

Factors associated with male involvement and skilled delivery utilization in Mareka woreda, Southern Ethiopia: a community based cross sectional study.

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Abstract

Back ground: Low utilization of skilled delivery care is one of the major factors contributing to high maternal mortality and morbidity. In developing countries women's poor status have limited utilization of maternal health services. Although skilled care for pregnancy and childbirth are the most important issues of reproductive health affected by male partners, how male involvement affects maternal health care utilization is lacking in both developing and developed countries.

Objective: the study aimed to assess magnitude and factors affecting male involvement and skilled delivery utilization among married women who gave birth in last 12 months prior to the survey in Mareka woreda.

Methods: Community based cross-sectional study was employed from March1-31, 2014 in Mareka woreda. A total of 676 couples invited to the study using stratified simple random sampling technique. Data was obtained from male partners and their spouses using structured, interviewer administered questionnaires. Data was analyzed using SPSS windows version 16.0. Descriptive, bivariate and multivariable analyses were performed. Statistical significance were declared at a value of $p < 0.05$. Ethical clearance was taken from Jimma University and informed verbal consent was established with the participants before the interview.

Result: A total of 635 (96 from urban and 539 from rural) couples response were analyzed making a response rate 94%. Skilled delivery care use and male involvement on skilled delivery care on study area was 32.9% and 41.3% respectively. Women who used skilled birth attendants in their recent delivery were educated [AOR=0.01(0.001-0.10)], knowledgeable on danger sign [AOR= 3.44(1.34-8.79)], showed favorable attitude for skilled delivery care [AOR=2.21(1.11-4.41)], and their husbands' participated for skilled delivery [AOR=2.35(1.18-4.66)]. And husbands' participated on skilled delivery care utilization were educated [AOR 1.77(1.13- 2.50)], younger [AOR 1.77(1.19-2.62)], prefers health facility for delivery [AOR 1.85(1.24-2.75)] and have had positive perception on importance of skilled delivery care [AOR 1.68(1.13, 3.29)].

CONCLUSION: skilled delivery care utilization was low in study area compared to national target. Couples education level, women's knowledge and attitude towards skilled delivery care were predictor for use of skilled attendant at birth. Although men, as partners, fathers, husbands, policy makers and community leaders have a critical role in safeguarding the health of women during pregnancy and child birth, low level of husband involvement was seen. Men's who were educated, young and positively perceive benefit of skilled delivery care demonstrated a greater participation. Improving awareness on skilled delivery care and male involvement are needed.

Key words: *Skilled delivery, Mareka woreda, Male involvement, recent delivery, utilization.*

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Abbreviations

ANC: Ante Natal Care

EDHS: Ethiopian Demographic and Health Survey

ERB: Ethical Review Board

FBD: Facility Based Delivery

FGD: Focus Group Discussion

HEWs: Health Extension Workers

HH: House Holds

HWs: Health Workers

HS: Health Service

KMs: Kilo Meters

MCH: Maternal Child Health

MDGs: Millennium Development Goals

MMR: Maternal Mortality Ratio

RMNCH: Reproductive, Maternal, Newborn and Child Health

SBA: Skilled Birth Attendant's

SNNPR: Southern Nation Nationalities Peoples Region

SSA: Sub Saharan Africa

TBA: Traditional Birth Attendant

UNICEF: United Nations Children's Fund

WHO: World Health Organization

1. Introduction

1.1 Back ground

Skilled attendant for every pregnant woman during child birth is the most critical intervention for improving maternal and child health. A skilled birth attendant is an accredited health professional who has 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(1).

Around 80% of maternal deaths worldwide are brought about by such direct causes as hemorrhage, infection, obstructed labor, unsafe abortion and high blood pressure. If women had access to interventions needed to address complications during pregnancy and childbirth, around 74 percent of maternal deaths could be avoided(1).

Man's attitudes, knowledge base and ways of reacting influences not only men's health but also women's reproductive health(2). Since the Beijing world conference for women 1995 a lot of emphasis has been to encourage male involvement in reproductive health including maternal health. Full partnership between men and women is required in both productive and reproductive life(3).

Male involvement enables men to support their spouses to utilize obstetric services and the couple would adequately prepare for birth complications. Evidence also clearly have showed that male partner can play a crucial role especially in the first and second phases of delay in developing countries and thereby positively impact birth outcomes(4).

United Nations Population Fund (UNFPA) emphasized on shared responsibility of men and their active involvement in responsible parenthood, sexual and reproductive behavior, including family planning; prenatal, maternal and child health. Thus UNFPA actively promoted male participation as a key to the achievement of maternal health goals and standards of care and used the subject as motto in 2007 World Population Day for further calling on men around the world to care for their pregnant wife, care for their baby, educate their daughters and partner in the task of parenting (2).

In recognition of importance of involving male in reproductive health, Global Strategy for Women's and Children's health calls for organizations which work with men and boys to coordinate their educational and advocacy programming to increase their effectiveness. Two strategies, described by UNFPA, could be used by gender transformative programmes to increase male involvement in Reproductive, Maternal, Newborn and Child Health (RMNCH) by engaging men as partners in reproductive health and as agents of change in RMNCH(4).

In relation to maternal morbidity and mortality, Ethiopian national reproductive strategy has given due emphasis on maternal and newborn health so as to reduce the high maternal and neonatal mortality. The strategy focuses on the need to empower women, men, families and communities to recognize pregnancy related risks, and to take responsibility for developing and implementing appropriate response to them(5).

Skilled care at delivery is usually provided at health facilities (hospitals and health centers) in Ethiopia. Ethiopian reproductive health strategy targeted to increase the proportion of births attended by skilled health personnel either at home or in a facility to 60% by 2015 (5,6).

Male involvement is a participation of men as a partner of life and husband discussing maternal health issues with their spouse as well as making a joint decision as a couple to seek care, encouragement and accompany the partner to care and planning as well as making any arrangement that are essential for delivery.

Men, as partners, fathers, husbands, policy makers and community leaders have a critical role to play in safeguarding the health of women during pregnancy and beyond. It is clear that the target of reducing maternal deaths will not be met without the concerted efforts of all involved. Reproductive health interventions that target couples are found to be more effective than those directed to only one sex(7). Increased involvement of husband in maternal health has been sought during the last decades.

1.2 Statement of the Problem

Pregnancy and its related complications, remains one of the major causes of maternal morbidity and mortality worldwide. Globally, over a half million women die every year due to pregnancy and its related causes. Virtually all (87%) of these maternal deaths occur in low-income countries. Maternal death in developing regions was still 15 times higher than in the developed regions. The global burden of maternal mortality is concentrated in developing countries with sub-Saharan Africa accounting for 56% of all maternal deaths reported worldwide (8).

Maternal death in Ethiopia is persistently high in past two decades despite the improvement in health service coverage. It represent 30% of all deaths to women age 15–49 in 2011(6).

Non-use of health facilities during pregnancy and delivery is main factor to high maternal death in SSA. Only 45% of births are attended by a skilled health worker in SSA and consequently, two million women have died in Africa during childbirth since 2010. Ethiopia is in lowest margin in achieving proportion of skilled birth attendance in SSA(6,8).

Studies to assess factors for low SBA have focused on the influence of factors related with service provision, economic and geographic accessibility, socio-demographic factors and relatively very few have looked at how factors such as women's autonomy and male partner involvement affect utilization of health services(9).

Pregnancy care and childbirth are the most important issues of reproductive health affected by male partners(3). Evidence on how maternal health care utilization is affected by their husbands is lacking in both developing and developed countries. Traditionally, men are kept outside maternal health issues in many societies (2).

Although men play a key role in the family as the main decision-makers, many studies on determinants of utilization of SBAs have focused largely on socio-demographic and maternal characteristics. Additionally, to increase uptake of maternal health services most of the efforts have mainly addressed these determinants and women. Therefore, the aim of this study was to answer in what extent male partner involve and affect maternal health service utilization in the

study area. In addition factors affecting skilled delivery utilization in the study area was examined.

2. Literature review

2.1 Magnitude of skilled delivery

Skilled attendance at all births is considered to be the single most critical intervention for ensuring safe motherhood when life-threatening complications arise (10). But in various developing countries utilization of skilled care for delivery is below the expected level to reduce maternal mortality ratio targeted in MDG (8).

The study on indigenous Mru community of Indonesia, only 1.9% of delivery was assisted by skilled personnel in 2010 (11). In Kenya about 48.2% of deliveries is attended by skilled attendants while the rest were deliver in their home(12). The data from demographic survey of Rwanda shows only 30% of mothers use facility for delivery (13)

Finding from in Nepal shows 69%of women had delivered their last baby in home(14). In Ghana 63% of women delivered at a health facility whilst the rest 22% delivered by a TBA and 15% at home without any assistance(15).

In Ethiopia different study revealed skilled birth attendance is still very low. The study conducted in Sekela district, West Gojjam only 12.1% of the mothers delivered in health facilities (16). A report from the study on Oromia region, only 12.3% in Munisa and 18.2% in Dodota district mothers use health facility for delivery(9, 16). Also another study from Woldia, Amhara region revealed 48.3% recent delivery was assisted by skilled professional(19).

2.2 Factors influencing utilization of skilled attendant at birth

A number of studies have stressed the role of socio economic and demographic factors in influencing demand for utilization of skilled delivery. Many of these studies have also showed that utilization of attended delivery is strongly affected by women's education. That is educated women are more likely to have attend institutional delivery(9).

As study in India showed mother's education, birth order and age had large positive effects on institutional delivery. About 46% of women with ten or more years of schooling delivered in a health facility compared to 13% with no education (20). Also study result from Afghanistan and Nepal revealed utilization of a trained attendant consistently increased with mother's education and decrease with parity and age(14, 19-20).

In Tanzania, Kenya, Uganda, and Ghana health facility delivery is significantly associated with education level of mothers. In Tanzania women with secondary education and above were two times more likely to deliver in health facility compared to those with primary or no formal education (22).

Studies done in Ethiopia also indicate similar conclusions on socio-demographic factors that determine skilled delivery. According to the study findings from Woldia and Dodota the chance of choosing home to deliver was found higher for illiterate(17,23). In other study young mothers at their first birth has more likely to deliver in health institution than those who give birth three or more(19).

Some studies have presented evidence that the effect of behavioral related factors of women such as ANC use, knowledge and attitude related to skilled deliver have influence on skill attendant utilization. ANC visits are important both maternal health and best opportunity to educate and promote skilled delivery care for mothers. A study conducted in Ruanda, Kenya, Ghana and Zambia revealed that receiving ANC has resulted on institutional delivery (13,24-25). However, only receiving ANC during pregnancy not result in skilled delivery but number of visits, early starting of service and counseling about pregnancy complications during antenatal care has significant effect on delivering in institution (13, 26).

Studies in different countries identified low knowledge on complication of pregnancy and delivery results in underutilization of skilled birth attendance. In Sekela district, Gojjam zone north Ethiopia, mothers who were knowledgeable on ANC and delivery services were about 3 times more likely to deliver in health institutions than their counterparts (16).

Attitude of HWs, traditional and cultural beliefs is thought to be an important influence on health care-seeking of clients. A study conducted in north Ethiopia a significant number of

mother choice home delivery due to unwelcoming approach of health workers(26). Also mothers in Nigeria responded that poor attitude of health workers and poor quality care as some of the challenges as well as traditional, cultural or religious reasons for nonuse of skilled attendant(27) .

