with World Health Organization, 2013 stating antenatal care with a skilled provider is one of the interventions that reduce maternal mortality. Because it allows early detection of obstetric complications and gives an opportunity to influence women`s decision to have a skilled attendance during child birth [4].

In the current study antenatal care was a significant positive determinant of skilled attendance during delivery only for those women who attended four or more times. Those mothers never attended and attended once times about 43% less likely to utilize professionally assisted delivery (PAD) than those who received more than four times. This finding is consistent with many studies conducted elsewhere in Ethiopia and other developing countries [31, 35, 39]. One of the studies conducted in north west Ethiopia revealed that having ante natal care follow up was found to be an important determinant of skilled birth attendance in which women who had four or more visits were 2.8 times [AOR (95% CI) = 2.8 (1.56, 4.98)] more likely to have skilled birth at- attendance as compared to those who didn't have ANC follow up. This implies that as the number of antenatal visits increases, the likelihood of giving birth in a health facility rather than at home also increases.

Previous experience with childbirth in a health facility will determine mothers' choice of deliver place. In this study only 7.1 % of the women had ever given birth at HFs before the immediate birth, of them majority (82.9%) had delivered their last baby at health institutions. Surprisingly, mothers who had experience of giving birth at health facilities were seven times more likely to deliver at health facilities than those never ever delivered at HF before. Consistent with the finding, studies conducted in Nigeria and Cambodia showed that women's use of skilled attendance at delivery for the most recent pregnancy was strongly related with receiving care for the preceding birth [43, 37]. This can be explained as due to mothers' confidence and trust on HFs developed following previous use of the services. It implies promotion of consistent practice of maternity care utilization might increase service reception by mothers.

With regard to reasons for preferring home delivery, perceived quality of care in a health facility will influence the level of utilization of that facility by the community. This perceived quality of care comprise the quality of the medical care and people's own experience and the experience of the people they know with the health facility. In the current study, many respondents in FGD expressed that the vast majority of mothers reside in rural where the facilities are not attractive; unclean with bad odor, lack of water and electric power. In addition, the professionals are negligent and with incapability of attending basic and emergency obstetric care. This is in line with similar studies conducted in different areas of similar setting [29, 42, 37]. One of the studies showed that many respondents blamed their lack of utilization of health facility for childbirth on unsatisfactory services at the health facility (54.2%), unfriendly attitude of staff at the health facility (70.8%), unavailability of staff at the health facility (64.0%) long waiting time(75%) [37].

Furthermore, reasons for preference of home delivery in the finding of this study were presence of traditional birth attendants, smooth and short labor duration, husbands' disapproval, maternal choice to deliver in the presence of relatives, lack of accompany and female providers in health facilities, and experience of previous normal home delivery. This might explaining higher utilization of none skilled traditional birth attendants, low maternal awareness in timing and signs of labor, inability of women to influence their utilization of health facilities for delivery as lower power of decision making, mothers' cultural belief to be supported by relatives' and preference of female care providers during labor and delivery could be resulted in encouraging mothers to give birth at home.

Mode of delivery is among the indices commonly used for skilled delivery. In the current study, only (0.5%) of the deliveries was attended by cesarean section depicting inaccessibility of comprehensive emergency care units. The finding is almost consistent with that of south west Ethiopia (1%) and Gondar (1.5%) [29, 42]. However, it is far below the minimum standard (5%-15%) recommended by World Health Organization,2013 [4]. This can be explained by inaccessible emergency obstetric services, inconvenient referral systems during obstetric emergencies and inadequate skilled professionals to manage obstetric emergency. This is supported by Focus group discussion indicated health worker are not qualified to manage basic and emergency obstetrics care.

Furthermore, available health facilities are with shortage of medical equipment needed for complicated labors; as a result, a number of catastrophic conditions are occurring related with labor and delivery.

Consistent with the study conducted in west Ethiopia, maternal knowledge on pregnancy and labor warning signs were not independent predictors of utilization of skilled care during delivery [29], but a study conducted in India indicated that lack of recognition of perceived seriousness of health problems as a significant reason for not seeking health care that accounted for half of maternal deaths [39]. This might imply that mother who is able to recognize danger signs could have greater fear of the possible outcomes of the signs so that they would be encouraged to deliver at HFs. Moreover, maternal awareness of warning signs during pregnancy and labor encourage timely decision to utilize HFs.

