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ENHANCING MATERNAL HEALTH IN RURAL ETHIOPIA: A CLUSTER-RANDOMIZED SOCIAL AND BEHAVIOR CHANGE COMMUNICATION INTERVENTIONS TRIAL TO OVERCOME BARRIERS TO INSTITUTIONAL CHILDBIRTH

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A PhD Dissertation Submitted to the School of Graduate Studies, Jimma University, in Partial Fulfillment of the Requirements for the Doctor of Philosophy Degree in Public Health, Specializing in Health Communication and Health Behavior

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DEDICATION

This dissertation is dedicated to my parents, Abebe Gebretsadik and Etse Mengesha. Despite lacking formal education, they instilled in me the values of unity, perseverance, and hard work, which have shaped my character and success. Although my father is no longer with us, his memory continues to guide and inspire me. I owe them my deepest gratitude for their sacrifices and love.

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Table of contents

Contents

MENTORS AND EXAMINATION BOARD ii

DEDICATION iii

ACKNOWLEDGEMENT iv

Table of contents v

List of Tables ix

List of figures x

List of Abbreviations xi

Abstract xiii

CHAPTER ONE: INTRODUCTION 1

1.1. Maternal Mortality: A Global Health Challenge 1

1.2. Global Initiatives of Maternal Health Service 3

1.3. The Need for Multi-Sectoral Approaches in Maternal Health 4

1.4. Maternal Health in Ethiopia: Progress and Persistent Challenges 6

1.5. Role of Religious Leaders in Maternal Health 8

1.6. Social and Behavior Change Communication (SBCC) Interventions Related to Childbirth 9

1.7. Government Interventions and Health Policies in Ethiopia 9

1.8. Significance of the Study 10

1.9. Conceptual Framework of the Study 12

CHAPTER TWO: RESEARCH QUESTIONS AND OBJECTIVES 14

2.1. Research Questions 14

2.2. Research Objectives 14

General Objective: 14

Specific Objectives: 14

CHAPTER THREE: METHODS AND MATERIALS 15

3.1. Study Settings and Period 15

3.2. Study Design and Data Collection Methods ... 16
3.3. Ethical Considerations ... 16
Study 1: Barriers to Use of Institutional Childbirth Services ... 17
Study Design and Participants ... 17
Inclusion and Exclusion Criteria ... 17
Data Collection ... 18
Data Analysis ... 18
Study 2: The Involvement of Religious Leaders in Supporting Institutional Childbirth ... 19
Inclusion and Exclusion Criteria ... 20
Study Design and Participants ... 20
Data Collection ... 20
Data Analysis ... 21
Study 3: Effectiveness of Targeted Social and Behavior Change Communication in Improving Maternal Health in Rural Ethiopia: A Cluster-Randomized Trial ... 21
Study Design and Participants ... 22
Sample Size Calculation ... 22
Study Participants and Sampling Procedures ... 23
Inclusion and Exclusion Criteria ... 23
Randomization and Blinding ... 24
Intervention Packages and Approaches for Community-Based Social and Behavior Change Communication (SBCC) for Maternal Health Improvement in Rural Ethiopia. ... 24
Usual Care ... 28
Operational Definition of Variables and Measurements ... 28
Data Collection and Quality Assurance ... 28
Data Analysis ... 29
CHAPTER FOUR: RESULTS ... 30
4.1. Barriers to Use of Institutional Childbirth Services ... 30
Results 30

Themes and subthemes.......... 30

The second theme that emerged was beliefs about pregnancy and childbirth. There were two subthemes: religious beliefs and cultural norms and women's lack of trust in healthcare professionals.......... 33

4.2. The Involvement of Religious Leaders in Supporting Institutional Childbirth.......... 37

Results 37

Theme 1: Awareness of Childbirth Practices.......... 40

Theme 2: Religious Beliefs.......... 41

Theme 3: Experience in Childbirth Preparedness.......... 43

Theme 4: Experience in Childbirth at a Health Institution.......... 44

Theme 5: Challenges to Childbirth at Health Institutions.......... 45

4.3. Effectiveness of Targeted Social and Behavior Change Communication in Improving Maternal Health in Rural Ethiopia: A Cluster-Randomized Trial in Jimma Zone.......... 46

CHAPTER FIVE.......... 52

5.1. Discussion.......... 52

5.2. Strengths and Limitations.......... 57

5.2.1 Strengths.......... 57

5.2.2. Limitations.......... 58

5.3. Implication of the study.......... 59

5.3.1. *Implications for Policy*.......... 59

5.3.2. Practical Implications of the Interventions.......... 59

5.3.3. Implications for Theory.......... 60

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS.......... 61

6.1. Conclusions.......... 61

6.2. Recommendations.......... 62

6.2.1. Policy Makers.......... 62

6.2.2. Community and Stakeholders.......... 62

6.2.3. Researchers.......... 62

Reference.......... 63

ANNEXES 87
Annex 1: CV of Ph.D. candidate 87
Annex 2: Letter for declaration of dissertation work 97
Annex 3: Qualitative Research Guidelines: English version 97
In-depth interview guide for midwifery nurse: 107
Focus Group Guide for Primary Health Care Unit or Maternal and Child Health Unit Head 111
Annex 4: Survey Questionnaires: English version 113
Annex 5: PCHA Intervention activities that have been conducted during home visits and pregnant women conference 134
Annex: 6: Training Manuals 136
Learning objectives 137
Learning Objectives 138
Learning Objectives 140
Annex 6A: Key Messages on pregnancy and pregnancy cares 145
Annex: 6B: Key Messages on Labor and Delivery Cares 147
Key Messages on Institutional Delivery 154
Annex 7: IRB Letter 158

List of Tables

Table 1: Participants' Socio-demographic Characteristics 31

Table 2: Themes, Subthemes, and Main Points 31

Table 3: Socio-Demographic Characteristics of Study Participants 38

Table 4: Socio-Demographic Characteristics of Study Participants at Baseline and End Line Studies 47

Table 5: Impact of the Intervention on Knowledge, Attitudes, ANC Visits, and Institutional Childbirth 49

Table 6: Generalized Estimating Equation Analysis of the Intervention's Effect on Institutional Childbirth 51

List of figures

Figure 1: Trends in global, regional and national maternal mortality (2001– 2020) [WHO, 2023] 2
Figure 2: Trends in Health Institution Childbirth Coverage in Ethiopia (2005–2019) [Mini EDHS 2019] 7
Figure 3: Coverage of health institution childbirth and attendance by skilled providers by regions in Ethiopia [Mini EDHS 2019]. 8
Figure 4: conceptual framework of the study 13
Figure 5 :Study area of the intervention [Jimma zone Health office] 15
Figure 6: A flowchart illustrating the trial profile, participant recruitment, randomization process, and outcome assessments of the SBCC intervention. 23
Figure 7: the mechanism by which the community based targeted SBCC implemented 27
Figure 8: Overview of the thematic results 40

List of Abbreviations

ANC	**Antenatal Care**
CFW	Conceptual Framework
CHA	Community Health Actors
CI	Confidence Interval
cRCT	Cluster Randomized Control Trial
EDHS	Ethiopian Demographic and Health Survey
EPHI	Ethiopian Public Health Institute
EPPM	Ending Preventable Maternal Mortality
FGD	Focused Group Discussions
GEE	Generalized Estimating Equations
HBM	Health Belief Model
HEP	Health Extension Program
HEWs	Health Extension Workers
HLM	Hierarchical Linear and Non-Linear Modeling
HSTP	Health Sector Transformation Plan
ICC	Intra-Cluster Correlation Coefficient
IDI	In-Depth Interviews
LMICs	Low and Middle Income Countries
MCH	Maternal and Child Health

MD	Mean Difference
MDGs	Millennium Development Goals
MMR	Maternal Mortality Rates
MoH	Ministry of Health
MWA	Maternal Waiting Area
ODK	Open Data Kit
PCBI	Participatory Community Based Intervention
PHCU	Primary Health Care Unit
PNC	Postnatal Care
SBCC	Social and Behavioral Change Communication
SD	Standard Deviation
SDG	Sustainable Development Goals
TBAs	Traditional Birth Attendants
TPB	Theory of Planned Behavior
UN	United Nations
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WDA	Women Development Army
WHO	World Health Organization

Abstract

Maternal mortality continues to be one of the most urgent global health challenges, particularly in low-income countries, which bear 95% of the global burden. While some progress was made in reducing maternal deaths between 2000 and 2015, recent trends show stagnation or even setbacks in certain regions, especially sub-Saharan Africa. Ethiopia, with its alarmingly high maternal mortality rate, is far from achieving the Sustainable Development Goal (SDG) target of reducing maternal deaths to 70 per 100,000 live births by 2030. This PhD dissertation offers a comprehensive evaluation of interventions aimed at reducing maternal mortality, focusing on improving institutional childbirth practices in rural Ethiopia.

The dissertation is based on three complementary studies, each addressing different aspects of maternal health interventions in the Jimma Zone of Oromia, Ethiopia. The first study explores the barriers to institutional childbirth by gathering qualitative insights from various stakeholders, including women, religious leaders, health extension workers, and healthcare providers. The second study investigates the role of religious leaders in promoting maternal health practices, particularly their influence on encouraging institutional childbirth. The third study assesses the effectiveness of a targeted social and behavior change communication (SBCC) intervention, which aimed to improve maternal health knowledge, attitudes, and behaviors, with a particular focus on antenatal care (ANC) attendance and institutional childbirth.

Study 1: Identifying Barriers to Institutional Childbirth

The first study utilized an exploratory qualitative case study design to identify barriers to institutional childbirth in rural Ethiopia. In 2019, 16 focus group discussions and 18 in-depth interviews were conducted with key stakeholders, including women of reproductive age, religious leaders, health extension workers, midwifery nurses, primary healthcare unit directors, and members of women's development armies. Purposive sampling was employed to ensure a diverse range of perspectives. The interviews and discussions were transcribed, translated into English, and analyzed using thematic analysis.

Five key themes emerged: (1) knowledge gaps regarding maternal health, (2) cultural beliefs and practices surrounding pregnancy and childbirth, (3) poor access to healthcare services, particularly in remote areas, (4) lack of essential resources such as medical supplies and skilled health personnel, and (5) limited community involvement in promoting institutional childbirth.

These barriers underline the multifaceted challenges women face in accessing skilled birth assistance at health facilities. The study highlights the need to target cultural beliefs and norms that hinder institutional childbirth, as well as the importance of improving healthcare infrastructure and ensuring equitable distribution of resources and healthcare personnel.

Study 2: The Role of Religious Leaders in Promoting Institutional Childbirth

The second study examined the involvement of religious leaders in maternal health promotion, focusing on their role in encouraging institutional childbirth in rural Ethiopia. Religious leaders hold significant influence within Ethiopian communities, and their power to shape health-related behaviors, including maternal health, is well-established. This study sought to explore how religious leaders can contribute to promoting safer childbirth practices and improving maternal health service outcomes.

In-depth interviews were conducted with 24 male religious leaders from various denominations in the Jimma Zone. Thematic analysis of the interviews revealed five key themes: (1) religious leaders' awareness of childbirth practices, (2) religious beliefs related to pregnancy and childbirth, (3) experiences in promoting childbirth preparedness, (4) interactions with health institutions, and (5) challenges faced in encouraging institutional childbirth. The findings suggest that, although religious leaders have the potential to positively influence community attitudes toward institutional childbirth, their efforts are often hindered by insufficient awareness and limited engagement with formal healthcare services.

The study emphasizes the importance of integrating religious beliefs into culturally sensitive maternal health interventions. Enhancing collaboration between healthcare providers and religious leaders, as well as providing targeted training for religious figures on maternal health issues, is crucial for improving maternal health health service outcomes. By leveraging the influence of religious leaders, women's development armies, and health extension workers, it is possible to align cultural beliefs with modern healthcare practices and increase the use of institutional childbirth services in rural Ethiopia.

Study 3: Evaluating the Effectiveness of SBCC Intervention

The third study used a community-randomized trial design to evaluate the impact of a targeted SBCC intervention across three districts in the Jimma Zone. A total of 5,057 women participated in the study, with 16 primary healthcare units randomly assigned to either the intervention group (which received the SBCC intervention) or a control group (which received usual care). The

SBCC intervention included communication campaigns, community-based awareness programs, and training for healthcare providers. The primary outcomes assessed included maternal health knowledge, attitudes toward ANC and institutional childbirth, the number of ANC visits, and the rate of institutional childbirth. Data were collected at both baseline and endline, with statistical analyses employing t-tests, effect size calculations, and generalized estimating equations.

The results showed significant improvements in the intervention group across all measured outcomes. Knowledge scores increased from 5.68 to 7.70 ($p < 0.001$, effect size = 0.34), and maternal health attitudes improved from 37.49 to 39.73 ($p < 0.001$, effect size = 0.29). The number of ANC visits increased from 3.27 to 4.21 ($p < 0.001$, effect size = 0.50), and the proportion of women delivering in health institutions rose from 0.52 to 0.71 ($p < 0.001$, effect size = 0.18). Further analysis revealed that ANC attendance ($B = 0.082$, $p = 0.002$) and positive maternal attitudes toward childbirth ($B = 0.055$, $p < 0.001$) were significant predictors of institutional childbirth. These findings highlight the effectiveness of community-based SBCC interventions in improving maternal health and increasing the utilization of institutional childbirth in rural Ethiopia.

Conclusions and Implications

This dissertation underscores the crucial role of community-based interventions, including SBCC and the involvement of religious leaders, in promoting institutional childbirth and improving maternal health service outcomes in rural Ethiopia. The findings from the three studies illustrate the importance of culturally sensitive interventions that address both attitudinal barriers and structural challenges to accessing skilled maternal healthcare. The SBCC intervention demonstrated significant improvements in maternal health knowledge, attitudes, ANC utilization, and institutional childbirth rates, providing a model for future maternal health promotion initiatives. However, overcoming deeply ingrained cultural beliefs and ensuring equitable access to healthcare resources remain significant obstacles. To meet the SDG 3 target of reducing maternal mortality in Ethiopia, a multifaceted approach is required, including strengthening healthcare infrastructure, improving attitudes and access to skilled birth assistance, addressing cultural and religious barriers to institutional childbirth, and fostering partnerships between healthcare providers and community leaders, especially religious figures. By implementing these strategies, Ethiopia can make significant progress toward reducing maternal mortality and

improving maternal health service outcomes, contributing to global efforts to safeguard the health and well-being of mothers and newborns.

Keywords: Social and Behavior Change Communication (SBCC), Maternal Mortality, Knowledge, Attitude, Religious Leaders

CHAPTER ONE: INTRODUCTION

The Sustainable Development Goals (SDGs), launched on September 25, 2015, outline a commitment period through December 31, 2030, with SDG 3 focusing on promoting health and well-being for all ages. Building on the Millennium Development Goals (MDGs), SDG 3 aims to reduce global maternal mortality to fewer than 70 per 100,000 live births by 2030. However, progress remains slow in low- and middle-income countries, highlighting the need for locally relevant strategies to improve maternal health outcomes. Integrating such strategies is crucial for achieving the 2030 targets and advancing maternal health (1-6)

1.1. Maternal Mortality: A Global Health Challenge

Maternal mortality continues to be a grave issue, with 287,000 women losing their lives to pregnancy and childbirth complications in 2020 globally. This crisis predominantly affects low-income countries, which account for 95% of these largely preventable deaths. Alarmingly, Sub-Saharan Africa and Southern Asia together contribute to 87% of the global maternal mortality rate, with Sub-Saharan Africa alone representing 70% (5, 7).

Efforts to address maternal mortality in developed nations began effectively in the early 1900s. However, it was not until the late 1970s that maternal and child health emerged as a critical global agenda for low-income countries (8, 9). Between 2000 and 2020, some regions achieved remarkable reductions in maternal mortality rates (MMR). Eastern Europe reduced its MMR by 70%, from 38 to 11, and Southern Asia saw a 67% reduction, from 408 to 134 (5, 10-13).

Despite persistently high MMR, sub-Saharan Africa made notable progress, reducing its MMR by 33% from 2000 to 2020. Four SDG sub-regions, including Eastern Africa, saw a 50% decline, while least-developed countries achieved nearly a 50% reduction. Small island developing states recorded a 19% decrease (14, 15).

In 2020, the World Health Organization reported that nearly 800 women died each day from preventable maternal and child health (MCH) complications. This equates to one maternal death every 120 seconds, with approximately 287,000 maternal deaths that year alone, reflecting persistently high maternal mortality levels (16-18).

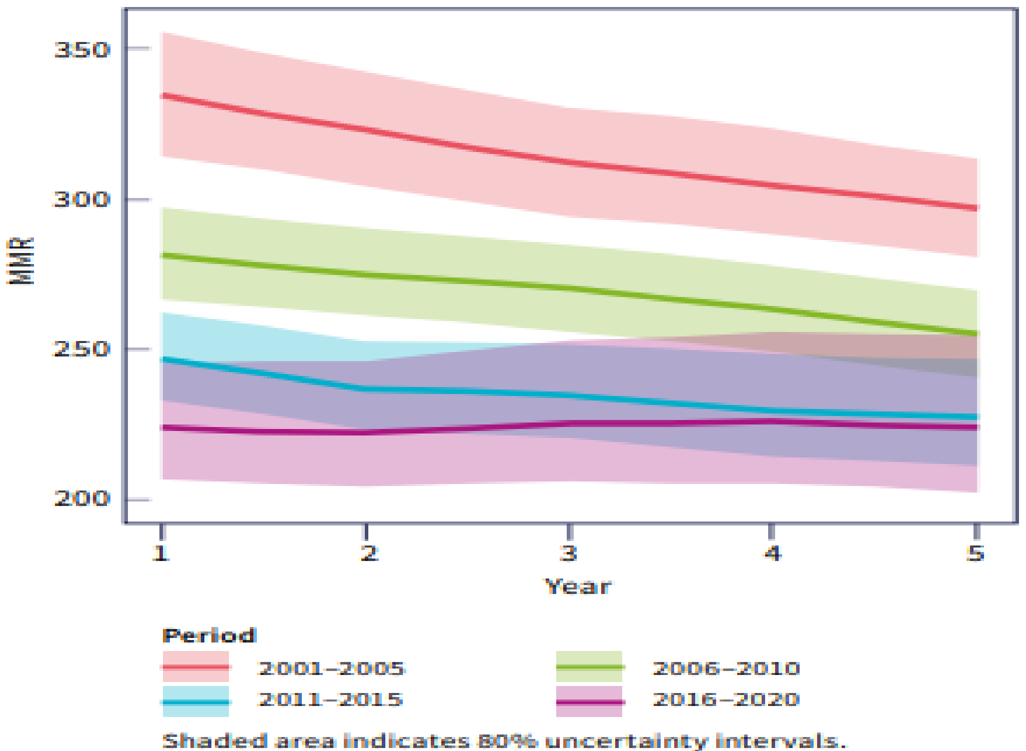


Figure 1: Trends in global, regional and national maternal mortality (2001– 2020) [WHO, 2023]

The World Health Organization (WHO) identifies institutional childbirth, attended by skilled birth attendants, as a pivotal intervention for preventing maternal mortality. Evidence from various studies supports this recommendation, indicating that about 75% of pregnancy and childbirth complications can be effectively managed by skilled birth attendants in health institutions. Such skilled care is crucial for reducing the risks associated with childbirth (19-21). However, despite its importance, the utilization of skilled birth attendance in SSA remains low, with Ethiopia reporting only 30.8% of deliveries occurring in health institutions (22-24).

This low rate of institutional deliveries reflects broader systemic and socio-economic challenges that hinder access to quality maternal healthcare. Despite various global and national efforts to increase access to skilled delivery services, the rate of progress in reducing maternal mortality has significantly slowed since 2016. This stagnation emphasizes the need for comprehensive strategies that address both healthcare access and socio-economic barriers to improve maternal health outcomes effectively (25-27).

1.2. Global Initiatives of Maternal Health Service

Over the past century, significant strides have been made in reducing maternal mortality, thanks to the concerted efforts of countries and international organizations. These advancements have been driven by the creation of robust strategies that involve the development of new legislation, the implementation of maternal health policies, and the establishment of critical infrastructure. Key among these initiatives are improved health information systems, enhanced professional standards for healthcare workers, and data collection frameworks that enable better tracking of maternal health outcomes (14, 16, 28, 29). These foundational measures have collectively contributed to substantial progress in many regions, yet challenges remain, particularly in low-resource settings.

The Ending Preventable Maternal Mortality (EPMM) strategy, launched by the World Health Organization, exemplifies the global commitment to addressing maternal mortality comprehensively (6). The EPMM strategy is a coordinated international effort designed to meet ambitious global health goals by 2025 and beyond. This initiative sets forth specific objectives aimed at improving maternal health outcomes worldwide. Among these goals are ensuring that 90% of women attend at least four antenatal care (ANC) visits, with the goal of increasing this figure to eight visits by 2030. Additionally, the strategy aims to ensure that 90% of births are attended by skilled health professionals to safeguard maternal and neonatal outcomes. Postnatal care is also a critical component, with a target of 80% of women receiving care within 48 hours of giving birth. Moreover, the EPMM strategy emphasizes that 60% of women should have access to emergency obstetric care within two hours of travel, while 65% should be empowered to make informed decisions about their reproductive health, particularly in relation to sexual and reproductive rights (14, 16, 28-30).

Despite the progress driven by initiatives like EPMM, maternal mortality remains a pressing challenge, especially in low-income countries where healthcare systems face significant limitations. Accessible, sustainable solutions are still out of reach for many communities in these regions, as healthcare infrastructure often lacks the necessary resources to meet the growing demand for maternal services. As a result, achieving the ambitious goals set by the global health agenda requires that maternal health continue to be a central focus in the post-2015 Sustainable Development Goals (SDGs). In particular, efforts must prioritize improving the continuity of

care throughout pregnancy, increasing the availability of skilled antenatal care, promoting facility-based deliveries, and ensuring timely access to postnatal services (31-34).

Global maternal health strategies have consistently highlighted the need for targeted and culturally sensitive interventions. It is clear that tailored approaches, designed to address the specific needs of different regions, are crucial for reducing maternal mortality and morbidity. The success of these strategies, however, hinges on widespread community engagement and the active participation of local populations. Only by ensuring that maternal health interventions are contextually relevant and locally embraced can the global community hope to achieve the desired outcomes. Strengthening health systems through focused, context-specific actions, and fostering a sense of shared responsibility will be critical in transforming maternal health on a global scale. Achieving these long-term objectives requires sustained collaboration, investment, and innovation to ensure that no woman dies needlessly from preventable maternal causes (31-33, 35).

1.3. The Need for Multi-Sectoral Approaches in Maternal Health

In recent decades, global policies have been directed at improving Maternal and Child Health (MCH) services. However, these initiatives have often been criticized for insufficient community involvement and a focus on resource-intensive solutions, such as building hospitals and acquiring medical equipment (36-39). International efforts primarily emphasized high-level collaborations that revolved around financial and technical assistance but did not fully address the unique cultural and social challenges in low-income regions.

Recognizing the need for a more comprehensive, multi-sectoral approach to antenatal care (ANC) and institutional delivery, researchers began exploring ways to effectively engage communities and stakeholders. However, evidence supporting these mechanisms remains limited, resulting in cultural resistance and low acceptance of MCH interventions, particularly in low-income countries (40-42). To overcome these barriers, a variety of strategies have been developed, including policy-based, health facility-based, social institution-based, community-based, and individual-based interventions (14, 27, 28).

While policy and health institution-level strategies have yielded success in developed nations, their impact in countries like Ethiopia—where many births still take place at home—is often

limited. In these settings, community-based interventions have proven more effective in encouraging maternal health service use throughout pregnancy, childbirth, and the postnatal period. These community-led strategies include health institution-based individual or group targeting, home visitation programs, professional and peer counseling, and women's group discussions, which all contribute to improving maternal health outcomes (14, 28).

Community engagement plays a pivotal role in the success of these interventions. Human behavior is influenced by social networks, norms, and broader societal systems (14, 27, 28). By actively involving community members, a sense of collective efficacy and empowerment can be fostered, leading to the adoption of new health behaviors. Stakeholders such as residents, faith-based organizations, public institutions, and social groups enhance access to healthcare services, promoting more equitable healthcare delivery—particularly in low- and middle-income countries (LMICs) (32, 33, 43).

The Community-Based Intervention (CBI) approach is instrumental in acknowledging the role of community systems beyond formal healthcare services. Community engagement through participatory methods has demonstrated success in various health programs, including those targeting maternal and child health, gender issues, HIV prevention, malaria control, breastfeeding, nutrition, and mental health (33, 43). As a result, both global and national actors are now advocating for strategies like participatory learning and action to promote the uptake of skilled care during ANC and health facility deliveries (14, 28).

Participatory Community-Based Interventions (PCBI) represent an evidence-based, theory-driven method that utilizes communication strategies to address psychosocial, cultural, and environmental factors influencing behaviors (14, 27, 28, 32). Through Information, Education, and Communication (IEC), Behavior Change Communication (BCC), and Social and Behavior Change Communication (SBCC), PCBI approaches are particularly promising for encouraging health facility births in low-income communities (14, 28, 43).

Building on previous initiatives, PCBI has become increasingly essential in promoting maternal and child health, particularly in areas like ANC and health facility childbirth. By leveraging the power of communities and social networks, these interventions can drive behavior change at individual, household, and community levels. The active participation and collaboration of

stakeholders through participatory approaches illuminate the path toward achieving Sustainable Development Goals (SDGs) by improving institutional childbirth rates and maternal health outcomes.

Moreover, participatory teaching and learning methods encourage active community involvement, integrative learning, and the development of both knowledge and skills. Training initiatives can address perceptions of MCH services, sources of health information, service preferences, safety concerns, and decision-making processes (44-48). PCBI utilizes a variety of communication methods—ranging from local leaders to mass media and interpersonal communication—to reshape community attitudes and behaviors, leading to improved health outcomes (49-55).

1.4. Maternal Health in Ethiopia: Progress and Persistent Challenges

Ethiopia was among the first African nations to adopt the Primary Health Care (PHC) strategy in the late 1970s. This early initiative showcased the government's commitment to addressing the country's substantial health challenges. However, despite this early adoption, the PHC implementation encountered significant barriers, such as weak governance, centralized management, and fragmented service delivery (56-58). These structural challenges have hindered Ethiopia’s efforts to achieve comprehensive health coverage, even with a robust foundational framework established decades ago (59-61).

In the 1990s, Ethiopia introduced the National Health Policy (NHP), a significant step aimed at revitalizing the health sector. This policy was accompanied by the Health Sector Development Program (HSDP), a 20-year strategy designed to strengthen the country's healthcare infrastructure and improve service delivery across diverse regions (27, 62-65). Although these initiatives were well-intentioned, persistent issues with management and the integration of services have continued to limit their overall impact, particularly in rural areas where access to healthcare is most critical.

A significant advancement came in 2003 with the launch of the Health Extension Program (HEP), a cornerstone of Ethiopia's health strategy. The HEP focuses on community-based health promotion and preventive care, particularly in rural areas. This program has increased community engagement and improved health education. However, access to curative services,

especially skilled care for maternal and child health, remains inadequate (21, 66, 67). Addressing this gap is essential for Ethiopia to overcome the enduring challenges in its healthcare system.

Ethiopia has made notable strides in reducing maternal mortality over the past two decades. The maternal mortality rate decreased from 871 deaths per 100,000 live births in 2000 to 421 in 2016. However, the 2022 maternal mortality rate of 267 per 100,000 live births remains alarmingly high, ranking among the highest globally (5, 15, 16). Although efforts like the HEP and the introduction of maternal waiting homes (MWHs) have contributed to this progress, substantial barriers to accessing maternal healthcare continue to persist, particularly in remote and rural areas (68-71).

Strengthening maternal health in Ethiopia will require continued efforts to improve healthcare infrastructure, ensure the availability of skilled personnel, and bridge the gap between community-based preventive care and access to curative services.

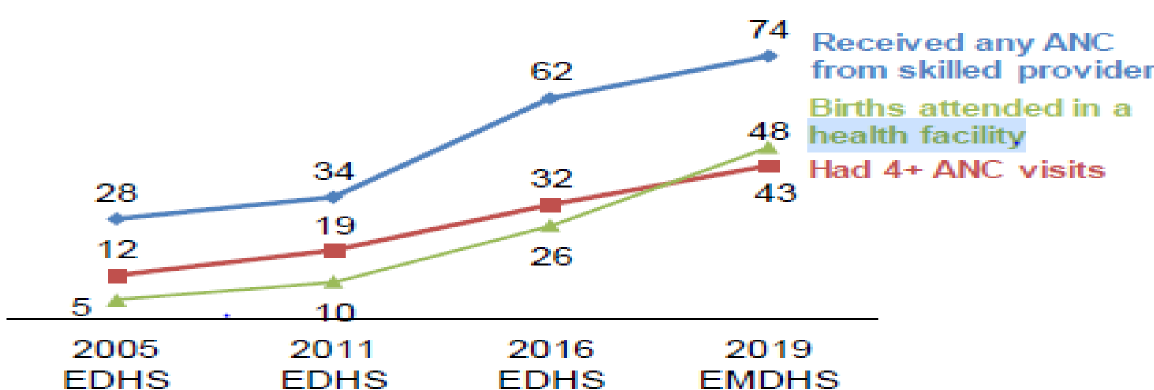


Figure 2: Trends in Health Institution Childbirth Coverage in Ethiopia (2005–2019) [Mini EDHS 2019]

Rural areas, where more than 80% of Ethiopia’s population lives, face profound healthcare challenges. The percentage of women giving birth in health facilities is considerably lower in rural areas compared to urban areas. In rural Ethiopia, only around 40% of births occur in health institutions, highlighting the persistent geographic and socio-cultural barriers to accessing maternal care (27, 72). These disparities are exacerbated by logistical obstacles such as inadequate transportation, limited financial resources, and underdeveloped infrastructure, further restricting access to essential maternal health services (73-76).

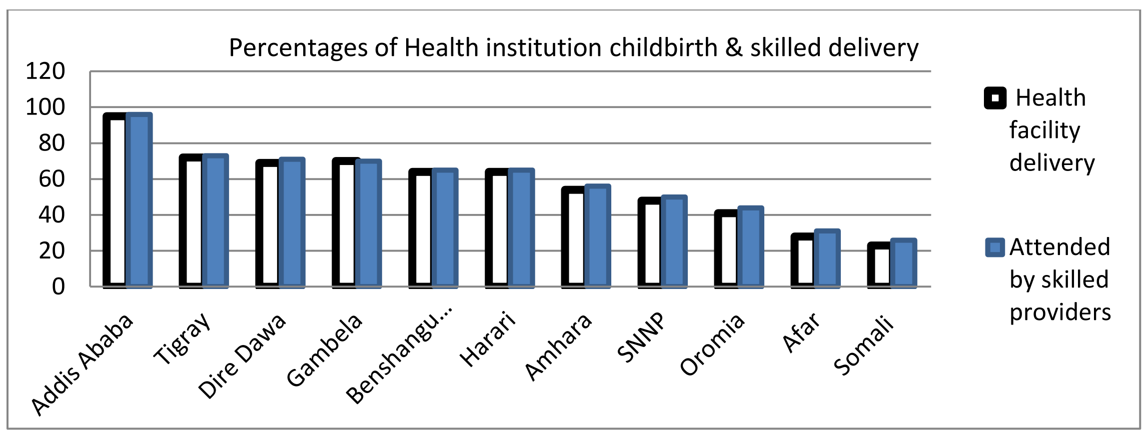


Figure 3: Coverage of health institution childbirth and attendance by skilled providers by regions in Ethiopia [Mini EDHS 2019].

Traditional beliefs and cultural norms continue to play a significant role in shaping maternal health behaviors. In many rural communities, childbirth is viewed as a natural event that is best managed at home by traditional birth attendants. These cultural perceptions, combined with religious beliefs, often discourage institutional childbirth, despite the known benefits of skilled care (77-79). To improve maternal health outcomes, interventions must address these deeply entrenched practices and encourage greater utilization of health services (47, 80-83).

1.5. Role of Religious Leaders in Maternal Health

Religious institutions are deeply woven into the societal fabric of Ethiopia, with 99% of the population identifying with a religious faith. In rural areas, where state healthcare services are often limited, religious leaders wield significant influence over community norms, values, and health practices (84-87). Their authority extends to maternal health, where their guidance shapes decisions related to antenatal care, childbirth preparedness, and the choice between home delivery and institutional childbirth. Religious leaders' perspectives often determine whether families opt for health facility deliveries or home births, reflecting the profound impact of religious beliefs on maternal health-seeking behaviors (88-90).

Despite their potential to advocate for institutional childbirth, religious leaders' engagement in maternal health interventions remains underexplored. Studies suggest that involving religious leaders in public health initiatives can enhance community participation and lead to improved health outcomes, particularly in resource-constrained environments (91-93). Their trusted position within communities provides a unique opportunity to address the socio-cultural barriers

that impede access to health facilities during childbirth. Religious leaders, therefore, hold the potential to play a crucial role in promoting institutional childbirth and improving maternal health outcomes in rural Ethiopia. By actively engaging them, public health initiatives could harness their influence to foster culturally sensitive approaches to maternal care, ultimately bridging the gap between traditional practices and modern healthcare services (94, 95).

1.6. Social and Behavior Change Communication (SBCC) Interventions Related to Childbirth

Social and Behavior Change Communication (SBCC) interventions are critical strategies designed to influence behaviors and improve health outcomes through targeted communication efforts. These interventions prioritize understanding the audience's needs and motivations, tailoring messages to address specific cultural beliefs, social norms, and contextual factors. SBCC encompasses diverse methods, including media campaigns, community engagement activities, and educational workshops (96-98).

SBCC strategies are essential tools for overcoming cultural and social barriers to institutional childbirth. These strategies aim to shift community attitudes, beliefs, and behaviors by delivering targeted messaging, facilitating community dialogues, and engaging key stakeholders such as religious leaders, health extension workers, and community health volunteers (99-102). These interventions enhance awareness of the benefits of institutional childbirth, improve maternal health knowledge, and promote positive health-seeking behaviors among pregnant women (103-105).

In Ethiopia, SBCC interventions have been implemented as part of broader maternal health strategies, focusing on engaging religious leaders and community health actors to promote institutional childbirth (50, 100, 106).

1.7. Government Interventions and Health Policies in Ethiopia

The Ethiopian government has implemented several initiatives to reduce maternal mortality, most notably the Health Extension Program (HEP) launched in 2004. This program is designed to deliver basic healthcare services at the community level, particularly in rural areas where access to medical facilities is limited. Through the HEP, the government has aimed to increase health service coverage by training and deploying Health Extension Workers (HEWs) to promote

maternal and child health services. Complementing the HEP, the Women's Development Army (WDA) was established to enhance community health by fostering positive health-seeking behaviors among women, emphasizing the importance of antenatal care, skilled childbirth, and postnatal care (107-109).

Despite these efforts, the utilization of maternal health services in rural communities remains low, as traditional practices, cultural norms, and logistical barriers continue to dominate maternal health decisions. In response, maternal waiting homes (MWHs) have emerged as a vital intervention to address geographic obstacles. These homes provide pregnant women, particularly those in remote or underserved areas, with accommodation near health institutions as they approach their due dates. This proximity allows for timely access to skilled birth attendants, helping to reduce the risks associated with childbirth in rural settings (68, 110, 111).

Additionally, the introduction of Community-Based Health Insurance (CBHI) seeks to alleviate financial barriers, making healthcare services more accessible to low-income families and encouraging the use of health facilities for delivery. By reducing the out-of-pocket costs for maternal services, CBHI aims to remove financial obstacles that often prevent women from seeking institutional care during childbirth (112-114). While these interventions have collectively improved access to maternal health services, the low uptake of institutional delivery remains a challenge. This underscores the need for more targeted strategies that address both socio-cultural and logistical barriers, particularly in rural Ethiopia, where home births are still prevalent and traditional practices often overshadow formal healthcare options (115, 116).

