Newborn and Infant HealthCare Service Utilization in the Context of the COVID-19 Pandemic in Rural Areas of Jimma Zone: An Exploratory Approach

By: Muaz Imam (BSc)

A Thesis submitted to Department of Health, Behavior and Society, Faculty of Public Health, Institute of Health, Jimma University; in Partial Fulfillment of the Requirements for the Degree of Master of Public Health (MPH) in Health Promotion and Health Behaviour.

Dec, 2021 G.C

Jimma, Ethiopia

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Abstract

***Background**: Ethiopia is one of the few countries in the world that achieved the United Nations Millennium Development Goal Four of reducing child mortality by two thirds three years ahead of the target year of 2015. Currently, the health system is overwhelmed by the Corona Virus Disease 2019 cases since its declaration as a global pandemic and threatens to reverse the progress of Sustainable Development Goal three including childhood mortality as most countries halted childhood vaccinations and basic health services as a part of COVID-19 public health restrictions.*

***Objective**: The current study aimed at exploring the newborn & infant healthcare service utilization in the context of the COVID-19 Pandemic in rural areas of Jimma Zone.*

***Method**: An exploratory qualitative approach was conducted in three districts of Jimma Zone [Dedo, Mana and Shabe Sombo] from June 28-July 28, 2021 G.C. The Study Participants were selected purposively employing maximum variation sampling assumption. Pregnant and lactating Women, Women Development Army leaders, Traditional Birth attendants, Religious leaders, Husbands, HEWs, Health workers were involved in the study. Data were collected through nine-Focus Group Discussions (FGD) and twenty-seven-Key-Informant Interviews (KII). Data was audio-taped, transcribed verbatim and translated to English. The translated transcripts were imported to ATLAS.ti 7.1 for coding and analysis. The findings were presented in themes, subthemes and subcategories supported with quotes derived from the data.*

***Result:** The study explored and identified three major themes; Barriers toward the newborn and infant healthcare service utilization, Facilitators of the newborn and infant healthcare service utilization and Impacts of the COVID-19 pandemic on the newborn infant healthcare service utilization. Barriers related to the COVID-19, Community-level barriers, and Health facility-related barriers. Moreover, Involvement of significant others, presence of committed health workers, access to media (radio) were explored as facilitators toward the newborn and infant healthcare service utilization*

***Conclusion:** A wide range of barriers and facilitators toward the newborn and infant healthcare was explored with the pandemic impacts on infants, which calls a need to develop effective strategies and interventions that fit the context of local setting, to address the explored barriers and reduce the impacts of the pandemic.*

***Key Words:** Care-seeking, newborn, Barriers, Covid-19 pandemic, Facilitators, Impacts*

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LIST OF ABBREVIATIONS

CBNC	Community Based Newborn Care
DAH	Development Assistance for Health
EMDHS	Ethiopia Mini Demographic and Health Survey
FGDs	Focus Group Discussions
HEWs	Health Extension Workers
HWs	Health Workers
IDIs	In-Depth Interviews
IMR	Infant Mortality Rate
JZHO	Jimma Zone health Office
KII	Key Informants Interview
LBW	Low birth weight
LMICs	Low-and-Middle Income Countries
MNCH	Maternal, Newborn and Child health
NNM	Neonatal Mortality
PLW	Pregnant and lactating women
PPE	Personal Protective Equipment
PSBI	Possible Serious Bacterial Infection
SDG	Sustainable Development Goals
SSA	Sub-Saharan Africa
TBAs	Traditional birth attendants
U5MR	Under-Five Mortality Rate
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION

1.1. Background

Newborn and infant care is a well-recognized marker of high-quality care since it is exquisitely time-sensitive, and delays of minutes can lead to death. Keeping mothers and newborns together is a core aspect of evidence-based, respectful care, including for neonates who are born preterm (<37 completed weeks of gestation) or with Low birth weight (LBW), or both (1,2). Newborn, Infant and child mortality is a factor that can be associated with the well-being of a population and taken as one of the development indicators of health and basic countries socioeconomic status. A high infant mortality rate (IMR) can reflect poor quality of care and/or lack of access to care. The neonatal (NN) period that is the first 28 days of life, is the most critical period for the survival of a child (3).

A number of interventions including community management of childhood illness (pneumonia, diarrhea, malaria, malnutrition) and neonatal sepsis, Community Based Newborn Care (CBNC), community-based nutrition, Hemophilus influenza type b vaccine, hepatitis vaccine, Pneumococcal & Rota virus vaccines were introduced in Ethiopia. However, the coverage of services remains low for most of the interventions (4).