In the current study, maternal knowledge on the risk of home delivery was independent predictor of utilization of skilled birth attendances. This finding is in line with a study conducted in north shoa zone, Amara regional state indicating women's perceived benefit of giving birth at HF and risk of giving birth at home, good attitude to pregnancy risk and health facility delivery service were associated with place of delivery [33]. Contrary to this, the finding is inconsistent with similar study conducted in south west Ethiopia [29]. This might suggest that mothers who are able to recognize the risk full condition of giving birth at home could have great fear of possible outcome during giving birth at home, so that they would be encouraged to give their consecutive birth at health facility.

## **6.1 Strengths and Limitations of the study**

### **6.1.1 Strengths**

- Different tools and methods employed so that findings were triangulated

### **6.1.2 Limitation**

- There could be recall bias since the women were asked for events within the last five years prior to the survey. However, the most recent births were considered and local events were utilized to remind them.
- Data collectors being health professionals at least holding diploma working in the district therefore there might be increased selection and information biases since they know all the trends and performance gaps in the woreda.

## **CHAPTER SEVEN: CONCLUSION**

The prevalence of utilization of skilled birth attendance was very low in the district for their recent child. Factors associated with utilization of skilled birth attendances care during delivery were interrelated to each other and related to the mother and health system. The independent predictors of utilization of skilled birth attendance were age of the mother during interview, educational status of mothers and their husbands, birth order, frequency of antenatal care, previous experience of delivery at health institutions and maternal knowledge on risks of home delivery.

As focus group discussion there is poor utilization of skilled attendances in present health facilities since they are not accessed with water and electric supply, not well equipped with needed equipment and well trained health professionals. Hence, they are not attractive for mothers. There was also poor referral linkage between the community and health centers and between health centers and hospitals even though there is safe and free transportation access in the woreda.

## **CHAPTER EIGHT: RECOMMENDATIONS**

To health care providers

- Health care providers should provide information on risks of pregnancy, benefits of giving birth at health facilities, risk of giving birth at home to mothers, family members and the community.
- Frequency of antenatal follow up should be promoted to four and more and linked with delivery care

To woreda health sector officials

- Health facilities need to be equipped with basic supplies and equipment
- Health centers should be stuffed with trained health professionals
- Referral linkage between HPs and HCs and hospitals should be strengthened

To community

- One to five network leaders should be strengthened to facilitate timely referral of laboring mothers to ensure home free delivery.
- Community members should discourage harmful traditional practices those hinder HF delivery care utilization

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## **Annex 1 : English Version Questionnaire**

### **Jimma University College of Public Health and Medical sciences Department of health planning and health management.**

Questionnaire prepared to assess determinants of utilization of skilled birth attendance among women of childbearing age in Loka abaya district, sidama zone, south nation nationalities and people regional government.

#### **1.1 Tools for quantitative survey**

##### **Verbal Consent Form before Conducting Interview**

Hello, my name is \_\_\_\_\_. I am from the college of Public health and medical sciences, JU that is currently carrying out Survey on determinants of utilization of skilled birth attendance among women of childbearing age in Loka abaya district, sidama zone, in scientifically sampled kebeles. I am working in the research team of Jimma University. I would like to interview you a few questions about the subject matter is being studied. Your cooperation and willingness for the interview is helpful in identifying problems related to the subject matter. Your name will not be written in this form. All information that you give will kept strictly confidential. Your participation is voluntary and you are not obliged to answer any question you do not wish to answer. If you are not still comfortable with the interview, please feel free to drop it any time you want. Do I have your permission to continue?