1.8. Significance of the Study

In 2015, the International Development Research Centre, the Canadian Institutes of Health Research, and Global Affairs Canada launched the IMCHA Initiative (Innovating for Maternal and Child Health in Africa) to enhance maternal, newborn, and child health outcomes by strengthening health systems. Implementation research teams from across Africa collaborated with Canadian researchers to develop strategies for improving access to healthcare and scaling up these interventions.

My research was part of a larger study funded by the IMCHA Initiative, known as "The Safe Motherhood Project." This project's primary objective was to evaluate interventions addressing

individual, social, and geographic barriers to safe motherhood using both quantitative and qualitative data. Two key interventions—social and behavior change communication and enhanced maternity waiting areas (MWAs)—were developed and assessed. My contributions included intervention design, developing data collection tools, calculating sample sizes, and analyzing trial outcomes, detailed in subsequent sections.

Despite various interventions and policies aimed at reducing maternal mortality in Ethiopia, significant barriers to institutional childbirth persist, particularly in rural areas. One notable barrier is the influence of religious leaders on maternal health practices. This study seeks to explore the role of community actors, namely, health extension worker, women development army and religious leader, in promoting institutional childbirth in rural Ethiopia, addressing a gap in their engagement in maternal health initiatives despite their significant influence over community health behaviors.

By employing two qualitative studies and one quantitative study, this research aims to deeply investigate the socio-cultural, religious, and structural factors influencing maternal health-seeking behaviors and childbirth practices. The studies assess the barriers to institutional childbirth and the role of religious leaders, and then evaluate the effectiveness of targeted community-based social and behavior change communication (SBCC) interventions in promoting childbirth at health institutions. This comprehensive methodology enables a detailed understanding of how individual knowledge, attitudes, religious beliefs, cultural norms, and structural elements intersect with health practices, providing critical insights into the barriers and facilitators to institutional childbirth. By involving key community actors, including religious leaders, health extension workers, and women's development army members, the SBCC intervention aims to shift attitudes and behaviors toward favoring institutional delivery.

The findings from this study are expected to contribute valuable evidence to inform future maternal health interventions and policies, particularly those targeting rural and underserved populations. These insights are essential for crafting culturally sensitive and contextually relevant strategies to address the complex factors influencing maternal health outcomes. By leveraging the influence of community health actors, and employing targeted SBCC interventions, Ethiopia can significantly reduce maternal mortality and improve maternal health

outcomes, ultimately contributing to the broader goal of safeguarding the health and well-being of mothers and newborns.

1.9. Conceptual Framework of the Study

Various theories and models explain health care utilization at the individual, interpersonal, and community levels. Anderson's behavioral model is widely known, identifying predisposing and enabling factors as key determinants of health care use. Predisposing factors include socio-demographic characteristics (e.g., age, education, occupation, income, and religion) and health-related experiences (117-120).

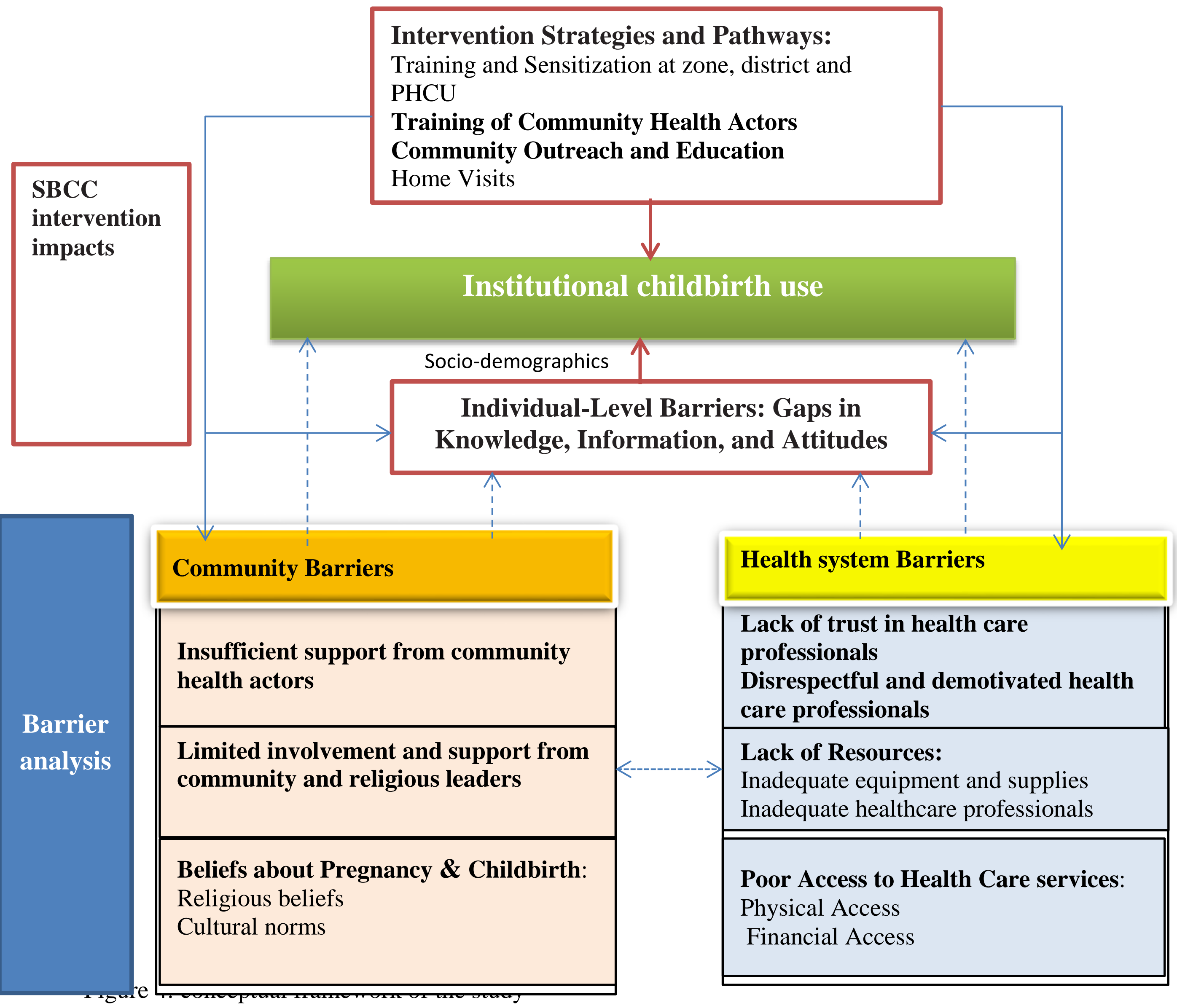
Two main hypotheses explain how knowledge and attitudes change in health contexts. The knowledge-attitude-behavior (KAB) hypothesis suggests that increasing knowledge leads to changes in attitudes, which subsequently influence behavior. As individuals acquire more information about health issues, they are likely to develop positive attitudes that encourage healthier behaviors (121-124). The social influence hypothesis highlights the role of social factors such as peers, family, community leaders, and media in shaping knowledge and attitudes (125-127).

These hypotheses underscore a critical interplay between knowledge, attitudes, and behaviors, revealing the profound impact that education and social influences can have on health promotion. The KAB hypothesis suggests that knowledge alone can set off a chain reaction—first by reshaping individual attitudes and then by altering behaviors. However, the social influence hypothesis expands on this by emphasizing that personal knowledge and attitudes are not developed in isolation but are deeply influenced by the social environment. Key figures within communities, such as family members, peers, and respected religous leaders, can act as catalysts for widespread behavioral change.

When these influencers model or endorse healthy behaviors, their actions reverberate throughout the community, reinforcing and amplifying the message of health education. This highlights not only the necessity of disseminating accurate health information but also the strategic importance of engaging and leveraging social networks to maximize the impact of health interventions. Together, these hypotheses reveal that health promotion efforts must extend beyond individual

education to encompass broader social dynamics, recognizing the powerful role that collective influences play in shaping and sustaining public health outcomes.

Building on these hypotheses, along with strong bonding ties, directly influence knowledge, attitudes, and beliefs regarding health institution childbirth. These dynamics play a more substantial role in predicting health institution childbirth (128-133), particularly in Ethiopia, where this area remains underexplored. Based on the literature reviews and the intervention of the project of the study a conceptual framework is prepared for the study as of the following:



CHAPTER TWO: RESEARCH QUESTIONS AND OBJECTIVES

2.1. Research Questions

Research Question 1**:** What are the key barriers preventing women in rural Jimma Zone, Ethiopia, from utilizing institutional childbirth services?

Research Question 2**:** How do religious leaders in rural Jimma Zone influence community attitudes and practices related to institutional childbirth, and what are the challenges they face in promoting these services?

Research Question 3: What is the effectiveness of a targeted Social and Behavior Change Communication (SBCC) intervention in increasing institutional childbirth rates, improving maternal health knowledge, and changing attitudes in rural Jimma Zone, Ethiopia?

2.2. Research Objectives

General Objective:

To improve maternal health service utilizations in rural Ethiopia by addressing barriers to institutional childbirth, involving religious leaders in promoting childbirth at health institution, and evaluating the impact of community-based SBCC interventions on maternal health service utilizations.

Specific Objectives:

1. To explore barriers to childbirth at health institutions.
2. To investigate the importance of involving religious leaders in promoting childbirth at health institutions.
3. To evaluate the effectiveness of targeted SBCC interventions on maternal knowledge, attitudes, and practices related to childbirth at health institutions.

CHAPTER THREE: METHODS AND MATERIALS

3.1. Study Settings and Period

The research was conducted between May 2016 and June 2019 across three districts, (namely, Seka-Chekorsa, Kersa and Gomma), within the Jimma Zone. This study is part of the evaluation of the Community-Based SBCC intervention, under the Innovating for Maternal and Child Health in Africa (IMCHA) Safe Motherhood Project site in the Oromia Regional State, located in Southwest Ethiopia.

The majority of the population in the study districts is from the Oromo ethnic group, which is one of the largest ethnic groups in Ethiopia. The Jimma Zone comprises 21 districts, including 42 urban and 513 rural kebeles. According to projections based on the 2007 Census by the Central Statistical Agency (CSA), the Jimma Zone's population was estimated to be 3.5 million in 2023, reflecting a 26.8% increase since the 2007 census. This population includes 1.75 million men and 1.74 million women, resulting in a population density of approximately 160 people per square kilometer over an area of 15,570 square kilometers.

In the Jimma Zone, the three largest ethnic groups are the Oromo, accounting for 89.6% of the population, the Amhara at 3.1%, and the Yem at 2.1%. Other ethnic groups make up 5.23% of the population. Afan Oromo is the predominant language, spoken by 90.4% of the residents as their first language. Amharic is spoken by 5.4%, while 4.3% speak other primary languages. The religious composition includes a majority of Muslims, comprising 85.6% of the population, followed by Ethiopian Orthodox Christians at 11.2%, and Protestants at 2.9% (134).

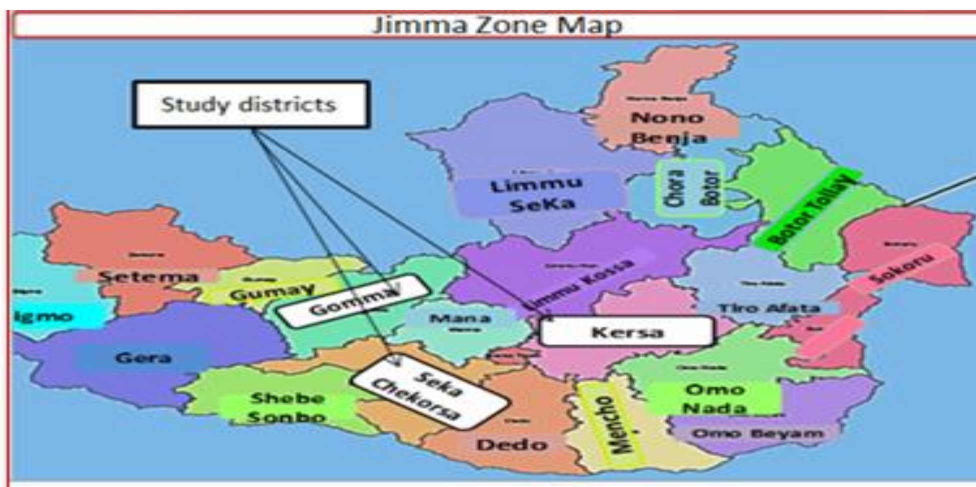


Figure 5: Study area of the intervention [Jimma zone Health office]

3.2. Study Design and Data Collection Methods

This study employed a mixed-methods, (qualitative and quantitive ones), research design to comprehensively explore maternal health practices and evaluate interventions in the Jimma Zone, Oromia, Ethiopia. The research was conducted across three purposively selected districts—Gomma, Seka-Chekorsa, and Kersa—chosen for their high population density and the presence of healthcare infrastructure such as Primary Health Care Units (PHCUs) and health posts.

Qualitative Data Collection: Qualitative data were gathered through focus group discussions (FGDs) and in-depth interviews (IDIs) to obtain in-depth insights from key stakeholders, including religious leaders, health extension workers (HEWs), midwives, Women's Development Army (WDA) leaders, and women of reproductive age. A total of 16 FGDs and 18 IDIs were conducted to explore barriers, and an additional 24 IDIs were conducted to assess the involvement of religious leaders. These qualitative methods were guided by semi-structured tools, focusing on themes such as knowledge, attitudes, cultural norms, childbirth preparedness, and institutional childbirth practices.

Quantitative Data Collection: Quantitative data collection involved a cluster-randomized trial to assess the impact of community-based Social and Behavior Change Communication (SBCC) interventions on institutional childbirth rates. Sixteen clusters were randomized into intervention and control arms, involving a total of 5,057 women at baseline and endline.

Both qualitative and quantitative data underwent rigorous analysis using Atlas.ti for thematic coding and SPSS version 27 for statistical analysis, ensuring methodological rigor and contextual relevance.

3.3. Ethical Considerations

The study adhered to all relevant ethical regulations and guidelines. Ethical approval was granted by the Jimma University Institutional Review Board (Reference No. RPGE-449-2016). To address participant concerns, verbal consent was approved instead of written consent. Verbal consent ensured comprehensive disclosure of study information without omissions. Before obtaining verbal consent, each participant was thoroughly briefed in their native language about

the study's objectives, safety measures, confidentiality, and privacy concerns. Only individuals who voluntarily provided verbal consent were included in the study.

Study 1: Barriers to Use of Institutional Childbirth Services

This qualitative study was designed to comprehensively investigate the barriers that impede the utilization of institutional childbirth services in the rural Jimma Zone of Ethiopia. Given the high maternal mortality rates in low-resource settings, understanding the obstacles to accessing healthcare services is paramount. The study employed focus group discussions (FGDs) and in-depth interviews (IDIs) with a variety of key stakeholders within the community and healthcare systems. The research was conducted across multiple primary healthcare units in the region, ensuring a robust representation of perspectives from healthcare professionals, religious leaders, Women's Development Army (WDA) leaders, and women of reproductive age.

Study Design and Participants

The study utilized an exploratory case study design and employed a purposive sampling strategy to ensure the inclusion of a broad spectrum of experiences and perspectives. A total of six focus group discussions (FGDs) were conducted with female community members (n=62), offering in-depth insights into their personal experiences and challenges regarding childbirth. Furthermore, four FGDs were held with leaders from primary healthcare and maternal health units (n=23), and six FGDs were conducted with Women’s Development Army (WDA) leaders (n=56). This extensive dataset was further enriched by conducting in-depth interviews (IDIs) with six religious leaders, six midwives, and six health extension workers (HEWs), resulting in a total of 24 individual interviews. This comprehensive participant selection method ensured a thorough and multifaceted exploration of the barriers to institutional childbirth services from multiple perspectives.

Inclusion and Exclusion Criteria

The inclusion criteria for this study focused on participants directly relevant to the research objectives. These included women of reproductive age (15–49 years) residing in rural Jimma Zone who were currently pregnant or had recently experienced childbirth. Additionally, healthcare professionals, such as primary healthcare and maternal health unit leaders, midwives, and health extension workers (HEWs), actively involved in maternal healthcare were included. Religious leaders and Women’s Development Army (WDA) leaders participating in maternal or community health initiatives were also selected. All participants needed to reside in rural Jimma

Zone and voluntarily consent to participate in focus group discussions (FGDs) or in-depth interviews (IDIs).

The exclusion criteria were designed to avoid factors that could compromise the study's validity. Individuals residing outside the Jimma Zone or in urban areas were excluded, as were healthcare professionals and leaders not directly involved in maternal or community healthcare activities. Participants unable to provide informed consent or actively engage in discussions due to severe health conditions were excluded, alongside those unwilling to participate or who withdrew consent.

Data Collection

The data collection process utilized semi-structured interview guides, meticulously developed in English and translated into Afan-Oromo and Amharic to facilitate effective communication with participants. This multilingual approach was crucial for ensuring that participants could express their thoughts and experiences comfortably in their native language. The FGDs and IDIs were conducted at health centers, providing a familiar and non-intimidating environment for participants.

All sessions were audio-recorded to ensure precise data capture. To further enrich the data, field notes were meticulously maintained, capturing non-verbal cues and contextual information that added depth and nuance to the findings. This comprehensive approach ensured a robust and reliable dataset, foundational for the study’s qualitative analysis.

Data Analysis

The analysis employed a thematic approach, leveraging the capabilities of Atlas.ti software to meticulously organize and interpret the rich qualitative data. The research team collaboratively developed a comprehensive coding framework, facilitating the systematic identification and exploration of key themes through iterative and in-depth readings of the transcripts. This rigorous process entailed coding discrete segments of data, subsequently categorizing them into broader, overarching themes that encapsulated the core insights from participants’ narratives.

To ensure that the interpretations were deeply rooted in the lived experiences and perspectives of the participants, the analysis was grounded in their direct quotes and stories. The thematic approach not only provided a structured methodology for data analysis but also allowed for the emergence of nuanced themes that reflected the complex realities of the study's context.

Enhancing the credibility of the findings was paramount, and the study employed several rigorous methods to ensure trustworthiness. Firstly, the interview guides were pilot tested, allowing for the refinement of questions and the optimization of the data collection process. This step ensured that the instruments used were both relevant and effective in capturing the necessary data. Detailed contextual descriptions were provided to support the transferability of the findings, offering rich background information that would enable other researchers to understand the context and applicability of the study results.

Dependability was reinforced through the involvement of multiple researchers in the coding process. This collaborative approach facilitated consistency and reliability in the data analysis, as different perspectives contributed to a more robust and comprehensive understanding of the data. Regular debriefing sessions and discussions among the research team members ensured that any discrepancies were addressed and resolved.

Moreover, expert reviews were conducted to minimize potential researcher bias and enhance confirmability. By involving experienced researchers and national experts in the review process, the study benefited from additional layers of scrutiny and validation. This helped to ensure that the findings were not only accurate but also reflective of the true experiences of the participants. The combination of these rigorous methodological approaches guaranteed the integrity and trustworthiness of the study's conclusions.

Study 2: The Involvement of Religious Leaders in Supporting Institutional Childbirth

This exploratory qualitative study delved into the pivotal role of religious leaders in supporting and promoting institutional childbirth practices within rural communities of the Jimma Zone. Recognizing the profound impact that cultural and religious beliefs have on health behaviors, this research aimed to uncover how religious leaders could serve as influential agents of change in the realm of maternal health. Their potential to positively impact healthcare outcomes underscores the critical need to harness their influence for advancing maternal health initiatives. Together with other studies of the project on women development armies and health extension workers (31, 36, 59, 135), the finding provides important information to improve and promote maternal and childhealth practices. By understanding these dynamics, the study sought to inform strategies that leverage the authority of religious leaders to foster improved maternal health behaviors and outcomes in these communities.

Inclusion and Exclusion Criteria

Inclusion Criteria: Religious leaders actively serving within rural communities of the Jimma Zone, specifically in the districts of Gomma, Seka-Chekorsa, and Kersa, were included in the study. Participants were selected from prominent faith groups within these districts to ensure a diverse representation of religious perspectives.

Exclusion Criteria: Religious leaders who were not actively serving in rural communities of the specified districts or who were seriously ill during the interview period were excluded from the study.

Study Design and Participants

The study utilized an exploratory study design. It was meticulously grounded in in-depth interviews (IDIs) with religious leaders selected from three strategically chosen districts: Gomma, Seka-Chekorsa, and Kersa. These districts were chosen for their demographic significance and representativeness within the Jimma Zone, providing a robust framework for examining the religious context that influences maternal health decisions.

The purposive sampling strategy employed in this study was designed to ensure the inclusion of leaders from the most prominent faith groups in the region. By doing so, the research captured a wide spectrum of religious perspectives on childbirth, facilitating a comprehensive understanding of how these beliefs and practices shape maternal health behaviors and decisions. This thorough and deliberate participant selection was crucial for obtaining rich, diverse data that reflect the multifaceted influences of religion on health practices within these communities.

Data Collection

The data collection process was meticulously executed using a pretested and refined semi-structured interview guide. This guide was specifically designed to delve into themes related to religious beliefs, childbirth practices, and the barriers to institutional childbirth. The thorough pretesting and refinement of the interview guide ensured that it effectively captured relevant data while remaining flexible enough to adapt to the natural flow of conversation during interviews. A team of researchers, all experts in qualitative methods, conducted the interviews in Afan-Oromo. This choice of language facilitated a rich and nuanced dialogue, allowing participants to express their thoughts and experiences freely and comfortably in their native tongue. Following the interviews, the data were carefully translated into English for detailed analysis. This bilingual approach not only preserved the authenticity of the participants' insights but also ensured that the

research team could conduct a comprehensive and accurate analysis of the data. This rigorous approach was fundamental to capturing the complex interplay of religious and cultural factors influencing maternal health behaviors in the Jimma Zone.

Data Analysis

Thematic analysis was employed to interpret the collected data, with Atlas.ti software being used for efficient data organization and coding. Transcripts were meticulously reviewed to identify recurring themes and insights, ensuring a comprehensive understanding of the data. The analytical process involved multiple iterative rounds of coding. Initial themes were refined and adjusted based on feedback and further readings, enhancing the depth and accuracy of the analysis.

To ensure the trustworthiness of the findings, the study implemented several rigorous measures. The interview guides were rigorously pretested to refine and optimize the questions, ensuring they effectively captured relevant data. The data collectors who have a 2nd degree, (MSc and MPH), and prior qualitative research experiences were recruited and extensive training was conducted to maintain consistency and reliability in data collection procedures. Additionally, peer reviews of the findings were performed, providing an additional layer of scrutiny and validation.

Moreover, triangulation with existing literature was employed to provide a broader context for the emergent themes, further validating the study's findings. This approach not only confirmed the reliability of the data but also enhanced the overall methodological rigor of the research. By integrating these comprehensive analytical and validation techniques, the study ensured a robust, credible, and contextually rich interpretation of the data.

Study 3: Effectiveness of Targeted Social and Behavior Change Communication in Improving Maternal Health in Rural Ethiopia: A Cluster-Randomized Trial

This study presents findings from a cluster-randomized trial (CRT) aimed at evaluating the effectiveness of a targeted Social and Behavior Change Communication (SBCC) intervention designed to enhance maternal health knowledge, attitudes, and rates of institutional childbirth in rural Ethiopia.

Study Design and Participants

The CRT was conducted in the Jimma Zone, specifically targeting three districts: Gomma, Seka-Chekorsa, and Kersa. These districts were selected based on their population characteristics and logistical feasibility for the implementation of the intervention. The trial employed a two-arm design, in which 16 Primary Healthcare Units (PHCUs) were randomly chosen and allocated to either the intervention or control group. Eight PHCUs received the SBCC intervention, while the remaining eight served as controls, receiving standard maternal health education through routine healthcare services.

Sample Size Calculation

The sample size was determined to detect a 15% difference in institutional childbirth rates between the study arms (40% in the control group and 55% in the intervention group), accounting for clustering effects.The formula used for cluster-randomized trials was applied to ensure adequate power and precision in detecting significant differences.

$$n = \frac{(Z1 - \alpha/2 + Z1 - \beta)^2 * (P1(1 - P1) + P2(1 - P2))}{\Delta P^2}$$

For $\alpha = 0.05$, $Z1-\alpha/2 = 1.96$; for $\beta = 0.20$, $Z1-\beta = 0.84$.

Plug in the values:

$$n = \frac{(1.96 + 0.84)^2 * (0.4(1 - 0.4) + 0.55(1 - 0.55))}{(0.15)^2}$$

$$n = 169.64$$

Adjust for clustering:

$$Ncluster = (1 + (m - 1) * ICC) * n$$

$$Ncluster = (1 + (8 - 1) * 0.1) * 169.64 = 288.39$$

$$Nperarm = m * Ncluster = 8 * 288.39$$

$$Nperarm = 2307.12$$

The total sample size for both arms: $Ntotal = 2 * Nperarm = 2 * 2307.12 = 4614.24$.

Including a 10% non-response rate, the final sample size was adjusted to 5120 participants.

Study Participants and Sampling Procedures

Pre-census lists of women who had given birth in the year prior to the study were used for sampling. Random selection procedures were executed using STATA software. A total of 5,057 women participated during both the baseline and endline periods. On average, there were 160 women per cluster per arm. The detailed participant flow is illustrated in Figure 6.

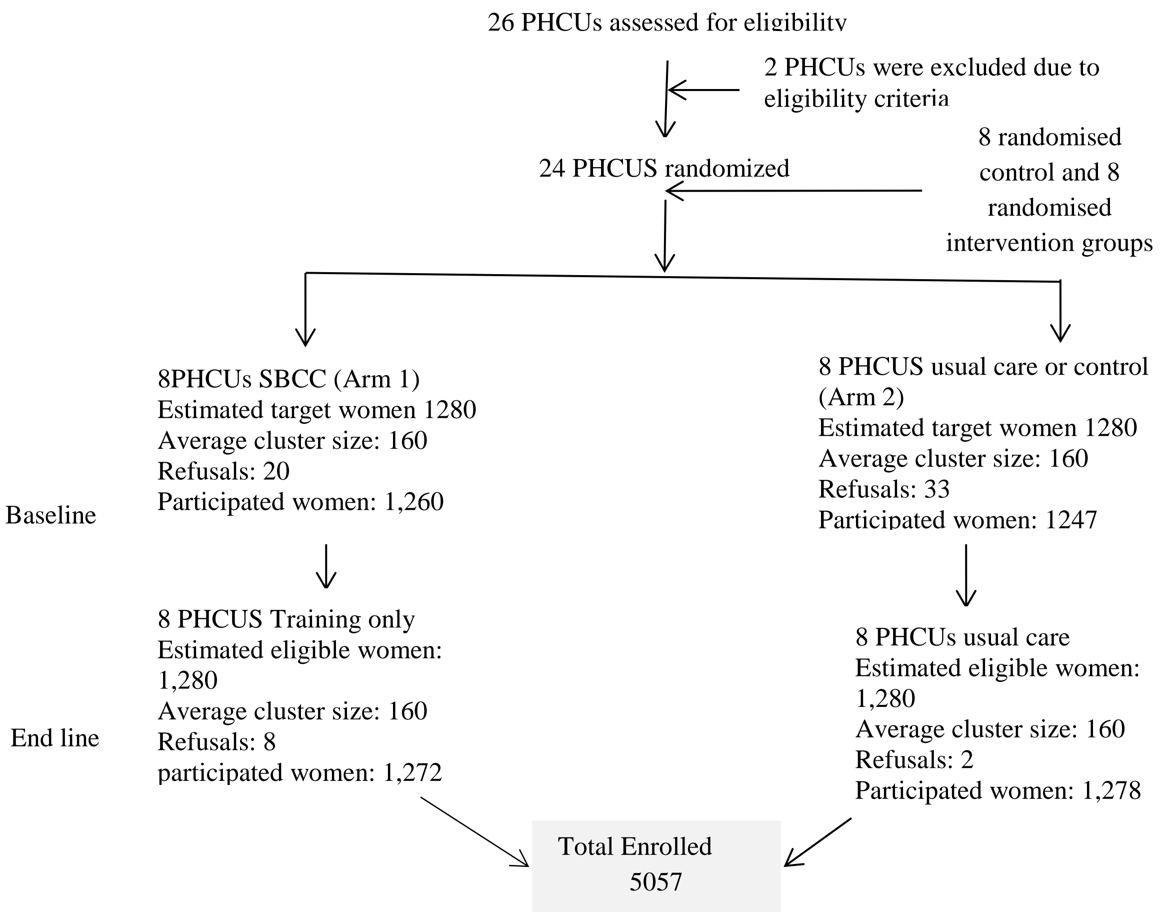


Figure 6: The CONSORT diagram illustrating the trial profile, participant recruitment, randomization process, and outcome assessments of the SBCC intervention.

Inclusion and Exclusion Criteria

Inclusion Criteria: The study included women aged 15–49 years residing six months and above in the rural areas of Jimma Zone, specifically in the districts of Gomma, Seka-Chekorsa, and

Kersa. Participants were required to have given birth within one year prior to the study period and be willing to provide informed consent. Women who were registered through pre-census lists and randomly selected for the study were eligible.

Exclusion Criteria: Women who were not residents for six months and above of the specified districts during the study period were excluded. Additionally, individuals unwilling to provide informed consent or unable to participate in interviews due to severe health conditions or communication barriers were excluded.

Randomization and Blinding

Clusters served as the units of randomization, with individual participants as the observational units. Sixteen clusters were randomly assigned to either the intervention or control groups using STATA's random number generator by an independent statistician.To maintain impartiality, data collectors and outcome evaluators were blinded to the cluster assignments. However, due to the nature of the intervention, both participants and healthcare providers were aware of their cluster's allocation. This awareness may have introduced performance bias and contamination (14). Random sampling was employed to select study participants from a list of eligible women for each cluster.

Intervention Packages and Approaches for Community-Based Social and Behavior Change Communication (SBCC) for Maternal Health Improvement in Rural Ethiopia.

The intervention reached 511,869 individuals across three districts in the Jimma Zone, encompassing 113,277 women aged 15–49. The initiative was developed through a collaborative effort between the study team and zone-level experts in maternal and child health (MCH), resulting in the creation of three comprehensive training manuals. These resources, adapted from guidelines provided by WHO, UNICEF, and USAID, served as a strong foundation for the program. The manuals also addressed significant religious and socio-cultural barriers.

The intervention involved training Community Health Actors (CHAs), which included Women's Development Armies (WDAs), religious leaders, and Health Extension Workers (HEWs), following a Training of Trainers (TOT) model. Over a period of one year and nine months (2017–2019), this TOT approach leveraged adult learning principles, with monthly sessions conducted by HEWs and religious leaders. WDAs extended these efforts with door-to-door outreach, while HEWs regularly updated Primary Health Care Units (PHCUs) and participated in semiannual meetings at both district and zone levels to assess progress.

This Social and Behavior Change Communication (SBCC) initiative comprised three key packages: home visits, conferences for pregnant women, and the dissemination of vital MCH messages. Guided by a structured implementation plan, HEWs, WDA volunteers, and religious leaders took lead roles in delivering these core interventions.

Training and Sensitization: To initiate the intervention, a sensitization workshop was held for local health administrators, MCH leaders, and midwives from selected PHCUs. Training for HEWs was conducted by district midwives, MCH leaders, and the Jimma University project team, who later co-facilitated sessions with district MCH heads for community leaders. The intervention trained a total of 91 HEWs, 143 religious leaders and 7363 WDA leaders. Health extension workers and WDA leaders attended two-day training sessions with monthly follow-up meetings, while religious leaders participated in one-day training sessions that focused on supporting pregnant women through religious teachings to enhance community engagement. This training was repeated at the end of one year to update and improve the intervention (36, 135).

Implementation Phase: Training encompassed various social and behavioral aspects, including practical assistance, emotional support, nutritional guidance, facilitation of access to healthcare institutions, and birth preparedness. Religious leaders were encouraged to offer spiritual and emotional support, promoting maternal and child health (MCH) services (137, 138).

Through a community based SBCC approach, the intervention enhanced CHAs' abilities to initiate early antenatal care (ANC) visits, provide ongoing pregnancy support, and assist with birth preparedness and delivery. Key strategies included regular home visits, pregnant women's conferences, and the distribution of educational materials in homes, ensuring the dissemination of essential MCH information (38, 59).

Home Visits: WDA leaders identified and registered pregnant women, referring them to health posts for antenatal care (ANC). Alongside HEWs, they conducted at least four planned home visits throughout pregnancy. During the women's village conference, religious leaders played a pivotal role in addressing prevalent myths and misconceptions, thereby enriching the counseling services provided on childbirth at health institutions. Furthermore, they actively involved family members to strengthen maternal support mechanisms. (58, 88).

Educational Resources and Conferences: CHAs distributed educational materials to reinforce maternal health awareness, displaying key messages visually in the homes of pregnant women.

Monthly conferences for pregnant women, organized by WDAs and HEWs, served as community platforms to discuss maternal and child health (MCH) barriers and encourage early ANC and childbirth at health institution (36, 135).

Intervention Framework: Informed by formative qualitative research, the intervention framework identified key influencers, barriers, and facilitators of childbirth at health institutions (36, 135, 138, 139). This multi-tiered approach addressed individual, household, community, and healthcare levels, fostering a collaborative environment for improving childbirth at health institution. Participatory activities aimed to enhance CHAs' impact on women's perceptions and decision-making, fostering improved knowledge, positive attitudes, and preparedness for childbirth.

The strategy aimed to increase the rates of childbirth at health institutions by considering socio-demographic and economic factors such as age, marital status, income, education, family size, and proximity to health facilities (140-142). The findings highlight the critical importance of multi-level interventions—addressing individuals, families, and communities—to effectively boost maternal and child health (MCH) service utilization. Collaboration among Community Health Actors (CHAs), including Health Extension Workers (HEWs), Women's Development Army (WDA) volunteers, and religious leaders, proved essential for enhancing health facility childbirth outcomes.

Implementation and Assumptions: The intervention followed a conceptual framework that assumed community-based targeted Social and Behavior Change Communication (SBCC) would enhance community health actors' (CHAs) ability to provide critical information and support. This approach aimed to elevate knowledge, shape perceptions and attitudes, and influence decision-making, ultimately reinforcing the practice of childbirth at health institutions. For further details, refer to Figure 7.

Integrated Strategies and Expected Outcomes: Integrating activities such as home visits, family counseling, peer education, and religious events aimed to create a supportive environment for shared decision-making within families and social networks. The support from these networks played a crucial role in boosting maternal knowledge, fostering positive attitudes, and enhancing birth preparedness. This collective effort significantly contributed to the increased utilization of health institutions for childbirth.