The 2030 Agenda for Sustainable Development emphasizes the need to reduce preventable newborn deaths (5) . In the same vein, UNICEF introduced the Strategy for Health 2016–2030 with two overarching goals: putting an end to preventable maternal, newborn and child deaths and promoting the health and development of all children (6).

Currently, the health system is overwhelmed by the Corona Virus Disease 2019 (COVID-19) cases since its declaration as a global pandemic. The United Nations Department of Economic and Social Affairs reported COVID-19 threatens to reverse the progress of Sustainable Development Goal (SDG3) including childhood mortality as most countries halted childhood vaccinations and basic health services as a part of COVID-19 public health restrictions (7).

As COVID-19 continues to spread, there has been diverted focus on general population needs rather than the specific needs of vulnerable groups, such as newborns, infant and children. These may cause an increase in newborn and infant deaths (8).

Although different interventions and strategies were applied, the achievements regarding the newborn and infant healthcare service utilization were confronted. Given the effect of the pandemic on the routine healthcare services for the newborn and infants as well as high burden of neonatal and infant mortality in sub-Saharan Africa (SSA) including Ethiopia, there is a need for effective strategies and behavioral interventions to prevent further deterioration of neonatal and infant health outcomes in already strained health systems. Therefore, the rationale of this study was aimed and designed to obtain deep, sufficient evidences through qualitative exploration on the uptake of the available newborn and infant healthcare services in the context of the COVID-19 pandemic in rural areas of Jimma zone.

1.2. Statement of the Problem

Prior to COVID-19, 2.5 million Newborns died globally, of preventable or treatable causes within the first 28 days of life in 2018. This represented approximately 63% of all infant deaths and 47% of deaths in children five years and Sub-Saharan Africa (41%) and Southern Asia (37%) accounted for close to 80% of the 2018 global estimates for neonatal mortality (9**).** Overall, the most important causes of newborn death are pre-term birth complications (36%), intra-partum related events (24%), sepsis or meningitis (16%) and congenital abnormalities (11%). Bacterial infection, which is called Possible Severe Bacterial Infection (PSBI), causes an estimated number of 600,000 NND per year (10).

Ethiopia is among the few regions with the highest burden of IMR in Africa. In 2018, nearly 100,000 babies died within the first 28 days following birth in Ethiopia (9). The 2019 Ethiopia mini Demographic and Health Survey (EmDHS) result showed that the infant and neonatal mortality rate is 43 and 30 deaths per 1,000 live births respectively. Among those infants that do not survive, about 72% deaths occur before the first birthday (11). World Health Organization (WHO) has also stated that Ethiopia is still one of the top ten countries that have the highest mortality of children under-5 years with 178,000 deaths in 2019 alone where under-one year infant takes high number (12). This reaffirms there is a long way to go in the next 10 years to achieve the SDG target of reducing newborns and under-5 mortality by 2030. The country aimed to further decrease the infant and neonatal mortality rates to less than 20, and 10 per 1000 live births respectively by 2020 (13).

However, on March 11, 2020 the World Health Organization (WHO) declared Coronavirus disease 2019 (COVID19) a global pandemic. While COVID does not appear to directly severely affect many infants and children in LMICs, the indirect effects of the pandemic are of great concern (14). Diversion of resources to adult services further compromises the ability to care for neonates and less than one-year children. Health care workers are increasingly being seconded to adult services and health budgets that are already inadequate for child health needs, are being shifted to managing the COVID epidemic (15).

Newborns and infants are among the most vulnerable to the indirect effects of the COVID-19 pandemic on healthcare provision. Roberton and colleagues estimated that coverage disruptions

of 9.8% to 51.9% over 6 months could result in 253,500 to 1,157,000 additional under-5 child deaths in Low-and Middle-Income Countries (LMICs), and these estimates did not include small and sick newborn care (14).

In Ethiopia, the delivery of safe and effective neonatal health services to all newborns and caretakers could be severely impacted by the COVID-19 pandemic in a number of ways. First, the uptake of neonatal health care services could decrease. In the earlier phase of the pandemic in Ethiopia, the care seeking for neonatal and infant health services declined, transportation of essential drugs and medical supplies was disrupted, and some facilities entirely closed their gates and turned back who come to receive services (16).

Study conducted by kassie et al, in 2020; revealed that newborn immunization service utilization was decreased by 28.5% from March-June 2019 to March-June 2020. Also, the overall health center services were reduced by more than one-third while the hospital services were reduced by more than 50% (17).

During the early phase of the pandemic in our country, the government declared a state of emergency labeling the pandemic as a national threat and launched overall preventive measures including advising the community to stay at home, practice strict and frequent hand washing and wearing a face mask. The government also restricted the movement of its people from place to place and laid temporary restrictions in market places, restaurants, shops, cinema houses, religious gatherings and other meetings. There was also a temporary restriction on public transport across-regions and cities (18).