Women's decision-making power is another factor usually exists within the community which influences use of skill attendant at delivery. In many parts of the world, women's power to make decisions is limited, even over matters directly related to their own health. Study from India in women's reproductive health in slum area identified skilled delivered utilization is significantly associated with women working status and financial autonomy(28).

From EDHS 2011 report, professionally assisted delivery in Ethiopia is in lowest margin of all SSA with highest rural urban variation. For these low coverage cultural norms, perceptions and practices of community may negatively impact on skill attendant care at delivery(6).

In Ethiopia, majority of husbands, family members and the community preferred mothers to deliver at home. Around 19.4% of husband prefer their wives to be assisted by their family members (16). In other study mothers who deliver their child at home were considered as strong. Also husband/relatives decision on the place of delivery, stigma attached to delivers at health care and fear of family being labeled as weak was associated with home delivery (17).

The availability of skilled attendant, accessibility of health institutions and expectation of mothers are some factors that enable mothers to utilize skilled attendant care. Studies indicated that one of the reasons given by women for nonuse of available obstetric care is poor access to health institutions. Many studies in Sub Saharan Africa identified distance, and transportation are the common facility-related factors (29).

2.2. Male partner involvement on delivery care.

A number of studies have highlighted the important role played by men in making decisions pertaining to maternal health issues(3,4). The involvement of men in maternal health arises from the numerous influences males have on almost all aspects of life, both in developing and developed countries. In first hand they affect maternal health service utilization by

participating as partner and encouraging them directly and indirectly deciding whether to use or not use the service(2).

The study result from Nepal have showed that 53% of men's reasons for not to accompanying their partners on antenatal visit were the feeling that this is a woman's duty and 29.3% were preoccupied with other tasks(30). Other study in Nepal have also revealed 82.6% of women said to have arranged any of the four preparations for delivery together with the husband and 40.7 percent of the women were accompanied by their husbands at ANC visit(31).

A study result from northern Nigerian community revealed 32.1% of husbands accompanied their wives at least once to the hospital for antenatal, delivery or postnatal care on their recent pregnancy. In the same study factors that predicts participation of male on maternity care were husband's age, educational status and ethnicity (32). However, in Sothern Nigeria Benin city only 13.9% spouse/male partners accompanied their wife for antenatal on their recent pregnancy (33). In Uganda 65.4% of male partners participated in at least one ANC visit(34).

On another hand male partner decision on place of delivery affects use of maternity care by womens. In western Uganda 56% women decide the final place of delivery by consulting their spouses (35).

In relation with decision to receive care the study from Ethiopia revealed that the decision to seek care for any woman's health problem was found to be highly dependent on the husband's decision. According to the study in Butajira 89.3% of mothers sought care for any woman's health problem getting permission from husband(36). Another study in south west Ethiopia eighty percent of the women who reported that their husband approved of prenatal care actually used prenatal care services, compared to only 40% of the women who reported their husband did not approve of prenatal care (37).

Finding from the study in Arsi zone, south east Ethiopia women whose husbands' attitudes negative on institutional delivery were less likely to utilize the service(38).

Conceptual framework

This framework considers the place of residence, socio-demographic characteristics, obstetric factors, health facility related factors, socio-cultural factors which affects women decision to seek care and reaching health facility. Knowledge on skilled birth attendance, danger sign of pregnancy and delivery, attitude towards SBA at delivery and health facility related factors is an important factor and all these together have influence on the decision to seek care. The male partner can play a crucial role especially in the first and second phases of delay in developing countries and thereby their participation in maternal health service positively impact maternal health and birth outcomes. In this study male involvement is an intermediate variable which affects use of skilled delivery care at birth.

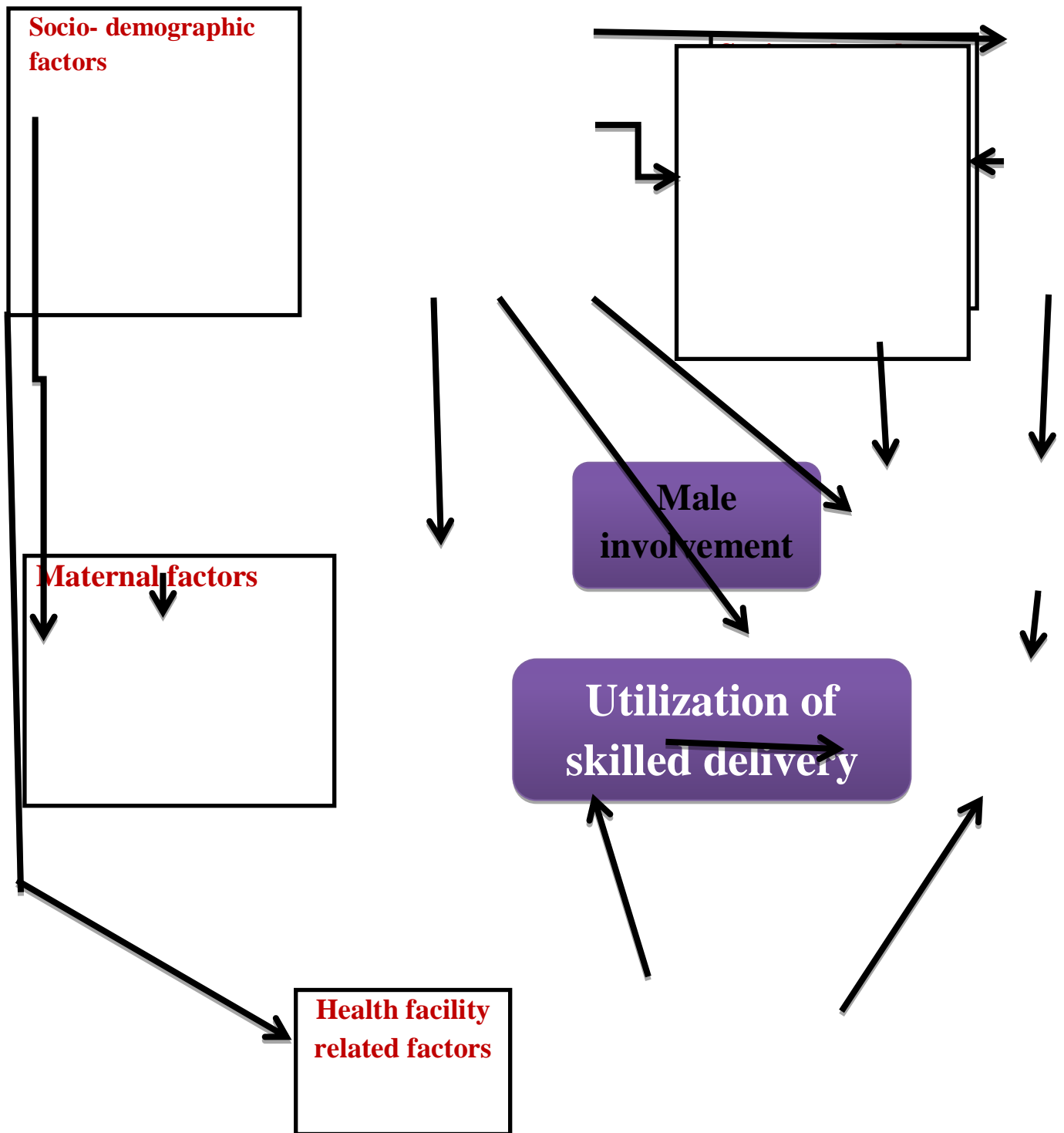


Figure 1: conceptual frame work to assess male involvement and utilization of skilled delivery in Mareka woreda, South West Ethiopia in 2014.

Significance of the study

Skilled attendance at childbirth is crucial for decreasing maternal and neonatal mortality, but still many women in low- and middle-income countries deliver alone or with inadequate care(8). Although men play a key role in the family as the main decision-makers, many studies on determinants of utilization of SBAs have focused largely on socio-demographic and maternal characteristics. However, man's attitudes, knowledge base and ways of reacting influences maternal use of care for pregnancy and delivery. Also there is low knowledge on the role of male partner in utilization of skilled delivery and little has been done to involve the male partner in maternal health.

Therefore, finding of the study will be important to understand the role of male on skilled delivery service use, insight men's knowledge, beliefs on skilled delivery care and other factors that influence their participation on maternity care which results on few womens' use of skilled birth attendants. The study result also adds new knowledge to understand contributing factors to the low skilled delivery service utilization.

The finding from study could be source of information for planners and stakeholders to identify area of intervention and to improve utilization of skilled delivery service.

3. Objective of the study

3.1. General objective

- ✚ To assess magnitude and factors affecting male partner involvement and skilled delivery utilization among married women who gave birth in last 12 months prior to the survey in Mareka woreda, Dawro zone, Southern Ethiopia from March 1-30/ 2014.

3.2. Specific objectives

- ✚ To describe proportion of women assisted by skilled birth attendance at birth among married women who gave birth in last 12 months.
- ✚ To identify factors affecting skilled delivery service utilization among married women who gave birth in last 12 months.
- ✚ To assess level of male partner involvement on utilization of skilled delivery service in birth of their recent child.
- ✚ To identify factors affecting male partner involvement on utilization of skilled delivery service in birth of their recent child

4. Methods

4.1 Study area and period

This study was conducted in Mareka woreda which is one of the 5 woreda in Dawro zone of SNNPR, Ethiopia. The capital city of the woreda is Waka which is located 500 KMs South West of Addis Ababa, the capital city of Ethiopia and 398 KMs from the regional capital city Hawassa. The woreda is administratively structured in to 37 kebele (34 Rural and 3 Urban). Projecting from 2007 census the estimated total population of the woreda is 143,641 in 2013(39). The health infrastructure in the woreda comprised of 4 health centers, 37 health posts, 1 pharmacy, 1 rural drug vendor and one lower clinic. With regard to human resource, there are 83 all type of health professionals and 74 rural and two urban health extension workers in the woreda. The study was conducted from March 1-30/ 2014.

4.2 Study design

Community based cross-sectional study was employed.

4.3 Populations

4.3.1 Source Population

The study population were all couples currently in union who have less than 12 months old child during the study period in Mareka woreda.

4.3.2 Study population

The study unit was selected couples currently in union who have less than 12 months old child during the study period in selected Kebeles of Mareka woreda during the study period.

4.4 Inclusion and exclusion criteria

4.4.1 Inclusion criteria

Couple currently in marriage having less than 12 months old child, stayed in the study area more than six month and voluntary to participate during the study period was included in the study.

4.4.2 Exclusion criteria

Couples having less than 12 months old child who are incapable to respond due to serious illness and those who stayed less than six month in the study area were excluded.

4.5 Sample size determination and sampling procedure

4.5.1 Sample size determination

The sample size calculation for the study was estimated by using Epi info version 7 considering α 5%, power of the study 80% and 5% degree precision. A single population formula $n = \frac{(z\alpha/2)^2 \times p(1-p)}{d^2}$ is used. For each objective sample size was calculated with their respective proportion and the variable which gives a large sample size among them was used to this study. A sample size of 676 couples (676 males and their 676 spouses) was determined with the above assumption and using the proportion of male involvement in use of skilled delivery care at birth in Kenya, odds ratio, design effect and expected non-response rate of 68.4%, 2.17, 2 and 5%, respectively.