Intervention Framework

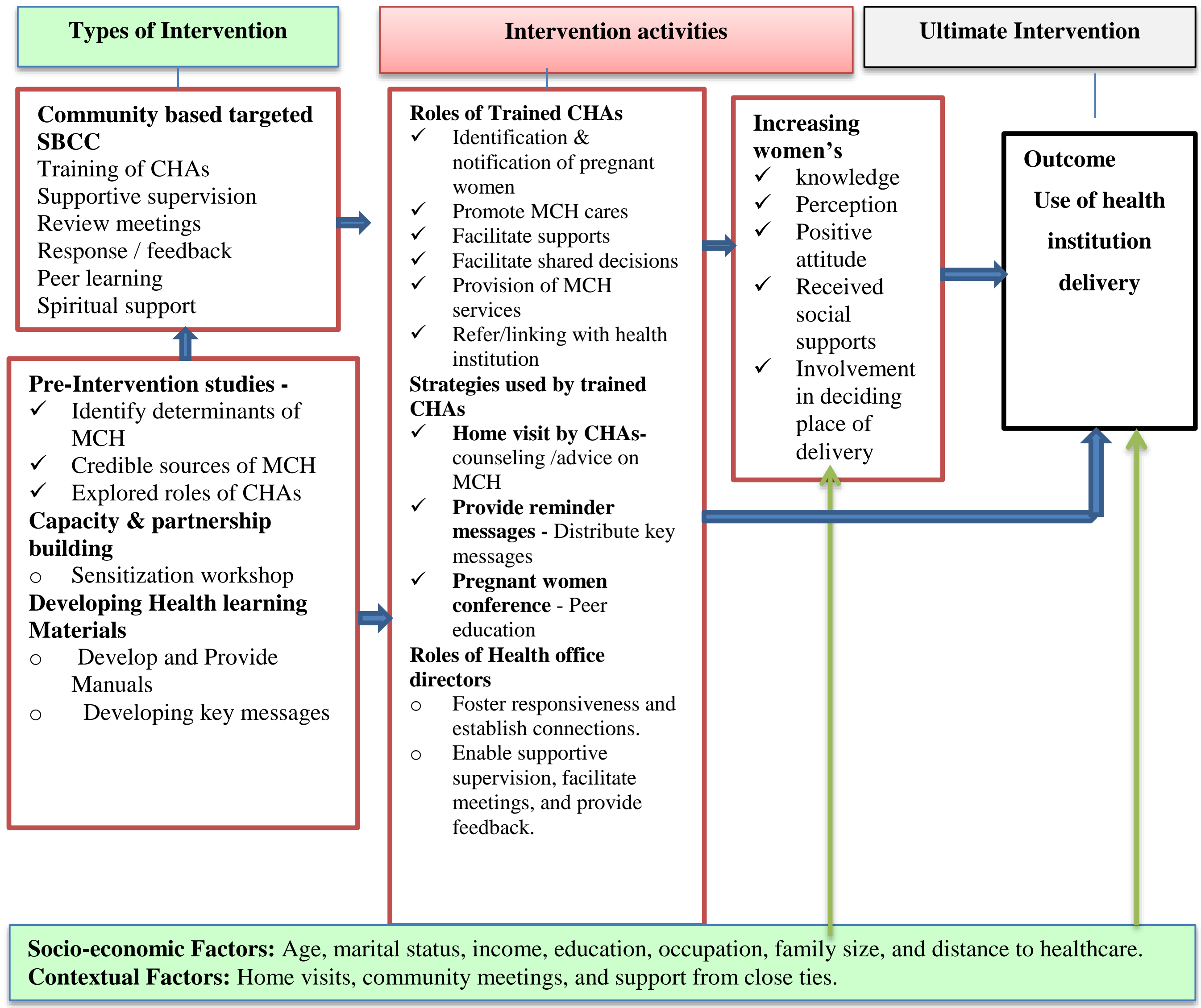


Figure 7: the mechanism by which the community based targeted SBCC implemented

Influence of Socio-Demographic and Economic Factors: The intervention framework acknowledged the modifying impact of socio-demographic and economic factors, including age, marital status, income, education, occupation, family size, and proximity to healthcare facilities. This recognition ensured that the intervention remained effective and adaptable across diverse populations.

Through coordinated efforts with CHAs at various levels, the intervention aspired to establish a comprehensive support network that bolsters maternal healthcare utilization and contributes to better maternal and child health outcomes.

Usual Care

The trial protocol outlined the existing services, emphasizing collaboration between the community and the government to enhance access to healthcare facilities. Regular health education sessions were provided to identify and support pregnant women. These sessions were part of ongoing efforts to disseminate vital health information and promote maternal health (15).

Operational Definition of Variables and Measurements

The primary outcome variable was institutional childbirth, coded as 1 for delivery in a health institution and 0 otherwise. The secondary outcome variables encompassed antenatal care (ANC) utilization, as well as attitudes and knowledge related to maternal health service utilization and overall maternal health. ANC utilization was treated as a continuous variable, measured by the number of ANC visits attended.

Attitudes were evaluated using fifteen Likert-type items, with possible scores ranging from 15 to 45. Knowledge was assessed through ten key questions related to pregnancy and childbirth. Responses were categorized as knowledgeable (1) or not knowledgeable (0), creating composite scores between 0 and 10.

The independent variables encompassed socio-economic and demographic factors, including occupation, which was categorized as housewife versus other types of employment. Educational level was classified into four categories: no formal education, primary school, high school, or above. Marital status was grouped as married or cohabiting versus single or not living together. Family income was divided into four quintiles, providing a measure of economic status. Travel time to the nearest health facility was categorized as less than 30 minutes or 30 minutes and above. Continuous variables included age and family size, offering additional insight into demographic differences.

Data Collection and Quality Assurance

The data collection process involved 14 data collectors, and it was conducted simultaneously for both study groups. The questionnaire was initially translated from English into Afan Oromo and Amharic by qualified linguists to ensure accuracy. It was then back-translated into English to confirm both linguistic and conceptual equivalence. The questionnaire drew on methodologies from the Johns Hopkins Program on International Education in Gynaecology and Obstetrics (143) birth preparedness and complication readiness monitoring toolkit [2004] and the Ethiopia Demographic and Health Survey 2005 (144).

Data collection was conducted using Samsung tablets equipped with a pre-programmed Open Data Kit (ODK). The Principal Investigator (PI) and Co-Investigators (CO-Is) accessed the final dataset securely via the internet as part of the Innovating Maternal and Child Health in Africa (IMCHA) project. Twenty experienced data collectors received comprehensive training, which included five days of theoretical instruction and two days of practical training in a non-study district using tablets.

A pre-test was conducted in the Mana district, which was not part of the study area, to refine the questionnaire and data collection procedures. This pre-test enabled the study team to address any challenges and make necessary adjustments based on the feedback. This rigorous methodology ensured high-quality data collection, minimized errors, and maintained consistency throughout the study process.

Data Analysis

A comprehensive range of statistical techniques was employed to analyze the data. Descriptive statistics characterized socio-economic and demographic variables. Frequencies and percentages were calculated for categorical variables, while means and standard deviations were computed for continuous variables such as ANC visits, knowledge levels, and attitudes.

Paired t-tests assessed changes within groups over time, including knowledge scores and ANC visits. Independent t-tests compared mean differences between the control and intervention groups at both baseline and end line. Effect sizes, such as Cohen’s d, were calculated to determine the practical significance of observed differences.

Generalized estimating equations (GEE) were used to analyze the impact of the SBCC intervention on institutional childbirth, accounting for the longitudinal nature of the data. GEE models provided coefficients and odds ratios, emphasizing the significant influence of ANC, knowledge, and attitudes on the likelihood of institutional childbirth.

The study's cross-sectional design, with data collected only at baseline and endline, eliminates the possibility of lost to follow-up. Furthermore, the clustering effect was addressed through the use of generalized estimating equations (GEE), ensuring robust and reliable results despite correlations within clusters.

CHAPTER FOUR: RESULTS

The three studies explore key aspects of maternal health in rural Ethiopia, focusing on barriers to institutional childbirth, the role of religious leaders, and the impact of social and behavior change communication (SBCC) interventions. Study one identifies knowledge gaps, cultural beliefs, poor access, and resource limitations as major hindrances. Study two highlights how religious leaders, despite limited formal education, advocate for antenatal care and safe delivery by aligning health practices with spiritual principles to build community trust. Study three demonstrates that SBCC interventions significantly improve institutional childbirth rates, antenatal care visits, knowledge and attitudes, emphasizing the need for comprehensive maternal health strategies.

4.1. Barriers to Use of Institutional Childbirth Services

Results

Table 1 outlines the socio-demographic characteristics of the participants involved in this qualitative study.The average age of participants across the various groups ranged from 24.0 years (health extension workers) to 43.5 years (religious leaders). The majority of participants were women, with the exception of all unit heads, midwifery nurses and religious leaders, who were men.

Themes and subthemes

The major themes identified were knowledge gaps, beliefs about pregnancy and childbirth, poor access to healthcare services, lack of resources and poor involvement of community health actors (Table 2).

Knowledge gaps

The first theme was knowledge gaps, which had two subthemes: lack of knowledge about institutional childbirth and inadequate information received from healthcare professionals.

Lack of knowledge about institutional childbirth

According to the participants, healthy, full-term pregnant women may not know why they should give birth at health institutions. This is mainly the result of poor efforts to raise awareness of the benefits of institutional birth. Participants reported that women often do not pay attention to radio and television messages, potentially because they are busy or because the messages are aired at inconvenient times.

'Factors related to these issues include a lack of attention or awareness. At this time, different types of information are transmitted through television and radio. Therefore, to me, every woman can learn. But the main problem is a lack of attention'. Women's Development Army leader, person 3, focus group discussion 1

Table 1: Participants' Socio-demographic Characteristics

Characteristic	**Focus Group Discussions**	**In-Depth Interviews**
	Women (n=62)	Women's Development Army Leaders (n=56)
Mean Age, years (range)	33.7 (20–49)	35.6 (19–55)
Sex		
Male	23	8
Female	62	56
Average Education Level/Grade	3	4
Average Work Experience (years)	6.8	4.7
Participants per Discussion	9–12	8–12

Table 2: Themes, Subthemes, and Main Points

Themes	Subthemes	Main Points
Knowledge Gaps	Lack of knowledge about institutional childbirth	- Limited awareness of benefits of institutional childbirth. - Insufficient information provided by healthcare professionals. - Poor mechanisms for disseminating information. - Radio and television messages often go

		unnoticed. - Missed opportunities for counseling upon discharge from hospitals or health centers.
Beliefs about Pregnancy and Childbirth	Religious beliefs and cultural norms Lack of trust in healthcare professionals	- Traditional beliefs necessitating cultural rituals. - Fear of evil spirits if returning home within 24 hours post-birth. - Perception that male midwives should not oversee childbirth. - Misconception that Sharia law prohibits modern reproductive health services. - Need for compassionate, respectful healthcare; dignity is essential for women in labor. - Fear of episiotomy following prior experiences.
Poor Access to Healthcare Services	Physical access Financial access	- Limited road infrastructure to healthcare facilities. - Insufficient ambulances available. - Insurance does not cover prescriptions dispensed at private pharmacies.
Lack of Resources	Inadequate equipment and supplies Inadequate healthcare professionals Disrespectful and demotivated healthcare staff	- Insufficient delivery kits, including gloves. - Scarcity of water and reliable electricity. - Lack of emergency medicines and essential supplies like mattresses, bedsheets, and blankets. - Insufficient number of adequately trained healthcare professionals. - Healthcare staff lack motivation and may display disrespect during labor and childbirth.

Poor Community Involvement	Lack of support from family Lack of support from community health actors	- Limited support from husbands, families, and communities. - Women's Development Army and health extension workers are underutilized in identifying and referring pregnant women to healthcare facilities.

Inadequate information received from healthcare professionals

Participants highlighted that healthcare professionals did not give women advice before they were discharged. This is crucial when women give birth and then stay at a health institution for hours.

> *'The reason behind low childbirth rates at health institutions is low awareness raising activities. Even if doctors and nurses attend many deliveries, they often miss advising mothers while discharging each of them'. Woman of reproductive age, person 5, focus group discussion 4*

Beliefs about pregnancy and childbirth

The second theme that emerged was beliefs about pregnancy and childbirth. There were two subthemes: religious beliefs and cultural norms and women's lack of trust in healthcare professionals.

Religious beliefs and cultural norms

There were different perspectives on giving birth at health institutions, which were directly linked to religious beliefs and cultural norms. Many participants believed that a woman who gave birth at a health institution would encounter evil spirits when she returned home. As a result, they gave birth at home with a traditional or spiritual healer.

> *'When a woman, who gives birth at a health institution becomes sick, it is associated with the evil encounter she had. I witnessed many such cases being taken to spiritual healers'. Midwife nurse from Kersa, person 6*

Some participants stated that their tradition did not allow male healthcare professionals to manage women in labour. Instead, their culture recommended being served by female healthcare professionals while wearing a niqab or face veil.

'Mothers in labour do not need male health providers during delivery'. Midwife-nurse from Gomma, person 1

'Sharia doesn't allow them to use modern reproductive health services, including childbirth, outside their own home. Because they think it opposes the will of Allah and His presence to save their lives'. Health extension worker from Seka Chekorsa, person 4

Women's lack of trust in healthcare professionals

One of the reported challenges to improving rates of institutional childbirth was a lack of trust in healthcare professionals. This lack of trust stemmed from the absence of compassionate and respectful healthcare services. For example, women were not adequately informed regarding medical procedures during birth, leading them to fear using a health institution in future if a procedure was performed that they did not understand.

'If a woman gives birth at a health institution, a health professional may [perform an episiotomy] with an indication. If proper advice had not been given to her, this surgical intervention would have exposed her to fear. This is why many women don't seek childbirth at health institutions'. Health extension worker from Seka Chekorsa, person 6

Poor access to healthcare services

The third theme was poor access to healthcare services, with two subthemes: poor physical access and poor financial access.

Physical access

Having physical access to healthcare is a pillar of childbirth promotion at health institutions. However, participants highlighted that physical access to services was a challenge, mainly because of the lack of transportation and poor road access.

'The ambulance service is only for taking women to the health centre or hospital. There is no ambulance service to return her home after childbirth'. Women's Development Army leader, person 7, focus group discussion 3

Many rural communities had no road access for any transportation. For women in labour, their options were either to give birth at home or be carried to a facility.

'Here, those within transportation-accessible distance are not more than 50%. On top of that, most landscapes are not conducive to transportation during rainy seasons. So, great numbers of them are forced to give birth at home'. Primary healthcare unit director, person 6, focus group discussion 1

Financial access

The government has implemented community-based health insurance to improve healthcare delivery. However, even if women had paid for health insurance, medical supplies and drugs were not always available in government health centres, and the scheme only covered government health institution costs, and is said to have less benefit for users.

> *'Health insurance does not benefit the community. Its objective is to help and support poor individuals, like labouring mothers. But they are often forced to buy medicines from private pharmacies. These outside prescriptions need out-of-pocket payment ranging from 200–500 Ethiopian Birr per prescription at one time'. Women's Development Army leader, person 7, focus group discussion 4*

Community members who had health insurance and expected to receive health services did not always have access. This was a demotivating factor for giving birth at a health institution.

> *'By assuming they have health insurance, mothers do not prepare for out-of-pocket payments they encounter while in labour. The insurance scheme does not cover out-of-government health institution prescription costs. This is one central issue that demotivates mothers in childbirth labour from going to the health institution for childbirth services'. Midwife-nurse from Kersa, person 5*

Lack of resources

The fourth theme that emerged was lack of resources, with three subthemes: inadequate equipment and supplies, inadequate numbers of healthcare professionals and disrespectful and demotivated healthcare professionals.

Inadequate equipment and supplies

Inadequate equipment and supplies presented significant challenges to facilitating childbirth at health institutions for healthcare professionals. Participants reported shortages of essential equipment, including beds, bedsheets, blankets, medicines, medical equipment, food, water and electricity. When women gave birth at health institutions, they could not wash the equipment or clothes and could not take a shower. In cases where there was no electricity, women had to stay in a dark room to give birth. Almost all medicines and other medical supplies were not available at government health institutions, especially gloves, oxytocin and glucose.

> *'Nowadays, I am conducting delivery services here beyond my scope of practice. There is no adequate human power, equipment, drugs, or gloves to save a life. Amazingly, our*

refrigerator is also not functional for long periods and has no maintenance at all'. Midwife-nurse from Gomma, person 2

'We do have only four mattresses in the maternal waiting home. However, six or seven mothers come at once'. Primary healthcare unit director, person 4, focus group discussion 3

The shortage of beds forced health extension workers to use a single bed for both antenatal care services and childbirth.

'Health extension workers have only one bed for both antenatal care and conducting obligatory delivery care'. Women's Development Army leader, person 4, focus group discussion 4

Inadequate numbers of healthcare professionals

Inadequate numbers of healthcare professionals led to persistently low birth rates at health institutions. Healthcare providers were overworked, which made them prone to irritability and less responsive to the needs of mothers giving birth. Additionally, there was a lack of motivating factors to encourage healthcare professionals, such as subsidised housing, transportation means and amenities. The lack of uniform distribution of staff at each level of government health institutions was also a concern.

'According to the civil service manpower standard of the country, one health centre needs around 40–60 health staff, but we have only nine health staff. Therefore, zone and district health offices should consider this problem seriously'. Midwife-nurse from Seka Chekorsa, person 3

Disrespectful and demotivated healthcare providers

Participants reported that disrespect from healthcare professionals was a reason not to use institutional childbirth services. Physical and verbal abuse, as well as a lack of respect and empathy, was commonly reported.

'There is a challenge at our health centre. The way our service providers welcome women, particularly midwives, is not good'. Primary healthcare unit director, person 3, focus group discussion 2

Health extension workers and the Women's Development Army leaders lacked motivation for their assigned duties, and it was reported that they did not give complete and timely information regarding institutional childbirth.

'I can say things are going from bad to worse because of a lack of motivation by health professionals. In remote areas, [Women's Development Army leaders] and health extension workers are not working timely and harmoniously due to a lack of motivation. This entails huge gaps to raise awareness and inspire service users to access health posts and health centres from afar'. Women's Development Army leader, person 4, focus group discussion 2

Poor community involvement

The fifth theme was poor community involvement, with lack of support from family and lack of support from community health actors as subthemes.

Lack of support from family

A lack of involvement from women's husbands and other family members was identified as a barrier to improving the use of childbirth services at health institutions.

'For the husband, staying at home alone in the absence of his wife is complex. Hence, some women keep supporting and preparing food for the family until the date of delivery. Consequently, many rural women are forced to come late or give birth at home'. Primary healthcare unit director, person 8, focus group discussion 4

Lack of support from community health actors

Participants reported that religious leaders did not discuss the benefits of childbirth at a health institution with their community, which was thought to be a missed opportunity to encourage women to use services at health institutions.

'It has now been around 30 years since I became a religious leader. Nevertheless, I haven't seen anyone preaching on the health of mothers and children in the church or mosque. These are places for preaching about religion and the soul, not for other issues like pregnancy and childbirth'. Religious leader from Gomma, person 3

4.2. The Involvement of Religious Leaders in Supporting Institutional Childbirth

Results

The study involved in-depth interviews with 24 male religious leaders, ranging in age from 30 to 70 years, with a mean age of 45 years. This age distribution encompasses both relatively young and more seasoned religious leaders, offering diverse perspectives on community practices and health-related beliefs. On average, the participants had served in their roles as religious leaders for 12.6 years, with some having recently assumed their duties as recently as 1.5 years, while

others had decades of experience, up to 30 years. This wide range of service duration underscores varying levels of engagement and influence within their communities, shaping their insights into childbirth practices and health advocacy.

Among the 24 participants, 20 were Muslim religious leaders, aligning with the predominant religious affiliation in the study sites, which are predominantly Muslim communities. The remaining four participants represented Christian denominations, including three from the Orthodox Church and one Protestant. This distribution is indicative of the religious landscape of the study area and provides a nuanced understanding of how different faith backgrounds may shape beliefs and practices around childbirth and maternal health.

Educational backgrounds among the participants varied, with an average of four years of formal schooling, indicating limited access to extended formal education among religious leaders in these communities. Despite their modest educational levels, their positions afforded them significant influence in their communities. The number of children per participant ranged from zero to ten, with an average of 4.5 children, reflecting varying personal family sizes. These socio-demographic characteristics underscore the diverse lived experiences of the participants, which play a critical role in shaping their attitudes and involvement in maternal and child health practices (Table 3).

Table 3: Socio-Demographic Characteristics of Study Participants

No.	District	PHCU	Religion	Years in Role	Age	Sex	Education Level	Number of Children
1	Gomma	Dinu Chochee	OCH	19	32	M	2	4
2	Gomma	Beshasha	ISM	3	52	M	4	6
3	Gomma	Chemi-Chego	ISM	6.5	45	M	2	6
4	Gomma	Gabane-Hoche	ISM	9	50	M	9	9
5	Gomma	Gembe	ISM	11	38	M	4	4
6	Gomma	Barsoma	ISM	3	50	M	8	3
7	Gomma	Kedemesa	ISM	10	41	M	3	3
8	Gomma	Limu Shayi	ISM	5	37	M	6	4
9	Gomma	Dhahi Kachani	ISM	18	39	M	4	4
10	Gomma	Omo-Gurude	OCH	2	39	M	4	0

11	Kersa	Bulbul	ISM	25	53	M	2	8
12	Kersa	Karagora	ISM	11	61	M	3	3
13	Kersa	Kitinbile	ISM	10	40	M	3	3
14	Kersa	Serbo	ISM	6	59	M	2	6
15	Kersa	Kelecha	ISM	10	45	M	4	10
16	Kersa	Buyo-Kechema	OCH	20	45	M	3	3
17	Seka-Chekorsa	Guyo	ISM	26	70	M	6	4
18	Seka-Chekorsa	Kersu	ISM	1.5	39	M	3	4
19	Seka-Chekorsa	Keta Boso	ISM	30	55	M	2	4
20	Seka-Chekorsa	Setema	ISM	25	40	M	3	2
21	Seka-Chekorsa	Setema Goro	ISM	9	35	M	2	3
22	Seka-Chekorsa	Lilu-Omoti	ISM	10	30	M	3	4
23	Seka-Chekorsa	Deto Kerso	ISM	5	33	M	10	4
24	Seka-Chekorsa	Demitu Shekota	PCH	15	46	M	6	4

Note: *OCH = Orthodox Christianity; ISM = Islam; PCH = Protestant Christianity; PHCU = Primary Health Care Unit.*

Themes Identified

The findings from this study revealed that religious leaders are increasingly cognizant of the importance of institutional childbirth for improving maternal health outcomes. They have come to understand that giving birth in healthcare institutions significantly mitigates the risks associated with childbirth. This growing awareness has positively influenced their role within the community.

Religious leaders recognize the pivotal role that healthcare professionals play in promoting safe childbirth practices through education and community outreach efforts. These efforts include conducting community meetings, organizing informational sessions, and disseminating health-related materials. Consequently, pregnant women have gained a better understanding of the importance of antenatal care and institutional deliveries.

The heightened awareness within the community, particularly concerning antenatal checkups and the management of childbirth complications such as postpartum hemorrhage, can be largely

attributed to targeted educational interventions. By actively endorsing and reinforcing these health messages, religious leaders have played a critical role in strengthening community engagement with maternal health services. This increased involvement has, in turn, led to notable improvements in both maternal and neonatal health outcomes in the region. Overall, the study identified five key themes, which are illustrated in Figure 8.

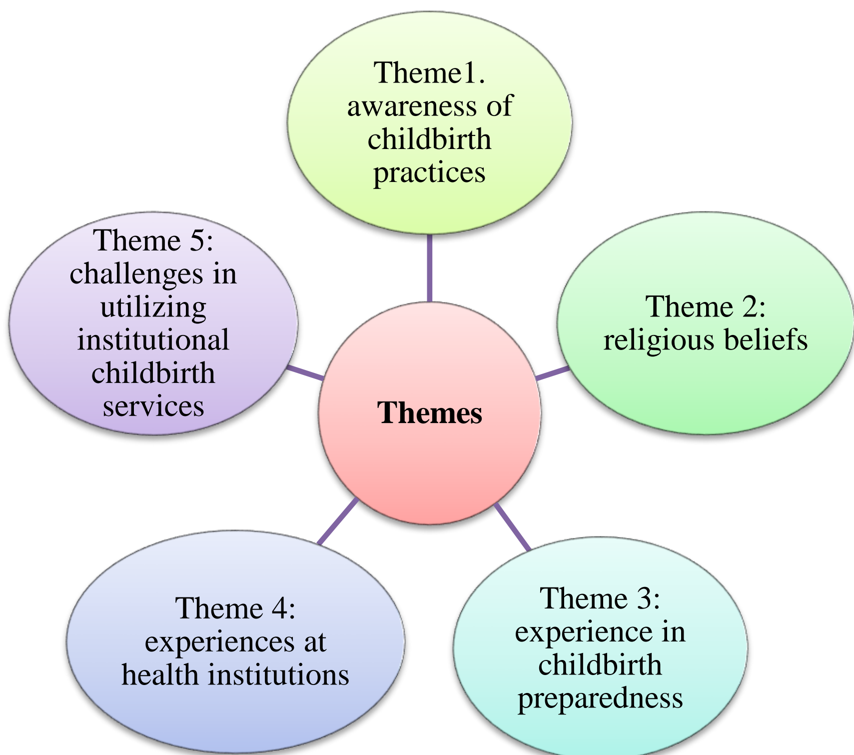


Figure 8: Overview of the thematic results

Theme 1: **Awareness of Childbirth Practices**

This theme focuses on religious leaders' awareness of the significance of institutional childbirth for maternal health. The findings indicate an increasing recognition among pregnant women of the importance of health checkups.

This shift is largely attributed to enhanced information dissemination efforts by healthcare providers. Healthcare professionals play a crucial role in educating the community about safe birthing practices. They use community meetings, educational sessions, and informational materials to spread awareness. These efforts help pregnant women understand the benefits of health checkups and institutional childbirth. This increased awareness leads to better maternal health outcomes.

"Healthcare professionals improve community knowledge of birthing practices through information dissemination." (Participant 15, Kersa District)

Antenatal care is vital for monitoring and managing potential health risks during pregnancy. Regular checkups allow healthcare providers to detect and address conditions like hypertensive disorders and anemia early on. By emphasizing the importance of antenatal care, religious leaders help reinforce the message that these preventive measures are essential for ensuring the health and safety of both the mother and the baby.

"Pregnancy care is crucial for reducing risks such as high blood pressure and anemia." (Participant 10, Gomma District)

Institutional deliveries are critical for managing complications such as postpartum hemorrhage, which can be life-threatening if not treated promptly. Health institutions are equipped with the necessary medical supplies and trained personnel to handle such emergencies. By promoting institutional childbirth, religious leaders help ensure that women have access to the care they need to manage and prevent severe complications during and after delivery.

"Heavy vaginal bleeding can be managed when a woman gives birth in a health institution." (Participant 13, Kersa District)

Community discussions play a significant role in spreading health information. Elders and other respected community members often engage in conversations with pregnant women, advising them on the benefits of institutional childbirth. These discussions help reinforce the messages delivered by healthcare professionals and create a supportive environment that encourages women to seek institutional care for childbirth.

"Elders and community members discuss among themselves and advise pregnant mothers to go to the health center for childbirth services." (Participant 11, Kersa District)

Theme 2: Religious Beliefs

The second theme focuses on religious leaders' beliefs regarding childbirth and healthcare. Many religious leaders believe that healthcare providers are divinely appointed to care for the community. This belief helps to legitimize and promote the use of institutional childbirth services. By framing healthcare providers as trustworthy and knowledgeable, religious leaders encourage women to seek their services, thereby improving maternal health outcomes.

“Birthing in a health institution is acceptable, but truthfulness and knowledge are crucial.” (Participant 2, Gomma District)

Local governance structures, such as ‘Garee,’ play a role in promoting antenatal checkups. These structures can enforce health-related practices within the community, ensuring that pregnant women receive the necessary care. By supporting these governance mechanisms, religious leaders help to institutionalize health checkups and improve maternal health.

“Village structures like 'Garee' forced pregnant women to undergo health checkups.” (Participant 1, Gomma District)

Religious leaders emphasize the moral and spiritual responsibility to support women’s access to healthcare services. They believe that it is a religious obligation to ensure that women receive the care they need during pregnancy and childbirth. This perspective helps to align religious beliefs with health practices, encouraging the community to support institutional childbirth.

“Allah's good qualities require our support, and our religion supports women's access to health services.” (Participant 18, Seka-Chekorsa District)

Some religious leaders maintain that ultimate healing is in the hands of God, even when medical interventions are used. This belief underscores the importance of faith in health outcomes. While they acknowledge the role of healthcare services, they also emphasize that divine providence plays a crucial role in healing, which can influence how the community perceives and utilizes healthcare services.

“God is the healer. For example, if I'm sick and 'oral' medicine is prescribed to me, whether I take it or not, the cure comes from God. The same rule applies to a pregnant woman's health.” (Participant 4, Gomma District)

Familial support is essential for a healthy pregnancy. Religious leaders stress the importance of husbands and family members providing emotional and physical support to pregnant women. This includes ensuring that women have access to nourishing food, a comfortable resting place, and protection from heavy labor. Such support helps to create a conducive environment for a healthy pregnancy and childbirth.

“Pregnant women need support from their husbands and families, nourishing food, a resting place, and protection from heavy duty.” (Participant 15, Kersa District)

Marital harmony and emotional support are crucial during pregnancy. Religious leaders highlight the importance of a loving and supportive relationship between spouses. They encourage husbands to be affectionate, supportive, and responsible for their wives' medical expenses. This emotional and financial support helps to reduce stress and promote a healthy pregnancy.

> *"Peace with their husband is key. They should address each other as 'my dear' and 'my love.' A husband should also encourage his wife and pay her medical bills." (Participant 19, Seka-Chekorsa District)*

Theme 3: **Experience in Childbirth Preparedness**

Childbirth preparedness emerged as a critical theme, with participants stressing the necessity of being adequately prepared for institutional childbirth to ensure safe maternal outcomes. Religious leaders hold significant sway in their communities, often more so than medical experts or community leaders. Their advice is highly respected and trusted, making them influential advocates for institutional childbirth. When religious leaders recommend giving birth in at health institution, their endorsement carries considerable weight, encouraging more women to opt for institutional deliveries. This influence is crucial in promoting safe childbirth practices and improving maternal health outcomes.

> *"Religious leaders were more likely to advise a woman to give birth in a medical facility than medical experts or community leaders. Their opinions were highly regarded." (Participant 13, Seka-Chekorsa District)*

Preparing for childbirth involves several practical steps to ensure the health and safety of both the mother and the baby. Common practices include washing clothes to maintain cleanliness, preparing an insecticidal bed net to protect against malaria, and ensuring overall hygiene. These preparations help create a safe and healthy environment for the newborn and the mother, reducing the risk of infections and other health issues.

> *"A pregnant mother and family members wash clothes, prepare an insecticidal bed net, and ensure the health of the baby and herself." (Participant 22, Seka-Chekorsa District)*

Maternal waiting homes (MWHs) are community facilities where pregnant women can stay close to their expected delivery date. These homes provide a safe place for women to wait for labor to begin, ensuring they are near a health facility when the time comes. This strategy is particularly beneficial for women living in remote areas, where access to healthcare facilities may be

challenging. By staying at MWHs, women can receive timely medical attention, reducing the risks associated with childbirth.

> *"Some women stayed at the maternal waiting home, uncertain of their delivery time, waiting for their childbirth period." (Participant 3, Gomma District)*

The decision-making process regarding the birthplace often involves both the woman and her husband. While the woman typically makes the final decision about where to give birth, her husband plays a crucial role in providing the necessary support. This includes arranging finances, organizing transportation, and ensuring other logistical aspects are in place. The husband's involvement is essential for facilitating access to institutional childbirth services.

> *"The woman makes the final decision. However, her husband decides on money, transportation, and other support." (Participant 9, Gomma District)*

Theme 4: Experience in Childbirth at a Health Institution

This theme explored participants' experiences with institutional childbirth, emphasizing their views on service quality, accessibility, and the availability of critical resources, such as ambulances. Participants highlighted that positive interactions with healthcare providers, clean and well-maintained facilities, and reliable access to emergency transportation significantly influenced their experiences. These factors not only shaped their immediate childbirth experiences but also impacted their overall trust in and willingness to utilize health institutions for future deliveries.

Historically, there was a humiliation associated with giving birth in health institutions within the community. Women who chose institutional childbirth were often looked down upon, as traditional home births were the norm. However, over time, this perception has shifted significantly. Increased awareness and education about the benefits of institutional childbirth have led to greater acceptance. Now, more women feel comfortable and supported in choosing to give birth in health centers, recognizing the safety and care provided by medical professionals.

> *"Previously, giving birth at health centers was considered shameful, but it is now accepted." (Participant 24, Seka-Chekorsa District)*

Women's decisions to opt for institutional childbirth are heavily influenced by the experiences shared by their peers. Before making a decision, pregnant women often seek advice and firsthand accounts from other women who have previously given birth in health institutions. These shared

experiences provide valuable insights into the quality of care, the environment, and the overall process, helping expectant mothers make informed choices about their childbirth options.

> *"She asks other women who gave birth at health institutions about their experiences before deciding." (Participant 21, Seka-Chekorsa District)*

To promote institutional childbirth, some communities have implemented enforcement mechanisms, such as financial penalties for home births. These fines, ranging from 150 to 200 Ethiopian Birr, serve as a deterrent against home births and encourage women to seek institutional care. This approach aims to reduce the risks associated with home deliveries and ensure that women receive the necessary medical attention during childbirth.

> *"A mother who gives birth at home is fined between 150 and 200 Ethiopian Birr." (Participant 22, Seka-Chekorsa District)*

Despite the efforts to promote institutional childbirth, many women still delay seeking care at health centers. It is common for women to labor at home for extended periods before deciding to go to a health facility. This delay can be due to various factors, including cultural beliefs, lack of transportation, or underestimating the severity of labor. Such delays can increase the risk of complications and negatively impact maternal and neonatal outcomes.

> *"In our village, women are often taken to health centers after laboring at home for long hours." (Participant 16, Kersa District)*

Theme 5: Challenges to Childbirth at Health Institutions

The final theme dealt with the various challenges religious leaders identified as barriers to institutional childbirth. These included low levels of awareness, cultural and religious beliefs, and economic hardships.

A significant challenge identified is the lack of preparedness for childbirth. Some women, due to inadequate planning and resources, end up giving birth on the way to health facilities. This lack of preparedness can stem from limited access to information, financial constraints, or logistical issues. Ensuring that women are well-prepared for childbirth, with plans in place for timely transportation and necessary supplies, is crucial for safe deliveries.

> *"Some women give birth on the roadside due to a lack of childbirth preparedness." (Participant 20, Seka-Chekorsa District)*

Traditional beliefs and superstitions can hinder childbirth preparations. For instance, some women avoid buying baby clothes before birth due to fears of negative outcomes, such as the

baby not surviving. These beliefs can prevent families from being fully prepared for the arrival of the newborn, potentially leading to last-minute challenges and stress. Addressing these cultural barriers through education and community engagement is essential to improve preparedness.

> *"Purchasing baby clothes before birth is stressful, in case the baby doesn't survive." (Participant 12, Seka District)*

Participants expressed concerns about the healthcare system, particularly the shortage of qualified medical professionals. In many rural areas, there is a lack of trained healthcare providers, and often male midwives are appointed, despite cultural preferences for female caregivers. This shortage can affect the quality of care and deter women from seeking institutional childbirth services. Addressing these workforce challenges is critical to improving maternal health outcomes.

> *"There aren't enough qualified medical professionals, and often male midwives are appointed, despite preferences for female caregivers." (Participant 19, Seka-Chekorsa District)*

Environmental factors, such as inadequate infrastructure, significantly hinder access to health facilities. Poor roads and bridges, particularly during the rainy season, make it difficult for pregnant women to reach health centers in time for delivery. These logistical challenges can delay or prevent access to essential maternal health services, increasing the risk of complications. Improving infrastructure and ensuring reliable transportation options are vital for enhancing access to institutional childbirth.

> *"Mothers can't reach health facilities due to poor roads and bridges, especially during the rainy season." (Participant 6, Gomma District)*

4.3. Effectiveness of Targeted Social and Behavior Change Communication in Improving Maternal Health in Rural Ethiopia: A Cluster-Randomized Trial in Jimma Zone

Results

Socio-demographic characteristics of study participants at baseline and endline

The detailed socio-demographic characteristics of study participants at both baseline and endline are as follows: The age distribution indicates that the majority of participants were aged 20–29 across all groups. The mean age remained consistent across groups, averaging approximately 27 years. Regarding education level, a significant portion of participants had no formal education,

particularly in the baseline control group (58.5%). However, there was an increase in participants with high school education or above in the endline intervention group (10.6%), indicating some educational shifts over time.