1. If yes, continue to the next page
2. If no, skip to the next participant

Interviewer's name and code \_\_\_\_\_ signature \_\_\_\_\_

Supervisor name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

**Thank you!**

#### **1. Households Identification**

01 Questionnaire code -----

02 Woreda/ Town Administration-----

03 Kebele-----

04 House numbers-----

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

**Part 1: Households Identification and Respondents’ Socio-demographic information**

101. What is your age in completed year? -----

102. What is the highest grade you completed?

- |                             |                         |
|-----------------------------|-------------------------|
| 1. College degree or higher | 5. 00-06 grade          |
| 2. College diploma          | 6. Read and write       |
| 3. Tech./voc. Certificate   | 7. Cannot read and writ |
| 4. 07 and above grade       |                         |

103. To which religion do you belong?

- |                       |                |
|-----------------------|----------------|
| 1. Orthodox Christian | 3. Catholic    |
| 2. Muslim Protestant  | 4. Traditional |

104. To which ethnic group do you belong?

- |           |                   |
|-----------|-------------------|
| 1. Sidama | 3. Oromo          |
| 2. Amara  | 4. Other, specify |

105. What is your occupation?

- |                     |                        |
|---------------------|------------------------|
| 1. House wife       | 5. Merchant            |
| 2. Farmer           | 6. House cleaner       |
| 3. Gov’t employee   | 7. Student             |
| 4. Private employee | 8. Other, Specify----- |

106. How much do you earn per month in ETB from this employment? -----

107. What is your current marital status?

- |              |                       |
|--------------|-----------------------|
| 1. Married   | 4. Widowed            |
| 2. Divorced  | 5. Never married      |
| 3. Separated | 6. Other specify----- |

108. How old were you during your first marriage in completed years? -----

109. What is the highest grade your husband completed? Ask for those currently married.

- |                             |                          |
|-----------------------------|--------------------------|
| 1. College degree or higher | 5. 00-06 grade           |
| 2. College diploma          | 6. Read and write        |
| 3. Tech. /voc. Certificate  | 7. Cannot read and write |
| 4. 07 and above grade       |                          |

110. What is your husband's current occupation?

- |                     |                       |
|---------------------|-----------------------|
| 1. Farmer           | 4. Merchant           |
| 2. Gov't employee   | 5. Daily laborer      |
| 3. Private employee | 6. Other specify----- |

111. How much do your husband earn from the work ----ETB/month

112. How many are you usually living in your household? -----

113. How much is your total household income per month in ETB? -----

114. Who is the decision maker for any household expenditure?

- |            |                             |
|------------|-----------------------------|
| 1. Self    | 3. Self and Husband jointly |
| 2. Husband | 4. Other specify-----       |

**Part 2: Obstetric characteristics of the respondents**

201. How many times you have been pregnant in your life. ----- Probe for abortions, stillbirths and current conception

202. How old were you at your first pregnancy in Completed years? -----

203. How old were you at your last pregnancy? -----

204. What were the outcomes of the pregnancies?

- |                           |                                |
|---------------------------|--------------------------------|
| 1) Total live birth       | 5) Died b/n 7days and birthday |
| 2) Abortion               | 6) Live birth survived to>1yr  |
| 3) Still birth            | 7) Other specifies             |
| 4) Died within seven days |                                |