4.5.2 Sampling technique

Multi stage stratified sampling technique was used to select the study units. First, all the Kebeles in the District was stratified in to urban and rural. Then 1 out of 3 urban and 7 out of 34 rural Kebeles was selected randomly. Since every family folder have monthly updated household information including vital events and their unique households ID number, family folder in health post was used for identification of eligible households in selected Kebele. Unique consecutive numbers was assigned for identified eligible households to generate proportionally allocated samples from selected eight kebele. Finally 676 random couples from eligible households were generated by using Microsoft excel.

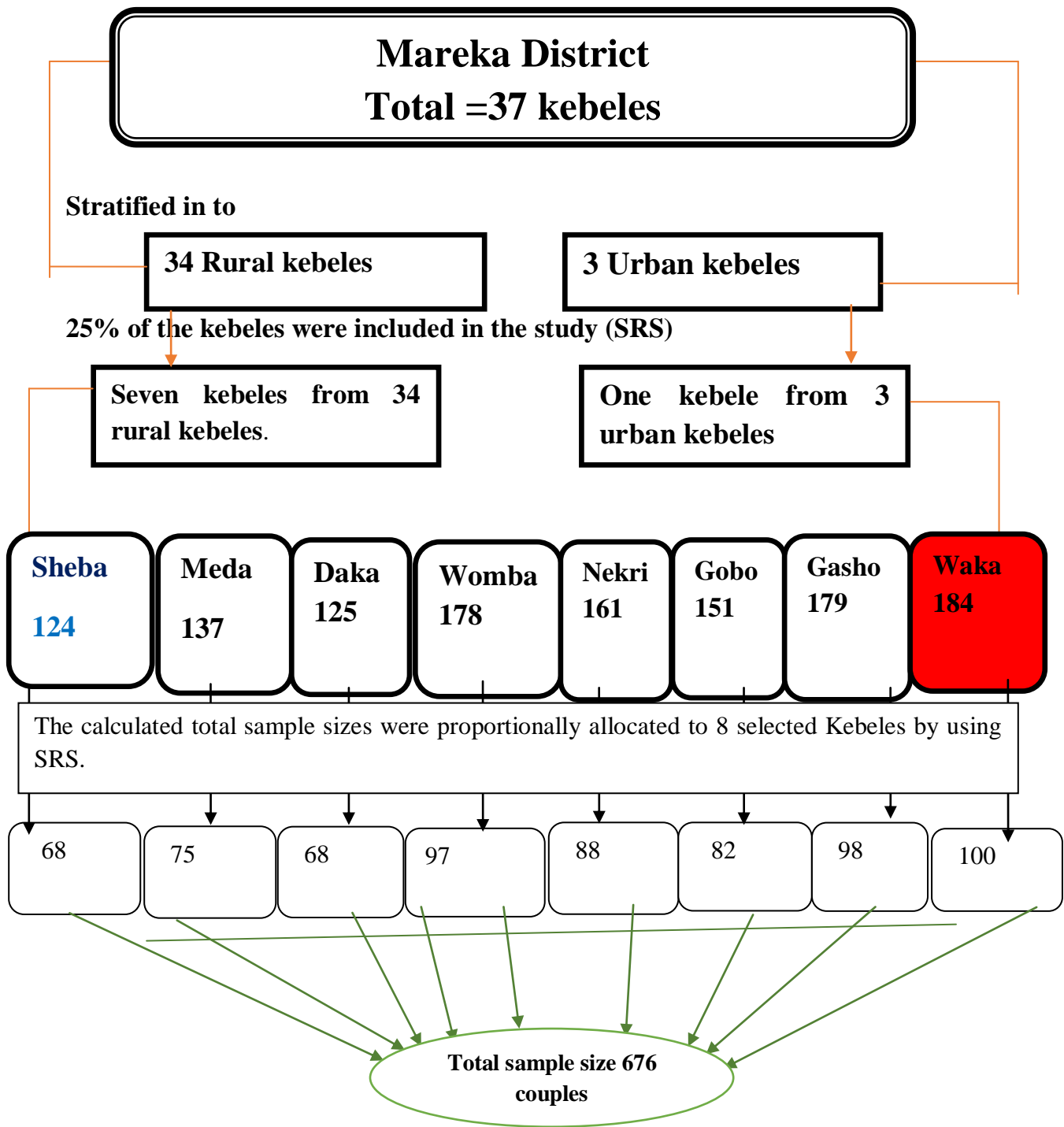


Figure 2 Schematic presentation of sampling techniques.

4.6 Data collection instrument and procedure

Data collection Instrument

Data was collected by using a semi-structured questionnaire that was initially prepared in English then translated into Dawurigna/local language/ by language expert in Dawurigna and back translated to English by another local language expert to ensure consistency. Questionnaires has two parts the first part prepared for womens and the second part for their male partners. Female part includes women socio-demographic characteristics, past obstetric history, knowledge on danger sign and attitude towards skilled delivery care while male part includes male socio-demographic characters, participation on skilled delivery and perception on benefit of skilled delivery care

Data collectors

Twelve diploma nurses (6 female and 6 male) who are fluent in the local language and three health officers were recruited for data collection and supervision respectively. A two day training on how to fill the questionnaire, mock interviews and practical field exercise was given to data collectors and supervisors to ensure the quality of the field operation. During data collection time data collectors was assigned in group as male (to interview male) and female (for female participant) to conduct interview for husband and spouse at the same time separately to avoid possible interference and contamination of ideas. The supervisors was supervised the data collection process and perform quality checks.

Data collection procedure

House number of couples selected for study were gave for data collectors and supervisors assigned for Kebeles. On the first visit data collectors interviewed study participants if couples were available and agreed otherwise they arranged the time convenient to interview couples at the same time separately. All the women and husbands, interviewed had their last child born within the duration of last one year, were interviewed in their home. During data collection repeated visit was needed for many households to get both respondents at the same time.

4.7 Variables

4.7.1 *Dependent variable:*

- ✓ Skilled delivery service utilization
- ✓ Male involvement on skilled delivery utilization

4.7.2 *Independent variables*

- ❖ **Socio demographic** -Maternal Age, Marital status, age at marriage, Ethnicity, religion, income, Family size, Residence, Educational status (women/husband), Occupation (women/husband).
- ❖ **Obstetrics characteristics** - age at first pregnancy, Gravidity, Parity, birth order, ANC use, and birth related complications.
- ❖ **Knowledge and attitude on** - obstetric risks, skilled delivery service, danger signs of pregnancy and labor, benefits of safe delivery.
- ❖ **Health facility factors**- distance, and transportation.
- ❖ **Socio-cultural factors** - traditional beliefs, influence by other members (mother, mother in-law, TBAs etc., low status of women/autonomy and discussion with male partner on place of delivery.
- ❖ **Male related factors**- perception on benefit of skilled delivery care, decision on delivery place, encouragement for SBA, planning and making arrangements, intra-spousal communication, preferred assistance for delivery,

4.8 Operational definition and definition of terms

- a) **Women's autonomy:** decision-making power of women on one's own choice of delivery place.
- b) **Delivery place:**-the place where women's give birth either home or health institution.
- c) **Educational status:** refers to self-reported highest level of education attended by the respondent during the time of survey.
- d) **Distance:** is measured in minute estimated from home to the nearest health facility by foot.
- e) **Perceived benefits:** perception about the benefits of having a skilled delivery attendant in prevention of delivery complications.

- f) **Skilled attendant:** people with midwifery skills who have proficiency in skills necessary to manage normal deliveries, and diagnose, manage or refer obstetric complications.
- g) **Knowledgeable:** women will be considered knowledgeable about danger signs related to pregnancy and delivery if they scored above the mean of knowledge questions.
- h) **Not knowledgeable:** women will be considered not knowledgeable about danger signs related to pregnancy and delivery if they scored below the mean of knowledge questions.
- i) **Favorable attitude:** if participant scored above the mean or median on 10 attitude questions considered as favorable.
- j) **Unfavorable attitude:** if participant scored below the mean or median on 10 attitude questions considered as unfavorable. Options for attitude question: (agree, disagree and neutral), for positive statement; agree worth 1 point and the other 0 and for negative statement; disagree worth 1 point and the other 0.
- k) **Recent delivery:** refers to women who gave birth within the previous 12 months prior to survey.
- l) **Male involvement in skilled delivery care services:** Male involvement in skilled delivery care service is when they made a joint decision with wife as a couple, planned health facility for delivery and made arrangements for recent delivery. Partner is considered as involved when he was done at least two of the following; if a
 - i. Planned health facility for delivery
 - ii. Made arrangements for recent delivery and
 - iii. Made joint decision on place of delivery in their recent pregnancy.

4.9 Data entry and analysis

Data was checked, cleaned and edited for completeness, outliers and missing values. Quantitative data was entered to EpiData version 3.1 and exported to SPSS windows version 16.0 for analysis. For analysis, male questionnaire was entered continuously after female's questionnaire making couples response as one case. Summed scale method was used for analysis of womens' attitude and knowledge. Descriptive analysis was carried out for each of the variables. Bivariate analysis was employed to check association between dependent and independent variables. Variable with p value <0.25 on bivariate analysis was entered to multivariable logistic regression model to identify the factors that affect male involvement

and use of skilled delivery. Statistical significance was declared at P value <0.05 . The summery result of quantitative data was compared by frequency tables, graphs, and charts and analytically presented by adjusted odds ratio and 95% confidence interval.

4.10 Data quality assurance

To minimize errors data was double entered in EpiData version 3.1 and training was given for data collectors and supervisors on the objective of the study, how to fill the questionnaire, research ethics, how to approach study participants, and field exercise. Data was checked for completeness, accuracy, and consistency by supervisors & principal investigator on daily basis and any correction was made on field when needed. Pre-test was conducted on 32 recently delivered women in adjacent woreda. Based on the findings and feedback obtained from the pre-testing, the questionnaire was updated and refined. Pre-testing helped to rephrase the wording of the questions, correction of flow and appropriate skipping pattern of questions, and also gave experience to data collectors.

4.11 Ethical Consideration

Ethical approval and clearance was obtained from Ethical Review Board (ERB) of Jimma University College of Public Health and Medical Sciences. Official cooperation letter obtained from Dawro zone health department and Mareka woreda health office. Informed consent obtained from the study participants by informing the purpose of the study, its procedure and confidentiality (not used for other purpose) prior to data collection.

4.12 Dissemination plan

The findings of this study will be presented to Jimma University, distributed to Regional health bureau, Dawro Zone Health Department, respective hospitals and health centers, other organizations working on maternal and child health program in the SNNPR. The findings may also be presented in different seminars, meetings and workshops and published in a scientific journal.

5. RESULT

5.1 Socio-Demographic Characteristics of study participants

Of those 676 couples invited for the study, information obtained from 635 couples (635 married men and 635 married women) making a 93.9% response rate. Nineteen couples couldn't be found after repeated visit and twenty one questionnaires were excluded from analysis due to incompleteness. The numbers of those excluded from the analysis are not higher than the expected 5% non-response rate. Five hundred thirty nine (84.9%) and 96 (15.1%) of respondents were from rural and urban respectively. The mean age for women was 29.66 with SD of ± 7.641 ranging from 15 to 49 years. The mean age for husband was 34.09 with SD of ± 6.763 ranging from 18 to 62 years.