The occupation distribution reveals that most participants identified as housewives, with a slight decrease in this category by the endline, particularly in the control group (73.2%). Conversely, the proportion of participants in other occupations slightly increased in the endline intervention group (22.9%).

Marital status remained relatively stable, with the overwhelming majority of participants being married, ranging from 96.5% to 98.2% across all groups.

Family size was generally large, with a mean size of around 5.5 to 5.8 members. There was a fairly even split between families with five or fewer members and those with more than five, with a slight tendency towards larger family sizes in the baseline control group (52.0%).

Income distribution exhibited notable shifts, particularly in the third quartile, where the endline groups showed a substantial increase in participants (70.9% in the control group and 70.0% in the intervention group) compared to baseline.

Lastly, the primary means of transportation to the delivery place varied significantly. At baseline, most participants traveled by foot, especially in the control group (70.7%). However, there was an increased reliance on public transport and ambulances by the endline, particularly in the intervention group, where ambulance usage rose to 23.0% (Table 4).

Table 4: Socio-Demographic Characteristics of Study Participants at Baseline and End Line Studies

Characteristics	Measurement	Baseline Control (N=1247)	Baseline Intervention (N=1260)	End line Control (N=1278)	End line Intervention (N=1272)
Age Category	M (SD)	27.77 (5.84)	27.50 (5.66)	27.22 (5.72)	27.28 (5.37)
10-19	N (%)	69 (5.5)	82 (6.5)	89 (7.0)	67 (5.3)
20-29	N (%)	711 (57.0)	744 (59.0)	770 (60.3)	796 (62.6)
30-39	N (%)	419 (33.6)	402 (31.9)	383 (30.0)	376 (29.6)
40-49	N (%)	48 (3.8)	32 (2.5)	36 (2.8)	33 (2.6)
Education Level					
No formal	N (%)	730 (58.5)	648 (51.4)	663 (51.9)	570 (44.8)

education					
Primary school	N (%)	474 (38.0)	523 (41.5)	526 (41.2)	567 (44.6)
High school+ above	N (%)	43 (3.4)	89 (7.1)	89 (7.0)	135 (10.6)
Women's Occupation					
Housewife	N (%)	979 (78.5)	968 (76.8)	933 (73.2)	971 (77.1)
Others	N (%)	268 (21.5)	292 (23.2)	341 (26.8)	289 (22.9)
Marital Status					
Not living together	N (%)	22 (1.8)	36 (2.9)	43 (3.4)	44 (3.5)
Married	N (%)	1225 (98.2)	1224 (97.1)	1235 (96.6)	1228 (96.5)
Family Size					
<=5	N (%)	598 (48.0)	674 (53.5)	633 (49.5)	674 (53.0)
>5	N (%)	649 (52.0)	586 (46.5)	645 (50.5)	598 (47.0)
Mean (SD)	M (SD)	5.83 (2.1)	5.59 (2.07)	5.75 (2.08)	5.6 (2.01)
Income Level Quartiles					
First quartile	N (%)	562 (45.1)	558 (44.3)	95 (7.4)	97 (7.6)
Second quartile	N (%)	501 (40.2)	462 (36.7)	208 (16.3)	226 (17.8)
Third quartile	N (%)	126 (10.1)	155 (12.3)	906 (70.9)	891 (70.0)
Fourth quartile	N (%)	58 (4.7)	85 (6.7)	69 (5.4)	58 (4.6)
Means of Transportation to Delivery Place					
By foot	N (%)	882 (70.7)	731 (58.0)	843 (66.0)	641 (50.4)
Stretcher, animal	N (%)	70 (5.6)	72 (5.7)	93 (7.3)	59 (4.6)
Public transport	N (%)	111 (8.9)	175 (13.9)	161 (12.6)	280 (22.0)
Ambulance	N (%)	184 (14.8)	282 (22.4)	181 (14.2)	292 (23.0)

Impact of SBCC Intervention

The proportion of childbirths at health institutions increased slightly in the control group, rising from a mean of 0.51 (SD = 0.50) at baseline to 0.53 (SD = 0.50) at endline. In contrast, the

intervention group saw a more substantial increase, with the mean rising from 0.52 (SD = 0.50) at baseline to 0.71 (SD = 0.46) at endline. This significant change in the intervention group, compared to the control, was evident in the mean difference of 0.18 (pooled SD = 0.48), supported by a t-value of -9.509 (df = 2530), p < 0.001, and an effect size of -0.18.

ANC visits showed a minor decrease in the control group, with the mean slightly dropping from 3.26 (SD = 0.86) at baseline to 3.23 (SD = 1.02) at endline. Conversely, the intervention group experienced a notable increase in ANC visits, with the mean rising from 3.27 (SD = 0.87) at baseline to 4.21 (SD = 0.97) at endline. This improvement was highly significant, as reflected in the mean difference of 0.94 (pooled SD = 0.98), with a t-value of -24.862 (df = 2530), p < 0.001, and an effect size of -0.48.

Knowledge scores remained relatively stable in the control group, moving from a mean of 5.68 (SD = 3.10) at baseline to 5.92 (SD = 2.19) at endline. However, the intervention group demonstrated a significant increase in knowledge, with the mean rising from 5.68 (SD = 2.82) at baseline to 7.70 (SD = 1.82) at endline. This improvement resulted in a mean difference of 1.78 (pooled SD = 2.00), a t-value of -22.325 (df = 2530), p < 0.001, and an effect size of -0.44, indicating a substantial impact of the intervention.

Attitude scores showed a modest improvement in the control group, increasing from a mean of 37.19 (SD = 4.10) at baseline to 37.86 (SD = 3.34) at endline. In the intervention group, attitudes improved more significantly, with the mean rising from 37.49 (SD = 3.91) at baseline to 39.73 (SD = 3.26) at endline. This change was statistically significant, with a mean difference of 2.24 (pooled SD = 3.60), a t-value of -14.307 (df = 2530), p < 0.001, and an effect size of -0.28, reflecting the positive influence of the intervention on participants' attitudes (Table 5).

Table 5: Impact of the Intervention on Knowledge, Attitudes, ANC Visits, and Institutional Childbirth

Variable	Study Phase	Study Group	N	Mean	Std. Deviation	T-test	P-value	Effect Size
Childbirth at health institution	Baseline	Control	1247	0.51	0.500	-0.5	0.62	-0.01
		Intervention	1260	0.52	0.500			
	Endline	Control	1278	0.53	0.499	-9.5	< .001	-0.18
		Intervention	1272	0.71	0.456			
ANC	Baseline	Control	1247	3.26	0.86	-0.29	0.77	-0.01
		Intervention	1260	3.27	0.87			

	Endline	Control	1278	3.23	1.02	-24.9	< .001	-0.48
		Intervention	1272	4.21	0.97			
Knowledge	Baseline	Control	1247	5.68	3.10	0.00	1.00	0.00
		Intervention	1260	5.68	2.82			
	Endline	Control	1278	5.92	2.19	-22.3	< .001	-0.44
		Intervention	1272	7.70	1.82			
Attitude	Baseline	Control	1247	37.19	4.10	-1.9	0.06	-0.07
		Intervention	1260	37.49	3.91			
	Endline	Control	1278	37.86	3.34	-14.3	< .001	-0.28
		Intervention	1272	39.73	3.26			

Determinants of Institutional Childbirth: Insights from GEE Analysis

The generalized estimating equation (GEE) analysis examined the influence of various factors on the likelihood of institutional childbirth, revealing several significant findings. The intercept for the threshold [Childbirth=0] was significant (B = 2.522, p < 0.001), with an odds ratio (Exp(B) = 12.459, 95% CI: 7.444, 20.854), indicating a substantially higher probability of institutional childbirth.

Each additional antenatal care visit was positively associated with institutional childbirth (B = 0.082, p = 0.002), increasing the odds by 8.5% (Exp(B) = 1.085, 95% CI: 1.029, 1.144). Positive attitudes towards institutional childbirth significantly affected the outcome (B = 0.055, p < 0.001), with a 5.7% increase in the odds (Exp(B) = 1.057, 95% CI: 1.038, 1.076).

However, knowledge about institutional childbirth did not significantly affect the outcome (B = 0.039, p = 0.221, Exp(B) = 1.039, 95% CI: 0.977, 1.106). Additionally, the interaction between knowledge and attitude was not statistically significant (B = 0.001, p = 0.516, Exp(B) = 1.001, 95% CI: 0.999, 1.003).

These results emphasize the crucial role of antenatal care visits and positive attitudes in promoting institutional childbirth. In contrast, knowledge alone and its interaction with attitude are not significant predictors (Table 6).

Table 6: Generalized Estimating Equation Analysis of the Intervention's Effect on Institutional Childbirth

Parameter	B	Std. Error	Sig	Exp(B)	95% Wald Confidence Interval for Exp(B)	
					Lower	Upper
Threshold [Childbirth=0]	2.522	0.2628	0.000	12.459	7.444	20.854
Antenatal Care	0.082	0.0268	0.002	1.085	1.029	1.144
Knowledge	0.039	0.0317	0.221	1.039	0.977	1.106
Attitude	0.055	0.0092	0.000	1.057	1.038	1.076
Knowledge * Attitude	0.001	0.0011	0.516	1.001	0.999	1.003
(Scale)	1.000					

Dependent Variable: Childbirth at home = 0; childbirth at health institution = 1

Model: Threshold, Antenatal Care, Knowledge, Attitude, Knowledge * Attitude

CHAPTER FIVE

5.1. Discussion

The first study explored the barriers to institutional childbirth services from various perspectives, including women, health workers, and key community figures. The findings reveal a complex interplay of factors influencing the use of institutional childbirth services, primarily encompassing knowledge gaps, beliefs surrounding pregnancy and childbirth, poor access to healthcare facilities, lack of resources, and inadequate community involvement.

Knowledge is central to recognizing the benefits of institutional childbirth and understanding how to access these services. Ensuring that this information is available and accessible to pregnant women is paramount. The impact of knowledge gaps on institutional childbirth aligns with studies from Bangladesh, which identified low awareness about maternal and child health services as a barrier to access (145). Similar findings have emerged in other low- and middle-income countries (70, 146, 147). Increasing awareness about the importance of institutional childbirth is crucial for enhancing service use. Social and behavior change communication facilitated by community actors such as religious leaders, women's development army leaders, and health extension workers, can help in delivering health education that is inclusive and culturally appropriate.

Access to services also emerged as a significant barrier in women's decisions regarding where to give birth. The absence of ambulance services and inadequate infrastructure, such as roads, complicates access to healthcare facilities and discourages institutional childbirth. Similar findings have been reported in other parts of Ethiopia, Nigeria, and other low- and middle-income countries (145, 148,149). The challenges of institutional childbirth are exacerbated in the absence of reliable transportation and road access. Potential solutions include establishing maternal waiting homes, where expectant mothers can stay in proximity to healthcare facilities in the days leading up to childbirth. Improving ambulance services and introducing accessible public transport options could significantly enhance maternal health outcomes.

In instances where women could access services, inadequate staffing remained a critical concern. Research in low- and middle-income countries has indicated that nighttime staff shortages and a lack of skilled personnel adversely affect maternal and child health service utilization (70, 71,150). Furthermore, negative perceptions of professional incompetence and unwelcoming

attitudes from healthcare providers deter women from choosing facility-based births (151-153). A lack of skilled health personnel can discourage women from delivering in healthcare facilities, especially if they anticipate receiving subpar treatment. Reports of abusive treatment by healthcare staff in Bangladesh and negative attitudes towards women's autonomy in Nigeria highlight the urgent need for compassionate, holistic care to ensure positive experiences for mothers and encourage future institutional births (145, 152).

Additional issues at healthcare facilities included shortages of essential medications, medical supplies, and basic utilities such as water and electricity. Studies from Ghana and Mali have reported similar concerns, where inadequate medical infrastructure dissuades women from seeking care (151, 154). Lack of necessary medical equipment at birthing centers directly contributes to low attendance rates for institutional childbirth (71, 155, 156). Efforts to promote the use of healthcare institutions for maternal and child health services should prioritize equipping facilities with essential supplies and equipment.

Another significant barrier identified in the study was the low level of community and stakeholder involvement in promoting institutional childbirth. Women, their husbands, and local religious leaders often lack engagement as stakeholders, leading to an information gap regarding the benefits of institutional childbirth services. These findings resonate with studies in other parts of Ethiopia that reported poor exposure to health information and the dominance of male decision-makers as factors negatively impacting the utilization of maternal and child health services (155, 157). Empowering communities to actively participate in encouraging institutional childbirth can enable women to take responsibility for their health decisions and enhance the use of healthcare institutions.

The perception of institutional childbirth as an unfavorable alternative to home birth was another theme that emerged from the discussions. Participants noted that traditional rituals associated with home births motivate women to opt for this choice. Previous studies have also highlighted that women may prefer home births due to the involvement of traditional customs (158-160). Healthcare providers and institutions must recognize the significance of local traditions and work towards integrating these practices into maternal health procedures to promote institutional births.

Moreover, participants indicated that even women with health insurance often faced out-of-pocket expenses for medications and laboratory tests, which were unexpected and discouraged

future service utilization. The limitations of health insurance coverage in government facilities, which often exclude essential drugs and services, force mothers to seek care from private health facilities at additional costs. This financial burden poses a significant barrier to accessing maternal healthcare services, echoing findings from various studies across Africa and globally (70, 161-163). Without extending insurance coverage to cover private health facility costs, the financial barriers to accessing maternal healthcare remain significant. Participants expressed a lack of awareness regarding the limitations of health insurance schemes, emphasizing the need for clearer communication about coverage to prevent discouragement from attending healthcare facilities.

The study participants also highlighted the importance of awareness-raising initiatives in promoting the use of childbirth health services. Notably, they felt that healthcare providers' support was crucial in encouraging institutional childbirth. Research has similarly indicated that service users perceive health service promotion as vital (164, 165). The findings suggest that promoting health services in a culturally sensitive manner is fundamental to building trust and improving service utilization.

Health extension workers played a pivotal role in facilitating access to health centers, often assisting in contacting ambulance services and promoting health services at the community level. Previous studies in rural Jimma Zone corroborate the essential role of health extension workers in enhancing antenatal care services and referring laboring women to health centers (59,165). However, there exists a notable disconnect between healthcare professionals and community norms, suggesting that healthcare providers may not fully comprehend or appreciate the cultural beliefs of community members. This disconnect may hinder effective communication and understanding, potentially impacting healthcare delivery and acceptance. Continuous communication between health extension workers and midwives is essential to improve services for laboring women.

Furthermore, the second study explored the involvement of religious leaders in institutional childbirth, emphasizing their awareness, beliefs, and practices related to childbirth preparedness and delivery within health institutions. The findings elucidate the complex relationship between religious beliefs and health-seeking behaviors, highlighting both facilitators and barriers to childbirth preparedness and institutional delivery within the community.

A significant finding was the recognition by religious leaders of the need to enhance health-seeking behaviors. Despite their influential positions, they acknowledged a lack of awareness about childbirth preparedness and institutional delivery within their communities. This lack of awareness, combined with beliefs in divine predestination, poses a significant barrier to institutional childbirth. Previous research underscores the importance of access to information for the effective utilization of health services (166). The limited knowledge of religious leaders diminishes their potential impact, highlighting the necessity for culturally sensitive health promotion strategies that integrate spiritual beliefs (167-170).

Trust in healthcare services is heavily influenced by religious beliefs. This distrust parallels findings in other African contexts where religion significantly shapes health practices (171-173). The perception of childbirth as a spiritual event complicates efforts to promote institutional childbirth (174, 175). Addressing these spiritual dimensions is crucial for the success of health interventions.

Positive experiences with institutional childbirth were found to encourage others to seek care, aligning with research in sub-Saharan Africa that indicates knowledge of CBP and positive experiences enhance the likelihood of institutional childbirth (176,177). Religious leaders also recognized the vital role of community health workers in promoting CBHI awareness, affirming the importance of these workers in maternal health (178).

Concerns about the quality of care within health institutions were voiced by religious leaders. Healthcare providers often neglect to respect social norms, focusing solely on their professional roles, which undermines maternal health services, corroborated by other studies in Africa (179,180). Respectful care is essential for improving maternal health outcomes.

Logistical challenges, such as shortages of medical supplies, further impede the effectiveness of CBHI. While childbirth services may be free, families often incur costs for necessary supplies externally, delaying timely care. Recent Ethiopian studies document challenges in meeting national maternal and newborn health standards (181).

Geographical barriers, particularly during the rainy season, complicate access to health institutions. Many rural women end up giving birth at home or en route to hospitals, which complicates care. Cases of home births are sometimes incorrectly recorded as institutional deliveries, inflating safe childbirth rates (182,183)

The third study provides compelling evidence of the effectiveness of community-based SBCC interventions in enhancing maternal healthcare outcomes, aligning with findings from similar contexts. Prior research underscores the crucial role of community health workers (CHWs) in developing countries, demonstrating significant improvements in antenatal care (ANC) attendance and institutional delivery rates through culturally tailored education and support (184-189). Our findings reflect these trends, revealing that participants in the intervention group exhibited a substantial increase in ANC visits and institutional deliveries compared to the control group. This underscores the success of our intervention in rural Ethiopia.

Similar strategies have shown promise in other countries such as India and Tanzania (103, 190-192). The engagement of women's development army and health extension workers in Ethiopia mirrors successful models from these regions, which enhance community trust and promote the use of skilled birth attendants—essential for encouraging health-seeking behaviors among rural populations. Our results suggest that leveraging local community resources can significantly improve maternal healthcare utilization and outcomes (193).

Notably, our study found improvements in maternal health knowledge and attitudes among intervention participants, consistent with recent studies (189, 194-197). These results highlight the vital role of community-based SBCC initiatives in advancing maternal health both in Ethiopia and globally. By implementing maternal health-specific SBCC interventions, we effectively enhanced participants' knowledge and fostered positive attitudes toward healthcare practices. This approach encouraged timely healthcare-seeking behaviors, which are crucial for improving maternal and child health outcomes. Our findings align with existing literature, suggesting that community-driven health education programs are effective across various sociocultural contexts (198-201).

The intervention addressed key topics such as the importance of regular ANC visits, recognizing danger signs during pregnancy, and the benefits of institutional delivery. Consequently, the intervention group demonstrated significantly higher levels of knowledge about maternal health and more positive attitudes toward seeking professional healthcare services during pregnancy and childbirth. The impact of SBCC strategies on ANC and childbirth outcomes in our study is particularly noteworthy. The effectiveness of our SBCC methods is evidenced by higher rates of institutional deliveries and ANC attendance among intervention participants compared to the control group. This supports international initiatives aimed at reducing maternal mortality rates

by increasing access to trained birth attendants and promoting safe delivery practices (202-205). By emphasizing the importance of institutional deliveries and regular ANC visits through community-based SBCC interventions, our study contributes to global efforts to achieve Sustainable Development Goal 3, which focuses on ensuring healthy lives and promoting well-being for all at all ages (206).

In summary, this study contributes to the growing body of evidence supporting the effectiveness of SBCC strategies in improving maternal healthcare utilization and outcomes in low-income settings like rural Ethiopia. Integrating insights from diverse studies and fostering partnerships with local communities and healthcare providers offer promising pathways for advancing maternal health goals and promoting global health equity (207, 208). Sustaining these efforts with robust investments in health systems and policy support is imperative for achieving lasting improvements in maternal and child health outcomes worldwide (184, 189, 209, 210). Continued investment in infrastructure, workforce capacity, and sustainable funding is crucial to advancing holistic approaches to maternal healthcare that extend beyond pilot projects. With adequate support and strategic implementation, SBCC interventions can effectively reduce maternal and neonatal mortality, contributing to global health equity and achieving maternal health targets.

5.2. Strengths and Limitations

5.2.1 Strengths

The studies exhibit several strengths, reflecting a rigorous, interdisciplinary, and culturally sensitive approach to maternal health challenges in rural Ethiopia. Active collaboration among multidisciplinary teams ensured alignment with scientific standards and community needs. A key strength was the integration of local traditions and norms, fostering trust, ethical conduct, and culturally appropriate findings. Engaging diverse stakeholders, including religious leaders, healthcare providers, and community members, enriched the research, enhancing its credibility and relevance.

The use of a cluster-randomized trial design minimized selection bias and provided robust evidence on community-based Social and Behavior Change Communication (SBCC) interventions. Digital tools like Open Data Kit improved data accuracy, while pilot testing ensured contextually relevant instruments. Comprehensive training of field staff improved research quality and contributed to sustainable capacity building. Strategies to enhance trustworthiness, including member-checking and triangulation, ensured credible and reliable

findings. Collectively, these strengths produced scientifically sound and impactful insights into maternal health interventions in rural Ethiopia.

5.2.2. Limitations

Despite these strengths, the studies were not without limitations. Social desirability bias, where participants may have altered their responses to align with perceived expectations, remained a concern despite efforts to minimize it. Performance bias also posed a challenge, as both participants and healthcare providers were aware of their group allocation in the trial, potentially influencing behavior and outcomes. Another limitation was the geographical and socio-cultural specificity of the findings, which may limit the generalizability of the results to other regions with different healthcare infrastructures and cultural contexts. Furthermore, while the studies provided important insights into rural settings in Ethiopia, caution must be exercised when extrapolating these findings to urban or international contexts with different maternal health dynamics.

Efforts to Mitigate Bias

The research teams took significant measures to mitigate potential biases and uphold the integrity of their work. Regular peer reviews, combined with rigorous training and continuous monitoring of data collection activities, ensured that high standards were maintained throughout the research process. Additionally, triangulating the findings with existing literature allowed the research teams to validate emerging themes and situate their results within the broader context of maternal health research. These strategies reinforced the reliability and validity of the studies, ensuring that the conclusions drawn were based on robust evidence.

In conclusion, the strength of these studies lies in their interdisciplinary approach, cultural sensitivity, and methodological rigor. The integration of diverse stakeholder perspectives, the adoption of rigorous trial designs, and the use of advanced digital tools significantly enhanced the quality and reliability of the findings. While acknowledging the limitations, including the potential for social desirability and performance biases, the studies made substantial contributions to maternal health research in rural Ethiopia. The insights generated provide a solid foundation for future research and intervention strategies aimed at improving maternal health outcomes, particularly in resource-limited settings where cultural and logistical challenges intersect with healthcare delivery.

5.3. Implication of the study

5.3.1. *Implications for Policy*

The study suggests significant policy implications aimed at strengthening maternal health services utilization, particularly in rural settings. One primary policy need is the enhancement of community-based health education, which involves integrating influential local leaders, such as religious leaders, into maternal health promotion efforts. Empowering these leaders with appropriate training can help address prevalent misconceptions about institutional childbirth and promote knowledge that supports safer birthing practices. Additionally, infrastructure improvements are essential; policies must focus on enhancing maternal health institutions by investing in improved roads, reliable transport systems, and well-equipped healthcare resources, such as emergency services and maternal waiting homes, which are vital for rural populations facing geographical barriers. Financial accessibility to maternal healthcare also requires policy attention. Revising health insurance policies to expand coverage—particularly to alleviate the burden of out-of-pocket expenses for women and to include more services at private facilities—can significantly reduce financial barriers and ensure that maternal healthcare is accessible to all, regardless of economic background.

5.3.2. Practical Implications of the Interventions

The study's interventions underscore the effectiveness of practical, community-centered approaches in improving maternal health service utilization. Strengthening social and behavior change communication (SBCC) initiatives alongside community health worker engagement can lead to more significant maternal health awareness and encourage service utilization. Expanding SBCC interventions through culturally tailored messages, delivered by community health workers, helps promote antenatal care (ANC) visits and institutional childbirth, resonating with the local culture. Furthermore, engaging local leaders and women's development groups plays a critical role in overcoming community-specific barriers. Training religious leaders, the women's development army, and health extension workers can help disseminate healthcare messages to a broader audience, fostering positive attitudes and trust in maternal health services. Improving the quality of care provided at healthcare institution is another practical implication. Training healthcare staff to offer respectful, compassionate, and culturally sensitive care can create a welcoming environment, encouraging women to seek institutional childbirth options over traditional home delivery practices.

5.3.3. Implications for Theory

The Role of Religious Leaders in Influencing Health Behaviors

Religious leaders possess significant authority in shaping the health choices of their followers. Their perspectives on health, rooted in spiritual teachings, can either support or inhibit certain practices. For instance, while some religious teachings promote habits such as regular exercise or mental health care, others may create conflicts with medical practices like vaccination or contraception. Theoretical investigations could examine how these leaders shape health decisions through activities such as sermons, religious events, or health-related outreach initiatives. By analyzing their influence, researchers could develop health strategies that align with religious values, thereby fostering better health outcomes in faith-driven communities. Additionally, religious leaders could act as intermediaries, bridging the gap between healthcare providers and underserved populations. Their insights could help create culturally sensitive and spiritually appropriate health solutions.

Cultural Perspectives and Healthcare Utilization

Cultural beliefs play a crucial role in determining how individuals interact with healthcare systems. These perspectives affect decisions related to seeking medical care, adhering to prescribed treatments, and navigating healthcare structures. In many societies, traditional healing methods are often preferred over modern medical approaches due to factors like mistrust, historical injustices, or perceived effectiveness. Theoretical exploration could delve into how cultural norms influence healthcare behaviors and uncover challenges such as stigma surrounding specific illnesses. Moreover, designing models for culturally competent healthcare could increase accessibility and reduce disparities. Adapting healthcare systems to respect cultural traditions and values may enhance trust, foster stronger engagement, and result in more patient-centered, inclusive care.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

This study underscores the critical role of community-based interventions, such as Social and Behavior Change Communication (SBCC) and religious leader engagement, in enhancing maternal health service utilization and promoting institutional childbirth in rural Ethiopia. The findings highlight the necessity for sustained investments in culturally sensitive strategies that address attitudinal gaps and structural barriers, including limited awareness, poor infrastructure, and inadequate healthcare services. The SBCC intervention demonstrated significant improvements in maternal health knowledge, attitudes, antenatal care (ANC) utilization, and institutional childbirth rates, offering a replicable model for similar low-resource settings.

Addressing access barriers such as transportation challenges, shortages of medical supplies, and insufficient staffing is essential. Establishing maternal waiting homes, improving public transport, and fostering respectful, competent care are key strategies. Deficits in healthcare infrastructure—such as shortages of medicines, equipment, and basic utilities—must be addressed to ensure a safe and reliable birthing experience. The integration of traditional practices into maternal health services, coupled with efforts to enhance religious leaders' understanding of institutional childbirth, can further support healthcare-seeking behaviors.

Financial concerns, particularly unexpected out-of-pocket expenses, remain a major deterrent. Expanding comprehensive health insurance schemes and mitigating logistical challenges, such as seasonal access issues, are critical steps to improve service uptake. Community engagement and inclusive health promotion involving local leaders, husbands, and community members are also vital for creating informed and supportive environments for women's health decisions.

Achieving the Sustainable Development Goal (SDG) 3 target of reducing maternal mortality in Ethiopia requires a multifaceted approach. This includes strengthening healthcare infrastructure, addressing cultural and religious barriers, improving access to skilled birth assistance, and fostering partnerships between healthcare providers and community leaders. These strategies can substantially improve maternal and newborn health outcomes in Ethiopia and similar low-resource settings globally.

6.2. Recommendations

6.2.1. Policy Makers

Implement Culturally Sensitive Education Initiatives

Developing and delivering educational programs tailored to local cultural contexts can significantly increase awareness of maternal health services and the benefits of institutional deliveries. These programs should emphasize the importance of childbirth in healthcare institutions while respecting traditional beliefs and practices. Engaging key local figures, such as religious leaders, health extension workers, and community groups, is vital for effectively disseminating health information and fostering trust within communities.

6.2.2. Community and Stakeholders

Strengthen Community Engagement and Stakeholder Involvement

Promoting inclusive health initiatives that actively engage community members, husbands, and local leaders is critical to supporting institutional childbirth. Community dialogue and participatory health forums can help address misconceptions and create a supportive environment for maternal health. Training religious leaders to improve their understanding of maternal health issues, bridge knowledge gaps, build positive attitudes, and foster trust within the community is a vital strategy.

6.2.3. Researchers

Address Cultural Barriers

Integrating cultural considerations into maternal health practices is essential to encouraging institutional deliveries without disregarding traditional customs and rituals. Culturally respectful interventions help build trust between healthcare providers and the community, making it easier for women to seek healthcare services during childbirth.

Promote Awareness and Supportive Healthcare Providers

Awareness initiatives that emphasize culturally sensitive health service promotion should be conducted to foster positive attitudes toward institutional childbirth. Strengthening the role of community health agents, including Health Extension Workers (HEWs), religious leaders, and Women Development Armies (WDAs), is critical in building community trust and delivering maternal healthcare information effectively. Researchers should prioritize understanding community dynamics and testing innovative approaches to improve maternal health service utilization.

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ANNEXES

Annex 1: CV of Dr. Lakew Abebe

Personal information			
First name(s) /Surname(	**Dr. Lakew Abebe Gebretsadik**		
Address(es)	**Ethiopia, Oromia, Jimma Town**		
Telephone(s)	**+2514711114439**	**Mobile**	**+251917823144**
E-mail	**lakewabebegebretsadika9@gmail.com**		
Sex	**Male**		
Educational experience			
Sept.1979-June 1982	**(4academic years): Primary education at Kubit primary school. Northshoa, Lalomider woreda**		
Sept. 1982-June 1988	**(6 academic years): Junior and Higheschool edution at Mollale Comprehensive HIgheschool, Northshoa,Mamamider district/wordera/**		
Sept. 1988-February 1991	**(2.5 academic years): Higher education at previously known as Jimma Institute of Health Science y graduated as Diploma in Comprehensive Nursing.**		
Sept. 1996- March 1999	**(2.5 academic years): Higher education at Jimma University, Bachelor degree in Health Officer**		
Sept. 2005-June 2007	**(2 academic years): Higher education at Jimma University, Degree in Master of public health degree in Health education and promotion**		
Sept.2017-present	**Competing Ph.D. Candidate of Public Health in Health Communication and Health Behavior at Jimma university department of Health, Behavior & Society.**		
Work experience			
Current rank	**Associate Professor, Department Health, Behavior, Society, Jimma University**		
Name and address of current employer	**Jimma University, P.O.Box 378, Jimma, Ethiopia** **jihs@telecom.net.et, Tel: +251 471 111458-60, Fax; +251 471 11450**		

Awards & Positions

1. From August 2015 Associate Professor of Health Communication and Behavioral Sciences under the Health Education and Behavioral Sciences
2. Department Chair Person (head) from Nov. 2009 till August 2018
3. Assistant Professor from April 2012 to August 2015 and Department Head of Health Education and Behavioral Sciences, Jimma University, Ethiopia
4. March 2008 to Nov 2009 Lecturer at Health Education and Behavioral Sciences, Jimma University, Jimma, Ethiopia
5. 2007 Head, Health Services, Illu-Ababor Zone Health Office, Oromia Region, Ethiopia
6. 2003-2005 Head, HIV/AIDS Prevention & Control Office, Illu-Ababor Zone, Oromia Regional HAPCO, Oromia Region,

Ethiopia

7. 2001-2002 Communicable Disease Control Department Head, Illu-Ababor Zone Health Office, Oromia Region, Ethiopia
8. 1999–2000 Clinician & Health Center Head, Mettu Health Center, Illu-Ababor Zone, Oromia Region, Ethiopia
9. 1991 –1996 Chief Nurse, Mettu Health Center, Illu-Ababor Zone, Oromia Region, Ethiopia

Short Course Training experience

1. Applied logistic regression using R statistical software. Statistics Department, Jimma University by Guest presenter Dr. Legesse Kassa Debusho (PhD), UNISA, South Africa; from Oct 1-4, 2019.
2. Implementation research (IR) training offered in collaboration with Montreal University and Jimma University, Jimma Ethiopia from May 10-04/2018
3. Comprehensive Systematic Review Training Programme: Conducting Systematic Reviews of Qualitative Evidence and Text and Opinion. 23-26 April 2018, Nairobi, Kenya certified by Joanna Briggs Institute
4. Certificate on Training of Trainers (TOT) in Qualitative Research Designing and Analysis organized by Johns Hopkins University Center for Communication Program, Communication for Health Project; January 22-27, 2018; Adama, Ethiopia
5. Certificate of Scientific writing after completion of a five day intensive training from 13-17 November 2017 in Addis Ababa, Ethiopia for East African countries of IMCHA, IDRC, Canada funded projects Innovation African Researchers.
6. Certificate for Training on Evidence for Policy Organization by Jimma University of Health in collaboration with alliance for health policy, WHO, Geneva; from 8-10 November, 2017, Jimma Ethiopia
7. Certificate of Comprehensive Systematic Review Training Programmed from 17-21 July 2017 in Nairobi, Kenya, via the collaboration of Jimma University, Ethiopia, African Population Health Research Center (AHPRC) Nairobi, Kenya and the Joana Briggs Institute, Adelaide, Australia.
8. Certificate of Hierarchical Linear and Non-Linear Modeling (HLM) after 40 hours trainings by Ann O'Connel, the Ohio University Professor in USA; from 9-13 December 2013.
9. Certificate of award for the completion of a one week Course on Introduction to Health Systems Research in Low and Middle Income Countries, February 11-15 2013. Organized by Health Alliance/African Hub at Jimma University, Ethiopia
10. Certificate of Participation for the Successful Completion of the Training Workshop on Manuscript Review For Reviewers and Authors, July 5th to 7th , 2012; Organized by Ethiopian Journal of Health Sciences (EJHS), in collaboration with African Journal Partnership Project (AJPP).
11. Certificate of Award on Qualitative Research Methods and Analysis, June 4-21, 2012 Jimma, Ethiopia-Jimma University in Collaboration with Johns Hopkins Bloomberg School of Public Health, Center For Communication Program, CDC, Ethiopia and ARC, Ethiopia
12. Corticated of Awards on Qualitative Research Methods and Analysis June 4-21, 2012 by Jimma University in Collaboration with the US Center for Disease Control and Prevention (CDC) and JHU-CCP
13. Certificate on Systematic Review Training Programme; 26th -30th December 2011. The Jonna Briggs Institute, Adeladie University, Jimma University; Jimma, Ethiopia
14. Certificate on Social and Behavior Change Communication/Online Teaching and Learning Facilitation, December 12-20th,

2011. African Net Work for Strategic Communication in Health and Development (AfriComNet) and C-Change Program; Nairobi, Kenya.