204n1. Total number of live birth-----

204n2. Total number of Abortion ----

204n3. Total number of still birth-----

204n4. Total number of died within seven days ----

204n5. Total number of died b/n 7days and birthday---

204n6. Total number of live birth survived to>1yr---

205. Are you pregnant now?

- |        |       |
|--------|-------|
| 1) Yes | 2) No |
|--------|-------|

206. How many months pregnant are you? -----

207. Have you started ANC follow up?

- |        |       |
|--------|-------|
| 1) Yes | 2) No |
|--------|-------|

208. When was your last pregnancy? -----months/years back

209. Was the pregnancy planned?

- |        |       |
|--------|-------|
| 1) Yes | 2) No |
|--------|-------|

210. Did you receive antenatal care for the pregnancy?

- |        |       |
|--------|-------|
| 1) Yes | 2) No |
|--------|-------|

211. Whom did you see during your ANC visit?
- |                   |                  |        |
|-------------------|------------------|--------|
| 1) Physician      | 3) Nurse/midwife | 5) TBA |
| 2) Health officer | 4) HEW           | 6) CHA |
212. How many times did you visit for the care until delivery? -----
213. Where did you deliver your last baby in the past five years?
- |                |                   |                |
|----------------|-------------------|----------------|
| 1) In my home  | 4) Hospital       | 7) Health post |
| 2) Others home | 5) Health center  |                |
| 3) On the road | 6) Private clinic |                |
214. Why do you prefer to deliver at home?
- 214n1. client factors
- |                               |                                      |
|-------------------------------|--------------------------------------|
| 1) Presence of TBAs           | 5) I was told my pregnancy is normal |
| 2) Labor was smooth and short | 6) Lack of transport                 |
| 3) Previous HDs was normal    | 7) Husband will not allow            |
| 4) Lack of accompanies        | 8) Need to be with relatives         |
- 214n2. Health facility factors
- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1) Too much cost of HF's        | 5) No female provider at HF's   |
| 2) Facility not opens regularly | 6) Unwelcoming approach of HW's |
| 3) Facility too far             | 7) Other specify                |
| 4) Poor quality service of HF   |                                 |
215. Why did you prefer to deliver at Health facility? Ask for those delivered at health institutions.
- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 1) HF was near to me                 | 4) I was told to deliver at HF's |
| 2) Need Better service               | 5) Difficult labor               |
| 3) Previous better out come with HFD | 6) Bad outcome with previous HD  |
216. What was the mode of your last delivery?
- |                                 |                       |
|---------------------------------|-----------------------|
| 1) Spontaneous vaginal delivery | 3) Cesarean section   |
| 2) Instrumental delivery        | 4) I did not remember |
217. Who assisted your last childbirth?
- |                  |       |                 |
|------------------|-------|-----------------|
| 1)physician      | 4)HEW | 7)Mother        |
| 2)Health officer | 5)TBA | 8)Mother in law |
| 3)Nurse          | 6)CHA |                 |
218. What was the condition of your last baby?
- |                                  |                    |
|----------------------------------|--------------------|
| 1)Live birth                     | 4)Still birth      |
| 2)Live birth but died soon after | 5)Other specify--- |
| 3)Died before birthday           |                    |
219. Did you encounter any health problems during labor, delivery and immediately after birth during your last delivery?
- |        |       |
|--------|-------|
| 1) Yes | 2) No |
|--------|-------|
220. If yes, what were the problems?
- |                               |                               |
|-------------------------------|-------------------------------|
| 1) Excessive Vaginal bleeding | 2) Prolonged labor (>12 hrs.) |
|-------------------------------|-------------------------------|

- 3) Retained placenta (>1hr)
- 4) Inability to control urine/faces/both
- 5) Mal-presentation
- 6) Fetal death
- 7) Early rupture of membrane
- 8) Loss of consciousness

221. What measures were taken to alleviate the problem?

- 1) Taken to health facility
- 2) Took traditional medicine
- 3) Consulted TBA
- 4) No action taken
- 5) Other, specify...

222. If you were taken to HF, were you referred further?

- 1) yes
- 2) no

223. What mode of transport you used to reach to the health facility?

- 1) on foot
- 2) On horse/mule back
- 3) Local stretcher
- 4) Vehicle
- 5) Other, specify

224. According to your birth order, where does the last baby belong?

- 1) First
- 2) Second
- 3) Fourth
- 4) Fifth and above

225. Did you encounter any health problems during labor, delivery and immediately after birth during immediate next to your last delivery?

- 1) Yes
- 2) No

226. If yes, what were the problems?

- 1) Excessive Vaginal bleeding
- 2) Prolonged labor (>12 hrs.
- 3) Retained placenta (>1hr)
- 4) Inability to control urine/faces/both
- 5) Mal-presentation
- 6. Fetal death
- 6) Early rupture of membrane
- 7) Loss of consciousness
- 8) Other, specify...

227. Have you ever given birth at HFs before your last birth?

- 1) Yes
- 2, No

228 If yes in how many pregnancies? -----

**Part 3: Women perception, knowledge and Attitudes**

301. Are you aware of any health risks a woman might experience during pregnancy?

- 1) Yes
- 2) No

302. If yes what are the risks?

- 1) Pregnancy related disease
- 2) Maternal death
- 3) Fetal death
- 4) Other specify

303. Do you know any danger signs of pregnancy?

- 1) Yes
- 2) No

304. If yes, what are the danger signs? Circle the mentioned responses

- 1) Swelling of leg/face
- 2) Vaginal bleeding
- 3) Reduced fetal movement
- 4) Severe head ache