Concerning ethnicity of study participants 629(99.1%) of women and 529(83.3%) of male participants belong to the Dawro ethnic group. Concerning education 19.2% of husbands has acquired secondary and college education and only 11.0% women has acquired secondary and college education.

Mothers practicing the Protestant faith were 55% while 40% belong to the orthodox Christians. Catholic were 5.0% of the total respondents. Male partner religion affiliation 52.4%, 41.9% and 5.7% of husbands practice protestant, orthodox and catholic religion respectively. Majority of the mothers and husbands were unemployed 66.5% and 64.3% respectively. Reported average household income was 606.53 with SD of ± 670.365 Ethiopian birr. Average family size in households was 5. The detail of socio demographic characteristics of the respondents are shown in table 1 and 2.

Table 1 Socio-demographic characteristics of women's who have under one child at the time of survey in Mareka woreda, March 2014. Arrived

Variable	Frequency (%)
Age	
<20	61(9.6)
20-34	424(66.8)
35-49	148(23.3)
>49	2(0.3)
Religion	
Orthodox	254(40)
Protestant	349(55)
Others	32(5)
Ethnicity	
Dawro	629(99.1)
Oromo	6(0.9)
Others	-
Education of respondents	
Illiterate	289(45.7)
Primary education	276(43.3)
Secondary education & above	70(11)
Work status	
Housewife	422(66.5)
Farmers	96(15.1)
Merchant	67(10.5)
Civil servant	28(4.4)
Student	10(1.6)
Daily laborers	9(1.4)
Others	3(0.5)

Table 2 Socio-demographic characteristics of men who have under one child at the time of survey in Mareka woreda, March 2014.

Variable	Frequency (%)
Age	
<20	7(1.1)
20-34	331(52.1)
35-49	270(42.5)
>49	27(4.3)
Religion	
Orthodox	266(41.9)
Protestant	333(52.4)
Others	36(5.7)
Ethnicity	
Dawro	529(83.3)
Oromo	103(16.2)
Others	3(0.5)
Education of respondents	
Illiterate	201(31.7)
Primary education	312(49.1)
Secondary education & above	122(19.2)
Work status	
Housewife	Not applicable
Farmers	408(64.2)
Merchant	123(19.4)
Civil servant	41(6.5)
Student	19(2.8)
Daily laborers	16(2.5)
Others	28(4.6)

5.2. Obstetric history of the respondents

Information on previous obstetric history of mothers collected in this study. For 97 (15.3%) mothers the last pregnancy was their first and 168 (26.5%) of them had 5 to 9 pregnancies. From total respondents 20.8% had history of abortion, 4.1% had history of still birth and 16.4% had history of neonatal death. Among the respondents 59.6% have 2-4 living children. Mean (SD) parity of women were 3.15 ± 1.77 .

Concerning recent pregnancy only 141(22.2%) was not planned pregnancy and 561(88.3%) of womens had attended antenatal clinic (ANC) at least once. Of 561women attended antenatal visit only 232(45.4%) started early at first trimester and 274(54.5%)

attended sufficient visit, four or more visits recommended by WHO, on their most recent pregnancy. Four hundred seventy eight (75.3%) women reported that they were discussed on skilled delivery care and 398 (62.7%) were recommended to use skilled delivery care from the service provider during ANC visit.

The mean age at first birth was 20±3.43 years. Majority of the women had their first child before the age of 20 years 388(61 %) followed by 20-29 age group 246(38.8%). Only 1(0.2%) of the respondents had their first child after the age of 30 years. Three hundred eighty five (60.6%) of the women had given birth 2-4 times while 105(16.5%) had given birth once and others 145(22.9%) more than 4 times in their life time. The average number of children for a women was 3. Table 3 below shows obstetric history of among the study respondents.

Table 3 Obstetric history of womens who gave birth 1 year prior to the survey in Mareka woreda, March 2014.

Variables	Frequency	Percent
Total No. of Pregnancy (n=635)		
1	97	15.3
2-4	370	58.2
>5	168	26.5
Total No. of living Children(n=635)		
1	105	16.5
2-4	384	60.5
>5	146	23.0
No. of ANC visit on recent pregnancy(n=561)		
1-3 times	229	40.9
4 times and above	274	48.8
Do Not remember**	58	10.3
Age of gestation at first visit in TM(n=561)		
1 st trimester	232	36.6
2 nd trimester	182	28.7
3 rd trimester	97	15.4
Mothers don't remember**	50	7.7

(**) Missing and mothers not remembered number of ANC visit

Deliveries conducted at home were 356(56.1%), while the rest 279(43.9 %) were conducted in health institution including health post. From total, delivery in health institution health

center constitute 179(28.2%), health post 70(11%) and 30(4.7%) were in the hospitals. Those who gave birth (32.9%) in health center and hospital were assisted by skilled birth attendants.

Table 4 Womens' knowledge on danger signs related to pregnancy and childbirth who gave birth 12 months prior to survey in Mareka woreda, March 2014.

Knowledge statement	Count(Yes)	Percent
*Knowledge on Pregnancy related danger sign (n=339)		
Bleeding	249	73.5
Severe headache	153	45.1
Blurred vision	109	32.2
Swollen hands/face	283	73.5
others	71	20.9
*Knowledge on Labor and delivery related danger sign (n=390)		
Sever Bleeding	250	64.1
Severe headache	328	84.1
Prolonged labor	281	72.1
Retained placenta	267	68.5
Convulsion	255	65.4
Others	76	19.5
*Knowledge on benefit of maternal health services (n=333)		
	312	93.7
For anticipating problems	107	32.1
For early detection of health Problems	182	54.7
For appropriate management of health problems	187	56.2
For better health care to the women	187	56.2
For better care to the newborn		
Over all knowledge on Pregnancy and delivery related danger sign and benefit of MHS		
Knowledgeable	261	41.1
Not knowledgeable	374	58.9
Total	635	100

(*)More than one response was possible and (N) is knowledgeable participants from total

Table 4 above shows the knowledge level of the study respondents. From total women 339(53.4%) were knowledgeable on danger sign related with pregnancy, 390(61.4%) were knowledgeable on danger sign related with labor and delivery and 333(52.4%) were knowledgeable on benefits of maternal health service given during pregnancy and delivery. Overall, 261(41.1%) of women were knowledgeable on danger signs related to pregnancy and labor and benefit of maternal health services provided for mothers during pregnancy, labor and delivery.

Regarding attitude of women toward skilled delivery service utilization, 325(51.2%) of the study participants showed favorable attitude on skilled delivery service. However, 568(89.6%) of women had unfavorable responses on the way how a woman should get to the place where she will give birth and 326(51.4%) of women had unfavorable response on effect of delivery complication on new born.

In attempt to assess level of male involvement and factors for their involvement on skilled delivery care, information from men were analyzed independently. According to the study, 408(64.7%) of men were aware either their wife have attended ANC service or not and 575(90.6%) reported that they discussed on delivery related issue with their wife in their recent pregnancy. Table 5 shows the detailed male involvement on skilled delivery care.

Table 5 Male participation on skilled delivery care service utilization with their spouse during their recent child birth in Mareka woreda, March 2014

Variables	Count	Percent
Preferred place of delivery by husbands		
May home	93	21.4
Health facility(Health center/Hospital)	145	33.4
Health post	108	24.9
Mother in law's home	88	20.3
Arrangements made by husband prior to the birth of recent child*		
Identify transportation	271	61.0
Save money	376	84.7
Identify skilled provider	185	41.7
Other (specify)	20	4.5
Who do you want to assist your wife during delivery?		
Health workers	268	42.2
Mother	128	20.2
Mother in-low	80	12.6
HEWs	145	22.8
TTBA	14	2.2
Importance of giving birth in health facility over home		
Very important'	326	51.3
Less important	165	26.0
Same as home	144	22.7

(*) more than one response is possible

One hundred forty five (32.7%) husband was planned health facility for their recent child birth. Two hundred sixty eight (42.4%) of male prefers skilled professionals and 366(57.6%) prefers non skilled attendants, including HEWs, TBAS and relatives to assist their wife on recent delivery.

The study shows that 196 (44.1%) of the men involved on skilled delivery care on recent delivery, 273(43%) made joint decision on place of delivery with their partner, and 448(70.5%) made prior arrangement for delivery (fig 3).

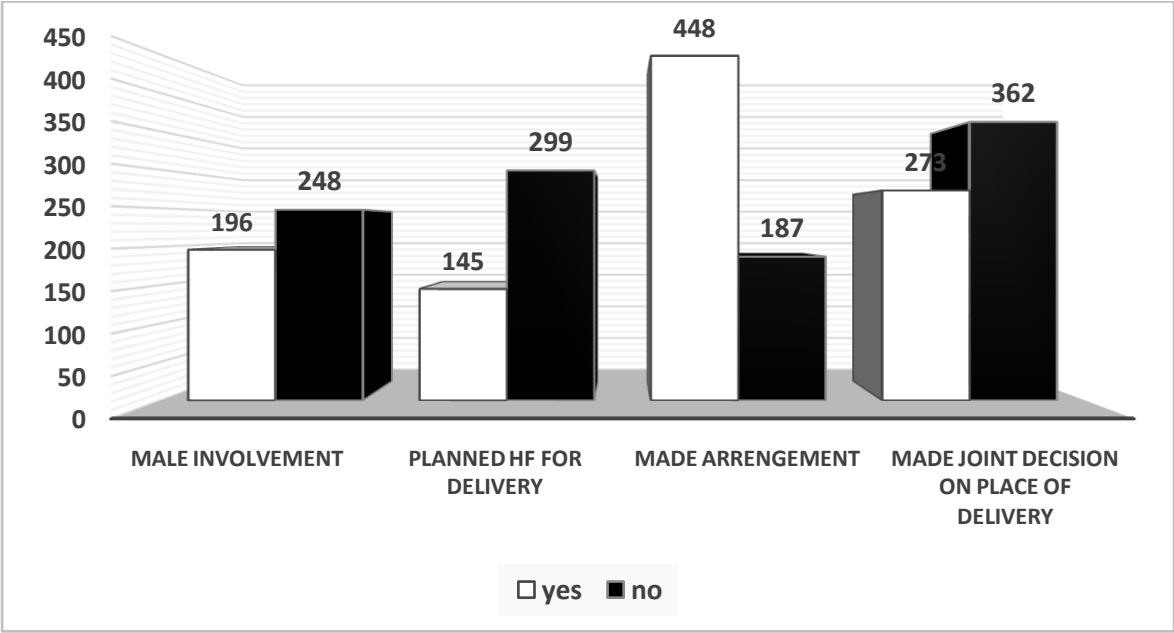


Figure 3 Level of husbands’ participation on skilled delivery service utilization among women’s gave birth 12 months prior to the study in Mareka, March 2014.

Regarding perception of males on the benefit of delivering on health facility 326(51.3%) has positive perception on benefit of delivery in HI and the rest 309(48.7%) responded facility delivery is either less important or the same as home delivery. For 356(56.1%) of males the reason of selecting health facility for delivery was they believe it saves life of mothers while 234(36.8) home delivery for privacy.

The factors influence use of skilled delivery care identified in the study area were women and men socio-demographic, obstetric characteristics, women and husband’s education, woman’s occupation, gravidity, and ANC visit level of husband’s involvement during pregnancy and

delivery. Tables 6 below presents the association between independent factors with outcome variables.