15. Certificate of Understanding and Using Demographic and Health Survey, August 1-August 5, 2011. Measure Demographic and Health Survey, Kambala, Uganda
16. Certificate of OpenEnd Workshop: Enhancing Teaching and Learning – A Public Health Perspective; 25 February 2011. Payson Center for International Development, Tulane University
17. Certificate of Award on Performance Management and Balanced Score Card, 4-8 July 2011. Jimma University, Ethiopia

Peer Reviewed Research publications

1. Lakew Abebe Gebretsadik, Abebe Mamo, Zewdie Birhanu Koricha, Sudhakar Morankar, Effectiveness of targeted social and behavior change communication on maternal health knowledge, attitudes, and institutional childbirth: a cluster-randomized trial in Jimma Zone, Ethiopia, European Journal of Public Health, 2025;, ckae220, https://doi.org/10.1093/eurpub/ckae220
2. Gebretsadik LA, Mamo A, Abera M, Bediru KH, Bulcha G, Koricha ZB, et al. The Involvement of Religious Leaders in Supporting Institutional Childbirth in Rural Jimma Zone, Oromia, Southwest Ethiopia: An exploratory Qualitative Study. Journal of Religion and Health [Internet]. 2024 Oct 8; Available from: https://doi.org/10.1007/s10943-024-02151-z
3. Gebretsadik LA, Lakew F, Mamo A, Abera M, Bediru KH, Bulcha G, et al. Barriers to use of institutional childbirth services: a qualitative study in the rural Jimma Zone, Ethiopia. African Journal of Midwifery and Women S Health [Internet]. 2024 Apr 2;18(2):1–14. Available from: https://doi.org/10.12968/ajmw.2023.0007
4. Shibeshi K, Lemu Y, Gebretsadik L, Gebretsadik A, Morankar S. Sex Disparities: Couple's Knowledge and Attitude Towards Obstetric Danger Signs and Maternal Health Care: in Rural Jimma Zone of Ethiopia. International Journal of Women S Health [Internet]. 2024 May 1;Volume 16:987–1007. Available from: https://doi.org/10.2147/ijwh.s457357
5. Shibeshi, K., Koricha, Z. B., Abebe, L., Gebretsadik, A. M., & Sudhakar, M. (2023a). Understanding Gender-Based Perception during Pregnancy: A Qualitative study. International Journal of Women's Health, Volume 15, 1523–1535. https://doi.org/10.2147/ijwh.s418653
6. Shibeshi, K., Koricha, Z. B., Abebe, L., Gebretsadik, A. M., & Sudhakar, M. (2023b). Gender-based roles, psychosocial variation, and power relations during delivery and postnatal care: a qualitative case study in rural Ethiopia. Frontiers in Global Women's Health, 4. https://doi.org/10.3389/fgwh.2023.1155064
7. Appiah B, Gebretsadik LA, Mamo A, Kmush B, Asefa Y, France CR, et al. (2022) A 10+10+30 radio campaign is associated with increased infant vaccination and decreased morbidity in Jimma Zone, Ethiopia: A prospective, quasi-experimental trial. PLOS Glob Public Health 2(11): e0001002. https://doi.org/10.1371/journal.pgph.0001002
8. Sewmehone, E., Chemir, F., Abebe, L., & Gizaw, A. B. (2022). Predictors of induction of labor and success rate among mothers giving birth at Jimma University Medical Centre South West Ethiopia: Unmatched case control study. International Journal of Childbirth, 12(4), 239–246. https://doi.org/10.1891/ijc-2022-0043
9. Abebe L, Birhanu Z, Bergen N, Bulcha G, Haji K, Kulkarni M, et al. Exploring Religious leaders' experiences and challenges on Childbirth at Health Institutions. A qualitative study. medRxiv (Cold Spring Harbor Laboratory) [Internet]. 2022 Jun 16; Available from: https://doi.org/10.1101/2022.06.14.22275177
10. Abamecha, F., Deressa, A., Sudhakar, M., Abebe, L., Kebede, Y., Tilahun, D., Teshome, F., & Birhanu, Z. (2021).

Acceptability of peer learning and education approach on malaria prevention (PLEA-malaria) through primary schools communities in rural Ethiopia: peer educators' perspectives. Malaria Journal, 20(1). https://doi.org/10.1186/s12936-021-03965-y

11. Abamecha, F., Sudhakar, M., Abebe, L., Kebede, Y., Alemayehu, G., & Birhanu, Z. (2021). Effectiveness of the school-based social and behaviour change communication interventions on insecticide-treated nets utilization among primary school children in rural Ethiopia: a controlled quasi-experimental design. Malaria Journal, 20(1). https://doi.org/10.1186/s12936-020-03578-x
12. Fira Abamecha, Gachena Midaksa, Morankar Sudhakar, Lakew Abebe, Yohannes Kebede, Guda Alemayehu and Zewdie Birhanu. Perceived sustainability of the school-based social and behavior change communication (SBCC) approach on malaria prevention in rural Ethiopia: stakeholders' perspectives. BMC Public Health 21, 1171 (2021). https://doi.org/10.1186/s12889-021-11216-7.
13. Yohannes Kebede , Abdu Hayder, Kasahun Girma, Fira Abamecha, Guda Alemayehu, Lakew Abebe, Morankar Sudhakar and Zewdie Birhanu. Primary school students' poetic malaria messages from Jimma zone, Oromia, Ethiopia: a qualitative content analysis. *BMC Public Health*; 2021, **21:** 1688. https://doi.org/10.1186/s12889-021-11641-8.
14. Yohannes Kebede , Morankar Sudhakar, Guda Alemayehu, **Lakew Abebe**, and Zewdie Birhanu. Comparing insecticide-treated nets access-use based on universal household and population indicators vis-a-vis measures adapted to sleeping spaces in Ethiopia. Malar J 20, 355 (2021). https://doi.org/10.1186/s12936-021-03887-9.
15. Kebede Y, Alemayehu G, Abebe L, Sudhakar M, Birhanu Z. Messenger students' engagement scale: Community perspectives on school-based malaria education in Ethiopia. Health Soc Care Community. 2021 Sep;29(5):1391-1400. doi: 10.1111/hsc.13193. Epub 2020 Oct 17. PMID: 33068059.
16. Yohannes Kebede, Lakew Abebe , Guda Alemayehu , Morankar Sudhakar and Zewdie Birhanu. Effectiveness of peer-learning assisted primary school students educating the rural community on insecticide-treated nets utilization in Jimma-zone Ethiopia. *Malar J* **19,** 331 (2020). https://doi.org/10.1186/s12936-020-03401-7.
17. Kebede Y, Abebe L, Alemayehu G, Sudhakar M, Birhanu Z. School-based social and behavior change communication (SBCC) advances community exposure to malaria messages, acceptance, and preventive practices in Ethiopia: A pre-posttest study. *PLoS One*. 2020;15(6):e0235189. Published 2020 Jun 25. doi:10.1371/journal.pone.0235189
18. Nicole Bergen, Grace Zhu, Shifera Asfaw Yedenekal, Abebe Mamo, Lakew Abebe Gebretsadik, Sudhakar Morankar & Ronald Labonté. Promoting equity in maternal, newborn and child health – how does gender factor in? Perceptions of public servants in the Ethiopian health sector, Global Health Action; 2020 13:1, 1704530, DOI: 10.1080/16549716.2019.1704530. https://doi.org/10.1080/16549716.2019.1704530.
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20. Gizaw, A. T., Mekuria, M. S., Abraha, G. K., Weldemariam, H. H., & Gebretsadik, L. A. (2020). University Students' intention to quit substace abuse in Ethiopian: Application of Theory of Planned Behavior. Research Square (Research Square). https://doi.org/10.21203/rs.3.rs-20022/v1.

21. Shemsu Nuriye Hagisso, Lakew Abeba Gebretsadika, Abata Lette Wodera and Temesgen Sidamo Summoro. Patients Satisfaction and its Associated Factors in Rural Health Center, Shashogo District, Southern Ethiopia: A Cross Sectional Study. Prim Health Care 2019, 9: 326.
22. Michelle R. Kaufman, Ashlie M. Williams, Graziele Grilo, Christina X. Marea, Fasil Walelign Fentaye,Lakew Abebe Gebretsadik, and Shifera Asfaw Yedenekal." We are responsible for the violence, and prevention is up to us": a qualitative study of perceived risk factors for gender-based violence among Ethiopian university students. BMC Women's Health, Nov. 6, 2019: 19:131. https://doi.org/10.1186/s12905-019-0824-0
23. Lakew Abebe, Mamusha Aman , Shifera Asfaw , Hailay Gebreyesus, Mebrahtu Teweldemedhin and Abebe Mamo. Formula-feeding practice and associated factors among urban and rural mothers with infants 0–6 months of age: a comparative study in Jimma zone Western Ethiopia. BMC Pediatrics, 04 Nov. 2019 19:408/ https://doi.org/10.1186/s12887-019-1789-8.
24. Abebe Mamo, ,Sudhakar Morankar, Shifera Asfaw, Nicole Bergen, Manisha A. Kulkarni, Lakew Abebe, Ronald Labonté, Zewdie Birhanu1 and Muluemebet Abera. How do community health actors explain their roles? Exploring the roles of community health actors in promoting maternal health services in rural Ethiopia. BMC Health Services Research, 21 Oct. 2019; 19:724. https://doi.org/10.1186/s12913-019-4546-7.
25. Nicole Bergen, Alzahra Hudani, Shifera Asfaw, Abebe Mamo, Getachew Kiros, Jaameeta Kurji, Sudhakar Morankar, Lakew Abebe, Manisha A. Kulkarni and Ronald Labonté. Promoting and delivering antenatal care in rural Jimma Zone, Ethiopia: a qualitative analysis of midwives' perceptions. BMC Health Services Research, 21 Oct. 2019; 19:719. https://doi.org/10.1186/s12913-019-4596-x.
26. Jaameeta Kurji, Lakew Abebe Gebretsadik, Muluemebet Abera Wordofa, Morankar Sudhakar, Yisalemush Asefa, Getachew Kiros, Abebe Mamo, Nicole Bergen, Shifera Asfaw, Kunuz Haji Bedru, Gebeyehu Bulcha,Ronald Labonte, Monica Taljaard, Manisha Kulkarni. Factors associated with maternity waiting home use among women in Jimma Zone, Ethiopia: a multilevel cross-sectional analysis. BMJ Open 2019; 9:e028210. doi:10.1136/bmjopen-2018-028210.
27. Michelle R. Kaufman, Graziele Grilo, AshlieM. Williams, Christina X. Marea, Fasil Walelign Fentaye, Lakew Abebe Gebretsadik & Shifera Asfaw Yedenekal. The intersection of gender-based violence and risky sexual behaviour among university students in Ethiopia: a qualitative study, Psychology & Sexuality, 02 Oct. 2019. DOI: 10.1080/19419899.2019.1667418. https://doi.org/10.1080/19419899.2019.1667418.
28. Zelalem Desalegn Waktole, Ameyu Godesso Roro, **Lakew Abebe Gebretsadik** Factors Predicting Responses to HIV/AIDS Prevention Messages among Wollega University Students, Oromia, Ethiopia: A Cross Sectional Study. Ethiop J Health Sci., July 2019; 29 (4): 453-460. DOI: http://dx.doi.org/10.4314/ejhs.v29i4.6;
29. Nicole Bergen, Arne Ruckert, Manisha A. Kulkarni, **Lakew Abebe**, Sudhakar Morankar and Ronald Labonté. Subnational health management and the advancement of health equity: a case study of Ethiopia. Global Health Research and Policy; 2019, (4):12. https://doi.org/10.1186/s41256-019-0105-3.
30. Haboro GG, Handiso TB, Gebretsadik LA (2019) Health Care System Delay of Tuberculosis Treatment and Its Correlates among Pulmonary Tuberculosis Patients in Hadiya Zone Public Health Facilities, Southern Ethiopia. J Infect Dis Epidemiol 5:077 . doi.org/10.23937/2474-3658/1510077.
31. Hagisso SN, Gebretsadika LA, Wodera AL, Summoro TS. Patients Satisfaction and its Associated Factors in Rural Health Center, Shashogo District, Southern Ethiopia: A Cross Sectional Study. Prim Health Care; May 07, 2019; 9: 326.

32. Nicole Bergen, Lakew Abebe, Shifera Asfaw, Getachew Kiros, Manisha A.Kulkarni, Abebe Mamo, Sudhakar Morankar & Ronald Labonté (2019): Maternity waiting areas – serving all women? Barriers and enablers of an equity-oriented maternal health intervention in Jimma Zone, Ethiopia, Global Public Health; 25 March 2019. https://doi.org/10.1080/17441692.2019.1597142.
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36. Shifera Asfaw1, Sudhakar Morankar , Muluemebet Abera , Abebe Mamo , Lakew Abebe , Nicole Bergen , Manisha A. Kulkarni4 and Ronald Labonté. Talking health: trusted health messengers and effective ways of delivering health messages for rural mothers in Southwest Ethiopia. BMC Archives of Public Health; (2019) 77:8. https://archpublichealth.biomedcentral.com/articles/10.1186/s13690-019-0334-4.
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40. Nicole Bergen , Abebe Mamo, Shifera Asfaw, Lakew Abebe, Jaameeta Kurji, Getachew Kiros, Muluemebet Abera, Gebeyehu Bulcha Duguma, Kunuz Haji Bedru, Manisha A. Kulkarni, Ronald Labonté and Sudhakar Morankar. Perceptions and experiences related to health and health inequality among rural communities in Jimma Zone, Ethiopia: a rapid qualitative assessment. BMC International Journal for Equity in Health, 18 June 2018; 17:84, https://doi.org/10.1186/s12939-018-0798-9; Accessed on 20 June 2018 at: https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-018-0798-9,
41. Sinan Tadesse, Abraham Tamirat Gizaw, Getachew Kirose Abraha and **Lakew Abebe Gebretsadik**. Patterns of psychiatric admissions and predictors of patient’s outcome in Jimma University Teaching and Referral Hospital: a retrospective study. Biomedical Central, Int J Ment Health Syst; 14, June 2017: 11:41 DOI 10.1186/s13033-017-0148-0.
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43. Abraham Tamirat Gizaw, Fira Abamecha Ababulgu, **Lakew Abebe Gebretsadik**, Getachew Kiros Abraha. The effect of psychometric variables in predicting physical activity behavior among diabetes mellitus type-2 patients. Journal of

Multidisciplinary Healthcare, Dovepress; 2017:10 59–64. https://www.dovepress.com/the-effect-of-psychometric-variables-in-predicting-physical-activity-b-peer-reviewed-article-JMDH.

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46. Abinet Arega Sadore, **Lakew Abebe Gebretsadik**, and Mamusha Aman Hussen. "Compliance with Iron-Folate Supplement and Associated Factors among Antenatal Care Attendant Mothers in Misha District, South Ethiopia: Community Based Cross-Sectional Study." Journal of Environmental and Public Health, 2015; 2015(2015): 7 pages. http://dx.doi.org/10.1155/2015/781973;
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51. Yohannes Abuhay, **Lakew Abebe**, Netsanet Fentahun. Male Involvement in Prevention of Mother to Child Transmission of HIV and Associated Factors among Males in Addis Ababa, Ethiopia. American Journal of Health Research. Vol. 2, No. 6, 2014, pp. 338-343. doi: 10.11648/j.ajhr.20140206.13
52. Yeshiwork Amogne Mekonnen, **Lakew Abebe**, Netsanet Fentahun ,Shegaw Alemu Belay, Addisu Workineh Kassa. Delay for First Consultation and Associated Factors among Tuberculosis Patients in Bahir Dar Town Administration, North West Ethiopia. American Journal of Health Research. Vol. 2, No. 4, 2014, pp. 140-145. doi:10.11648/j.ajhr.20140204.16.
53. Gebremeskel Mirutse, Girmatsion Fisseha, **Lakew Abebe**, Zewda Birhanu, Mussie Alemayehu. Intention to Donate Blood among the Eligible Population in Mekelle City, Northern Ethiopia: Using the Theory of Planned Behavior. American Journal of Health Research.Vol. 2, No. 4, 2014, pp. 158-163. doi: 10.11648/j.ajhr.20140204.19.
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Attending Jimma University Specialized Hospital, Southwest Ethiopia: Application of Health Belief Model. Science Journal of Public Health, 2014; 2(6): 524-53. doi: 10.11648/j.sjph.20140206.15.

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57. Yohannes Kebede Lemu, Zewdie Birhanu Koricha, **Lakew Abebe Gebretsadik**, & Ameyu Godesso Roro. Predictors of refusal of provider initiated HIV testing among clients visiting adult outpatient departments in Jimma town, Oromia Region, Ethiopia: unmatched case control study. HIV/AIDS - Dove Press Journal of Research and Palliative Care; 1 August 2012. http://dx.doi.org/10.2147/HIV.S33122.
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Abstract and poster presentation

1. Lakew Abebe Gebretsadik. Engaging Women Health Development Armies through HEWs—an Innovative Approach towards Safe Motherhood. 26th Canadian Conference on Global Health (CCGH)on 2020 Global Health in Changing Environment, 19 – 22 October 2020 online conference.
2. Lakew Abebe Gebretsadik. Involving health system decision makers in research design and implementation: Experiences from the Safe Motherhood project in Jimma Zone, Ethiopia. Posters were presented in 25th Canadian Conference on Global Health (CCGH), 17 – 19 October 2019, Delta Hotel, Ottawa, Canada.
3. Lakew Abebe Gebretsadik. Religious leaders' perceptions regarding the community and health facility level support system for safe motherhood in Jimma Zone, Ethiopia. Posters were presented in 25th Canadian Conference on Global Health (CCGH), 17 – 19 October 2019, Delta Hotel, Ottawa, Canada.
4. Lakew Abebe, Getachew Kiros, Sudhakar Morankar, Shifera1 Asfaw, Abebe Mamo, Gebeyehu Bulcha, Kunuz Haji, Nicole

Bergen, Manisha Kulkarni4, Ronald Labonté, Jaameeta Kurji. Dogma or Practicing Maternal and Child Health Services? Religious Leaders Way of Engagement in Promoting Safe Motherhood in Jimma Zone Southwest Ethiopia. The 2nd RMNCAH/N Research Conference, FMOH, Addis Ababa, August 19-20, 2019: (Poster Presentation).

5. Zewdie Birhanu, Lakew Abebe, Morankar Sudhakar, Guda Alemayehu . Access to and Use Gaps of Insecticide-Treated Nets in Jimma Zone: Evidence from a Baseline Result from School and Faith Based Malaria Education Program: Implication for Behavioral Change Communication. 5th Ethiopian Malaria Research Network Symposium Report, Mekele University Jan 23-24, 2015: pp22. (Abstract presentation)
6. Gemechis Etana Roro, MorankarSudhakar, Lakew Abebe, ZewdieBerhanu, Guda Alemayehu. Rapid Assessment of Barrier to LLIN utilization among the trained lead person Under USAID –JU ACP malaria project. 5th Ethiopian Malaria Research Network Symposium Report, Mekele University Jan 23-24, 2015: pp23. (Abstract presentation)

Blogs

1. Abebe L, Birhanu Z, Bergen N, Bulcha G, Haji K, Kulkarni M, et al. Exploring Religious leaders' experiences and challenges on Childbirth at Health Institutions. A qualitative study. medRxiv (Cold Spring Harbor Laboratory) [Internet]. 2022 Jun 16; Available from: https://doi.org/10.1101/2022.06.14.22275177
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5. https://www.idrc.ca/en/project/promoting-safe-motherhood-jimma-zone-ethiopia-imcha;
6. https://www.idrc.ca/en/research-in-action/getting-there-overcoming-barriers-safe-motherhood-ethiopia
7. https://www.manishakulkarni.com/stories-from-the-field

Project and fieldwork experiences

1. **2018-2020-** Exploring Challenges and Opportunities on using Radio Communication in Promoting Childhood Immunization in Ethiopia through 10+10+30 infant vaccines communication campaign via radio in Ethiopia and an RCT and Cohort Study of Penta 3- Country PI

   Starting Date: 17 October 2018

   Funder: Texas A&M University, USA, subcontracting to JU after Funding from Bill Gate and Melinda Foundation
2. **2015-2022:** An Implementation Study of Interventions to Promote Safe Motherhood in Jimma Zone, Ethiopia. Promoting Safe Motherhood in Jimma Zone, Ethiopia (IMCHA) | IDRC - International Development Research Centre

Objective: What existing and new interventions designed to remove barriers to safe motherhood options contribute to a reduction in MCH mortality and morbidity? **Funder:** IDRC, Canada

Role: Principal Investigator (PI) and Project leader

Grant completed

3. **2014-2018** - Advancing Community's Practices on Prevention and Control of Malaria ("ACP-Malaria") through Schools and

Faith Based organization in Jimma Zone

Funder: USAID, Ethiopia

Objective: Local Community Capacity Building and Strengthen to bring SBCC on malaria prevention and Control

Role: Co-Project administrator (Manage, coordinate and lead logistical needs, control and manage all financial related matters: and participate on Baseline study, interim and final evaluation of the project intervention.

4. 2015-2017: Novel Approaches to Measuring Demand-Side Community Perceptions and Barriers to Family Planning via Social Network Analysis. Funder: the Bill & Melinda Gates Foundation

   Role: Principal investigator
5. 2016: Formative and baseline research and impact Evaluation Study on communities' knowledge, Attitude, practice and overall awareness on land rental and Credit availability. Funder: EM-Communication PLC, Ethiopia

Role: Professional Consultant a one year project

6. 2015-2018: Addressing Gender Based Violence and HIV on Ethiopian University Campuses: Formative Research and Intervention Development (country Co-PI).

Also

7. Has served as a Supervisor for the project entitled: Exploring COVID-19 Vaccine Hesitancy among urban settings residents in Ethiopia, in collaboration with Jimma University and WHO and FMoH. 2023
8. PI for the project entitled: Practice of Bottle Feeding and Associated Factors by Mothers, a Comparatives Study, in Jimma Zone Southwest Ethiopia. Funded by Jimma university college of Public Health And Medical sciences
9. PI of a mega research project entitled, Trajectories of Skilled Delivery Service Utilization among Pregnant Mothers Who Received Innovative mHealth Intervention, Jimma Zone, Ethiopia, funded by the Jimma University; 2019

Organizational Activities

1. Mr. Lakew Abebe currently serves as an Associate Professor at the Faculty of Public Health, Jimma University, while simultaneously pursuing his fourth year as a Ph.D. fellow in Public Health, specializing in Health Communication and Health Behavior. In his dual role, he engages in both academic and research activities.
2. In his academic capacity, Mr. Lakew teaches a range of courses, including Qualitative Research Methods, Health Promotion, and Health Behavior Theories and Models, among others. He teaches these courses to postgraduate students in Master of Public Health (MPH), Health Economics, and Health Monitoring and Evaluation programs, as well as to MPH students specializing in Public Nutrition.
3. Additionally, Mr. Lakew provides research advisory services to postgraduate MPH students and offers guidance to medical specialists in fields such as Internal Medicine, Surgery, and Gynecology and Obstetrics.
4. During his tenure as Department Chair for nearly a decade, Mr. Lakew also served as the Secretary of the Academic Commission at the former College of Public Health and Medical Sciences.

Language and Skills

Mother tongue(s)	**Amharic**
Other languages (self-rating)	✓ English: Excellent proficiency in reading, writing, and speaking skills
Social skills (competence)	✓ Exceptional commitment and motivation to achieve further success. ✓ Strong communication and teamwork abilities.

	✓ Positive social interaction with individuals from diverse linguistic and cultural backgrounds.
Computer skills and technical competences	✓ Proficient in basic computer applications: MS Word, MS Excel, MS PowerPoint. ✓ Advanced data analysis skills using statistical software: SPSS (version 27), Stata (version 12) for Windows. ✓ Expertise in qualitative data management and analysis using Atlas.ti (version 7.5) for Windows. ✓ Skilled in advanced internet research techniques and using various search engines. ✓ Advanced abilities in literature review and systematic reviews. ✓ Strong scientific writing skills with a proven track record of producing high-quality publications.
References	
1. Zewdie Birahanu (Ph.D., Professor.); Chief Academic and Research Director, Institute of Health, Jimma University, Ethiopia. E-mail: zbkoricha@yahoo.com , mobile: (+251) 917025852 **2.** Morankar Sudhaker (PhD, PGDP, HCMTC): Professor, Department of Health, Behavior and Society, Jimma University, Ethiopia, Director, Ethiopian Evidence Based Health Care Center, JBI Center of Excellence, Jimma University Rapid review Response center: AHPSR/WHO Center of Excellence. Email: morankarsn@yahoo.com, or sudhakar.morankar@gmail.com **3.** Fira Abamecha (PhD, Assis. Prof.): Department of Health, Behavior and Society, Jimma University, Ethiopia, Moblie: +251917019211; E-mail: firamecha@gmail.com	

Annex 2: Letter for declaration of dissertation work

I, the undersigned, declared that this is my bona fide original work, has never been presented in this or any other university, and that all the resources and materials used for the thesis, have been fully acknowledged.

Name: Lakew Abebe Gebretsadik

Signature: ____

Date: ____

Date of submission: _______________________________________

This dissertation has been submitted for examination with my approval as the Candidate's Promoter (supervisor).

1. 1st supervisor: Morankar Sudhakar (Professor)
   Signatures: ______________________________
   Date: _____________________________________
2. 2nd supervisor: Zewdie Birhanu (PhD, Professor)
   Signatures: ________________________________
   Date: _____________________________________

Annex 3: Qualitative Research Guidelines: English version

FGD and IDI Guidelines (research questions 1)

Information Sheet for FGD Participant's Recruitment Script

Good morning/ afternoon/ evening. Thank you for talking with me. My name is _______. I am working with Jimma University, Ethiopia and Ottawa University, Canada, which are currently working on Implementation Research to improve maternal and Child Health in Jimma Zone, South West Ethiopia. We would like to ask you how the stakeholders of child and maternal health services and care provision work in holistic and synchronized and your desired future actions to work together.

Study Procedure: If you say yes, we will ask you to join a focus group discussion with other Women Health Development Army members. The discussion will be led by a facilitator and will be in a private setting. We will ask questions about on how women, government, community and stakeholders work towards improving the quality of safe motherhood and child health program and its interventions in your area (Village or District), including the maternal waiting areas and the community's opinion of the use of this waiting areas. The focus group discussion will take about one and half (1.5) hours of your time. We would like to audio record it so that we can go back to exactly what was said later.

Risks: The facilitator is not going to ask you personal question rather more general and common questions just to learn from your observations, experiences and previous decision making processes. However, if you feel uncomfortable discussing topics or parts of the discussion you can stop the discussion or you are not obliged to answer all the questions. No risk is associated with the opinions and feelings you expressed at all and it is only on voluntary bases.

We will do our best to keep your information safe by not recording your name and any personal identifier in our notes or on the audio recording. We will also keep the recordings and notes in a locked cabinet that is only accessible to the study team. If we share your information with other researchers, they will also use the same protections. The discussion is confidential. We also ask that you keep whatever others say in the group confidential. Having said this, we hope you will be willing to share your thoughts, opinions, and experiences as openly as you feel, think, know and experience comfortably.

Benefits: You may find it interesting or empowering to discuss topics on pregnant women and child health care and service provisions. The discussion you participate in may give us information to help us contribute towards innovating maternal and child health programs in your community and Ethiopia. This is your pride to give valuable and accurate information thorough out the focus group discussion so that your community and country will have healthy and productive generation. Besides, through this

discussion, you may learn more and use it for your future decision making and teaching purposes to your village women, particularly pregnant women.

Do you have any questions?

You may contact Mr. Lakew Abebe Gebretsadik (who is the Principal African Researcher of this project, and Head of Department of Health and Behavioral Sciences, Jimma University, Southwest Ethiopia, about your questions or problems with this work. Mr. Gebretsadik's phone number is +251917823144, and email: lakewgebretsadika9@gmail.com.

If you have any questions about your rights as a study participant, or if you feel you have not been treated fairly, please contact Mr. Kunuz Hajii Abdella (who is the Co-PI and decision Maker of the project, and Jimma Zone Health Office Head). Mr. Abdella's Phone No: +251911029130; email: kunuzhaji@yahoo.com .

Further you can report to Dr. Mirkuzie Woldie Kerie, Head of the Institutional Review Board for the Health Sciences College at Jimma University, which approved this study. Dr. Kerie's No: +251917804051 and his email is mirkuziewise@gmail.com.

I will give you a contact card with this information.

Do you agree to participate in the group discussion today? *(Check participant's answer)*

☐ Yes ☐ No

May I record/audio-tape/ the discussion? *(Check participant's answer)*

☐ Yes ☐ No

"I have read the consent form completely for the study participant, and the study participant voluntarily agreed to participate in the study."

________________________ _____________________________ __________

Signature of Interviewer Printed Name of Interviewer Date

Consent form for Qualitative study part

I have been informed by the data collectors about the purpose of this study in a language I can understand. The study is a part of the safe motherhood project which has been implemented in our district. I have been told that the information in give to the researcher will be kept confidential and will be used only for research purposes. Participation in the research is fully up to me. I have also been informed that I can refuse to participate in the study, not to respond to question I am not interested or stop responding to question at any time in the process.

Therefore; I, the undersigned have understood that the purpose of this particular research and I agree to participate in the research voluntarily.

Participant's signature ____________ date_______/______/______ (dd/mm/yy)

Data collector's signature, ______________ date ______/_______/_____ (dd/mm/yy)

In-Depth Interview guide for Health Extension Workers

Key Informants

- **Health Extension Workers**

Back Ground information of Interviewee

- Name of District______________________
- Name of Health center and Health post_______________
- Age of interviewee___________________
- Responsibility of the HEW ___________________
- **Time started ___________________**

In-depth interview Guide - HEWs

1. How do you break down your time for maternal health services and other health extension programs? How much of your work week is for maternal and child health program?
2. Give a detailed list of maternal and child health services you provide for the community?
3. What do you do to encourage members of your community so that they participate in maternal and child related activities, education or planning?
4. What are some serious health problems that can occur **during pregnancy** that could endanger the life of a pregnant woman? Which of these problems are severe? Could a woman die from [this problem] any of these problems?
5. What are some serious health problems that can occur during **labour and childbirth** that could endanger the life of a pregnant woman? Which of these problems are severe? Could a woman die from [this problem] any of these problems?
6. What are some serious health problems that can occur during **postpartum period** that could endanger the life of a pregnant woman? Which of these problems are severe? Could a woman die from [this problem] any of these problems?
7. How many ANC attendants could you face each month on average?
8. What are the services given to pregnant women during antenatal care visits?
9. What was the level of ANC 1 to ANC 4 dropout rate? What are the reasons for high dropout rate?
10. How do you understand the function, quality of services and impact of maternal waiting area in reducing maternal and neonatal mortality?
11. What are the factors that discourage pregnant mothers not to stay at maternal waiting area before immediately close to their delivery? What are the solutions you suggest?
12. What are the roles of health extension workers to increase the uptake of Maternal Waiting Area?
13. What are the leading reasons why women not prefer to follow antenatal care services? What are the possible solution do you suggest to curb such problem?
14. In your community how do women prepare for birth? What birth preparedness related services are found in your community?

15. In your locality where do women prefer to give birth and to be assisted by? Why?
16. Top reasons why women prefer to give birth in a home rather than elsewhere?
17. Why all women do not seek delivery care at health facilities?
18. Do you think the health problems can arise after birth? What are the health problems that can happen during that period? do you think it is necessary? Do women get check up after birth for their health? Why**?**
19. Do pregnant women in your community seek care after their delivery? Where did they prefer to go? Why?
20. Could you name some types of basic care that can be provided to a newborn baby immediately after birth?
21. What are problems in your community that hinder pregnant women from getting health services childbirth/labor, and post partum period?
22. How do you involve men during household visit or health education concerning maternal and child health?
23. How do you understand preparation for birth? What practices are common in your community? Who is responsible for saving money? How do women get financial support?
24. How do you work together with health development army, opinion leaders and model households to promote the health of mother and to reduce maternal and neonatal mortality?
25. When did you refer pregnant women for ANC, Delivery services and PNC to upper level of health level of health system? Where? How?
26. What did you do after they return to the community?
27. How often health center offices visited your community pertaining to maternal and child health services? What they do? What does the guideline say about the visit
28. How do you get feedback from health center officers or district health offices regarding maternal and child health services? Does the feedback have values?
29. Do you have routine meeting with health development armies? In what ways community residents participate in maternal and child health activities?

- **Time ended ___________________**

Thank you for your time and great participation

Back Ground Information of Interviewer

a. Name of Interviewer ____________________________
b. Sex____
c. Age of Interviewer______________________________
d. Educational level _________________________________
e. Date of Interview ____________________________; Signature __________________

In-depth interview Guide (Questions) for Religious Leaders

Key Informants

- **Religious Leaders**

Back Ground information of Interviewee

- Name of District______________________
- Name of Health center_______________
- Age of interviewee___________________
- Responsibility of the religious leader ___________________
- **Time Started:_____________________**

In-depth interview Guide - RL

1. What are the roles of religious leaders in promoting maternal and child health to decrease maternal and neonatal mortality and morbidity?
2. Dou you have a routine program with health development agent, male development agent and community members to discuss on the issue of maternal health? What mal –practices were changed through these discussions?
3. What are some serious health problems that can occur **during pregnancy** that could endanger the life of a pregnant woman? Which of these problems are severe? Could a woman die from [this problem] any of these problems?
4. What are some serious health problems that can occur during **labor and childbirth** that could endanger the life of a pregnant woman? Which of these problems are severe? Could a woman die from [this problem] any of these problems?
5. What are some serious health problems that can occur during **postpartum period** that could endanger the life of a pregnant woman? Which of these problems are severe? Could a woman die from [this problem] any of these problems?
6. What do women in your community do during their pregnancy? Any visit to health center/health post? How many times in total pregnant women should receive antenatal care during pregnancy?
7. What are the services given to pregnant women during antenatal care?
8. How do you understand the function, quality of services and impact of maternal waiting area in reducing maternal and neonatal mortality?
9. What are the factors that discourage pregnant mothers not to stay at maternal waiting area before immediately close to their delivery? What are the solutions you suggest?

10. What are the leading reasons why women not prefer to follow antenatal care services? What are the possible solution do you suggest to curb such problem?
11. In your community how do women prepare for birth? What birth preparedness related services are found in your community?
12. In your locality where do women prefer to give birth and to be assisted by? Why?
13. Top reasons why women prefer to give birth in a home rather than elsewhere?
14. In your community who will make final decision where the women give birth and birth assistance? why?
15. What is the nature & extent of husband`s involvement in decisions on the use of maternal and child health services? What happens if husbands disapprove seeking the care?

16. Why all women do not seek delivery care at health facilities?
17. Do you think the health problems can arise 2 days after birth? What are the health problems that can happen during that period? do you think it is necessary? do women get check up after birth for their health? why**?**
18. Do pregnant women in your community seek care after their delivery? Where did they prefer to go? Why?
19. Could you name some types of basic care that can be provided to a newborn baby immediately after birth?
20. In your community do women freely discuss pregnancy and childbirth matters? with whom? Why?
21. What are problems in your community that hinder pregnant women from getting health services childbirth/labor, and post partum period?
22. What preparations are found in your community for emergencies? do people make advance preparations? What barriers those hinder from such preparations?
23. What are the roles of health development army in promoting the health of mothers and in reducing maternal and neonatal death?
24. How do you do with health extension workers to promote the health of mother and to reduce maternal and neonatal mortality?

***Time Ended:*____________________**

Thank you for your time and great participation

<u>Back Ground Information of Interviewer</u>

a. Name of Interviewer ____________________________
b. Sex____
c. Age of Interviewer______________________________
d. Educational level ________________________________
e. Date of Interview ____________________________; Signature _________________

Focus group discussion Interview guide for Women's Health Development Army <u>(WDA)</u>

Time started: ____________________________

Focus group discussion Interview guide - WDA

1. Do you have regular meetings on the issue of ANC, delivery and PNC? How often do you meet each other? What are the roles of health development army in promoting the health of mothers and in reducing maternal and neonatal death?
2. How do you work together with health extension workers to promote the health of mother and to reduce maternal and neonatal mortality?
3. How do you access information on maternal and child health services in the community?
4. In your community do women freely discuss pregnancy and childbirth matters? With whom? Why? If not why not?
5. What do women in your community do during their pregnancy? Any visit to health center/health post?
6. What are some serious health problems that can occur **<u>during pregnancy</u>**? (Which of these problems are

severe? Have you ever observed or witnessed in that any pregnant woman die from those serious health problems related to pregnancy? Have you tried anything to safe life of the woman/women? What and how or why not? Can you tell more?)