- 5) Severe abdominal cramp
- 6) Excessive weight gain
- 7) Increased BP
- 8) Leakage of amniotic fluid without labor
- 9) Blurring of vision

305. Did you experience any of the danger signs during your last pregnancy?

- 1) Yes
- 2) No

306. If yes, what action did you take?

- 1) Consulted health workers
- 2) Consult
- 3) Used traditional medicine
- 4) Did not take any action

307. Do you know any danger signs of labour?

- 1) Yes
- 2) No

308. If yes, what are the danger signs do you know? Multiple responses are possible.

- 1) Prolonged labor >12hrs
- 2) Early rupture of membrane
- 3) Vaginal bleeding
- 4) Placenta retention >1hr
- 5) Mal-presentation
- 6) Increased BP
- 7) Convulsion
- 8) Cessation of labor pain
- 9) Severe continuous abdominal pain

309. Do you think giving birth at home has risks?

- 1, Yes
- 2, No

310. If yes, what risks do you know?

- 1) Maternal exhaustion
- 2) Fetal distress
- 3) Maternal deaths
- 4) Fetal/neonatal death
- 5) Disease transmission from attendant
- 6) Exposure to HTPS
- 7) Higher postpartum morbidity

311. Do you know any benefits of giving birth at HFs?

- 1) Yes
- 2) No

312. If yes, what benefits do you know?

- 1) Early detection of problems
- 2) Timely RX of problems
- 3) Lower maternal exhaustion
- 4) Better newborn care
- 5) HTPS can be avoided
- 6) Lower maternal mortality
- 7) Post-partum morbidity
- 8) Other specify-----

313. Do you know most complications of labor are preventable?

- 1) Yes
- 2) No

314. Do you know most complications of Labour are treatable?

- 1) Yes
- 2) No

315. Any pregnant women are susceptible to face delivery complications.

- 1. Agree
- 2. Disagree
- 3. In different

316. Like any pregnant women, I am susceptible to face delivery complications

- 1. Agree
- 2. Disagree
- 3. In different







5. In your opinion what are the most important factors that affect delivery provision?

- Staffing (skill, behavior, commitment)
- Equipment, supplies, infrastructure (drug, electricity, water...)
- Quality of care, technical assistance, supervision
- Transport (ambulance)
- Service fee, User unable to afford?

7. Where do women in your area prefer to deliver?

- Home
- Health facility, Why?
- Whom they prefer for attendance?

8. What should be undertaken to maximize utilization of skilled birth attendance in your area you think?

- Community mobilization
- use of HEWs and
- Service expansion

## **Annex 2: sidamiffa version of questionnaire**

Jimmu Universite dagomu fayimana hikiminu saynse kolleje

Xawisha:- amuwunita ilate owante horonsi'ra itissano hajuba xinxalate qixabino xa,mo

Dahenga agarate shemate

Keereho?

An-----yamamemo

Jimmu yuniversitera dagomu fayimana hikiminu saynse kolleje xinxalote gamo milati ani.xinxalo sayinsete doogon doron ollubana minna aana ha'rinsanite. Xinxalote hexono Amuwu ilate owante horonsi'ranoki gede itissano hajuba bande tirote dooga lellishate. Kunira ateta dagomu, Godowatenna ilate yannara hedhano mitima aana noheta huwangotuna laote iima taje gamba assate. Konne ikinohura uyananke tajen gash tuna wolotuno hajo la'anonsar amuwuyta ilate owante horonsi'ra woyesatena mala kalaqate ka'litatononsa' ogeeyete ka'lo nokiha ila ilano amuwana ilantanno qaquwa lowo gesha remote illishano gawajora reqeci assitano.

Xinxalote aana beqatahu umoki fajon ikino dafira horontano iko daratun beqa hoogate dandaata.xinxalote aana beqa hoogate murok ayirsantinota ikase alen fayimate owante horonsi'ra aana may dani qarino ilannohek gede gamba asinemo taje aana su'mik borresamanokitana wolotuno tajuba dahegnun agarante xinxalote gedensan girantanno dafira foju fulannokita hawaqira hasisano.