Table 6; Bivariate analysis of factors affecting use of skilled delivery among recently delivered womens in Mareka (N=635)

Variables	Used skilled delivery		OR 95% CI	P-value
	Yes (209)	No (424)		
Educational status of husbands				
Primary and below	131(20.6)	382(60.1)	0.19(0.13-0.29)	0.001
Post primary	78(12.3)	44(7)	1.0	
Educational status of wife				
Primary and below	143(22.5)	422(66.5)	0.02(0.07-0.10)	0.01
Post primary	66(10.4)	4(0.6)	1.0	
Number of pregnancy				
1-3 pregnancy	141(22.2)	216(34.0)	2.01(1.42-2.85)	0.008
4 and above	68(10.7)	210(33.1)	1.0	
Pregnancy planned				
Yes	179(28.2)	315(49.6)	2.13(1.35-3.27)	0.004
No	30(4.7)	111(17.5)	1.0	
Initiated ANC service				
Early	110(21.5)	122(23.9)	2.64(1.82-3.84)	0.0001
Late	71(13.9)	208(40.7)	1.0	
Favorable attitude to SBA				
Favorable	143(22.5)	182(28.7)	2.91(2.05-4.12)	0.0001
Unfavorable	66(10.4)	244(38.4)	1.0	
Knowledgeable on skilled delivery care				
Yes	136(21.4)	125(19.7)	4.48(3.15-6.38)	0.0001
No	73(11.5)	301(47.4)	1.0	
Male involved on skilled delivery care				
Yes	108(24.4)	88(19.9)	2.76(1.87-4.08)	0.0001
No	76(17.2)	172(38.8)	1.0	

Lower education of husbands and women was significantly decrease use of skilled delivery care. Womens' pregnancy order, ANC visit in last pregnancy and early start of ANC visit were significantly associated with skilled delivery utilization in bivariate analysis.

Womens knowledge on danger sign related with pregnancy, labor and delivery, favorable attitudes towards skilled delivery care and husbands' involvement on skilled delivery care were positively influence use of skilled delivery care.

Table seven below shows factors affecting men involvement on skilled delivery care in the study area by bivariate analysis.

Table 7 Bivariate analysis of factors affecting male involvement on skilled delivery among womens gave birth one year prior study in Mareka woreda. (N=444)

Variables	Male involvement		OR 95% CI	P-value
	Yes (%)	No (%)		
Age of husband				
Below 35	115(25.9)	105(23.6)	1.93(1.32-2.83)	0.001
Above 35	81(18.2)	143(32.2)	1.0	
Mothers occupation				
House wife	106(23.9)	169(38.1)	0.55(0.37-0.81)	0.002
Other than house wife	90(20.3)	79(17.8)	1.0	
Maternal educational status				
Post primary	38(8.6)	21(4.7)	2.6(1.47-4.59)	0.001
Primary and below	158(35.6)	227(51.7)	1.0	
Husbands educational status				
Post primary	55(12.4)	37(8.3)	2.22(1.39-3.55)	0.001
Primary and below	146(35.8)	182(57.8)	1.0	
Husband perceives delivering in health facility is important than home				
Yes	140(34.3)	108(26.5)	2.16(1.44-3.24)	0.0001
No	60(14.7)	100(24.5)	1.0	
Husband prefers skilled assistance for delivery				
Yes	100(22.5)	89(20)	1.86(1.27-2.73)	0.0001
No	96(21.6)	159(35.8)	1.0	

In multivariable logistic regression analysis the most important variables predicting the utilization of skilled deliver services among the study participants were women pregnancy order, women gravidity less than three times were 2 times more likely to utilize the service than women who were more than three pregnancy in their life time AOR (95% CI): 2.65(1.31, 5.37).

Women's good knowledge on pregnancy, labor and delivery related danger sign has a significant association with the utilization of service in that those women who has good knowledge has 3 times more likely to utilize the service than the others [AOR= 3.44, 95%CI;

(1.24, 8.79)]. Womens' attitudes towards skilled delivery service utilization was significant association with service utilization. Those women who have favorable attitude on skilled delivery care utilized the service two times more than those who have unfavorable attitude AOR= 2.21, 95%CI; (1.11, 4.41). Men's participation was the most important factors for increased use of skilled delivery care [(AOR 2.35, 95% CI: 1.18-4.66)]. While low level of education for both sex was significantly associated with home delivery.

Table 8 Multivariable logistic analysis of factors associated with use of skilled delivery care by women

Variables	Used skilled delivery			
	Yes	No	COR	AOR 95% CI
Womens education level				
Primary and below	143(22.5)	422(66.5)	0.02	0.01(0.001-0.10)***
Post primary	66(10.4)	4(0.6)	1.0	1.0
Husband education level				
Primary and below	131(20.6)	382(60.1)	0.19	0.27(0.12-0.66)*
Post primary	78(12.3)	44(7)	1.0	1.0
Number of pregnancy				
1-3 pregnancy	141(22.2)	216(34.0)	2.01	2.65(1.31-5.37)**
Above >3 pregnancy	68(10.7)	210(33.1)	1.0	1.0
Knowledge of women skilled delivery care				
Knowledgeable	136(21.4)	125(19.7)	5.28	3.44(1.34-8.79)**
Not knowledgeable	73(11.5)	301(47.4)	1.0	1.0
Attitude of women towards SBA				
Favorable	143(22.5)	182(28.7)	2.91	2.21(1.11-4.41)*
Unfavorable	66(10.4)	244(38.4)	1.0	1.0
Male involvement on skilled delivery care				
Yes	108(24.4)	88(19.9)	2.76	2.35(1.18-4.66)*
No	76(17.2)	172(38.8)	1.0	1.0

(*) *p* value significant <0.05, (**) *p* value significant <0.01 and (***) *p* value significant <0.0001

The logistic regression analysis revealed that husbands positive perception on skilled delivery care [(AOR 1.68, 95% CI: 1.13-2.50)], educational level of husband [(AOR 1.77, 95% CI: 1.13-2.50)], preferred assistant for delivery as skilled HWs [(AOR 1.85, 95% CI: 1.24-2.75)] and husbands age below 35 years [(AOR 1.77, 95% CI: 1.19-2.62)] were factors determine male involvement on skilled delivery utilization.

Table 9 Multivariable analysis of factors associated with men involvement on skilled care service utilization in Mareka woreda (N=311).

Variables	Male involved		COR	AOR 95% CI
	Yes	No		
Husbands educational status				
Post primary	55(12.4)	37(8.3)	2.22	1.77(1.13-2.50)**
Primary and below	146(35.8)	182(57.8)	1.0	1.0
Age of husband				
Less than 35yrs.	115(25.9)	105(23.6)	1.93	1.77(1.19-2.62)*
Above 35 yrs.	81(18.2)	143(32.2)	1.0	1.0
Husband prefers skilled assistance				
Yes	100(22.5)	89(20)	1.86	1.85(1.24-2.75)**
No	96(21.6)	159(35.8)	1.0	1.0
Husband perceives delivering in health facility is important than home				
Yes	140(34.3)	108(26.5)	1.82	1.68(1.13-2.50)***
No	60(14.7)	100(24.5)	1.0	1.0

(*) *p* value significant <0.05, (**) *p* value significant <0.01 and (***) *p* value significant <0.0001

6. Discussion

This community based study used information from both husband and wife in attempt to assess factors affecting utilization of maternal healthcare services specifically delivery services and male involvement on skilled delivery in Mareka woreda. As hypothesized both husband and wife factor affect maternal health service use by the wife, although wives' factors remained to be more predictive variable for their current MHS use. Accordingly women who used health facility in their recent delivery tend to be relatively educated, knowledgeable on danger sign, showed favorable attitude for skilled delivery care, made joint decision on place of delivery with husband and their husbands' planned and made arrangement for skilled delivery.

Home delivery is still a norm in many developing countries; maternal mortality tends to be highest where this is the case. In this study, only 32.9% of births took place at health facility with help of skilled attendants. This finding is not in agreement with the previous studies from Dodota (22%), Arsi (17%), Sekela (13.5%), Munisa (12.3%), and DHS (2011) (11%) (6,16–18,38). This difference may be related with recently introduced new strategy like health development army which, creates an opportunity for women to access health information on maternal health care services and promote community involvement to support women during labor and delivery, has a great impact on recent skilled delivery status. In addition specific health programs like provision of ambulance for every woreda may work to the advantage of the current status.

Results of this study revealed that use of skilled birth attendants were significantly associated with the level of education. There is strong evidence that higher level of education (secondary and above) were ten times more likely to use safe delivery services than those with lower education levels. Most maternal and child health studies conducted in developing countries strongly agree with this findings(14,19,23,30,38). This may be the fact that, education is likely to enhance female autonomy and communication with partners so that women developed greater confidence and capacity to make decisions about their own health.

In the study women's attitude towards their maternal health services and knowledge on pregnancy related danger sign were found to affect maternal health care services here and

elsewhere. There was a higher probability attendance among those mothers whose attitude was favorable attitude and knowledgeable. The results of the present study are found to be similar with previous studies in Ethiopia and other developing countries. The uses of SBA were significantly more among knowledgeable women and favorable attitude(12,16,23,40,41).

Respondents' knowledge of potential danger signs of pregnancy is an important factors for delivery services (23,38). Women who experienced concern about any health problems (whether or not the health problem mentioned were indeed a risk to mother) were more likely to be user. This indicates that understanding of the nature and the importance of delivery care services. In this study 41.1% of respondents could able to score more than mean score on the acceptable danger signs of pregnancy and delivery. Women's knowledge of any of the risk was found to be an important factor in their use of delivery services. Other reports from Bangladesh and India came-up with similar findings (18,20).

The number of previous pregnancies is an important determinant for utilization of skilled delivery services in this study and it is consistent with study done in India(28). The number of pregnancy increase likelihood of using the skilled delivery services in the study areas. Lower utilization of maternal care services among higher gravidity (multi-parious) women could be due to time and resource constraints faced by those with large families, and greater experience of higher parity. Multi-parious women on the other hand, tend to believe that modern health care is not as necessary due to experiences and accumulated knowledge from previous pregnancies and births and therefore likely to have more confidence about pregnancy and childbirth and thus may give less importance obtaining skilled delivery (11,16,17).

Our study found that women whose husband's involved on skilled delivery care were almost two times more likely to use SBA at birth than those whose husband's not involved. This could imply that men who involved were educated about the importance of skilled birth attendance. Our finding reinforces other studies showing that women were more likely to have better outcomes when their husbands got directly involved in maternal health care by supported their wives during pregnancy(41). Also study in India and Nepal have found that women whose husbands show concern in pregnancy are more likely to utilize reproductive health services(28,31).

The study revealed that the proportion of male's involvement on maternal skilled delivery care utilization was relatively low at 34.6%. Specifically 32.7% of planned health facility for delivery, 52.4% made joint decision for skilled delivery care and 43.2% planned and made arrangement for delivery. This study is inconsistent with the recent studies that have shown high male involvement in maternal health care services. The study done in northern Uganda revealed that 48% of the males involved on skilled delivery care (34). The study finding from Nigeria showed 56% women final decision on location of birth was taken in consultation with spouse (35). This much variation of male involvement on maternal health service utilization may be attributed due to sociocultural and gender roles related variation between countries.