It is understood that there was gaps in neonatal and infant healthcare service utilization at a health facilities in the context of the COVID-19 pandemic. There are various quantitative studies conducted and identified different factors determining the healthcare service utilizations. To the best of our knowledge, very few qualitative studies attempted to explore the uptake of healthcare services for newborn and infants in the current study settings. Thus, this study was aimed at and explored the newborn and infant healthcare service utilization in the context of the COVID-19 pandemic in the rural areas of Jimma zone, through qualitative explorations of barriers and facilitators. Additionally, how the pre-existing barriers was linked and exacerbated by the pandemic was revealed in this study finding.

CHAPTER TWO: LITERATURE REVIEW

2.1. Overview

Ethiopia is one of the few countries in the world that achieved the United Nations Millennium Development Goal Four (MDG4) of reducing child mortality by two thirds three years ahead of the target year of 2015. The under-five morality rate was reduced from 205 deaths per 1000 live births in 1990 to 68 deaths per 1000 live births in 2012. During the same time frame, the neonatal mortality rate went from 59 to 34 deaths per 1000 live births (19). Building on this success, the country aimed to further decrease the under-five, infant and neonatal mortality rates to less than 30, 20, and 10 per 1000 live births respectively by 2020 (13).

However, on March 11, 2020 the WHO declared COVID-19 as a global pandemic. If routine health care that are essential for maintaining and continuing reduction in mortality gains is disrupted due to COVID-19 in Ethiopia, the increase in newborn and infant mortality as an indirect effect of the pandemic may be substantial (14). In Ethiopia, most studies established the fact that the implementation of various COVID-19 precaution measures and modalities has resulted in a decline of household income, living cost inflation including increased transportation cost, and this makes it tougher for caregivers/ women to access services at a health facility. That is, the measures that are being taken against COVID-19 pandemic are causing an unforeseen consequence on maternal, newborn and infant healthcare service utilization (20). The decline in service utilization may be attributable to restricted access to health facilities arising from city lockdowns and curfews imposed by the government, fear of contracting COVID-19 may keep many caregivers/women from attending health facilities and utilizing healthcare services (21).

Mechanisms by which the COVID-19 pandemic could influence neonatal and infant health in Ethiopia using the WHO's health system building blocks framework was revealed (22). The delivery of safe and effective neonatal health services to all newborns and caretakers could be severely impacted by the COVID-19 pandemic in Ethiopia in a number of ways. First, the uptake of neonatal health care services could decrease. In the earlier phase of the pandemic in Ethiopia, the care seeking for maternal and neonatal health services declined, blood donations shrank, essential surgical care such as caesarean section became unpredictable, transportation of essential

drugs and medical supplies was disrupted, and some facilities entirely closed their gates and turned back people who would come to receive services (16).

Neonatal and infant healthcare safety could be compromised. The decline of uptake of neonatal and infant health services is partly due to fear of safety in healthcare settings among health workers and the caretakers. In the absence of clearly outlined strategies on health care safety and in the face of scarce resources, guidelines, tools, and supplies, ensuring safety remains unclear. COVID-19 has further exposed these long-standing health system challenges. Public health measures to control the spread of COVID-19 implemented in high-income countries, such as physical distancing and use Personal Protective Equipment (PPE) has further strained the provision of safe maternal and neonatal healthcare in Ethiopia (23). The lack of easily accessible maternal and neonatal health services could force families to seek care from less safe traditional practitioners.

Provision of standard neonatal and infant health services requires a sufficient number of skilled health workers. Still there is a shortage of health workforce in our country. This shortage is made worse by high turnover of the staff, limited competency and motivation, and challenges related to training, deployment, and retention (24). The COVID-19 pandemic threatens to further reduce the availability of competent and motivated maternal and neonatal healthcare providers. As seen in other countries, the COVID-19 pandemic diverts health workers towards COVID-19 efforts (25). Critical healthcare worker shortages are intensified by healthcare worker absenteeism due sicknesses, underlying health conditions that put them at higher risk, and psychological stress from COVID-19 (26).

Safe, efficacious and cost-effective medical products, vaccines and technologies are essential to provision of both preventative and curative neonatal health services. Globally, the productions of medical products, vaccines and technologies have been slowed due to the COVID-19 pandemic. LMICs' capacity to procure essential neonatal health commodities are compromised by economic losses from COVID-19 pandemic, countries restricting export of medical supplies, as well as the shrinking global Development Assistance for Health (DAH). Furthermore, transportation of essential commodities through global supply chains becomes a challenge due to the travel bans and restrictions imposed across borders. Ethiopia already faced a chronic shortage of essential maternal and neonatal health drugs and commodities (27). The COVID-19 pandemic

could worsen the shortage by disrupting procurement and importation, and transportation of essential neonatal health commodities.