### **Kifile 1: dagomu taje**

101. Dirik me ''eho?

102. Rosu dirimk me' 'eho?

1) kolejete diplomana alee

2) Tekinkena ogimate sertifikete

- 3) 7-12 kifile gesha  
4) 0-6 kifile gesha
103. Hite ama 'no harunsanchot?  
1) ortodokise  
2) protestsnte
104. Hite daga milati?  
1) Sidama  
2) Oromo
105. Losik maati?  
1) minamat  
2) dadaloho  
3) Gashotu losasinchot  
4) Gibirnaho
106. Kuni losin magesh eo afirata? -----birra aganunafi'rema
107. Xaa yanara adhamate gari hitoti?  
1) Adhame nooma  
2) Tidhame nooma
108. Mine assirta woyte dirik me 'eho? -----dirot
109. Minanikhu rosu dirim me 'eho?  
1) Kolejete diploma  
2) Tekinkete ogima  
3) 7-12 kifile gesha
110. Minanik losi maati?  
1) Gashotu losasinchot  
2) Gibirnaho  
3) manaho losanoho
111. Minanik kon losin magesh eo afi'rano? -----birra
112. Rore yanara miten hedhanoti maatene kiir me'ete? -----
113. Babaxitino fulora womasha hajajanohu a yeti?  
1) ane umo'yati  
2) minana'yati,  
3) anetina minana'yati  
4) wolu he'riro xawis

**Kifile 2: Godowatenna godowu giddo gumi taje**

201. Heshok diro me''e hige godowita? -----
202. Umiha godowita waro dirik me' 'eho? -----dirot
203. Gedensidi qaqa godowita yannara dirikin me' 'eho? -----dirot
204. Godowata yannara xa gesha tidhamata gari ma lawano?  
1) xaphomun lubote hee're ilammohu----  
2) umoki kaotahu-----  
3) ree ilammohu-----  
4) ilamihu gedensan lamalu barri kawa  
5) ilamihu gedensan mittu diri kawa u---  
6) mittu diri alee keeshinohu-----
205. Xa godowii noota?

- 1) eeye 2) dee'n
206. Godowitanku me''e aganat? -----Agana
207. Ilate alba assi'nan harunso hanafota?  
1) eeye 2) dee'n
208. Jefote godowotahu mama roti? -----agana/diri albani
209. Godowita waro hasidheet?  
1) Eeye 2) Dee'n
210. Jefote godowni hedhe ilate albid harunsira assi'rota?  
1) Eeye 2) dee'n
211. Ilate albid harunsira assinohehu ayeet?  
1) Dotoru 3) narse 5) R / ilishishancho  
2) F/ Mekonen 4) F/ekstenshine
212. Ilate gesha me''e hige ilate albid harunsira assi'rota? -----hige
213. Jefote ilaki mamati ilotahu?  
1) umi,ya mine 5) hosipitalete  
2) wolu mann mine 6) fayimate kelira  
3) dogote 7) mani kilinkera  
4) fayimate xawira
214. Jefote ilaki ilotahu minetiro mayirat mine ilate dodhitahu?  
1) F/urishara bantishu batigne ikenna 8) F/o shiqonsa gari dancha ikinok dafira  
2) F/u balanka woyte fanantanok dafira 9) Rosu ilishishancho noo dafira  
3) Fayimate urinsha xerto ikitino dafira 10) Game keshitinoeki dafira  
4) F/u owante isilanchima nokihura 11) Kon alba mine ilana qarru xadinoekihura  
5) Meyat fayimate ogete hedhanok dafira 12) Fayimate urinsha massanoeha hooge  
6) MinaniyaF/uha'remagedefajanoekihura 13) xa godowomahu mitima nokihurat  
7) Fixu firu nowa ila hasi're 14) Hodhishu/ womashu mitima xadenae
215. Ilotahu fayimate merershira ikiro hako ilate dodhitahu qarru korkat maati?  
1) Qae'yara mule ikenna 4) FM ilema gede kuloniehura  
2) woyate owante afira hasi're 5) ilate yanara mitima xadinoe dafira  
3) kon albanino FM ilena danchur xadinae 6) kon alba mine ilana mitima xadinoe dafira
216. Jefote qaqa ilotahu may gariniti.  
1) Ootu raga udunichu ka'lo nokiha 3) godowu daro assinena  
2) Ootu raga udunichu ka'lon 4) garun diqagema •
217. Jefote ila ilitta woyte ayi ilishishihe?  
1) Dotoru 4) F/E/L 7) Minani'ya  
2) F/M 5) R/I 8) Balo'ya  
3) Narse 6) Ama'ya 9) Ayino dika'lineo
218. Qaqunihu fayimate gari hitoti ilamiwaro?  
1) lubote noohu ilamino 3) Lamalu barri wo'miki reyinoe  
2) heshote noohu ilame reyinoe 4) reenohu ilamino