From study finding, low education level for the man was found to be significant in contributing too few men escorting the wife for ANC and delivery. The finding of our study is similar to findings in the studies carried out in Uganda and in Kenya .In Busia district of Kenya, un-educated men were found to be less likely to participate in reproductive health(41). The study in Omoro County revealed that educated men were positively associated with male participation in maternal health service (34). Studies suggest that uneducated men tend to hold on to traditional belief which greatly impair inter spousal communication leading to low male involvement in reproductive health (7).

In this study younger men were involved two times more on skilled delivery care than older ones. The observed higher participation among younger men in this study is similar to the findings from Nigerian(32) This could be due to the fact that younger men are more adventurous and likely to challenge cultural norms. In addition, they may have better chance of education which is known to positively influence health seeking behavior.

Husbands' positive perception on maternal health service utilization was associated with increased participation of male. Our finding shows male who perceived giving delivery in health facility is important for mother and new born were two times more likely to participate on maternity care than those who perceived it has no importance. This result is consistent with finding from Uganda where husband positive perception on benefit of maternity care on prevention of pregnancy related complication results in high level participation of male on

maternal health(34). Studies have shown that when men know the danger signs of pregnancy and delivery, they may act as life-saving agents, ensuring that their wives get appropriate attention in obstetric emergencies(7).

Strength and limitation of the study

Strength of the Study: The study is community based study, used primary data from both male and female partner using local language. To minimize recall bias data collected from womens' gave birth 12 months prior to the study and their partners. Also couples interviewed separately by male and female interviewer at the same time to avoid possible interference of ideas between respondents.

Limitations: The finding might be subjected to social desirability bias because the finding was based on self-reported responses of couples.

7. Conclusions and Recommendations

Conclusions

This study has revealed skilled delivery care use by mothers in the study area is low compared to national target. Couples education level, birth order of women, knowledge and attitude of women on skilled delivery and their husbands' involvement on skilled delivery care were found to be very important predictor for skilled delivery care utilization.

Although an involvement of male have a significant effect on use of skilled delivery care, low level of male participation was seen in study area. Men's' who were educated, younger, prefers skilled birth attendants at delivery, and positively perceive on benefit of skilled delivery care were demonstrated a greater participation on skilled delivery care utilization.

Recommendations

Therefore based on the study findings for further improvement to utilize delivery services it needs to consider:

- ✚ Regional health bureau should take steps to raise awareness on the importance and benefits of skilled delivery care and male involvement on skilled care services utilization to improve service utilization and to get support from male partners.
- ✚ Zonal health department, Woreda Health Office and health facility should raise awareness of community on the importance and benefits of skilled delivery care. This could be achieved through involvement of the community health workers and community leaders in reaching out to men and encouraging their involvement on skilled delivery care services.
- ✚ Health system need to design the way how men will be invited for ANC with their wife and giving messages in simple terms to be prepared in time for avoidance of factors that keep men away from skilled delivery care services.
- ✚ A further study to establish knowledge and attitude of male on maternal health care services would further strengthen strategies for improving male involvement in maternal health care services.

References

1. WHO. Making pregnancy safer: the critical role of the skilled attendant: a joint statement by WHO, ICM and FIGO. Geneva, Switz. WHO. 2004.
2. UNFPA. Men at work. World Population Day document. Retrieved September 10. [Internet]. 2007. Available from: <http://www.unfpa.org>.
3. UNFPA. The Fourth World Conference on Women, Beijing Declaration and Platform for Action. 1995. p. 1–132.
4. UN. Global strategy for Women's and Childre's Health [Internet]. New York; 2010. Available from: http://www.who.int/pmnch/topics/maternal/201009_globalstrategy_wch/en/index.html
5. EFDR. National reproductive health strategy 200-2015. AA: MOH; 2006.
6. CSA and ICF International Calverton. Ethiopia Demographic and health survey 2011. Addis Ababa, Ethiopia; 2012.
7. Davis J, Luchters S, Holmes W. Men and maternal and newborn health. 2013;(February).
8. UN. The Millennium Development Goals Report 2013. New York; 2013.
9. Gabrysch S, Campbell O. Still too far to walk: literature review of the determinants of delivery service use. BMC Pregnancy Childbirth. 2009;18:1–18.
10. Fitaw Y, Feleke A, Degu G, Yifru S, Admasu M, Bewketu H, et al. Safe motherhood. 1997;(April).
11. Rakibul Islam. Maternal Morbidity and Mortality among Indigenous People in Bangladesh : A Study of the Mru Community Maternal Morbidity and Mortality among Indigenous People in Bangladesh : A Study of the Mru Community Thesis Submitted by : Faculty of Social Sciences, University of Tromsø, Norway; 2010.
12. Wanjira C, Mwangi M. Delivery practices and associated factors among mothers seeking child welfare services in selected health facilities in Nyandarua South District, Kenya. BioMed Central Ltd; 2011;11(1):360.
13. Umurungi YS. Determinants of the utilisation of delivery services by pregnant women in Rwanda. 2010.
14. Dahal R. Factors Influencing the Choice of Place of Delivery among Women in Eastern Rural Nepal. Int. J. Matern. child Heal. 2013;1(2):30–7.

15. Nai-Adjei M. Factors contributing to low utilization of skilled delivery in Ahafo Ano South District Ashanti Region, Ghana. 2010;
16. Teferra A. associated factors among mothers who gave birth in the last 12 months in Sekela District, North West of Ethiopia: A community-based cross sectional study. *BMC Pregnancy Childbirth*. 2012;12(74):1–11.
17. Fikre AA, Demissie M. Prevalence of institutional delivery and associated factors in Dodota Woreda (district), Oromia regional state, Ethiopia. *Reproductive Health*; 2012 Jan;9(1):33.
18. Amano A, Gebeyehu A, Birhanu Z. Institutional delivery service utilization in Munisa Woreda, South East Ethiopia: a community based cross-sectional study. *BMC Pregnancy and Childbirth*; 2012;12(1):1.
19. Worku AG, Yalew AW, Afework MF. Factors affecting utilization of skilled maternal care in Northwest Ethiopia: a multilevel analysis. *BMC Int. Health Hum. Rights*. 2013 Jan;13:20.
20. Sugathan K, Mishra V, Retherford R. Promoting institutional deliveries in rural India: The role of antenatal-care services. 2001;(20).
21. Mayhew M, Hansen PM, Peters DH, Edward A. Determinants of Skilled Birth Attendant Utilization in Afghanistan: A Cross-Sectional Study. *Am. J. Public Heal*. 2008;98(10):1849–56.
22. Lwelamira J, Safari J. Choice of Place for Childbirth: Prevalence and Determinants of Health Facility Delivery Among Women in Bahi District, Central Tanzania. *Asian J. Med. Sci*. 2012;4(3):105–12.
23. Awoke W, Muhammed J, Abeje G. Institutional delivery service utilization in Woldia, Ethiopia. *Sci. J. Public Heal*. 2013;1(1):18–23.
24. An H, Siziya S. Choice of place for childbirth : prevalence and correlates of utilization of health facilities in Chongwe district , Zambia. *Med. J. Zambia*. 2002;35(2):53–7.
25. Kanini C. Utilization of skilled birth attendants among women of reproductive age in Central District, Kitui County. 2013;(September).
26. Abebe F, Berhane Y, Girma B. Factors associated with home delivery in Bahirdar , Ethiopia : A case control study. *BMC Research Notes*; 2012;5(1):1.
27. Esena RK, Sappor M. Factors Associated With The Utilization Of Skilled Delivery Services In The Ga East Municipality Of Ghana Part 2 : Barriers To Skilled Delivery. *Int. J. Sci. Technol. Res*. 2013;2(8):195–207.

28. Hazarika I. Women ' s Reproductive Health in Slum Populations in India : Evidence From NFHS-3. *J. Urban Heal.* 2009;87(2):264–77.
29. Moyer C, Mustafa A. Drivers and deterrents of facility delivery in sub-Saharan Africa: a systematic review. *Reproductive Health*; 2013;10(1):1.
30. Bhatta DN. Involvement of males in antenatal care , birth preparedness , exclusive breast feeding and immunizations for children in Kathmandu , Nepal. *BMC Pregnancy and Childbirth*; 2013;13(1):1.
31. Thapa DK. Woman ' s autonomy and husband ' s involvement in maternal health. 2012;
32. Iliyasu Z, Abubakar IS, Galadanci HS, Aliyu MH. Birth Preparedness , Complication Readiness and Fathers ' Participation in Maternity Care in a Northern Nigerian Community. 2010;14(1):21–32.
33. Ai O, Abe E, Oh O. Male and Community Involvement in Birth Preparedness and Complication Readiness in Benin City , Southern Nigeria. 2013;10(6):27–32.
34. Tweheyo R, Konde-lule J, Tumwesigye NM, Sekandi JN. Male partner attendance of skilled antenatal care in peri-urban Gulu district , Northern Uganda. 2010;
35. Turyakira E, Pettersson KO. Influence of Birth Preparedness , Decision-Making on Location of Birth and Assistance by Skilled Birth Attendants among Women in South-Western Uganda. 2012;7(4).
36. Yegomawork Gossaye, Negussie Deyessa , Yemane Berhane, Mary Ellsberg M, Emmelin, Meaza Ashenafi, Atalay Alem, Alemayehu Negash DK, Gunnar Kullgren UH. Women's Health and Life Events Study in Rural Ethiopia. *Ethiop. J. Heal. Dev.* 2003;17.
37. Biratu BT, Lindstrom DP. The influence of husbands ' approval on women ' s use of prenatal care : Results from Yirgalem and Jimma towns , south west Ethiopia. (401).
38. Abera M, Belachew T. Pridicators of safe delivery service utilization in Arsi Zone, South-East Ethiopia. *Ethiop. J. Heal. Sci.* 2011;12.
39. FDRE population and Census Comission. Summary and Statistical Report of the 2007 Population and Housing Census Results. Addis Ababa, Ethiopia; 2008.
40. Birmeta K, Dibaba Y, Woldeyohannes D. Determinants of maternal health care utilization in Holeta town , central Ethiopia. *BMC Health Services Research*; 2013;13(1):1.
41. Nanjala M, Wamalwa D. Determinants of Male Partner Involvement in Promoting Deliveries by Skilled Attendants in Busia , Kenya. 2012;4(2):60–7.

Annexes: Questionnaire

English version questionnaire for individual interview

Informed Consent Form for Quantitative survey questionnaires:

My name is ----- I am working as a data collector temporarily for post graduate student of Jimma University College of Medical Science. The objective of the present study is to assess factors institutional delivery in public health care facility.

During the interview you will be asked some short questions. Your answers will be recorded on a survey questionnaire. No personal identifiers will be attached/ recorded to the interview. All the data obtained will be kept strictly confidential by using only code numbers.

Your participation in the study is upon purely voluntary basis. The interview will be conducted individually and will take 20-30 minutes. During the interview (discussion) period, if you feel inconvenient, you can interrupt and clarify inconvenience, appoint to other time or even withdraw any time after you get involved in the study. Your honest and genuine participation in responding to the questions prepared is very important & highly appreciated. If you agree to participate in this study I will interview you.

Would you be willing to participate? Yes No

If yes, proceed. If no, thank and stop here. _____ (Signature of interviewer certifying that respondent has given Informed consent verbally).