7. What are some serious health problems that can occur during **labour or childbirth? (Which of those health problems are severe? Have you observed or witnessed that any woman die of those problems during childbirth?** Anything tried to safe the life of the labouring mother/mothers that you observed? By whom? Where? How? And if not why not? Can you elaborate more on this issue what should be done by the pregnant woman? Husband and family? By the community? By you? And health institutions?)
8. What are some serious health problems that can occur during after delivery within one to six weeks that could endanger the woman/women? Which of these problems are severe? Have you encountered any of these problems? What were the immediate solution/s/ done in order of actions? If no action why?)
9. Do pregnant women in your community visit to health post or health centre during pregnancy for checkups? How many times they visit if they visit? For what purpose they visit if they visit? If they did not visit why not?
10. For those mothers who visited health post/health center for Antenatal care, what services are given to them? When or at what visit for which service/s/?
11. How do you judge the function, quality of services given during ANC? Why?
12. What about the quality and coverage of maternal waiting area service provision, (functionality and quality) to impact or reduce maternal and newborn death rates? (How? Why? Or why not? What else needs to be improved?)
13. What are the factors that promotes or discourage pregnant mothers to stay at maternal waiting area? What are the solutions you suggest?
14. What are the roles of health development armies in promoting the utilization of ANC and maternal waiting area? (Were there problems? How those problems were addressed? What else be in place? By who could be provided?)
15. Do pregnant women prefer to have ANC and get delivery at Maternal waiting areas currently? Why or why not? How can the issues be addressed? Who is responsible for what?)
16. In your community how do women prepare for birth? What birth preparedness related services are found at family and community?
17. Every action needs decision. So, who decided the place of delivery (either at home or health institution or attended by relatives or medical person?). Why? Were the decisions accepted at what circumstances?).
18. How likely the condition of service provision influence Decision Making? How and why? What do you recommend to have safe delivery (or delivery attended by midwife at health center)?
19. After the birth what happened to the child and mother? What did they do? Where did they go? Any visit to health center? Why/why not? What did they do? Any visit from HEW or Community volunteer? What did they do?
20. Do you think the health problems can arise 2 days after birth? What about within 7 days, 15 days 20 days, 30

days and so on?). When it be expected no health problem associated to childbirth for the mother and newborn?

21. When do mothers start breast feeding? How long did mother's breast feed their baby? When do mothers start additional feeding to their baby? Why and why not?
22. When does the newborn get immunized or vaccinated? By whom? If not immunized, why? (Can you mention the benefits of vaccination to the newborn? What are those benefits? Are those benefits crucial to the survival of the newborn and the life afterwards? How and why? What is/are the values held by the mothers, community members in general about the benefits of getting vaccinated to the newborn? Why and why not? Discuss more on this topic
23. Did HEWs visit your home in the last one year: How frequently they visit your home? Where you think HEWs live? What services did they give you?
24. Who supervise your efforts and actions to safe the mothers and newborn babies in your community? Are you satisfied by your actions so far? Why or why not?
25. Anything you will add or recommend before we rewind our discussions-you are well come?

Time Ended:____________________

Thank you for your time and great participation

<u>Back Ground Information of Interviewer</u>

f. Name of Interviewer ____________________________
g. Sex____
h. Age of Interviewer______________________________
i. Educational level ________________________________
j. Date of Interview ____________________________; Signature _________________

Focus group discussion Interview guide for <u>Married Women from Community</u>

Time Started: ______________________________

Focus group discussion Interview guide – Married Women

1. Let us discuss about mother and child, how you feel and think they should be cared? (Probe: By whom? Why? How?
2. Do you think mothers' and children's health care is important? (Probe: Why? Are they cared as we think and want? Why and how?
3. Do you tell me about ANC and its important?
4. Have pregnant mothers gone for ANC in your village or Kebele? (Probe: If so, where? How? Where do they prefer to go for ANC? Why?
5. Let's discuss about some health problems the pregnant mothers may encounter during pregnancy, delivery and after delivery within weeks?
6. Have you ever seen or encountered any of those pregnancy and delivery related health problems? (Probe: Tell me more about why those problems happen? What was/were done? By whom? When (immediately or late)?

Why? Whom do you think is highly responsible for prevention or averting these pregnancy and delivery related problems? About Maternal Waiting Areas and its advantage and disadvantages)

7. Now let's discuss about the newborn care? How is the newborn cared while a mother gives birth? (What is going to be done for the new born? When? Where? By whom? Why? What about immunization, when to which vaccination?)
8. Do you feel and think religious leaders can play role in caring the mothers and children? (What, how, why? What should be done?)
9. What are the roles of husbands in caring pregnant mothers and newborn baby in your village? How? Why? Why not?
10. Was the new born get adequate care? If yes, what are the cares provided to the new born? When? By whom? If not, why? What else do you feel not provided?
11. Were the newborn vaccinations provided on time? When? Where? By Whom? Or why not?
12. Tell us what you perceive the new born to the mother? To the father? To the family? To the community and nation?
13. What do you feel or suggest important care to the newborn and how?
14. What do you think or view the responsibility of women, men, community, and government to give maximum health care for pregnant mothers and newborns? How? Why and why not? Put the recommendations specific.
15. Now we are on the way to windup but before we do so, anything to be added or left to be discussed from your side or you need to pass the message or any errand to anybody.

Time Ended: ____________________

Thank you for your time and great participation

<u>Back Ground Information of Interviewer</u>

a. Name of Interviewer ___________________________
b. Sex____
c. Age of Interviewer_____________________________
d. Educational level _______________________________
e. Date of Interview ___________________________; Signature _________________

In-depth interview guide for midwifery nurse:

Implementation study of interventions to promote safe motherhood

Jimma University and the University of Ottawa collaboration

Project funded by IDRC

Background information on the interviewee or key informant

- Name of PHCU ___________________________________
- Discipline/expertise ______ level of education_____________________
- Position ____ years in role ______________
- Age ___________________ sex __________________

Question set 1.

First I'd like to ask you to tell me about the maternal and child health services or activities provided at the primary health care unit (PHCU).

1. What types of maternal and child health services or activities are available?

   Prompt: services for women before they become pregnant (e.g. contraception or family planning), services for pregnant women (e.g. immunizations, visits with health provides), services around time of childbirth, services in the ## days following childbirth (e.g. visits with health providers, services related to child feeding)

   Prompt: medical services, education, other activities
2. What types of resources does the PHCU commit to providing maternal and child health services?

   Prompt: financial, personnel, materials, training, other
3. What is the role of the PHCU in managing and/or delivering maternal and child health services? Is the PHCU effective in this role? Why or why not?
4. How do community members become aware of the services that you have mentioned?

   Prompt: use of marketing, media, word of mouth, common practice, HEWs, etc.
5. What motivates women to participate in maternal and child related activities, education or planning?
6. How do you at the PHCU encourage participation?
7. What might prevent them from participating? Do you address these influences? If so, how?
8. How important is it that they participate? How do you think this participation affects maternal and child health outcomes?
9. What examples of this participation have you experienced?
10. Are there any families for whom these services are especially important? Do you target any groups of women in particular? If so, how? Can you think of any examples?

    Prompt: vulnerable populations

Question set 2.

The next three questions will ask about the experiences of PHCU staff and health extension workers (HEWs) with regards to the provision of maternal health services at different stages of childbearing.

1. I am now going to ask you about the experiences of **PHCU staff and HEWs** in providing antenatal care (ANC) visits for pregnant women in the kebeles of this PHCU. ANC visits refer to the visits that pregnant women may have with a health provider for reasons related to the pregnancy.

   a) *What types of ANC services are provided at PHCUs by PHCU staff?*

   b) *What do you see as the reasons for pregnant women to attend (or not attend) ANC visits at the PHCU?*

   c) *What do you see as the reasons for pregnant women to return (or not return) for subsequent ANC visits at the PHCU?*

   d) *What do PHCU staff do to encourage women to attend an initial ANC visit? What do they do to reduce drop-outs? Explain why these actions are effective or ineffective.*

e) What challenges do PHCU staff face in providing ANC?

f) What types of ANC services are provided by HEWs? Where are these services delivered? (Prompt: home, health post, other)

g) What are the reasons why pregnant women attend (or do not attend) ANC visits with HEWs?

h) What do you see as the reasons why pregnant women return (or do not return) for subsequent ANC visits with HEWs?

i) What challenges do HEWs face in providing ANC?

How do you think pregnant women could be encouraged to attend ANC visits at PHCUs? With HEWS? What would the PHCU need to improve ANC services?

j) How does ANC service delivery differ by kebele? Can you give an example of how a kebele performs well (less well) with regards to ANC services? Why?

2. Next I will ask about the preferences of women in the kebeles of this PHCU with regards to giving birth.
    a) Where do you think women prefer to give birth, and with the assistance of whom?
    b) What are the factors for women to (not) give birth at a health facility?
    c) What do PHCU staff do to encourage women to give birth at a health facility? What challenges do they face?
    d) What do HEWs do to encourage women to give birth at a health facility? What challenges do they face?
    e) How could more women be encouraged to give birth at a health facility? What would the PHCU need to encourage women to give birth at a health facility?
    f) *How do birth services differ within this PHCU? Can you give an example of how a kebele performs well (less well) with regards to birth services?*
3. Now, I ask that you tell me about the experiences of women in the kebeles of this PHCU during the ## days after they give birth, with regards to their health and the health of their baby.
    a) Do new mothers seek care after their delivery? If so, where do they prefer to go? Why?
    b) What postnatal services are available at the PHCU? What other types of postnatal services are available for these women at other locations (e.g. at the health post or in their communities)? By whom are they delivered?
    c) What challenges do PHCUs face with regards to providing postnatal services? What solutions are/could be taken? What would PHCUs need to contribute to these solutions?
    d) What challenges do HEWs face with regards to providing postnatal services? What solutions are/could be taken? What would HEWs need to contribute to these solutions?
    e) How do postnatal services and their usage differ within this PHCU? Can you give an example of how a kebele performs well (less well) with regards to postnatal services?

Question set 3.

The next four questions will ask about serious health problems that present at different stages of childbearing.

1. What types of serious health problems do PHCU staff or HEWs see during pregnancy?

a) *How is the problem addressed? By whom?*
b) *What improvements could be made to better address the problem?*
c) *What are the reasons for action or inaction on these improvements?*
d) *What would be needed to make these improvements? By whom?*

2. What types of serious health problems do PHCU staff or HEWs see during childbirth?
    a) *How is the problem addressed? By whom?*
    b) *What improvements could be made to better address the problem?*
    c) *What are the reasons for action or inaction on these improvements?*
    d) *What would be needed to make these improvements? By whom?*
3. What types of serious health problems do PHCU staffs or HEWs see during the two days following childbirth?
    a) *How is the problem addressed? By whom? What improvements could be made to better address the problem?*
    b) *What are the reasons for action or inaction on these improvements?*
    c) *What would be needed to make these improvements? By whom?*
4. What types of serious health problems do PHCU staff or HEWs see during the ## day period after a woman gives birth?
    a) *How is the problem addressed? By whom?What improvements could be made to better address the problem?*
    b) *What are the reasons for action or inaction on these improvements?*
    c) *What would be needed to make these improvements? By whom?*

Question set 4.

This question set is about the maternal waiting area (MWAs) available at this PHCU (if applicable).

1. In your experience, how do MWAs affect a woman's decision to have skilled birth attendance at the PHCU?
    a) *What do you see as the reasons for women to (not) use the MWA?*
    b) *Are there any women for whom MWAs are particularly important? How are these women encouraged to attend?*
2. What qualities of MWAs do you think are most important in encouraging women to be assisted in birth at a health facility?

    Prompt: refer to the 11 indicators
3. How can these qualities be sustained (for those MWAs brought up to full scale) or improved (for those MWAs functioning below scale)? What is needed to do so?
4. What should be the role of government (then, of the community) in sustaining (or improving) these qualities?
5. What are the reasons for action or in action on the part of the PHCU in improving MWAs?

Question set 5.

Do you have anything else you'd like to say about how you and the PHCU (including HEWs) work to promote the health of women and their babies?

THANK YOU!

Background information of interviewer

Name____________________________

Sex____

Age______________________________

Education level _________________________________

Date of Interview ____________________________; Signature __________________

Focus Group Guide for Primary Health Care Unit or Maternal and Child Health Unit Head

Implementation study of interventions to promote safe motherhood

Jimma University and the University of Ottawa collaboration

Project funded by IDRC

Background information on the focus group discussion

Name of District __________________________________

Question set 1.

First I'd like to ask you to tell me about the maternal and child health services or activities provided at the primary health care unit (PHCU).

1. What types of maternal and child health services or activities are available?
2. What types of resources does the PHCU commit to providing maternal and child health services? *Prompt: financial, personnel, materials, training, other*
3. What is the role of the PHCU in managing and/or delivering maternal and child health services? Is the PHCU effective in this role? Why or why not?
4. How do community members become aware of the services that you have mentioned? *Prompt: use of marketing, media, common practice, health extension workers (HEWs) information to community, etc.*
5. What motivates women to participate in maternal and child related activities?
6. How do you at the PHCU encourage participation?
7. What might prevent them from participating? Do you address these influences? If so, how?
8. How important is it that they participate? How do you think this participation affects maternal and child health outcomes?

Question set 2.

The next six questions will ask about the experiences of PHCU staff and health extension workers (HEWs) with regards to the provision of maternal health services at different stages of childbearing.

1. Where do you think women prefer to give birth, and with the assistance of whom?
2. What are the factors for women to or not to give birth at a health facility?

3. What do PHCU staffs do to encourage women to give birth at a health facility? What challenges do they face?
4. What do HEWs do to encourage women to give birth at a health facility? What challenges do they face?
5. How could more women be encouraged to give birth at a health facility? What would the PHCU need to encourage women to give birth at a health facility?
6. How do birth services differ within this PHCU? Can you give an example of how a kebele performs well (less well) with regards to birth services?
    a) *Do new mothers seek care after their delivery? If so, where do they prefer to go? Why?*
    b) *What postnatal services are available at the PHCU? What other types of postnatal services are available for these women at other locations (e.g., at the health post or in* their communities)? By whom are they delivered?
    c) *What challenges do PHCUs face with regards to providing postnatal services? What solutions are/could be taken? What would PHCUs need to contribute to these solutions?*
    d) *What challenges do HEWs face with regards to providing postnatal services? What solutions are/could be taken? What would HEWs need to contribute to these solutions?*
    e) *How do postnatal services and their usage differ within this PHCU? Can you give an example of how a kebele performs well (less well) with regards to postnatal services?*

Question set 3.

The next four questions will ask about serious health problems that present at different stages of childbearing.

5. What types of serious health problems do PHCU staffs or HEWs see during pregnancy?
    e) *How is the problem addressed? By whom?*
    f) *What improvements could be made to better address the problem?*
    g) *What are the reasons for action or inaction on these improvements?*
    h) *What would be needed to make these improvements? By whom?*
6. What types of serious health problems do PHCU staffs or HEWs see during childbirth?
    e) *How is the problem addressed? By whom?*
    f) *What improvements could be made to better address the problem?*
    g) *What are the reasons for action or inaction on these improvements?*
    h) *What would be needed to make these improvements? By whom?*
7. What types of serious health problems do PHCU staffs or HEWs see during the two days following childbirth?
    d) *How is the problem addressed? By whom? What improvements could be made to better address the problem?*
    e) *What are the reasons for action or inaction on these improvements?*
    f) *What would be needed to make these improvements? By whom?*
8. What types of serious health problems do PHCU staffs or HEWs see during the ## day period after a woman gives birth?

a) How is the problem addressed? By whom? What improvements could be made to better address the problem?

b) What are the reasons for action or inaction on these improvements?

c) What would be needed to make these improvements? By whom?

Question set 4.

Do you have anything else you'd like to say about how you and the PHCU (including HEWs) work to promote the health of women and their babies?

THANK YOU!

Background information of focus group discussion facilitator

Name___________________________

Sex____

Age_____________________________

Education level ________________________________

Date of Interview ___________________________; Signature _________________

Annex 4: Survey Questionnaires: English version

Questionnaires for research questions 1

Basic infrmation and consent form for key stakeholders (research 1)

Good morning/ afternoon/ evening. Thank you for talking with me. My name is _______. I am working with Jimma University, Ethiopia and Ottawa University, Canada, which are currently working on Implementation Research Survey in Jimma Zone, Ethiopia. You are randomly selected by chance or lottery to be involved in this study among others. Therefore, it is my privilege to get informed consent to interview you. Study Procedure: If you say yes, we will ask you to give us true and genuine responses. You will not be asked sensitive issues and the interview will take from 25-35 minutes

The interview will be in a safe and private place where only you and the interviewer interact. The interviewer will use pencil, pen and interview digital recorder. Your personal identity (your name) won't be included; but your age, sex, place of residence and some general socio-economic status will be included in recording.

Risks: No risk is associated at all by providing true and valuable responses on these interviews. However if you feel unease to give responses to some of the questions, you can escape or stop responding. This is fully a voluntary participation. Besides, we assure you we will do our best to keep your information safe and confidential. We will also keep the recordings and notes in a locked cabinet that is only accessible to the study team members. If we share your information with other researchers, they will use the same protections.

Having said this, we hope you will be willing to share your thoughts, opinions, feelings, experiences and possible solutions as openly as you feel, think, know and experience them.

Benefits: You may find it interesting or empowering to give valuable information and future directions. Being part of this study, you may also be proud of your contribution to solve MCH program intervention gaps in your community as well as nation.

If you need further clarification, you may contact Mr. Lakew Abebe Gebretsadik (who is the Principal African Researcher) of this project about your questions or problems with this work. Mr. Gebretsadik's phone number is +251917823144, and email: lakewgebretsadika9@gmail.com.

If you have any questions about your rights as a study participant, or if you feel you have not been treated fairly, please contact Mr. Kunuz Hajii Bediru (who is the Co-PI and decision Maker of the project, and Jimma Zone Health Office Head). Mr. Kunuz's Phone No: +251911029130; email: kunuzhaji@yahoo.com .

I will give you a contact card with this information.

Do you have any questions?

Do you agree to participate in the interview? (Check participant's answer)

☐ Yes ☐ No

May I record the responses on the paper? (Check participant's answer)

☐ Yes ☐ No

"I have read the consent form completely for the study participant, and the study participant voluntarily agreed to participate in the study."

______________________	______________________	______________
Signature of Interviewer	Printed Name of Interviewer	Date

Consent form Survey

I have been informed by the data collectors about the purpose of this study in a language I can understand. The study is a part of the safe motherhood project which has been implemented in our district. I have been told that the information in give to the researcher will be kept confidential and will be used only for research purposes. Participation in the research is fully up to me. I have also been informed that I can refuse to participate in the study, not to respond to question I am not interested or stop responding to question at any time in the process.

Therefore; I, the undersigned have understood that the purpose of this particular research and I agree to participate in the research voluntarily.

Participant's signature ____________ date_______/______/______ (dd/mm/yy)

Data collector's signature, ______________ date ______/_______/_____ (dd/mm/yy)

Basic Information

Evaluation of Interventions to Promote Safe Motherhood in Jimma Zone, Ethiopia

QUESTIONNAIRE FOR INDEX WOMAN

INTERVIEWER: Complete this section before approaching household					
CP1	Interview date	☐☐/☐☐ /☐☐☐☐ D D M M Y Y Y Y		**CP16** Survey phase	**ENDLINE**
CP2	Interviewer ID	☐☐	**CP3** Screening ID	**SCR** ☐☐☐☐☐	
CP4	Woman's first name		**CP5** Woman's last name		
CP17	District	1○ Gomma	2○ Kersa	3○ Seka Chekorsa	
CP20	Survey site (PHCU)	ENTER PHCU WHERE TEAM IS **GOMMA** 1○ Beshasha 2○ Chami Chago 3○ Choche 4○ Dhayi Kechene 5○ Gembe 6○ Kedemasa 7○ Limu Shayi 8○ Meti Koticha 9○ Omo Beko 10○ Yachi	**SEKA CHEKORSA** 1○ Bake Gudo 2○ Buyo Kechema 3○ Dabo Yaya 4○ Detu Kersu 5○ Geta Bake 6○ Lilu Omoti 7○ Seka 8○ Setemma 9○ Wokito	**KERSA** 1○ A/Dika 2○ B/Wajo 3○ Bulbul 4○ K/Beru 5○ K/Gora 6○ Kellacha 7○ Serbo	
CP6	Kebele of residence	**SEKA CHEKORSA** ☐ Kusaro ☐ B/Qacamaa ☐ A/Allaggee	☐ I/Tunjo ☐ W/Medaaluu ☐ X/Waacho ☐ Deto Qarssu	☐ Siba Qaqee ☐ Budo Keraa ☐ I/Togobee ☐ Bake Gudo	

		☐ G/Bosoo	☐ B/Tuulii	☐ Atro Sufaa
		☐ Meexii	☐ U/Buyo	☐ D/Shekota
		☐ U/Koche	☐ Q/Waacoo	☐ Gaxa -Bakke
		☐ G/Ula’ukke	☐ M/Ushaane	☐ Geppa – Sadan
		☐ Shashamanne	☐ G/Daakaa	☐ S/Genefoo
		☐ Magala Saqqaa	☐ K/Haarri	☐ Sogido
		☐ Dabo Yaya	☐ L/Ca’aa	☐ Sentema Goroo
		☐ D/Gibee	☐ Nasee	☐ G/Lucine
		☐ B/Rogee		
		GOMMA		
		☐ Beshasha	☐ Bulado Choche	☐ Gomma 2
		☐ Bore dinsira	☐ Koye Sejja	☐ Gembe
		☐ Keda maye	☐ L.Shaye	☐ Omo Gobu
		☐ Omo Funtule	☐ L.Sapha	☐ Belfo Konche
		☐ Kotta	☐ Keta Bero	☐ Keso Hiti
		☐ Kedemasa	☐ Acha Afeta	☐ Yachi
		☐ Getabore	☐ Meti koticha	☐ Kilole
		☐ Barsoma	☐ Tesso Sadecha	☐ Dedo Ureche
		☐ Elbu	☐ Dedessa	☐ Gogga
		GOMMA continued	☐ Gomma 1	☐ Dhayi kechene
		☐ Dalecho	☐ Choche	☐ Chami Chago
		☐ Chedero Suse	☐ Choche Lemmi	☐ Jimate
		☐ Bulbulo	☐ Dinu	☐ Odo Adami
		☐ Omo Gurude	☐ Gabene Abo	
		☐ Omo Beko		
CP6 cont.	Kebele of residence (continued)	**KERSA**	☐ Ankeso	☐ B/bechane
		☐ A/Sebu	☐ Gunju	☐ K/sume
		☐ Babo	☐ Kombolcha	☐ B/wajo
		☐ T/Balto	☐ Merewa	☐ Dogos
		☐ T/Abulo	☐ K/Mujja	☐ Osso
		☐ Girma	☐ Bulbul	☐ Siba
		☐ Serbo	☐ Gello	☐ Sinkulle
		☐ T/Kersu	☐ Kitimbile	☐ K/Gora
		☐ A/Dika	☐ Wadiko	☐ Sh/Totoba
		☐ F/Gubeta	☐ K/Beru	☐ G/Seriti
		☐ M/Kebericho	☐ Kellacha	

INTERVIEWER: Introduce yourself and follow consent procedures before enrolling woman				
CP8	Consent obtained?	¹○ Yes	⁰○ No SKIP TO END	
CP10	Household ID	□□□□□	**CP9** Index woman ID	□□□□□□
CP11	Is woman's name correct?	¹○ Yes SKIP TO CP12	⁰○ No	
CP11a	Woman's correct first name		**CP11b** Woman's correct last name	
CP12	Husband's first name		**CP13** Husband's last name	
CP7	Household GPS	Latitude □□□°□□'□□"	Longitude □□□°□□'□□"	
CP18	Name of health centre woman attends	**GOMMA** ¹○ Beshasha ²○ Chami Chago ³○ Choche ⁴○ Dhayi Kechene ⁵○ Gembe ⁶○ Kedemasa ⁷○ Limu Shayi ⁸○ Meti Koticha ⁹○ Omo Beko ¹⁰○ Yachi	**SEKA CHEKORSA** ¹○ Bake Gudo ²○ Buyo Kechema ³○ Dabo Yaya ⁴○ Detu Kersu ⁵○ Geta Bake ⁶○ Lilu Omoti ⁷○ Seka ⁸○ Setemma ⁹○ Wokito	**KERSA** ¹○ A/Dika ²○ B/Wajo ³○ Bulbul ⁴○ K/Beru ⁵○ K/Gora ⁶○ Kellacha ⁷○ Serbo
CP19	Husband present for interview	¹○ Yes	⁰○ No	

Adapted from: Demographic and Health Surveys & JHPIEGO Birth preparedness/complication readiness tools for MNH & EQ-5D-3L 2009

SECTION 1: [DEM] SOCIODEMOGRAPHIC INFORMATION

Good morning/afternoon. My name is ____________________. Thank you for taking the time to speak with me. I would like to start by asking you some general questions about yourself and your family.

DEM1a.	Do you know the year and month you were born in?	1○ Yes 0○ No SKIP TO DEM3
DEM1.	What year were you born in? *INTERVIEWER: Use the Calendar of events if needed. Record answers in Ethiopian calendar.*	□□□□ Y Y Y Y
DEM2.	What month were you born in? *INTERVIEWER: Record answers in Ethiopian calendar.*	□□ SKIP TO DEM5 if complete M M 99○ Do not know
DEM3.	***If year of birth not known*** What is your age?	□□ years
DEM5.	Have you ever attended school?	1○ Yes 0○ No SKIP TO DEM7
DEM6.	What is the highest level of education you have completed?	0○ None 1○ Grade 1 2○ Grade 2 3○ Grade 3 4○ Grade 4 5○ Grade 5 6○ Grade 6 7○ Grade 7 8○ Grade 8 9○ Grade 9 10○ Grade 10 11○ Grade 11 12○ Grade 12 13○ Higher 88○ Other (*specify*)
DEM7.	Now I'd like you to read these four sentences to me. ***INTERVIEWER Show card in preferred language to respondent.*** Probe: Can you read any part of these sentences to me?	0○ Cannot read at all 1○ Able to read some parts of the sentences 2○ Able to read all four sentences in full 3○ Visually impaired literate 4○ Visually impaired non-literate
DEM8.	What work do you mainly do?	1□ Housewife 2□ Student 3□ Farmer 4□ Trader 5□ Government employee 6□ Private organization employee 7□ Domestic worker 8□ Daily labourer 88□ Other (*specify*)
DEM9.	Have you worked in the last 12 months?	1○ Yes 0○ No
DEM10.	What is your marital status?	1○ Never married SKIP TO DEM18 2○ Married 3○ Divorced 4○ Separated 5○ Widowed 88○ Other (*specify*)

INTERVIEWER: Ask questions about husband if NOT PRESENT to be interviewed (see response in CP19)

DEM11 a	Do you know the year and month your husband was born in?	[1]O Yes [0]O No SKIP TO DEM13
DEM11.	What year was your husband born in? *INTERVIEWER: Record answers in Ethiopian calendar.*	□□□□ Y Y Y Y
DEM12.	What month was your husband born in? *INTERVIEWER: Record answers in Ethiopian calendar.*	□□ M M [99]O Do not know
DEM13.	***If year of birth not known*** How old is your husband?	□□ years [99]O Do not know
DEM14.	What **kind of work** does your husband mainly do?	[1]□ Student [2]□ Farmer [3]□ Trader [4]□ Government employee [5]□ Private organization employee [6]□ Domestic worker [7]□ Daily labourer [88]□ Other (*specify*)
DEM15.	Has your husband **worked** in the last 12 months?	[1]O Yes [0]O No [99]O Do not know
DEM16.	Has your husband **ever attended school**?	[1]O Yes [0]O No SKIP TO DEM18 [99]O Do not know SKIP TO DEM18
DEM17.	What is the **highest level of education** your husband has completed?	[0]O None [1]O Grade 1 [2]O Grade 2 [3]O Grade 3 [4]O Grade 4 [5]O Grade 5 [6]O Grade 6 [7]O Grade 7 [8]O Grade 8 [9]O Grade 9 [10]O Grade 10 [11]O Grade 11 [12]O Grade 12 [13]O Higher [99]O Do not know
DEM18.	How many individuals are part of your household? (*i.e usually stay together and have shared arrangements for eating, cooking and pool their money together)*	□□
DEM19.	Of these, how many household members are **adults** (18 years or above)?	□□
DEM20.	How many of the adults in the household have **jobs or are earning money** through work or trade?	□□
DEM21	Last year, what was the total income for **your household** for the year?	□□□□□□ Birr [99]O Do not know

SECTION 2: [IDM] INFORMATION SOURCES & HEALTH-RELATED DECISION MAKING

I would now like to ask you some questions about your sources of information and how decisions are made in your household

IDM1.	How often do you read a **newspaper or magazine -** at least once a week, less than once a week or not at all?	⁰O Not at all	¹O At least once a week	²O More than once a week
IDM2.	How often do you listen to the **radio -** at least once a week, less than once a week or not at all?	⁰O Not at all	¹O At least once a week	²O More than once a week
IDM3.	How often do you watch **television -** at least once a week, less than once a week or not at all?	⁰O Not at all	¹O At least once a week	²O More than once a week
IDM4.	Do you own a mobile phone?	¹O Yes	⁰O No	
IDM5.	Where do you usually get health information from? *Probe: Any other place?*	¹☐ Newspaper/Magazine ²☐ Radio ³☐ Television ⁴☐ Nurse/doctor ⁵☐ HEW ⁶☐ Partner ⁷☐ Relative	⁸☐ Friends/neighbours ⁹☐ Traditional birth attendant ¹⁰☐ CDA member ⁸⁸☐ Other (*Specify*)	
IDM6.	What were your main sources of advice/information about **where to deliver** your last child? *Probe: Any other place?*	¹☐ Newspaper/Magazine ²☐ Radio ³☐ Television ⁴☐ Nurse/doctor ⁵☐ HEW ⁶☐ Partner ⁷☐ Relative	⁸☐ Friends/neighbours ⁹☐ Traditional birth attendant ¹⁰☐ CDA member ⁸⁸☐ Other (*Specify*)	
IDM7.	Has a health extension worker (HEW) ever	¹O Yes	⁰O No SKIP TO IDM11	

	visited your home?		
IDM8.	How often does the HEW visit your home?	0○ Less than once a month 1○ 1-2 times a month	2○ 3-4 times a month (or every week) 3○ 5 or more times a month
IDM9.	Does the HEW provide health information during her visits?	1○ Yes	0○ No SKIP TO IDM11
IDM10.	What information does the HEW share with you during her visits to your home? ***Do not read out. Select all that apply.*** ***Probe: Anything else?***	1☐ Antenatal care at health facilities 2☐ Care during pregnancy (diet, hygiene, rest, vaccinations, etc) 3☐ Danger signs during pregnancy 4☐ Birth/safe delivery planning 5☐ Danger signs during labour 6☐ Postpartum danger signs in mother 7☐ Danger signs in newborn 8☐ Newborn care – feeding, immunizations, cord care,etc 88☐ Other (*Specify*)	
IDM11.	Did the HEW visit you after you delivered your last child?	1○ Yes	0○ No SKIP TO IDM13
IDM12.	How many times did the HEW visit you in the 6 weeks (42 days) after you had given birth to your last child?	☐☐	99○ Do not recall
IDM13.	In the **last 12 months**, have you or anyone in your family participated or joined a programme that promotes antenatal care, delivery at health facilities or after birth care for mother and baby at health facilities?	1○ Yes	0○ No
IDM14.	Who usually decides how the money **you earn** will be used?	1○ Self 2○ Husband 3○ Jointly with husband 4○ Mother 5○ Father	6○ Mother-in-law 7○ Father-in-law 88○ Other (*Specify*)

IDM15.	*INTERVIEWER: Skip if woman not married.* Who usually decides how the money **your husband** earns will be used?	[1]O Self [2]O Husband [3]O Jointly with husband [4]O Mother [5]O Father [6]O Mother-in-law [7]O Father-in-law [88]O Other (*Specify*)
IDM16.	Who usually makes decisions about **health care** for **yourself**?	[1]O Self [2]O Husband [3]O Jointly with husband [4]O Mother [5]O Father [6]O Mother-in-law [7]O Father-in-law [88]O Other (*Specify*)
IDM17.	Who usually makes decisions about **health** care for your **children**?	[1]O Self [2]O Husband [3]O Jointly with husband [4]O Mother [5]O Father [6]O Mother-in-law [7]O Father-in-law [88]O Other (*Specify*)
IDM18.	Who usually decides whether or not you will use **family planning** or birth spacing methods?	[1]O Self [2]O Husband [3]O Jointly with husband [4]O Mother [5]O Father [6]O Mother-in-law [7]O Father-in-law [88]O Other (*Specify*)
IDM19.	Who made the **final** decision about where you would give birth to your **last** child?	[1]O Self [2]O Husband [3]O Jointly with husband [4]O Mother [5]O Father [6]O Mother-in-law [7]O Father-in-law [88]O Other (*Specify*)

IDM20.	Who usually decides whether you can **leave the house** to visit family/friends, go out shopping, etc?	1○ Self 2○ Husband 3○ Jointly with husband 4○ Mother 5○ Father	6○ Mother-in-law 7○ Father-in-law 88○ Other (*Specify*)
IDM21.	Are you a member of any social group, organization or association?	1○ Yes	0○ No SKIP TO REP1
IDM22.	What group are you a member of? ***Select all that apply***	1☐ Farmers' group 2☐ Women's group 3☐ Youth group 4☐ Kebele committee 5☐ Credit/savings group/*iddir, ekub*	6☐ Community Conversation 7☐ NGO-led group 8☐ Health Development Army 88☐ Other (*Specify*)
IDM23.	Are you a leader of the women's development army?	1○ Yes	0○ No

SECTION 3: [REP] REPRODUCTIVE HISTORY OF INDEX WOMAN

I'd now like to ask you some questions about any pregnancies and births you have had during your life.

REP1.	How old were you when you first got married? INTERVIEWER: *If woman cannot remember, ask how long she has been married for and help her work out age when she first got married.*	☐☐ years	
REP2.	How old were you when you first got pregnant?	☐☐ years	
REP3.	How many times have you been pregnant during your life?	☐☐	
REP6	How many **livebirths** have you **ever** had?	☐☐	
REP4	How many times in your life have you had an **induced abortion**?	☐☐	*INTERVIEWER: Check against total pregnancies and other pregnancy outcomes*

REP5	How many times in your life have you had a **miscarriage**?	☐☐	*INTERVIEWER: Check against total pregnancies and other pregnancy outcomes*
REP7	How many times in your life have you had a **stillborn child**?	☐☐	*INTERVIEWER: Check against total pregnancies and other pregnancy outcomes*
REP8	How many children have you delivered **at home**?	☐☐	
REP9	How many children have you delivered at a **health centre or hospital**?	☐☐	
REP10	How many children have you delivered **en route** (ex: on the road, in the ambulance)?	☐☐	
REP14.	Did your **last pregnancy** result in a livebirth, stillbirth, miscarriage or abortion?	[1]○ Live birth [2]○ Still birth	[3]○ Miscarriage [4]○ Abortion
REP15.	Have you ever given birth to a **premature baby** (i.e gave birth to a live baby before completing 37 weeks of pregnancy)?	[1]○ Yes	[0]○ No
REP16.	Did you plan your last pregnancy?	[1]○ Yes	[0]○ No
REP17.	During your **last pregnancy**, did you experience any **serious health problems** related to the pregnancy?	[1]○ Yes	[0]○ No SKIP TO REP22
REP18.	What health problems did you experience during your last pregnancy? ***Select all that apply***	[1]☐ Bleeding [2]☐ Severe headache [3]☐ Blurred vision [4]☐ Convulsions/fits [5]☐ Swollen face/hands [6]☐ High fever [7]☐ Loss of consciousness/fainting [8]☐ Breathing difficulty [9]☐ Severe weakness [10]☐ Severe abdominal pain	[11]☐ More/less fetal movement [12]☐ Water breaks without labour [13]☐ Persistent vomiting [14]☐ Infection [15]☐ Mental health problems (ex: depression) [88]☐ Other(*Specify*)
REP19.	Did you **get help**/seek assistance for the problem(s)?	[1]○ Yes	[0]○ No SKIP TO REP21
REP20.	Where did you get help from? ***Select all that apply***	[1]☐ Husband/partner [2]☐ Family/relative [3]☐ Friends/neighbours [4]☐ Health extension worker [5]☐ Doctor/nurse	[6]☐ Traditional birth attendant (TBA) [7]☐ Community Development Army [88]☐ Other (*Specify*)
REP21.	What was the **reason for not** seeking assistance for the problem (s)? ***Select all that apply***	[1]☐ Didn't think it was necessary [2]☐ Partner/family didn't think it was necessary [3]☐ Facility too far [4]☐ No transport	[8]☐ Used home remedy [9]☐ Didn't know where to go [10]☐ Had no time [11]☐ Long wait times

		5☐ No childcare 6☐ Too expensive 7☐ Poor quality services	12☐ Inconvenient hours 99☐ Don't know 88☐ Other (*Specify*)
REP22.	Did you suffer from any of these conditions during your last pregnancy? ***INTERVIEWER: Read out all the health condition listed***	0☐ No, none 1☐ High blood pressure 2☐ Diabetes	3☐ HIV 4☐ Malaria 5☐ Other infection
REP23.	Have you experienced any health problems related to pregnancy during your **other previous pregnancies**?	1○ Yes	0○ No SKIP TO HSU1
REP24.	What health problems did you experience during your other previous pregnancies? ***Select all that apply***	1☐ Bleeding 2☐ Severe headache 3☐ Blurred vision 4☐ Convulsions/fits 5☐ Swollen face/hands 6☐ High fever 7☐ Loss of consciousness/fainting 8☐ Breathing difficulty 9☐ Severe weakness 10☐ Severe abdominal pain	11☐ More/less fetal movement 12☐ Water breaks without labour 13☐ Persistent vomiting 14☐ Infection 15☐ Mental health problems (ex: depression) 88☐ Other(*Specify*)

SECTION 4: [HSU] MATERNAL HEALTH CARE UTILIZATION

I would now like to ask you some questions about health services that you may have used during your last pregnancy, during your delivery of your last child and after delivery.