219. Jefote godowaki yanara ilitta woyte fayimate mitima xadinohe?

- 1) Eeye 2) Dee'n

220. Mayi may mitima iilitinohe?

- 1) Deer male mundete du'nama 5) ila rag male da  
2) Gamete keesha 6) qalimu giddo reya  
3) mowu keesha(hobatete keesha) • 7) shumuu yannimale du'nama  
4) wayi shumana lowo shuma amaxa hooga 8) umo hawe damma

221. Iillituhe mitimara may qafo adhita?

- 1) Fayimate ogeye amaloma 4) Qachaho noo hakimewa harooma  
2) FEO amaloma 5) budu hakimewa harooma  
3) Rosu ilshishancho amaloma 6) Mayi qafono adhumak mine'ya goxoma

222. Fayimate urinsha ha'rootaha ikiro hakini wolewa sonkihe?

- 1) Eeye 2) Dee'n

223. Mayi hodhishin ha'rita?

- 1) Lekkate 4) rerete  
2) gaarete 5) kamelun  
3) Farashun 6) wole doogon

224. Gedensidi qaqik ilakira me 'ikiho?

- 1) Umiho 3) Sayikiho  
2) Laynkiho 4) Sholkiho

225. Jefote albid godowaki ilate yannara fayimate mitima iilitinohe?

- 1) Eeye 2) Dee'n

226. Mayi may mitima iilitinohe?

- 1) Deer male mundete du,nama 5) ila rag male daa  
2) Gamete keesha 6) qalimu giddo reya  
3) mowu keesha(hobatete keesha) • 7) shumuu yannimale du,nama  
4) wayi shumana amaxa hoogate qari 8) umo hawe damma

227. Jefote ilakira alba fayimate urishara ilte egenota?

- 1) Eeye 2) diegenoma

228. F/urishara ilte egenootaro me''e hige ilitta? -----

**Kifile 3: Amate egenno, adhona laote taje**

301. Godowata ledo amadante daganota fayimate mitima afoota?

- 1) Eeye 2) diafoma

302. Afootaha ikiro mitiimuba maa maati?

- 1) Godowate amadantino dhiwe 3) Qalimu reya  
2) Amate reya 4) Woluri he'riro xawis