General instruction: Circle the correct number which contains the answer from answer box or put the answer on the space provided.

Interviewer name: _____ **Interviewer code:**

Date: __/__/____ **Kebele name:** _____ **HH code:** _____

Part I: Questionnaires for women's.

Q#	Question	Option	Skip to Q#
1	Age in year at present (Years)		
2	Religion	Orthodox-----1 Muslim-----2 Protestant-----3 Catholic-----4 Other specify----88	
3	Ethnicity	Dawro-----1. Oromo-----2 Amhara-----3 Tigre-----4 Other specify----88	
4	Occupation	House wife-----1 Civil servant-----2 Merchant-----3 Farmer-----4 Daily labors-----5 Student's-----6 Other specify-----88	
5	Educational status	Illiterate-----1 Primary education (1-4)---2 Primary education (5-8)---3 Secondary education (9-12)---4 college and above-----5	
6	Number of family living together in HH?	_____	
7	Number of living children?	In numbers_____	
8	Your monthly income in ETB?		
9	Who decide on the use of house hold earnings?	Husband-----1 Women-----2 decide jointly-----3	
10	Do you have any health facility in your kebele?	Yes-----1 No-----2	
11	If yes for Q#10 type of health facility?	Health post-----1 Health center-----2	

		Hospital-----3 Others/specify_____88	
12	In general, how long would it take to reach this health facility? If less than 2 hours, record in minutes. Otherwise, record in hours.	Hours _____ Minutes _____ Don't know-----88	
11	Who in the family usually has the final say in making large household purchases?	Husband-----1 Women-----2 decide jointly-----3	
12	Who in your family usually has the making household purchases for daily needs?	Husband-----1 Women-----2 decide jointly-----3	
	Who in your family usually has the final say on visits to family or relatives?	Husband-----1 Women-----2 decide jointly-----3	

PERSONAL EXPERIENCE RELATED TO LAST PREGNANCY

In the next sets of questions, I am going to be asking about your experiences related to the pregnancy and child birth. I'd like to begin by speaking about your past obstetric history and continue to your last pregnancy that resulted in a baby.

Q#	Question	Codes	
1	Age at marriage?		
2	Age at first pregnancy?		
3	Gravidity/total number of pregnancy?		
4	Parity/total number of birth?		
5	History of abortion?	Yes-----1 No-----2	
6	History of still birth?	Yes-----1 No-----2	
7	History of neonatal death?	Yes-----1 No-----2	
8	Was your recent pregnancy planned?	Yes-----1 No-----2	
9	Have you discussed about your health with your husband during the most recent pregnancy?	Yes-----1 No-----2	
10	Did you attend ANC for your recent pregnancy?	Yes-----1 No-----2	
11	How many times in total did you receive antenatal care during your pregnancy? No. Of ANC visit	_____times Don't know/don't remember -----88	

12	How many months pregnant were you when you first attend antenatal care for this pregnancy?	Months _____ Don't know/don't remember -----88	
13	Was your husband present with you/to accompany you during any of your ANC visit?	Yes-----1 No-----2	
14	If ANC yes, during your visit did you receive any advice on the following issue?		
15	Where to go if you had danger signs of serious health problems?	Yes-----1 No-----2 IDK-----3	
	Where you should give birth to your baby?	Yes-----1 No-----2 IDK-----3	
	If No for ANC visit why did you not attend antenatal care? (Circle all responses given.)	Did not know where to go-----1 Health facility too far-----2 Too expensive-----3 No one was there to accompany----4 No good service-----5 Other (specify)_____88	
16	Where did you give birth to your last child?	Home-----1 Hospital-----2 Health center.-----3 Health post-----4 Other (specify)_____88	
17	Who assisted you during your delivery?	TTBAs-----1 Relatives-----2 HEWs-----3 Nurse-----4 Health officer-----5 Midwifery-----6 Other (specify)_____88	
18	Was your husband present with you during the delivery (whether it is at home or at the health facility)?	Yes-----1 No-----2	
19	If the delivery was in health facility, was your husband with you to the health facility?	Yes-----1 No-----2	
20	Do you think there is a difference in giving birth at home and health facility?	Yes-----1 No-----2 IDK-----3	

21	Can you tell me reasons why you gave birth in a health facility rather than elsewhere?	Clean-----1 Save mothers life-----2 No retain placenta-----3 No bleeding-----4 save child life-----5 shorten labor-----6 Other (specify)_____88	
22	Can you tell me the reasons why you did not give birth in a health facility?	Labor is too short-----1 Facility too far-----2 No transport-----3 Too expensive-----4 Services are poor-----5 Husband/family refused-----6 Feel shame-----7 Other (specify)_____88	
23	Where do you preferred to give birth for your next delivery?	Home-----1 Health facility-----2	
24	Who decides on place of your delivery?	Just me-----1 My husband-----2 Both-----3 TBAs-----4 Other specify_____88	
25	Where is your husband's preference place for your next delivery?	Home-----1 Health facility-----2	

Question to assess knowledge of women on pregnancy and delivery related complication

Q#	Question	Options	Skip to																																							
1	Are there some health problems that can occur during pregnancy that could endanger the life of a pregnant woman?	Yes—1 No-----2 Don't know-----87	→																																							
2	Can you mention obstetric problems that can occur during pregnancy? (Probe: ask for the problems which are not mentioned spontaneously)	<table style="width: 100%; border: none;"> <thead> <tr> <th></th> <th style="text-align: center;">Yes</th> <th style="text-align: center;">No</th> </tr> </thead> <tbody> <tr> <td>Bleeding -----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Severe headache-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Blurred vision-- -----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Convulsions -----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Swollen hands/face-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>High fever -----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Loss of consciousness-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Difficulty breathing-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Severe weakness-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Severe abdominal pain-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Reduced fetal movement-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Water breaks without labor-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		Yes	No	Bleeding -----	1	2	Severe headache-----	1	2	Blurred vision-- -----	1	2	Convulsions -----	1	2	Swollen hands/face-----	1	2	High fever -----	1	2	Loss of consciousness-----	1	2	Difficulty breathing-----	1	2	Severe weakness-----	1	2	Severe abdominal pain-----	1	2	Reduced fetal movement-----	1	2	Water breaks without labor-----	1	2	
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	What do you think the advantages of pregnancy and delivery related services?	<table style="width: 100%; border: none;"> <tbody> <tr> <td>For anticipating problems-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>For early detection of health Problems-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>For appropriate management of health problems-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>For better health care to the women-----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>For better care to the newborn -----</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Others/specify_____</td> <td style="text-align: center;">88</td> <td></td> </tr> </tbody> </table>	For anticipating problems-----	1	2	For early detection of health Problems-----	1	2	For appropriate management of health problems-----	1	2	For better health care to the women-----	1	2	For better care to the newborn -----	1	2	Others/specify_____	88																							
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Question to assess attitude on skilled delivery.

Q#	Attitude related questions	Options to answerer	Skip to
1	Any pregnant woman can develop delivery complication.	Agree----- 1 Disagree-----2 Neutral-----3	
2	Delivery complications can be dangerous for the health of the woman	Agree----- 1 Disagree-----2 Neutral-----3	
3	Delivery complications can't be dangerous for the health of the new born	Agree----- 1 Disagree-----2 Neutral-----3	
4	A woman should plan ahead of time where she will give birth	Agree----- 1 Disagree-----2 Neutral-----3	
5	A woman shouldn't plan ahead of time how to get to the place where she will give birth	Agree----- 1 Disagree-----2 Neutral-----3	
6	Every pregnant woman needs a skilled attendant at delivery.	Agree----- 1 Disagree-----2 Neutral-----3	
7	Being attended by male health professional during delivery is very shameful and unethical	Agree----- 1 Disagree-----2 Neutral-----3	
8	It is very shameful to deliver on delivery bed in labor ward	Agree----- 1 Disagree-----2 Neutral-----3	
9	Women do not go to health facility for delivery because it is too expensive	Agree----- 1 Disagree-----2 Neutral-----3	
10	Women do not go to health facility for delivery because the health worker do not treat them respectfully	Agree----- 1 Disagree-----2 Neutral-----3	

Part II: Questionnaire for husband.

Q#	Question	Option	Skip to Q#
1	Age in year at present (Years)	-----	
2	Religion	Orthodox-----1 Muslim-----2 Protestant-----3 Catholic-----4 Other specify----88	
3	Ethnicity	Dawro-----1. Oromo-----2 Amhara-----3 Tigre-----4 Other specify----88	
4	Respondent's occupation	Civil servant-----1 Merchant-----2 Farmer-----3 Daily labors-----4 Student's-----5 Other specify-----88	
5	Respondent's educational status	Illiterate-----1 Primary education (1-4)-----2 Primary education (5-8)-----3 Secondary education (9-12)--4 college and above-----5	
6	Your monthly income in ETB?		
7	Have you discussed about your wife health during the here most recent pregnancy?	Yes-----1 No-----2	
8	Have your wife receive ANC service on her most recent pregnancy?	Yes-----1 No-----2	
9	If she receives ANC, did you accompany your wife to HF for ANC visit?	Yes-----1 No-----2	
10	How many times you present with her in ANC visit to health facility?	Number of times.....	
10	If you don't accompany your wife what was the reason?	It is responsibility of woman's-- 1 I have more appropriate tasks to do-----2 Others specify-----3	
11	Did you plan the birth place for your recent child birth?	Yes-----1 No-----2	
12	If you plan for birth place where was your preferred place?	Home-----1 Health facility-----2	

13	Prior to this birth, did you make any arrangements for the birth of this child?	Yes-----1 No-----2	
14	What arrangement did you made for the birth of this child? More than answer is possible	Identify transport-----1 Save money-----2 Identify blood donor----3 Identify skilled provider-4 Other (specify)_____88	
15	Who do you want to assist your wife during delivery?	Health workers-----1 Mother-----2 Mother in-low-----3 HEWs-----4 TTBA-----5 Others_____88	
16	Who decides on place of delivery?	Just me-----1 My wife-----2 Both-----3 TBAs-----4 Other specify_____88	
17	What do you think about importance of giving birth in health facility over home delivery?	very important-----1 less important-----2 same as home-----3	
18	What are the benefits of delivery at HF?	Clean-----1 Save mothers life-----2 No retain placenta-----3 No bleeding-----4 save child life-----5 shorten labor-----6 Other (specify)_____88	
19	What are the benefits of delivery at Home?	No need of transport----1 There is privacy-----2 No cost-----3 No bleeding-----4 other (specify)_____88	

Date of Data collection_____

Name of Data collection_____

Code of Data collector_____

Signature of Data collector_____

Name and signature of supervisor_____

IV Questionnaire on local language

Ochewaa suntha: _____ **Ochewaa malata:** _____

Gallassa: ___/___/____ **Kabeliya suntha:** _____

Ketha payidowa: _____

Bagaa koyiro: Macca assa oyisha.