4.1 Antenatal care

HSU1.	Have you ever received antenatal care for any of your previous pregnancies?	1○ Yes	0○ No SKIP TO HSU3
HSU2.	Where did you usually receive antenatal care during your previous pregnancies? ***Select all that apply***	1☐ Health post 2☐Health centre 3☐ Maternity waiting home 4☐ Hospital	88☐ Other (*Specify*)
HSU3.	Did you see anyone for antenatal care during your **last pregnancy**?	1○ Yes SKIP TO HSU5	0○ No
HSU4.	What was the reason for not getting antenatal care during your last pregnancy? SKIP TO HSU16 WHEN COMPLETE	1☐ Didn't think it was necessary 2☐ Husband/family didn't think it was necessary 3☐ Facility too far	8☐ Used home remedy 9☐ Didn't know where to go 10☐ Had no time 11☐ Long wait times 12☐ Inconvenient hours 99☐ Don't know

		[4]☐ No transport [5]☐ No childcare [6]☐ Too expensive [7]☐ Poor quality services	[88]☐ Other (*Specify*)
HSU5.	How many times did you visit the health facility for antenatal care during your **last pregnancy**?	☐☐	[0]○ Do not remember
HSU6.	During your **last pregnancy**, how many months pregnant were you when you went for your **first** antenatal care visit at the health facility?	☐☐ months	[0]○ Do not remember
HSU7.	How many months pregnant were you when you **last** received antenatal care for your last pregnancy?	☐☐ months	[0]○ Do not remember
HSU8.	Where did you **mainly** receive antenatal care from during your last pregnancy? *INTERVIEWER: Select the place woman went most often for ANC care. Enter all sites mentioned in "Other" if it is not clear which site was used most often.*	[1]○ Own home [2]○ Someone's home [3]○ Government hospital [4]○ Government health centre	[5]○ Government health post [6]○ Private hospital [7]○ Private clinic [88]○ Other (*Specify*)
HSU12	Did you receive **counselling** as part of the antenatal care visit during your last pregnancy?	[1]○ Yes [0]○ No SKIP TO HSU14	[99]○ Do not remember SKIP TO HSU14
HSU13	Can you tell me **what information** you were provided with during the counselling session? ***Do not prompt.*** ***Select all that apply***	[1]☐ Antenatal care at health facilities [2]☐ Care during pregnancy (diet, hygiene, rest, vaccinations, etc) [3]☐ Danger signs	[7]☐ Postpartum danger signs in mother [8]☐ Danger signs in newborn [9]☐ Newborn care – feeding, immunizations [88]☐ Other (*Specify*)

		during pregnancy 4☐ Birth/safe delivery planning 5☐ MWH services 6☐ Danger signs during labour
HSU14	Did the health worker recommend where you should consider delivering your baby?	1○ Yes 0○ No SKIP TO HSU16 98○ Do not remember SKIP TO HSU16
HSU15	Where did the health worker recommend you should deliver your baby?	1○ Health post 2○ Health centre 3○ Hospital 4○ Home 98○ Do not remember 88○ Other (*Specify*)

4.2 Intrapartum care

HSU16.	Where have you **usually** given birth to your children in the past? *INTERVIEWER: Select the place where most deliveries occurred. Enter all sites mentioned in "Other" if it is not clear which site was used most often.*	1○ Own home 2○ Someone else's home (ex: relative, TBA) 3○ Government hospital 4○ Government health centre 5○ Government health post 6○ Private hospital 6○ Private clinic 88○ Other (*Specify*)
HSU17.	SKIP to WDK1 IF REP14=miscarriage or abortion Where did you give birth to your **last child**?	1○ Own home SKIP TO HSU19 2○ Someone else's home (ex: relative, TBA) 3○ Government hospital 4○ Government health centre 5○ Government health post 6○ Private hospital 6○ Private clinic 88○ Other (*Specify*)
HSU18.	How did you reach the place where you gave birth to your **last child**?	1○ By foot 2○ By taxi 3○ Bajaj (motorbike rickshaw) 4○ Local stretcher 5○ Ambulance 88○ Other (*Specify*)
HSU19.	***INTERVIEWER: Ask only if respondent did not deliver at a health***	1☐ Didn't think it was necessary 12☐ Inconvenient hours 13☐ Fear of procedures

	facility What were the reasons why you did not give birth to **your last child** at a health facility? ***Select all that apply***	2☐ Husband/family didn't think it was necessary 3☐ Facility too far 4☐ No transport 5☐ No childcare 6☐ Too expensive 7☐ Poor quality services 8☐ Unexpected/short labour 9☐ Didn't know where to go 10☐ Had no time 11☐ No privacy	14☐ Wanted family present 15☐ Not comfortable receiving services from male health care workers 16☐ Preferred birthing position not allowed at health facility 88☐ Other (*Specify*)
HSU20.	Did you plan to give birth to your **last child** at this place?	1○ Yes	0○ No
HSU21.	Prior to the delivery of your **last child** did you or your family make any **arrangements for the birth** of the child?	1○ Yes	0○ No SKIP TO HSU23
HSU22.	What did you do? Did you……. ***Read out options and select all that apply***	1☐ Save money for delivery? 2☐ Organize transport to delivery location? 3☐ Identify skilled delivery attendant? 4☐ Get an MWH referral? 5☐ Identify blood donor? 6☐ Identify someone to look after your home?	7☐ familiarize yourself with your estimated delivery date? 8☐ Identify a birth companion? 9☐ Identify a health facility to go to in case of emergency? 88☐ Other (*Specify*)
HSU47	Prior to the delivery of your last child did you make a plan for an emergency or complication during pregnancy?	1○ Yes	0○ No SKIP TO HSU23
HSU48	What did you do? Did you….. ***Read out options and select all that apply***	1☐ Save money for an emergency? 2☐ Identify someone to look after your home during the	4☐ Organize transport to a health facility in case emergency? 88☐ Other (*Specify*)

		emergency? 3☐ Identify a health facility to go to in case of emergency?	
HSU23.	Who assisted with the delivery of your **last child**?	1○ Doctor 2○ Nurse/midwife 3○ TBA 4○ Relative/friend	5○ HEW 88○ Other (*Specify*)
HSU24.	During the delivery of your **last child**, did you experience any serious health problems related to birth?	1○ Yes	0○ No SKIP TO HSU26
HSU25.	What serious health problems did you experience during the delivery of your last child? ***Do NOT prompt. Select all that apply***	1☐ Severe bleeding 2☐ Severe headache 3☐ Blurred vision 4☐ Convulsions 5☐ High fever 6☐ Loss of consciousness 7☐ Labour >12 hours	8☐ Placenta not delivered 30min after delivery 99○ Don't know 88☐ Other(*Specify*)
HSU26.	How was your last child delivered?	1○ Caesarean section (belly cut open and baby taken out) 2○ Forceps/vacuum extraction	3○ Vaginal delivery 88○ Other (*Specify*)

SECTION 5: [WDK] DANGER SIGN KNOWLEDGE & PERCEPTIONS

I would now like to ask you some questions about pregnancy and childbirth in general.

WDK1.	Can women experience **serious, unexpected health problems** during pregnancy?	1○ Yes	0○ No SKIP TO WDK5	99○ Do not know SKIP TO WDK5
WDK2.	What are some of the serious health problems that can occur during **pregnancy**? ***Do NOT prompt. Select all mentioned.***	1☐ Bleeding 2☐ Severe headache 3☐ Blurred vision 4☐ Convulsions/fits		13☐ Persistent vomiting 14☐ Infection 15☐ Mental health problems (ex:

		[5]☐ Swollen face/hands [6]☐ High fever [7]☐ Loss of consciousness/fainting [8]☐ Breathing difficulty [9]☐ Severe weakness [10]☐ Severe abdominal pain [11]☐ More/less fetal movement [12]☐ Water breaks without labour	depression) [88]☐ Other(*Specify*)
WDK3.	In your opinion could a pregnant woman **die** from this problem/any of these problems?	[1]○ Yes [0]○ No	[99]○ Do not know
WDK4.	In your opinion could a pregnant woman **lose the baby** from this problem/any of these problems?	[1]○ Yes [0]○ No	[99]○ Do not know
WDK5.	Can a woman experience serious health problems during **labour/childbirth**?	[1]○ Yes [0]○ No SKIP TO WDK9	[99]○ Do not know SKIP TO WDK9
WDK6.	What are some of the serious health problems that can occur during **labour/childbirth**? ***Do NOT prompt. Select all mentioned.***	[1]☐ Severe bleeding [2]☐ Severe headache [3]☐ Convulsions [4]☐ High fever [5]☐ Loss of consciousness [8]☐ Labour > 12 hours	[9]☐ Placenta not delivered 30min after birth [99]☐ Do not know [88]☐ Other (*Specify*)
WDK7.	In your opinion could a woman **die** from this problem/any of these problems?	[1]○ Yes [0]○ No	[99]○ Do not know
WDK8.	In your opinion could a woman **lose her baby** from this problem/any of these problems?	[1]○ Yes [0]○ No	[99]○ Do not know
WDK9.	Can a woman experience serious health problems	[1]○ Yes [0]○ No SKIP TO WDK12	[99]○ Do not know SKIP TO

	during the **first 6 weeks after delivery**?	WDK12
WDK10	What are some of the serious health problems that can occur in the mother during the **first 6 weeks after delivery**? ***Do NOT prompt. Select all mentioned.***	1☐ Severe bleeding 2☐ Severe headache 3☐ Blurred vision 4☐ Convulsions 5☐ Swollen face/hands 6☐ High fever 7☐ Loss of consciousness 8☐ Breathing difficulty 9☐ Severe weakness 10☐ Foul smelling vaginal discharge 11☐ Inability to control urine/stool 88☐ Other(*Specify*)
WDK11	In your opinion could a woman **die** from this problem/any of these problems?	1○ Yes 0○ No 99○ Do not know
WDK12	Can a baby experience serious health problems during the **first 28 days of life/after birth?**	1○ Yes 0○ No SKIP TO ATT1 99○ Do not know SKIP TO ATT1
WDK13	What are some of the serious health problems that can occur in the baby during the **first 28 days of life/after birth**? ***Do NOT prompt. Select all mentioned.***	1☐ Difficulty/fast breathing 2☐ Yellow skin/eyes 3☐ Poor feeding 4☐ Pus/blood around cord 5☐ Very small baby 6☐ Lesions or blisters 7☐ Convulsions (fits) 8☐ Loss of consciousness/weak 9☐ Red/swollen eyes with pus 10☐ Cold to touch 11☐ Vomiting/diarrhea 12☐ Fever 88☐ Other(*Specify*)
WDK14	In your opinion could a **baby die** from this problem/any of these problems?	1○ Yes 0○ No 99○ Do not know

SECTION 5: [ATT] ATTITUDES TOWARDS MATERNAL CARE SERVICES

Now I am going to read out a list of common opinions about pregnancy, delivery and the period after childbirth. Please tell me if you agree, disagree or neither agree nor disagree with these statements. There is no right or wrong answer. We are only interested in hearing your opinion about the situation in your kebele.

ATT1.	A woman should plan ahead of time where she will give birth to her baby	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT2.	Antenatal care visits at the health facility are necessary for healthy pregnant women	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT3.	It is not necessary for a husband to accompany his wife to antenatal care visits	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT4.	Women who are healthy are not at risk for complications during delivery	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT5.	When women do not go to a health facility to give birth it is often because it is too expensive	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT6.	When women do not go to a health facility to give birth it is often because it is too difficult to get there	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT7.	When women do not go to a health facility to give birth it is often because the staff do not treat women respectfully	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT8.	It is not necessary for a husband/partner to accompany his wife to the health facility when she is giving birth.	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT9.	When women do not go to a health facility to give birth it is often because they are afraid of receiving unwanted procedures	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT10.	When women do not go to a health facility to give birth it is often because it is unacceptable to be attended by male health workers	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT11.	Once a woman has had experience delivering a baby she does not need to go to a health facility to deliver any of her future babies	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree
ATT12.	A woman who has complications during delivery/labour has a better chance of survival if doctors/nurses/midwives are present	[1]O Agree	[2]O Neither agree nor disagree	[3]O Disagree

ATT13.	A newborn is most vulnerable to death and illness between birth and 28 days after birth	[1] O Agree	[2] O Neither agree nor disagree	[3] O Disagree
ATT14.	It is important for mothers who have recently given birth to visit a health facility with their newborn for a check up	[1] O Agree	[2] O Neither agree nor disagree	[3] O Disagree
ATT15.	It is important to get babies vaccinated at the health facility to protect them against common illnesses and possible death	[1] O Agree	[2] O Neither agree nor disagree	[3] O Disagree

SECTION 6: [PHF] PERCEPTIONS OF HEALTH FACILITIES

I would now like to ask you some questions about places where women give birth and receive care during pregnancy

PHF1.	Can you tell me where a woman can go to give birth to a baby with the assistance from a doctor/nurse/midwife? ***Do NOT prompt. Select all mentioned.***	[1] ☐ Hospital [2] ☐ Health centre [3] ☐ Health post [4] ☐ Maternity waiting home [88] ☐ Other(*Specify*)		
PHF2.	Do women have to pay to receive services related to pregnancy and delivery at this place?	[1] O Yes [0] O No SKIP PHF4 [99] O Do not know SKIP PHF4		
PHF3.	Would you say the amount to be paid is expensive, reasonable, or cheap?	[1] O Expensive [2] O Reasonable [3] O Cheap		
PHF4.	Is there a health facility in or near your kebele?	[1] O Yes [0] O No SKIP QOL1		[99] O Do not know SKIP QOL1
PHF5.	What type of a health facility is it? ***Read out answer options if necessary***	[1] O Health post [2] O Health centre [3] O Government Hospital [5] OPrivate hospital		[4] O Private clinic [88] O Other (*Specify*)
PHF6.	How would you usually get there? *Probe: What type of transport would you mainly use?*	[1] O By foot [2] O By taxi [3] O Bajaj (motorbike rickshaw) [4] O Local stretcher [5] O Ambulance		[6] O Horse/mule [7] O Bicycle [88] O Other (*Specify*)
PHF10	What health facility did you deliver your LAST child at?	**GOMMA** [1] O Beshasha	**SEKA** [1] O Bake Gudo	**KERSA** [1] O

		2○ C/Chago 3○ Choche 4○ D/Kechene 5○ Gembe 6○ Kedemasa 7○ Limu Shayi 8○ M/Koticha 9○ Omo Beko 10○ Yachi	2○ B/Kechema 3○ Dabo Yaya 4○ Detu Kersu 5○ Geta Bake 6○ Lilu Omoti 7○ Seka 8○ Setemma 9○ Wokito	A/Dika 2○ B/Wajo 3○ Bulbul 4○ K/Beru 5○ K/Gora 6○ Kellacha 7○ Serbo
PHF11	How did you get to this facility?	1○ By foot 2○ By taxi 3○ Bajaj (motorbike rickshaw) 4○ Local stretcher 5○ Ambulance	6○ Horse/mule 7○ Bicycle 88○ Other (*Specify*)	
PHF7.	**How long** does it take to get to this facility from your home using this method of transport?	☐☐ mins	☐☐ hrs	
PHF8B	In your opinion, **how would you rate the services** offered at this health facility? Would you say they are very good, good, fair, poor or very poor?	1○ Very good 2○ Good 3○ Fair 4○ Poor 5○ Very poor		
PHF9	Can you tell me what is/are the reason(s) that you feel that way about this health facility? ***Do NOT read out. Select all that apply.***	1☐ Doctor/nurse always there 2☐ Facility always open 3☐ Respectful staff 4☐ Short waiting times 5☐ Competent staff 5☐ Patient privacy maintained 88☐ Other (*Specify*)	6☐ Doctor/nurse never there 7☐ Facility often closed 8☐ Disrespectful staff 9☐ Long waiting times 10☐ Incompetent staff 11☐ Patient privacy not maintained 89☐ Other (*Specify*)	

Thank you for taking the time to share this information with us.

Annex 5: PCHA Intervention activities that have been conducted during home visits and pregnant women conference

BARRIERS	POSSIBLE COUNSELLING/ADVICE
Mother and family members believe that home births are just as safe and Feeling more comfortable delivering with TBA at home	✓ Explain that sometimes problems arise during labour and birth, like bleeding or fits, which require skilled health. It is not possible to predict if a woman will experience complications in labour, even if she has had uncomplicated births in the past. So, it is safest for all women to deliver with a skilled birth attendant and in a health facility because health workers have the skills, equipment and medication needed to help ensure a safe birth and a healthy baby.
Cost of medical items need for the birth and the health facility fee	✓ All pregnancy, labour, delivery and PNC services are available and provided free of charges in governmental health facilities
Distance and Lack of transport, rapid labour resulting in the birth occurring suddenly at home or on the	✓ Facilitate social supports like call ambulance, arrange bajaj or carry the mother with local stretchers to closest health facility
Lack of knowledge of the importance of a facility delivery and poor perception or negative attitude for HFD	✓ Pregnant women and families must be able to recognize danger signs in labour and delivery and be prepared to immediately take the woman to the facility should any complications arise. ✓ All community members especially HEWs, HDAs, Religious leaders and family members should strongly encourage pregnant women identified as high risk to find a way to labour and birth at a facility, and if they live far from the health facility, to plan to stay at MWH or nearby the health center before their due date.
Pregnancy and delivery is natural and considered as normal cycle of women	✓ She must be also educated on attending follow-up visits and about the role of the balanced diet she takes during pregnancy in the child's physical and mental growth and development before and after birth
Poor decision making power or not involved on decision where to deliver and more the influence of family members –e.g. mother in law or mother	✓ Home visits, conference and keg messages on materials and HEWs, WDA and RLs should explain about the benefits of MCH use – ANC, HFD, and PNC from science, culture and religious perspectives discussion
Lack of supports during pregnancy and delivery	✓ Give information and support to the pregnant woman and her family about: Birth preparedness planning, facilitate shared decision making to use ANC, MWA and HFD, facilitate practical support at home and accompany during labor and child birth

Poor perception/negative attitude: Fear of the procedures at a health facility and disrespectful treatment of some health facility staff	✓ There are many health professionals and providing respectful treatment and ready to support any pregnant mother without discrimination.
Family thinks they should take a sick baby to a faith healer first	Explain that a baby with danger signs needs urgent treatment at a health facility, and could die quickly if he/she does not get this treatment.
Family has fear of the health facility	Explain that treatment using injections is necessary for a baby with severe illness. This can be done only at a health facility and health facility delivery is so important.
Family thinks it would cost them too much to get treatment.	Explain the cost of treatment at a health facility, and if it would be covered by their savings for an emergency; or if the family could begin to save for such an emergency.
Family does not have any transport to take the baby to the health facility.	Help the family to explore options for arranging transport or identifying transport possibilities in advance. Arrange bajaj, call to ambulance or carry to nearby health facility

Annex: 6: Training Manuals

Training Manuals for Community Health Development Army and Religious Leaders on Safe Motherhood" In Jimma Zone, Oromia Region, Southwest Ethiopia:

An Intervention through Health Development Army and Religious Leaders

Objectives of the Training Manual

General Objective

To promote MCH services including pregnancy, delivery/skilled birth attendants and postnatal cares services as well as the utilization of MWA through community leaders/Health Development Army [HDA] leaders to prevent mothers and children that constitute a majority of our population, from illness, death and disability.

1. Identify and discuss the importance of ensuring respect and care for pregnant women, and SBA at health facilities
2. Understand the importance of birth spacing/family planning to protect the health of women and their families
3. Understand the purpose and importance of ANC services
4. Understand the purpose and importance of SBA at health facilities
5. Understand the purpose and importance of PNC services
6. Identify cultural beliefs/values that could be barriers to all components of the safe motherhood HEP
7. Strategize how HDA members can promote women to access ANC, SBA and PNC; respect and care for pregnant women; birth spacing/family planning; and addressing cultural beliefs/values that may be barriers to safe motherhood

INTRODUCTION

Worldwide, about 3 million women die every year from causes related to pregnancy and child birth of which about 2.9 million are in developing countries. About 6.3 million children died before reaching the age of five years.

Ethiopia is a low income country with a total population of 91.73 million [World Bank, 2012]. The expected number of live birth is 32.4 per 1000 population (or about 3.0 million each year. Although the country has improved maternal mortality in recent years from 871 to 421 per 100,000 live births, this figure is still high –12,512 maternal deaths occur each year (EDHS, 2000, 2005, 2011 & 2016).

In addition, even though Ethiopia has had a decrease in infant mortality from 97 to 48 per 1000 live births between 2000 and 2016, the actual figure is high -142,658 infants died before celebrating their first year.

To improve maternal and child health joint efforts by Jimma University and Canada based research organization with project titled, “An Implementation Study to Promote Safe Motherhood in Jimma Zone” is implemented.

This project’s interventions Goal is: “Removing Barriers towards Safe Motherhood Options.” The intervention has two components: Improving Maternal Waiting Areas (MWAs+) and participatory community health actors/local leader interventions within 8 selected Primary Health Care Units.

The participatory community health actors for social and behavior change component intervention are going to be implemented through health extension workers, religious leaders and health development armies. The intervention will involve two years on our part (training and follow up), but the Health Development Army Leaders are expected to strengthen their ability to promote safe motherhood into the future, and keep improving their abilities to work with community members, even after the two years are finished. Your Kebele has been selected as one of the Kebeles for intervention. Therefore, this module is to help train the religious leaders as one of the key stakeholders and community members to help them intervene in their locality among their followers and community members. We will work together actively for next two years from now while you carried out the main activities by you and the community.

SESSION 1

OVERVIEW OF SAFE MOTHERHOOD

Learning objectives

By the end of the session the participants will be able to:

1. Briefly discuss the Safe Motherhood/MCH concept.
2. Outline the current status of maternal and newborn health globally, regionally, and locally.
3. Discuss factors contributing to maternal and neonatal mortality and morbidity.
4. Discuss the solutions and evidence to prevent maternal and neonatal mortality and morbidity

Facilitator's Instructions

- ✓ Introduce the session using a brain storming activity [10 minutes].
- ✓ Ask the participants to define or to explain the terms “Maternal and Child Health”.
- ✓ Ask participants if they know some components of safe mother hood including utilization of MWAs.
- ✓ Write down all the responses on the flip chart.
- ✓ Summarize them and provide the correct definition using the PowerPoint presentation. See

introduction sessions above

Content to be covered - [For this session use introduction sessions above]

- ❖ Definition of Maternal Health and child Health
- ❖ Components of maternal and child Health – including pregnancy care, ANC, delivery care, PNC and MWA
- ❖ The benefits of learning about MCH
- ❖ Barriers to accessing /receiving quality MCH cares
- ❖ Roles of community leaders on promoting safe mother hoods [MCH]
    - ✓ HDAs [Male and Female]
    - ✓ Religious Leaders
    - ✓ Health workers [HEWs, Mid-wife, nurses, etc]
        - ❖ Where to get MCH services?

SESSION 2

PREGNANCY CARE

Learning Objectives **By the end of the session the participants will be able to:** 1. Explain pregnancy and its process 2. Describe the Major problems of Pregnancy/Danger signs of pregnancy 3. Explain and justify the need of ANC services 4. Identify existing cultural belief, taboos and other customs during pregnancy 5. Identify barriers and challenges to receiving quality Pregnancy and ANC services 6. Health Development Army Leaders discuss on the responsibility of caring the pregnant mothers and the foetus at home, within the community, health institutions and maternal waiting area 7. Health Development Army Leaders identify barriers to be tackled and discuss on responsibilities / task sharing to tackle those identified barriers

Facilitator's Instructions:

- ✓ Introduce the session using a brain storming questions -see BOX 1below.
- ✓ Write down all the responses on the flip chart
- ✓ Divided the trainees/or participants into groups and each group works on one of the inquiries below and present to the whole participants. Remember each group shall have leader, presenter and participant/s/ facilitated by one HEW for each group.
- ✓ Summarize them and provide the correct definition using PPT presentation – see Annex 1A
- ✓ Brain storming should be followed by discussion and wrap-up of the presentations by the training facilitator.

BOX 1 **Brain Storming [20 minutes]**
✓ What is pregnancy care?

- ✓ What is Antenatal care [ANC]? And what happens at ANC clinic?
- ✓ What are barriers to utilize ANC service in your locality? Including Myths, cultures/beliefs/customs
- ✓ Who is responsible to promote safe pregnancy and the utilization of ANC in the community?
- ✓ Who has a role in supporting a pregnant woman at home? Why and why not?
- ✓ Who has a role in supporting a pregnant woman to have ANC?
- ✓ Who can help the mothers to decide and to go for ANC**?**
- ✓ Do HDAs leaders have a role in promoting ANC? What are these roles?
- ✓ What is/are the benefit of utilizing ANC services?

Content to be covered: **[See Annex 1A]**

- ❖ Definition of pregnancy and pregnancy care
- ❖ Major problems during Pregnancy/Danger signs of pregnancy – NB:- show the pictures under Annex 1B then ask participants to identify the meanings of the pictures on danger signs of pregnancy
- ❖ Identify and explain about existing cultural belief, good/bad practices including taboos, myths, misconceptions and other important customs during pregnancy
- ❖ Problems of first delay (decision to seek help and to get support) during pregnancy care or towards safe motherhood.
- ❖ Roles of communities including, family, husband, religious leaders, HDAs and other social supports to promote pregnancy and ANC services.
- ❖ Identify the likely strategies to promote safe pregnancy by the HDAs and other community members
- ❖ What has been done and planned to avoid first delay
- ❖ Give information and support to the pregnant woman and her family about:
- ✓ ANC services [four visits] – show the pictures under Annex 1C
- ✓ Birth preparedness planning -
- ✓ Nutrition during pregnancy
- ❖ Summarize and wrap-up by Discussing on key messages –see annex 1A

Hint for the facilitator/trainer:

1. Divide the participants into groups of 5 preferably from the same community unit/locality.
2. Read the following case scenario for these five groups
3. Encourage participants to present about the scenario - what they think about the case, if they agree with it, and if it is appropriate in their community.
4. Allow one participant to report this in plenary and guide the discussion on the best possible structures. See discussion points under each scenario.

Case scenario 1

Think that you are the HDA leader of your community; One morning while you are walking through villages to your farm land two women of your neighbors are talking to each other and their discussion doesn't look like normal. One of them was talking very loudly and with anger. She was blaming people including health workers specially her daughter –in-law. You have been observed the discussion is between Hindiya and her mother-in-law, Miss Fatima. After you approached to them you asked mother Fatima the reason she is accusing her own children and you asked her to calm down. As soon as mother Fatima understands you are there she started to explain the reason of accusing people specially her daughter – in-law. She told you that her daughter –in –law- Hindiya is 4 month pregnant and she wants to use ANC services, the worst thing is she also convinces my child [Hindiya's husband] to help accompany her to health center. As you know our culture especially our religion prevents the use of such evil things and even it will bring evil things to their child. Thanks to God now you are here to help me. Please would like to say something to this mad girl to stop going to health center?

Discussion Points - 20 minutes

1. What would you have been done to support Hindiya? Or how could you convince Miss Fatuma?
2. What could have the community members such as (family other than the husband, neighbors, religious leaders, HEWs, etc) done differently to support Hindiya to utilize ANC services?
3. Is there a role for the HDAs Leader in Hindiya's community to support her? If so, what might this be?
4. Is there any role by the community members such as (family other than the husband, neighbors, religious leaders, HEWs, etc) to support Hindiya? What are these supports?
5. How can we avoid some bad beliefs in our community?

NOTE; -Allow the participants to report this in plenary and guide the discussion on the best possible structures and how these can utilize.

SESSION 3:

LABOUR AND DELIVERY CARE

Learning Objectives

By the end of the session the participants will be able to:

1. To define and understand the birth process of delivery and its associated risks/dangers to mother, to foetus, to family and to the community at large
2. To identify barriers associated with getting skilled birth attendance (at individual, family, group, socio-economical and geographical access to services and health system and health provider's perspectives)
3. To identify possible solutions for the barriers (emphasizing the use of MWAs) and how to move forward on these solutions (emphasizing the role of HDA leaders)

Facilitator's Instructions:

- ✓ Introduce the session using a brain storming questions below -see BOX 2
- ✓ Write down all the responses on the flip chart
- ✓ Summarize them and provide the correct definition using PPT presentation

- ✓ Brain storming should be followed by discussion and wrap-up of the presentations by the training facilitator.

BOX 2

Brain Storming [20 minutes]

- ➢ What is delivery and delivery cares?
- ➢ What are some problems during labor and child birth in your community? – see Annex 2B
- ➢ What are the four delays which could have major contributions for maternal and child death during delivery?
- ➢ Where did women in your community like to give birth? Who prefers home delivery? Why?
- ➢ Explain about the benefits of birth preparedness plan and its cultural implications.
- ➢ Explain the importance of using MWA to avoid delivery complications.
- ➢ Explain the importance of having a skilled birth attendant for the woman during labor and child birth.
- ➢ Identify barriers to use MWA, SBA and that families may have in preparing for birth.
- ➢ Who could be more responsible to avoid barriers and to promote the utilization of MWA and SBA in the community? Husband, parents, in-laws, HDAs, religious leaders, HEWs, etc.

Content to be covered - [See annex 2A]

- ➢ Definition of labor and child birth
- ➢ Major problems / Danger signs of delivery – use pictures from Annex 2B
- ➢ Identify existing cultural belief, taboos, myths, misconceptions and other customs during labor and child birth
- ➢ The four delays as barriers to promote safe delivery.
- ➢ Identify the likely barriers to adopt the utilization of MWA, SBA by HDAs and the family members
- ➢ Places of delivery and the use of MWAs and other practices/services that promote having safe deliveries (use of ambulances, health facilities, etc.)
- ➢ Roles of HDAs including communities members like husband, religious leaders to promote utilization of MWA and SBA.
- ➢ Identify the likely strategies to promote safe delivery by the HDAs and other community members
- ➢ Areas of the interventions which can HDAs leaders support their community to avoid these barriers and promote safe delivery
- ➢ Give information and support to the pregnant woman and her family about:
    - ✓ Birth preparedness planning
    - ✓ Accompany during labor
    - ✓ Decision makers to use MWA and SBA
- ➢ Summarize by Discussing on Key messages from the module

Hint for the facilitator/trainer:

1. Divide the participants into groups of 3 preferably from the same community unit/locality.

2. Assign these three groups for one of the following scenario and read for them.
3. Encourage participants to present about the scenario - what they think about the case, if they agree with it, and if it is appropriate in their community.
4. Allow one participant to report this in plenary and guide the discussion on the best possible structures. See discussion points under each scenario.

Case Scenario 1 – Hadha Kenzi

HadhaKenzi, a 40-year-old housewife in a remote rural district, is pregnant with her seventh child. She is now 8 months pregnant and has attended clinic two times. She has been advised by the HEW at the Health post that everything is satisfactory, and her baby is growing well. One day, at 10 pm she starts experiencing labour pains, and 4 hours later she packs her bags and makes her way to the health post. She spends 8 hours at the heath post, but is then advised to go to the Health Centre, because a Midwife is available there. The Midwife in the Health Centre makes an assessment of the mother and baby. According to her assessment, the Midwife recommends that it would be best for the baby to be delivered at the Hospital. Hadha Kenzi is transferred to the Hospital in an ambulance. She arrives at the hospital 5 hours later due to the poor road conditions brought about by heavy rain. She is immediately taken to the operating theatre for a caesarean section after laboring for more than 20 hours.

Discussion points;

- ✓ What would have been H/Kenzi do before her delivery date? Why?
- ✓ What could have the community /family done differently to support H/Kenzi in having a safe delivery?
- ✓ Is there a role for the HDAs Leader in H/Kenzi'scommunity to prevent these types of situations? If so, what might this be?
- ✓ What are the strategies to prevent the four delays?
- ✓ What is the role of HDAs and other community members on prevention of four delays?

Case Scenario 2 - Munira

Munira is in the last month of pregnancy. She begins to have on and off bleeding. She knows that bleeding is a danger sign and she should go to the Health Centre. After resting a while, the bleeding stops. The Health Centre is 10 km away, down a bad road. Munira's husband asks a neighbor with a bajaj for help but there is no fuel. Munira's daughter asks some nearby motorbike for help but they refuse. Neighbors gather to pray for Munira. Her bleeding and pains become worse. The next morning, both Munira and baby are dead.

Discussion Points

- ➢ What would have been Munira do before her delivery date? Why?
- ➢ What could have the community /family done differently to support Munirain having a safe delivery?
- ➢ Is there a role for the HDAs Leader in Munira'scommunity to support these types of situations? If so, what might this be?

- Is there any role by the community such as (family other than the husband, neighbors) before this tragedy happens to Munira? What might this be?
- How could utilization of MWA help Munira in preventing such tragedy?

Case Scenario 3 - Birkisa

Birkisa is having her first baby. Following custom, she travels to her mother in the 8th month of pregnancy. Pains start early one morning. Her mother puts a mat on the floor. Six neighbors arrive to help. A few hours later, Birkisa is in distress. The women think this was because of a spirit. They say a special prayer and carry out a ceremony to protect her. The nearest health center is 3 kilometers away. The women want her to go there to have her baby. But her parents are worried about the cost. Finally, they decide to go, but they must wait for the husband to come home. But some men of Birkisa's neighbors agree to carry Birkisa to the health center in the absence of her husband but the bad roads slow them down. Finally Birkisa delivers her baby at the health center. Birkisa and her baby survive due to the brave decision from neighbors.

Discussion Points

- ✓ What would have been Birkisa do before her delivery date? Why?
- ✓ What could have the community/family done differently to support Birkisa in having a safe delivery?
- ✓ Is there a role for the HDAs Leader in Birkisa'scommunity to prevent these types of situations? If so, what might this be?
- ✓ How can we avoid some bad beliefs in our community?