303. Godowate yanara kalaqantanota danote malatta afoota?

- 1) Eeye 2) diafoma

304. Afootaha ikiro malatta maa maati

- 1) Albu woy Lekkate darsha 2) Otottote munde du,nama

- 3) Qalimu mill yaa agura  
 4) Bayrid umu damume  
 5) Bayrid godowu dhisso/game  
 6) Bikimale ayira lexa/du'ma  
 7) Mundete gifite lexa
- 8) Bayrid foolate mitima  
 9) Bayrid bisu iibile  
 10) gamehanafuki shumuu du,nama  
 11) illete dhiwata gana
305. Jefote godowaki yannara kuriuu malatta kalaqantinohe?  
 1) Eeye  
 2) Dee'n
306. Kalaqantinoheha ikiro may qafo adhita?  
 1) Fayimate ogeye amaloma  
 2) Fayimate ekstenshine ogeye amaloma  
 3) Rosu ilshishancho amaloma  
 4) Qachaho noo hakimewa harooma  
 5) Budu hakimewa harooma  
 6) may qafono adhumak mine'ya goxoma
307. Bala abbitanota ilate game malatta egenota?  
 1) Eeye  
 2) diegenoma
308. Afootaha ikiro malatta maa maati?  
 1) Deer male mundete du'nama  
 2) Gamete keesha  
 3) Mowu keesha(hobatete keesha) •  
 4) Bayrid umu damume amada  
 5) Ila ragimale daa  
 6) Mundete gifite  
 7) Shumuu yannimale du,nama  
 8) Umo hawe damma
309. Mine ilate mitima hedhano yite hedata  
 1) Eeye  
 2) Dihedema
310. Mitima hedhano yite hedataha ikiro may mayi mitima abitano?  
 1) Amate daafura abitano  
 2) Amate reya abitano  
 3) Qalimu fugama abitano  
 4) Ilshishanoten dhibu tarawanno  
 5) Gawajano budira reqeci yaa  
 6) Ilate Gedensid xisso
311. Fayimate urishara ilate horo no yaata?  
 1) Eeye  
 2) Diafoma
312. Horo no yitaro may may horo no?  
 1) Mitima yannate bandan  
 2) Mitima yannate akaman  
 3) Amate dafuro ajishano  
 4) Woyabinoti qalimu ka'lo hedhano  
 5) Gawajitanot budu asso dihedhano  
 6) Ilate gedensid xisso ajjano
313. Batigne ilate Yana mitima gargadha dandinanta ikitinota afoota?  
 1) Eeye  
 2) Diafoma
314. Batigne ilate Yana mitima aka'ma dandinanta ikitinota afoota ?  
 1) Eeye  
 2) Diafoma
315. Hiit amano godobiwot ilate korkatin daganano fayimate mitimara reqeci yitiwota ikase afoota?  
 a. Eeye  
 b. diafoma
316. Atino hiite ama gede godowana ilate korkatin daganano fayimate mitimara reqeci yotata ikaki afoota?  
 1) Eeye  
 2) diafoma
317. Godowana ilate korkatin daganoti fayimate mitima fayimak aana batigne busha guma abbitano?  
 1) Eeye  
 2) diafoma

318. Godowana ilate korkatin daganoti fayimate mitima ilamino qaqi fayima aana busha guma abitano?

- 1) Eeye 2) diafoma

319. Ilate yannara qajelino ogeesi ka'lon ila woyitino fayima hedhahe gedde assitanota afoota?

- 1) Eeye 2) diafoma

320. Ilate yannara qajelino ogeesi ka'lon ila ilamino qaqi aana woyitino fayima hedhahe gedde assitano?

- 1) Eeye 2) diafoma

321. Fayimate urishinshara noo ogeye ilate Yana mitima bada, akama hatono dandonsa alee ikiro soya danditano gedde afoota?

- 1) Eeye 2) diafoma

322. Ki'nawa not fayimate urinsha ikado hikiminu uduunin wo'mitinote?

- 1) Eeye 2) Dee'n

**Kifile 4: Fayimate owante horonsi'ra muro aate gara**

401. Ki 'ne qamatera fayimate urinsha noo?

- 1) Eeye 2, Dino

402. Fayimate urinsha magesha fafano? -----k/m

403. Fayimate urinsha ma dirimite?

- 1) Eeye 2) Dee'n

404. Fayimate urinsha ilishishate owante uyitano?

- 1) Eeye 2, Dee'n

405. Yannayita hikiminu owante horonsidhe egenota?

- 1) Eeye 2, Dee'n

406. Horonsidhe egenotaha ikiro may may owante afidhe egenota?

- 1) Ilate albidita 4) Maatete bowirshita  
2) Ilanita 5) kitibate  
3) Ilate gedensidita 6) Hurrete hikimina

407. Fayimate urinshara ilte egenota

- 1) Eeye 2) diegenoma

408. Fayimate urinshara ilte egenootaro owante hitoni afi'rata?

409. Baatishun ikiro me''e birra baatita? -----birra

410. Baatate wolqa noohe hakawaro?

- 1) Eeye 2) Dinoe

411. Baatishu aana noheti lao maa labano?

- 1) Baatishu batiraho 3) Baatishu mereerimaho  
2) Baatishu shochoho

412. Fayimate owante horonsi'rata gedde ayeet muro aanohu?

- 1) Ane umo'yati 3) Fixa firaho  
2) Minana,yati 4) Ama 'note annuwati

413. Qajeelino ogeesi ilshiishawohe gedde ayeet muro aanohu?

- 1) Ane umo'yati 3) Fixa firaho  
2) Minana,yati 4, Ama 'note annuwa