Q#	oyisha	dorrowaa	Oyish Q# aadha
1	Yeleta layitha (kumentha layitha)		
2	Ammanuwa	Orttodokisiya-----1 Islama-----2 Pentiya-----3 Kattolikiya-----4 Harra/gijeta----88	
3	Kommuwa	Dawrwa-----1. Oromowa-----2 Amhara-----3 Tigriya-----4 Harra/gijeta ----88	
4	Ossowa	Ketha ayoo-----1 Kawo ossancha-----2 Zala7anicha-----3 goshancha-----4 othi aqega-----5 Tamariya-----6 Harra/gijeta -----88	
5	Timrte detha	Tamiribenawa-----1 Koyiro detha (1-4)----2 Koyiro detha (5-8)---3 La7etha detha (9-12)---4 Collegene bolla-----5	
6	Kethani de7eya assa payidowa?	_____	
7	Natu payidowa?	Attuma nana _____ Macca nana _____	
8	Agenan demiya birra qoda?		
9	Agenan demiya birra ayisegi onne?	Assina-----1 Machewu-----2 Maquwan ittepe-----3	

10	Ente heran payetetha naguwa kethi de7i?	E77e-----1 Bawa-----2	
11	De7oppe ayi komoyi de7i?	Tena kella-----1 Tena tabiya-----2 Hospitaliya-----3 Harra komo_____88	
12	Ente gollepe payetetha kethayi woyisa kena haki?	saateni _____ daqiqan _____ ereko-----88	
11	Kethan woga mishatowa shama onee koffa kachewee?	Assina-----1 Machewu-----2 Maquwan ittepe-----3	
12	Kethan ubaa galla mishatowa shama onee koffa kachewee?	Assina-----1 Machewu-----2 Maquwan ittepe-----3	
	Kethan dabbowa/lageya achanawu onee koffa kachewee?	Assina-----1 Machewu-----2 Maquwan ittepe-----3	

Shaharetara gaketeda oshsha

Hawappe kalidi de7iya oshshatu ente sharatethara gakiteda gido gishawu oshsha marada zarite.

Q#	Oshsha	dorrowua	
1	Ne assina gelode affu layethe?		
2	Koyiro na sharode affu layithe?		
3	Hanno gakanawu affunawa sharadi?		
4	Hanno gakanawu affunawa yeladi?		
5	Shara Bosheta errayi?	E7ee-----1 Eerike ----2	
6	Hayoo na7a yella eerayi?	E7ee-----1 Eerike ----2	
7	Yeleti sa7ani hayo na7ayi erri?	E7ee-----1 Eerike ----2	
8	Ha7ii shara koya sharaddi?	E7ee-----1 Eerike ----2	
9	Shara macca assa payetetha tseletadi?	E7ee-----1 tseltawyike----2	

10	Tseletada gidoppe appu gede tseletadi? Tseleto qoda	_____gede akekike -----88	
11	Koyirowa tseletode appue agena share?	Agena _____ akekike -----88	
12	Payetetha tseletode ne asinayi nena na itepe de7iy?	E7ee-----1 Bawa-----2	
13	Apu kala nenera payetetha ketha yide?	Yeda qoda_____	
14	Na assina ne sharetethana oketeda yewota maketadi?	E7ee-----1 Maketa erike---2	
15	Payetetha kalada gidope payetetha assatu nena kaleya yewotuni makowa emedino?		
	Sharetethana gaketida yashiya malatatu beteyawode haqa baneto odedino?	E7ee -----1 oddiwbikino-----2 akekike-----3	
	Na haqan yelaneko odedino?	E7ee -----1 oddiwbikino-----2 akekike-----3	
16	Ayibas neni payetetha kalowa kalena agadi? (Circle all responses given.)	Haqan emitento errike-----1 Payetetha kethayi hako-----2 Gatiy ali7oo-----3 Etiye biya assayi bawa----4 Emetiya -----5 Haraa oda_____88	
17	Wursetha na7a hakan yeleda?	ketha-----1 Hospitalliya-----2 Tena tabiya.-----3 Tena kellani-----4 harrasan (oda)_____88	
18	Oni nena na7a yelisede?	Hilanchatun -----1 Dabota -----2 eksteshinatu -----3 Nursetu-----4 Payatetha awatu-----5 Yelencha ayeta-----6 harra (oda)_____88	
19	Ne assinayi ne yelode ne miye de7i (soyanika gido payetetha kethani)?	De7ee-----1 Bawwa-----2	
20	Soyani yelusane payetetha kethan yelusayi dumatethayi de7i?	De7ee-----1 Bawwa-----2 Akekike-----3	

21	Ayibassi payetetha ketha yelowasi doradinto tawu odani?	Gesha gidowasi-----1 Ayeya shenfowa nage-----2 Guyaba ele wodhises-----3 Sutha nagessi-----4 Nana shenfo nage-----5 Oyitha qamise-----6 harra (oda)_____88	
22	Ayibassi soyani yeladi ne?	Qanath oyitha-----1 Paytetha keta hakowa-----2 Camiya dhayota-----3 Gateya al7oo-----4 Emotayi lo7enna-----5 Assinayi degeda-----6 Yelayewassa -----7 harra (oda)_____88	
23	Hawape kalo yelewode haqani yelana koyayi?	Kethani -----1 Payetetha kethani-----2	
24	Ne yelana sa7a one qofa qachewe?	Tani-----1 Assinayi -----2 Maqoni itpee-----3 Here hilanchatu-----4 Harantu(oda)_____88	
25	Ne assinayi ne haqani yelanada koyi?	Kethani -----1 Payetetha kethani-----2	

Sharatethanane yelowa wodee betiya yasha malatatuwa errota oyshshata

Q#	oshsha	doruwaa	Skip to
1	Sharatetana gayitidi shahara macchsa shenfusi yashiya fayatetha metu gakanawu dandayiyaga erayi?	Ereayisss -1 erike -----2 Akekike-----87	→
2	Sharatetana gayitidi de7iya metotuphe odanawu dandayayi? (Lemisso: ereiyabatowa barewuka oddanayida madite)	<p style="text-align: right;">Erayi Erike</p> Suxetha ----- 1 2 Kehi daro huphe sako----- 1 2 Xella methowa-- ----- 1 2 Worraba ----- 1 2 Gediya/kushe gaffo----- 1 2 Keyi daro micha----- 1 2 Barena dogussa----- 1 2 Shenfiya methowa----- 1 2 Daro dabura----- 1 2 Daro ulo sakowa----- 1 2 Na7a katha bayusa----- 1 2 Ayife masowa ele giketha----- 1 2	
2	Oyithane yelowna gayitidi de7iya metotuphe odanawu dandayayi? (Lemisso: ereiyabatowa barewuka oddanayida madite)	Daro sutha guketha----- 1 2 Kehi daro huphe sako----- 1 2 Worraba ----- 1 2 Keyi daro micha ----- 1 2 Barena dogussa ----- 1 2 12 satiyappe adhida oyitha----- 1 2 Baga sa7atepe guyani guyabayi wodhena exetha ----- 1 2	
	Sharanane yelora emitaya madowa go7ethayi ayiba malati?	Nagetiya methowa eransi-----1 2 Metota ele shakanasi----- 1 2 Wodiyana metota bilanasi -----1 2 Macca assa payetetha naganiss-----1 2 Yeletiya na7aa payetetha naganassi--1 2 Hara /oda_____ 88	

Kanndowana gaketheda oshsha

Q#	Oshsha	doruwa	adhetha
1	Ubba shara macca assatuka shenfowa bayiziya metowa gaketana dandayino.	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
2	Yeletana oyketeda metoyi macca assa shenfowas etiban olana dandaye.	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
3	Yelewana wode medhethiya metoyi biro yeletiya na7aa qohanawu dandayena	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
4	Shara macca mishrata yelowa wodyisi halchuwa halchana koshawus.	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
5	Shara macca mishrata yelowa wodyisi yeliya sohhowa halchana koshawus.	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
6	Ubba shara maccatu tamarida loyanchata kusheni yelana koshino.	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
7	Attuma lohonchatu kusheni yelisuya herra marrepene wogappe kesseba	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
8	Payetetha kethani yelusayi daro pokoba	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
9	Shara maccutu payetetha kethani yelenawee gateyi daro gido gisha	Mayassi ----- 1 Mayike -----2 Gidolle -----3	
10	Shara maccutu payetetha kethani yelenawee lohanchatu bonchena gishassa	Mayassi ----- 1 Mayike -----2 Gidolle -----3	

Baga lae7entho atuma assa oyisha

Q#	Question	Option	Skip to Q#
1	Yeleta layitha (kumentha layitha)		
2	Ammanuwa	Orttodokisiya-----1 Islama-----2 Pentiya-----3 Kattolikiya-----4 Harra/gijeta----88	
3	Kommuwa	Dawrwa-----1. Oromowa-----2 Amhara-----3 Tigriya-----4 Harra/gijeta ----88	
4	Ossowa	Ketha ayoo-----1 Kawo ossancha-----2 Zala7anicha-----3 goshancha-----4 othi aqega-----5 Tamariya-----6 Harra/gijeta -----88	
5	Timrte detha	Tamiribenawa-----1 Koyiro detha (1-4)---2 Koyiro detha (5-8)---3 La7etha detha (9-12)---4 Collegene bolla-----5	
6	Ne kethayina shara gaketedaba maketa ereyi?	E7ee-----1 Errike -----2	
7	Ne kethayia shara paytetha kaluwa kalade?	E77e-----1 kalaweku-----2	
8	Payetetha kaladu gidoppe ne ezina itippe badi?	E7ee-----1 Baweke -----2	
9	Payetetha kaladu gidoppe appu tara kalade?	
10	Itippe baweke gidoppe ayibasse ne bawenawe?	Macca ssa osso gidgishawu- 1 Kitayi gathena gishawu----2 Hara (oda)-----3	
10	Ne macca assiya yeliya sohowa halchade errayi?	E7ee-----1 Halcha erike-----2	
11	Halchiyawaa gidoppe haqani yelanada halchadi?	soyani-----1 payetetha nago kethani--2	
12	Yeloppe kassena yelnassi madiyabata kunthadi/gigisadi?	E7ee-----1 Gigisaweyke -----2	

13	Ayi malabatuwa gigisadi?	Toga mishata-----1 Birra minjo-----2 sutha immiya assa----3 yelowa lohanchashako-4 hara oda_____88	
14	Ne macca assiya o7oo yelishada dorrayi?	Tamaro lohancha-----1 Ta daya-----2 Ta mache daya-----3 Eksteshinata -----4 Hera lohanchata-----5 Harayi _____88	
15	Yelowa sohowa dorrova o7oo qoffa qachi?	Tani -----1 Macca assiya-----2 Maqoni itippe-----3 Hera lohanchata-----4 Hara assayi_____88	
15	Payetetha nago kethani yelu woyissa kena go7essi gade qopayi?	Darope lo7aa-----1 Lappa lo7a-----2 Soyi yelope shako bawa-3	
16	Ayibassi daroppe lo7ee?	Gesha gidowasi-----1 Ayeya shenfowa nage---2 Guyaba ele wodhises----3 Sutha nagessi-----4 Nana shenfo nage-----5 Oyitha qamise-----6 harra (oda)_____88	
17	What are the benefits of delivery at HF?	Toga misha koshena ----1 Pokuwa nagessi-----2 Ccigi bantawasa-----3 Sutha nagesi-----4 harra (oda)_____88	

Ashshayi kumeda galassa_____

Oshsha kunthidaga suntha_____

Oshancha Malate _____

Kushe malata_____

Kaliyawa sunthane kushe mlata_____

DECLARATION

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

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Name of the institution: Jimma University

Date of submission: _____

This thesis has been submitted for examination with my approval as University advisor

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