LESSION 4: POSTNATAL CARE

Learning objectives

By the end of the session the participants will be able to:

1. To understand health risks during the postnatal period, both to the mother and the baby
2. To clarify the postnatal care and types of care given to the mother and baby to avoid most life risks of the mother and baby
3. To learn more on signs of postnatal period health problems associated to the mother and baby
4. To identify barriers (individual, family, and social) of postnatal care, brainstorm solutions and discuss the role of health development army leaders

Facilitator's Instructions:

- ✓ Introduce the session using a brain storming questions below -see BOX 3
- ✓ Write down all the responses on the flip chart
- ✓ Summarize them and provide the correct definition using PPT presentation
- ✓ Brain storming should be followed by discussion and wrap-up of the presentations by the training facilitator.

BOX - 3
Brain Storming [20 minutes]

- ✓ What and when is the postpartum phase? Why is it important for the mother?
- ✓ Major problems / Danger signs of postpartum for mother and new born – show picture from the Appendixes
- ✓ Do you know of any cases where a woman experience difficulties after delivery? What happened?
- ✓ Do you know of any cases where a new born experience difficulties immediately after delivery? What happened?
- ✓ Are there any cultural beliefs [good/bad], taboos that practiced immediately after delivery for new born or mother or both?
- ✓ Do HDAs have any role during postpartum periods?
- ✓ What could be these roles? Who is more responsible to promote safe postpartum periods for mother and new born?

Content to be covered - [See Annex 3A]

- ✓ The Postnatal Period and Risks Associated with this period (mother and baby)
- ✓ The benefits of postnatal care for the mother and the baby
- ✓ Barriers (cultural, social, personal, and structural) of using the postnatal care by the mother and new born
- ✓ Community beliefs and traditions pertaining to postnatal care, (especially birth to next six weeks after birth thought it differs from culture to culture and norms to norms)
- ✓ Roles of the HDAs leaders to take part and contribute towards safe motherhood by creating awareness in the community to utilize the postnatal care.
- ✓ Summarize by Discussing on Key messages from the Annex 3A.

Hint for the facilitator/trainer:

1. Divide the participants into groups of 2 preferably from different community unit/locality.
2. Assign these two groups for one of the following scenario and read for them.
3. Encourage participants to present about the scenario - what they think about the case, if they agree with it, and if it is appropriate in their community.
4. Allow one participant to report this in plenary and guide the discussion on the best possible structures. See discussion points under each scenario.

Case scenario 1 – Fozia

Miss Fozia has given birth to a baby boy at home and after two days her child becomes ill and Fozia worried very much and told to mother Alfiya who is the head of HDAs in her village about the illness of her newborn. Mother Alfiya quickly comes to see the newborn with Fozia. When Mother Alfiya see the baby, the baby is rigid as well as he has reduced activity and he has weak crying, not responding to touch, reduced movement and feels unusual sleepiness. Fozia also told mother Alfiya that the baby is sucking weakly.

Discussion Points

- ✓ What could we advise the mother during such experiences or any similar problems?
- ✓ What is the role of the HDA leaders at this time?

- ✓ What advice is given to a mother at this point?

Case Scenario 2 - Fedila

Fedila has given birth in her home on October 25th to a baby girl. You get to know of it through Fedila's neighbor. You visit Fedila in her home on October 27th when the baby is two days old. You learn that Fedila had a normal delivery and that the baby cried soon after birth. The TBA who attended the birth started to boost and she got applaud from Fedila's family. After 2 days the baby has been dull and sleepy and has not fed well since that morning. You heard this information and visited the newborn. In addition to what you heard about the baby, you also find that the baby has fast breathing.

Discussion Questions:

- ✓ How can you help Fedila?
- ✓ What support is available to Fedila's baby in your community?
- ✓ What were the most relevant information you can provide to Fedila and her families?

Annex 6A: Key Messages on pregnancy and pregnancy cares

What is pregnancy?

We say a woman is pregnant when a male's sperm reaches in the uterus of a woman, meets and fertilizes the woman's ovum. Pregnancy lasts from 37 to 42 weeks, (40 weeks on the average). The fertilized ovum gradually grows and develops in the uterus of the woman and transforms itself into a fetus.

Danger Signs during Pregnancy

While pregnancy and childbirth are normal events that happen all the time, some women and babies can develop complications that not only pose problems but can also result in death. Sadly, many women and newborns die from causes that could have been prevented if the woman had sought suitable care at the appropriate time.It is important for a pregnant woman and the family to recognize the danger signs in pregnancy so she can be taken, when necessary, to a qualified health professional.

The Following Are Some of danger signs during pregnancy

- ✓ Severe anemia
- ✓ Pre-Eclampsia/Eclampsia (in either the previous pregnancy or in the present one)
- ✓ APH
- ✓ PPH in the previous pregnancy
- ✓ More than 5 previous births
- ✓ Transverse fetal lie or any other obvious mal presentation within one month of the EDD
- ✓ Previous caesarean section
- ✓ Previous assisted vaginal delivery
- ✓ Multiple pregnancy
- ✓ Age less than 16 years
- ✓ no labour pains even after 8 hours of rupture

The common traditional beliefs and practices during pregnancy:

- ✓ Families are genuinely interested in the mothers getting well soon and take actions that they believe are best.

- ✓ In some places, families will first seek help from traditional healers.
- ✓ Families may not want to take the woman to a health facility due to reasons such as perceived inadequacy of the health services, poor behavior of the staff, and the expenses involved.
- ✓ Beliefs in bad omen or spirits may prevent mothers from seeking care, especially if the emergency occurs during certain times of the day (for example, after sundown).

Strategies to prevent problems during pregnancy

Antenatal Care Services

What Happens At Antenatal Visits? See pictures under Annex 1C

Key Messages

- ✓ You must ensure that every pregnant woman makes at least 4 visits for ANC, including the first visit/registration.
- ✓ These are sufficient and, for pregnancies without complications, studies have shown that additional visits do not improve the maternal or perinatal outcome.
- ✓ The first visit is recommended as soon as the pregnancy is suspected. This is meant for registration of the pregnancy and the first antenatal check-up.
- ✓ The second visit should be scheduled between the 4th and 6th month (around 26 weeks).
- ✓ The third one should be planned in the 8th month (32 weeks), and the fourth one in the 9th month (36 weeks).
- ✓ Complications can develop suddenly, and ongoing monitoring is essential to maintain the health of mothers and babies.
- ✓ The sooner the woman goes for ANC, the sooner she can be examined and given important medicine and advice.
- ✓ Remember, *all women need social support during pregnancy*.

Nutrition for the Pregnant Woman

Balanced diet is one of the major essentials for a woman during her pregnancy. The food she takes must meet the nutritional requirements of herself and her baby. She needs to regularly and attentively feed herself with cereals, vegetables, fruits, milk, meat, pulses, butter, and cereals with fat contents. If she cannot get these food items, she should be educated on the use of other food items that replace those ones. She must be also educated on attending follow-up visits and about the role of the balanced diet she takes during pregnancy in the child's physical and mental growth and development before and after birth**.**

Birth Preparedness

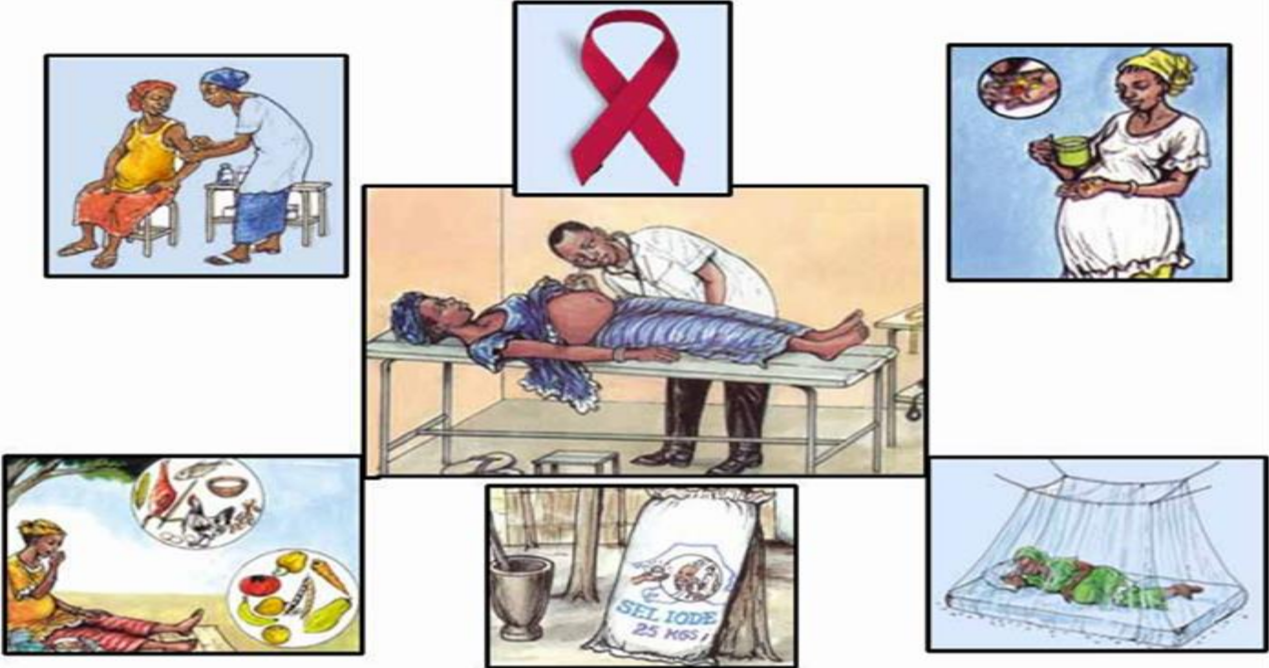
It is the process of planning for normal birth and anticipating the actions needed in case of an emergency. Responsibility for birth preparedness must be shared among all families and women because a coordinated effort is needed to reduce the delays that contribute to maternal and new born deaths.

Common beliefs and practices influencing Birth Preparedness:

- ➢ Some families believe that "preparing" for the birth ahead of time may result in problems in the woman and baby.

- In communities with mostly underprivileged families, newborn deaths are high, especially in the first week.
- Some families may consider that the baby has not really "come into the family" until 7-10 days have passed.
- For this reason there may even be a delay in naming the baby.

Annex: 1C: Pictures show ANC services



Annex: 6B: Key Messages on Labor and Delivery Cares

Key Messages

- More than one in four maternal deaths in developing countries occurs during labour and delivery and in the 24 hours post-delivery.
- This rate of death is higher than for any other 36-48 hour period during the nine-months of pregnancy and 42-days postpartum.
- Two in four maternal deaths occur from the onset of labour to the end of the first week post-delivery.Most of the deaths during this short period are due to haemorrhage and Eclampsia while septic deaths usually occur after 7 days postpartum.
- Every Minute in the World
  - ✓ 380 Women become pregnant
  - ✓ 190 are unplanned/unwanted pregnancies
  - ✓ 110 face pregnancy related complications
  - ✓ 40 practice unsafe abortions
  - ✓ 1 women die from pregnancy
  - ✓ 99% of this occur in developing countries, and is preventable

Danger signs during labor and child birth

Pregnant women often die because they do not receive the care they need quickly enough. Early identification and timely referral of women showing signs of early labour or obstetric complications can save lives. Study revealed that, 60% of deaths occur at immediately post-partum period, 40% experience morbidities (15% serious/long term). Community members and health workers need to know the signs of early labour and danger signs of obstetric emergencies, and be able to explain them to pregnant women and their families, so that they can seek care quickly.

1.1. Signs of early labour

- ✓ Contractions or cramps (more than five in one hour).
- ✓ Bright red blood.
- ✓ Swelling or puffiness of the face or hands.
- ✓ Pain during urination (possible urinary tract, bladder, or kidney infection).
- ✓ Sharp or prolonged stomach pain.
- ✓ Acute or continuous vomiting.
- ✓ Sudden gush of clear, watery fluid.
- ✓ Low, dull backache.
- ✓ Intense pelvic pressure.

1.2. Danger signs of obstetric complications include:

- ✓ Any bleeding from the birth passage during pregnancy or any heavy or sudden bleeding after delivery.
- ✓ Any leaking or sudden flow of clear or blood-stained fluid from the birth passage (not urine or diarrhoea).
- ✓ Decreased movements by the baby.
- ✓ Shortness of breath, difficulty breathing, or chest pain.
- ✓ Fever.
- ✓ Severe stomach pain.
- ✓ Severe headache/blurred vision.
- ✓ Fits or passing out.
- ✓ Pain when passing urine, or bloody or very little urine passed.
- ✓ Bad-smelling discharge from birth passage (or from any tear or injury to the birth passage after birth)
- ✓ Calf pain, with or without swelling.
- ✓ Night blindness.
- ✓ Mother speaking about hurting herself or baby.
- ✓ Hallucinations (seeing or hearing things that are not there).

The Importance of Delivering In Health Facility

- ✓ It is safest for all women to deliver with a skilled birth attendant and in a health facility because health workers have the skills, equipment and medication needed to help ensure a safe birth and a healthy baby.

- ✓ Sometimes problems arise during labour and birth, like bleeding or fits, which require skilled health It is not possible to predict if a woman will experience complications in labour, even if she has had uncomplicated births in the past; Workers, medications and equipment to treat, without which the mother and/or baby could die.
- ✓ Therefore, it is safest to deliver in a facility that can manage these and other problems. It is especially important that HIV-positive women deliver in a facility to reduce the risk of transmitting the HIV virus from the mother to the baby during labour and birth.
- ✓ Nevertheless, if a facility birth is not possible, or if labour starts early, families must be able to recognize danger signs in labour and delivery and be prepared to immediately take the woman to the facility should any complications arise.
- ✓ All community members especially HDAs leaders should strongly encourage pregnant women identified as high risk to find a way to labour and birth at a facility, and if they live far from the health facility, to plan to stay nearby the health center before their due date.

Reasons Why Mothers Do Not Deliver In Health Facility

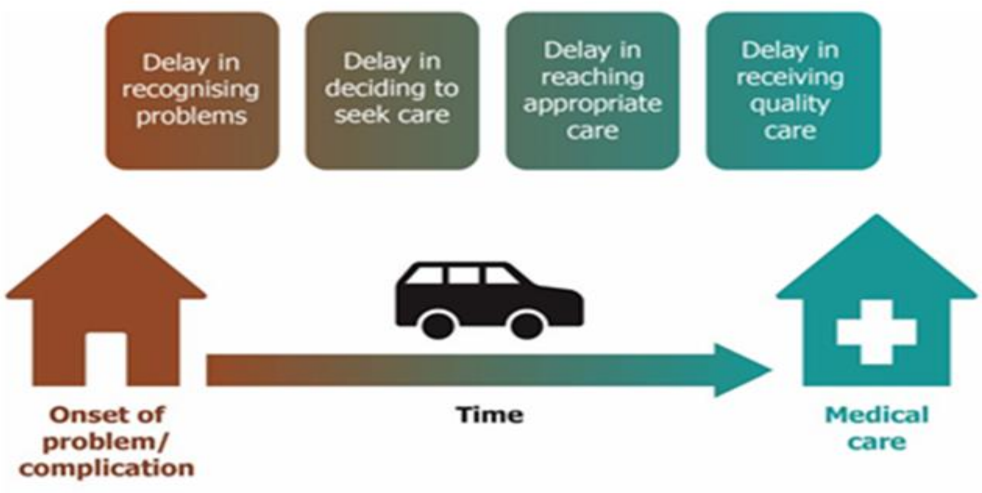
- ❖ Home Delivery is a tradition/custom for most women in Ethiopia and this could be preferred due to
- ❖ Cost of medical items need for the birth, transport and the health facility fee
- ❖ They believe that home births are just as safe
- ❖ Feeling more comfortable delivering with TBA at home
- ❖ Lack of knowledge of the importance of a facility delivery
- ❖ Lack of transport
- ❖ Fear of the procedures at a health facility or of the attitudes and disrespectful treatment of some health facility staff
- ❖ Rapid labour resulting in the birth occurring suddenly at home or on the way to the facility
- ❖ Influence of family members –e.g. mother in law or mother.

Reasons Why Families Are Unable To Transfer Mother in an Emergency

- ❖ Lack of transport at odd hours
- ❖ Financial constraints – no saved up money; poor planning

Four delays as Barriers to deliver at health Facility

In emergencies, timely arrival at the health service is critical to avoid serious injury and death of the pregnant women and her baby.Four delays have been identified as major contributing factors to maternal deaths.



Delays in Reaching Care- Inability to Access Health Facilities

This is the third delay and it may be created by the distance from a woman's home to a facility or provider, the condition of roads/ Poor roads and communication network, Poor community support mechanisms and a lack of transportation.

Delays in Receiving Care at the Health Facility

This is the fourth delay and it may result from unprofessional attitudes of providers, shortages of supplies and basic equipment, a lack of health care personnel, weak referral system and poor skills of health care providers.

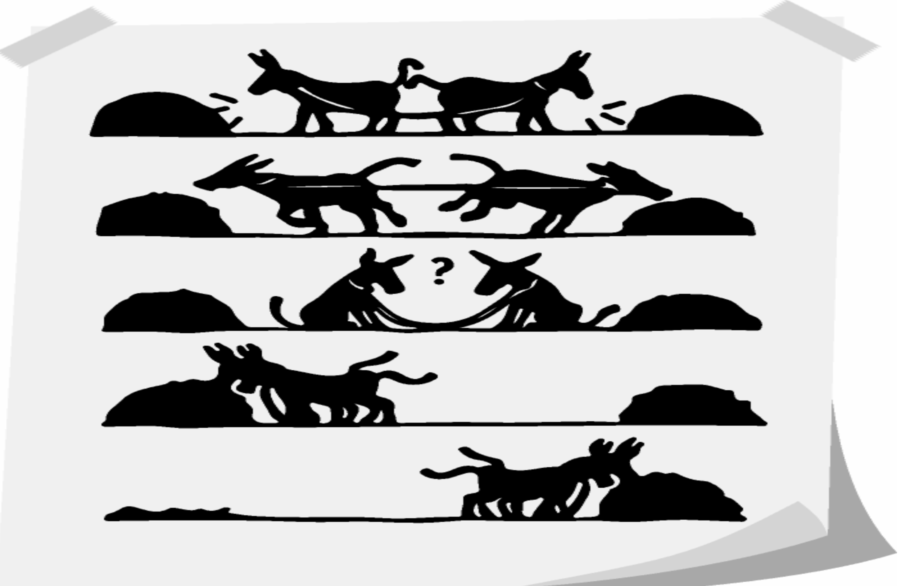
Role of the Community in Promoting Maternal Health

Review the diagram 'What is a healthy community?' Explain that this diagram shows many of the factors that contribute to a healthy community. Discuss that the role of the HDAs is to help individuals and the community work together to achieve this goal. In the context of safe motherhood, the community leaders and HDAs can particularly help the community to think about these factors and identify what can be done to reduce the four delays.

Annex 2C: Role of the Community in Promoting Maternal Health

See the next picture about Cooperation Donkeys

Ask the participants; what is happening here? Why is this happening? How does this make you feel? Have you seen anything like this in your own community? How does this drawing relate to Birkisa's Story?



- ✓ *How does this drawing relate to communities working together?*
- ✓ *Can you think of a time when your community solved a problem together?*
- ✓ *What is the role of the HDAs in engaging communities to solve their health problems?*
- ✓ *How can communities work together to improve mother and child health?*

Annex 3: Postnatal Cares

The postpartum phase lasts from 0 to 45 days after delivery when the mother is at high risk of suffering infection or complications related to delivery. During this time, the woman should take extra care of herself to prevent infections and keep up her strength for breastfeeding and caring for her new baby, and has special self-care and support needs.Of all the components of maternal and child health care delivery, postnatal care (PNC) and early newborn care are the most neglected components. In Ethiopia only 7% percent of women receive postnatal care (PNC) in the first two days after their last delivery (EDHS 2011).

Maternal Care:

During a facility or a home birth, someone should be with the mother for the first hour to ensure that she is feeling well – and perhaps longer if she has had a difficult delivery. The three greatest concerns for the mother in this time are:

- ❖ Bleeding too much
- ❖ Fever and chills, which might indicate an infection
- ❖ Loss of consciousness/fainting/fits or seizures

During the first hours and day after the birth, encourage the woman to:

- ❖ Breastfeed the baby and keep it in skin-to-skin contact
- ❖ Eat a light meal and drink fluids
- ❖ Encourage the woman to pass urine
- ❖ Rest well.

KEY MESSAGES AND ADDITIONAL INFORMATION

- ✓ Mother and baby sleep under long lasting insecticide treated bed net
- ✓ Postnatal care at health facility as soon as possible after a home birth and within 45 days after delivery.
- ✓ Maternal hygiene – washing her all over with soap twice a day for five days, especially around the perineum and any wound or tear.
- ✓ Mothers should continue to eat well and take iron and folic acid as recommended
- ✓ Post-partum mother should rest well, and have support of the family to not return to heavy work too soon.
- ✓ Danger signs in post partum mother: Take the mother to the health facility urgently if she experiences:
  - ➢ Abdominal Pain
  - ➢ Bleeding
  - ➢ Fever and Chills
  - ➢ Painful Breastfeeding, Swelling Redness of Breast.

Newborn care

It may be difficult to know a newborn baby is unwell. They don't show the same signs of illness as older infants. The mother must be aware of the baby's normal feeding and waking activity, and watch for any changes which could indicate sickness.

KEY MESSAGES

- ➢ Danger signs in the newborn are difficult to detect and it's important that the family be aware of the signs and observe the baby carefully at all times. They should inform the HDAs or HEWs or go directly to the health facility if they suspect that the baby has a danger sign. During each home visit in the first week of life they should assess the baby and give the top to toe check to ensure that the baby is well
- ➢ Even if only one danger sign present it is enough to say that the baby is sick and needs help
- ➢ Families can overcome the barriers to care seeking by being aware of danger signs and ready to leave quickly if the baby shows any signs. Mother and baby should be accompanied to the nearest hospital.

Danger signs in the baby include the following:

- ✓ Refuses to breastfeed or sucks poorly
- ✓ Is inactive, moves less or only when stimulated or is lethargic
- ✓ Feels too hot or too cold
- ✓ Has rapid or difficult breathing, chest retractions, and/or grunting
- ✓ Has a convulsion or fit
- ✓ Has a distended tummy and/or vomits after most or all feeds
- ✓ Has redness or swelling around the base of the cord/umbilicus and/or foul smell with or without pus
- ✓ Take your baby immediately to the health facility as soon as you see even one of the danger signs.

Barriers and Enablers to care seeking for newborns

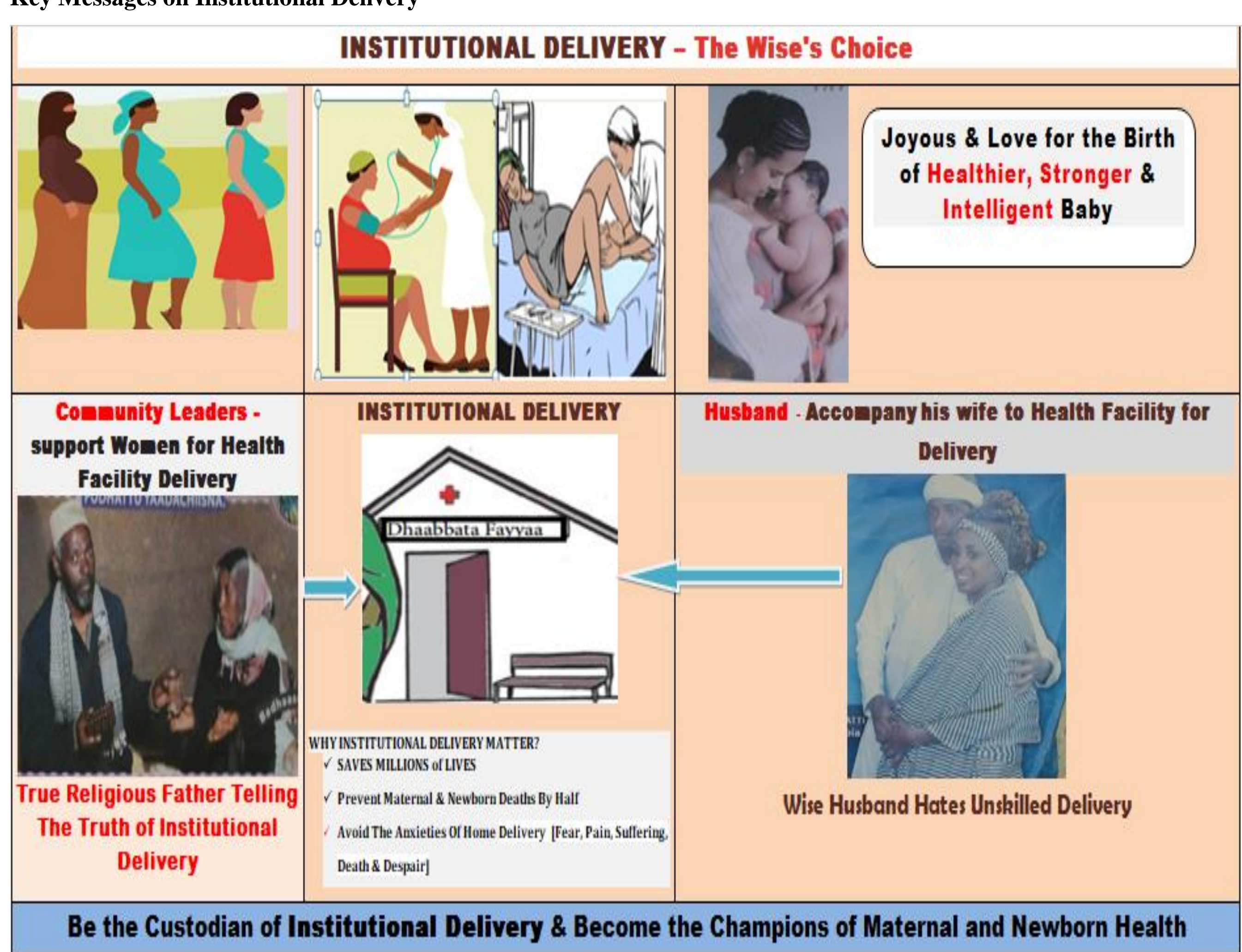
Families may have problems taking sick newborns or sick mothers to a health facility even if they identify signs of illness. Consider the four delays for referral (discussed previously).

- Danger: Delay in recognizing the danger sign
- Decision: Delay in deciding to seek care
- Distance: Delay in reaching care (distance to the health clinic and/or lack of transport)
- Service: Delay in receiving effective care.

The common beliefs and practices during Postnatal care:

- ✓ In many cultures, bathing the baby soon after birth to "purify" him/her is a common practice. It may be carried out with cold water in order to stimulate breathing.
- ✓ In some places, the baby is left unwrapped for some time on the floor until the cord is cut after expulsion of the placenta.
- ✓ In other cultures, the postpartum period is considered a "cold state," and mothers and babies are given warm drinks and "hot foods." In a few countries the provision of "heat" to the mother can be excessive, with mothers and babies being kept very close to fires that may cause overheating and even risk of burns.

Key Messages on Institutional Delivery



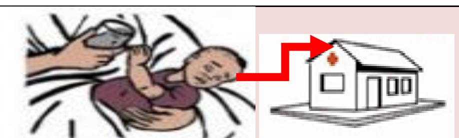
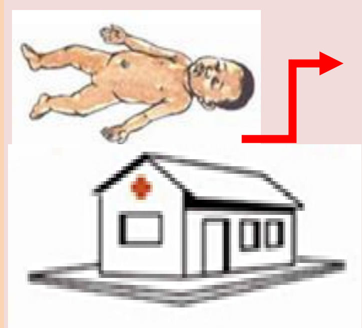
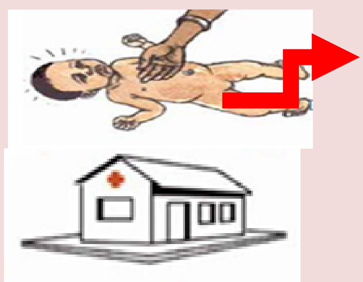
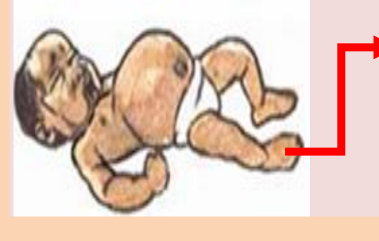
Key Messages on PNC

Why PNC Matters?

The postpartum phase lasts from 1 to 45 days after delivery when the mother and the neonate are at high risk of suffering infection or complications. A mother should make two postpartum visits, one in the first 48 hours and another in the first 7 to 10 days, to help ensure that any major complications during the postpartum period are recognized in time. During this time, the woman should take extra care of herself and the newborn to prevent infections or causes of maternal and neonate mortality.

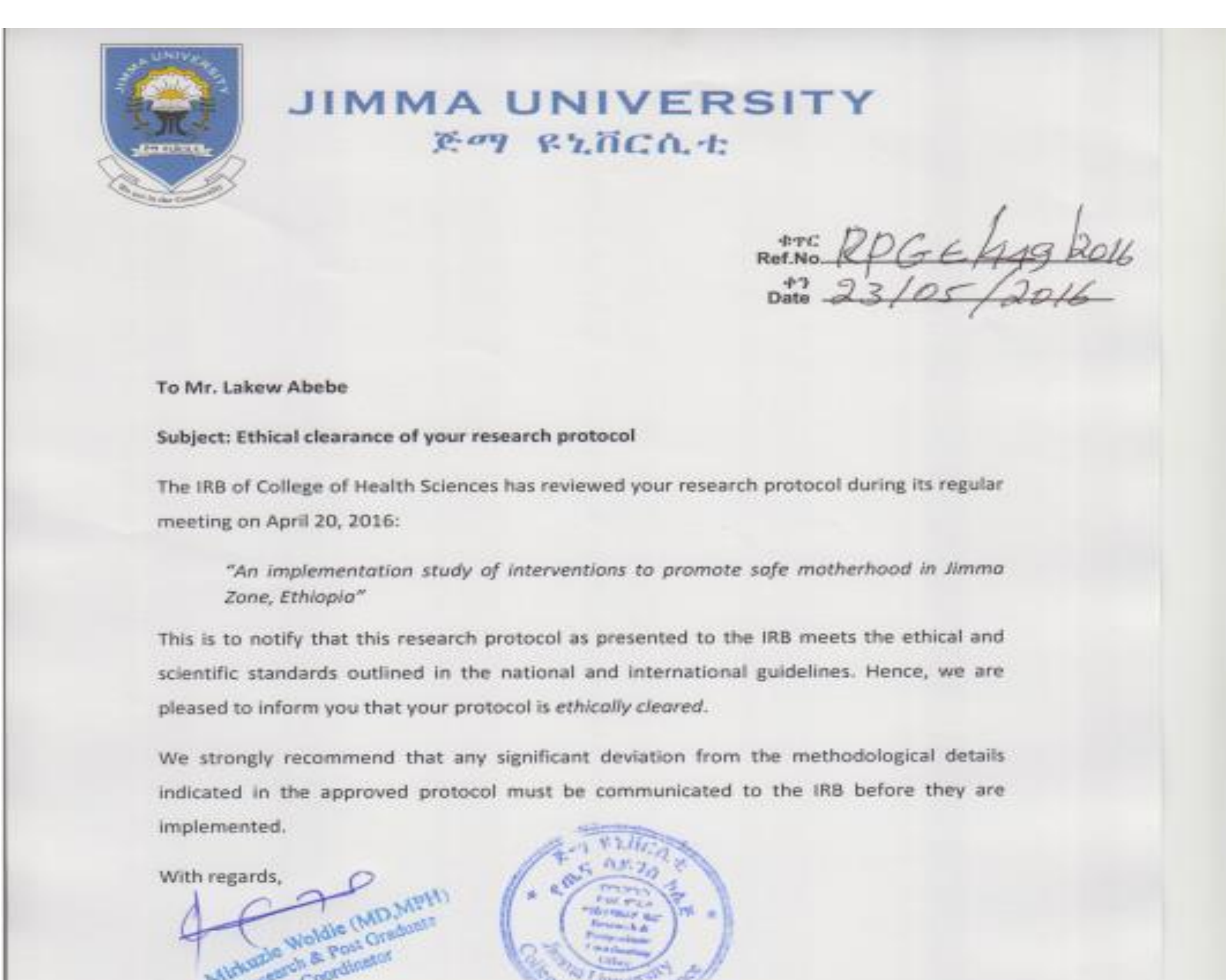
Maternal & Newborn care: 44 out of 100 = child death occurs within the first 28 days of life; **75 out of 100** = newborn deaths occur during the first week of life and **25-40 out of 100** = newborn death occurs within the first 24 hours of life.

What are the greatest concerns for the mother in Postnatal periods	***What wise family members do as they see these Concerns?***	***What is good practice?***
✓ Bleeding too much ✓ Pain or pus or foul-smelling from perinea ✓ Fever and chills ✓ loss of consciousness/fainting/seizures ✓ Painful, Swollen, red or tender breasts, or sore nipple	As soon as you see even one of the danger signs *wise family members* take the mother immediately to the health facility.	*During the first hours and day after the birth, encourage the woman to*: **Eat a light meal and drink fluids, Encourage the woman to pass urine, Rest well and Good Diet**
What are the Greatest Danger signs in the newborn?	***Some unwise/bad Practices***	***What wise mothers do?Best Practices during PNC***
Refuses to breastfeed or sucks poorly – *take the baby to nearby health facility as soon as you see this danger sign*	**Unwise mother may do:-** ✓ Bathing the baby soon after birth and Left the baby unwrapped for some time on the floor ✓ Mothers and babies are given	**Wise mother do:-** ✓ Wrap the baby with clean towel

	warm drinks and “hot foods”	✓ Wash after 24 hours with warm water ✓ Give breast milk within half an hour after delivery
Is inactive, moves less or only when stimulated or is lethargic 	**Unwise mother may:-** ✓ Give newborns water or butter or to “welcome them into the world, to prevent from dehydration and death. ✓ Belief yellow milk is dirty water that the baby and causes diarrhea & makes a child thirsty	✓ Yellow milk helps to clean the baby’s stomach and eliminate black stools. ✓ It is God’s/Allah’s way of welcoming the child into the world. ✓ It has complete food & needs & it protects diseases
Feels too hot or too cold or difficult breathing, chest retractions, grunting 	**Unwise community talks**: ➢ Some foods should be forbidden or taboo 	**Wise community says:** ✓ No foods are forbidden, Mothers should continue to eat well & foods rich in calories, proteins, vitamins, fruits &
Has a convulsion and/or a distended tummy 	**Some Unwise Family thinks:** ✓ They should take a sick baby to a faith healer first ✓ The baby’s symptoms are not due to a medical problem.	 **Wise Family:** Takes the baby to health facilities, keep hygiene, sleep under ITN, etc.

Has vomits after most or all feeds 	**Some Unwise Family:** ✓ Interested in the mothers getting well soon and participate on any normal activities.	 **All wise family help:** Post-partum mother to rest well, and have support of the family to not return to heavy work too soon

Annex 7: IRB Letter



JIMMA UNIVERSITY
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Ref.No. RPGE/449/2016
Date 23/05/2016

To Mr. Lakew Abebe

Subject: Ethical clearance of your research protocol

The IRB of College of Health Sciences has reviewed your research protocol during its regular meeting on April 20, 2016:

> *"An implementation study of interventions to promote safe motherhood in Jimma Zone, Ethiopia"*

This is to notify that this research protocol as presented to the IRB meets the ethical and scientific standards outlined in the national and international guidelines. Hence, we are pleased to inform you that your protocol is *ethically cleared*.

We strongly recommend that any significant deviation from the methodological details indicated in the approved protocol must be communicated to the IRB before they are implemented.

With regards,

Mirkuzie Woldie (MD,MPH)
Research & Post Graduate
Coordinator