The health systems building block that is most likely to be affected by the COVID-19 pandemic is health care financing. The DAH has stagnated long before the COVID-19 pandemic, forcing low-income countries to look for domestic financing options (28). The shrinking global and national economy will have detrimental consequences on maternal, neonatal and infant health (29). The absence of substantial external support combined with the internal economic slowdown and political sensitivity of the pandemic will likely divert resources from the existing health programs to the COVID-19 pandemic. The effect of this shift of finance on the provision of neonatal health will become considerable as COVID-19 spreads throughout the country

2.2. Factors Influencing the Newborn and infant healthcare service utilization

2.2.1. Barriers toward the uptake of newborn and infant healthcare

2.2.1.1. COVID-19 related barriers and its Mitigation strategies

Implementation of different mitigation measures to interrupt the transmission of COVID-19 i.e. movement restrictions, transport inaccessibility, lock downs, perceived poor quality of care and anxiety over possibly being exposed to corona virus are acting as barriers to access neonatal healthcare utilization at health facilities including maternal health care during the COVID-19 pandemic (30).

Maintaining regular childhood preventive and curative services through the pandemic is a particular problem in LMICs, due to resource constraints, closure of facilities, limited access to health facilities and insufficient health care workers due to attention given for the pandemic. For example, immunization or nutritional programs and services providing essential newborn care may be compromised (31). Newborn, infant and their mother's health care-seeking practice were reduced because of an interrupted health-care delivery system and delay of getting treatment due to fear of acquiring the COVID-19 infection from the health institutions, the lockdown and movement restrictions brought about by the ongoing pandemic and lack of transportation (32).

The COVID-19 pandemic is creating unprecedented disruptions in the delivery of routine health services in many countries of the world. As a result, economic fallout generated by lockdown

policies is putting pressure on Ministries of Health to cut public spending or divert resources to the COVID-19 response and thus compromising other essential and even life-saving non-COVID-19 services. In health outcomes terms, the poorest countries stand to lose the most from these disruptions (14). Emerging evidence indicates that the pandemic has caused disruption to the delivery of immunization programmes globally. This disruption is explained by factors including challenges in keeping services running (e.g., due to healthcare worker redeployment or insufficient protective equipment), public fears around accessing healthcare services safely, and movement restrictions (33-35).

2.2.1.2. Community-related barriers

Health facilities were viewed and perceived as high-risk centers for contracting COVID-19 as it was widely publicized that health workers were contracting the virus which impacted the service utilization at high**,** (36).

Newborns in Ethiopia face a multitude of barriers in accessing healthcare. Some of these are related to culture and fatalism and limited communication. Although nearly all the Health Extension Workers (HEWs) have been trained to treat severe newborn infections in the CBNC program, relatively few sick newborn and infants have been identified and treated in the country (10,37)**.**

Socio-cultural and religious beliefs were among barriers to the service utilization. Among the Orthodox Christian follower community members, newborns who have not reached their baptism date [‘Kristina’] are not taken out of home for any issue. a delivered mother before 2 months of data collection, in IDIs, reported that it is forbidden to take newborns out of home before date of Baptism [Christianization] for seeking treatment or other issues whether the illness or issue regardless of its severity. this descriptive exploratory qualitative, identified the Local newborn illness diagnosis negatively affected health seeking behavior of the community members in that they made them to rely on traditional medications or delay in seeking care from health facilities. This might lead to negative consequences like disability and mortality (38)**.** Personal Factors that either delayed or prevented care-seeking included fears of poor treatment at the health facility, clinic hours, rain or night time hours, poor communications, distance, lack of adequate resources

for transportation and overall financial constraints are determined in qualitative Study done in rural Oromia and Amhara regional states of Ethiopia (39)**.**

2.2.1.3. Health facility-related barriers

Resources have not been equitably distributed across health facilities, leading to sub-standard infection control procedures at many underfunded and overburdened health facilities. The distribution of PPE has been highly inequitable, and some healthcare workers have been forced to reuse equipment and provide care in environments that increase their risks of exposure and the potential to spread the virus to their families and communities(40). Lack of adequate personal protective equipment (PPE) for health care workers (HCWs) hinders effective provision of care for suspected and confirmed COVID-19 paediatric cases and increases the risk of transmission to this vital work force. HCWs are particularly vulnerable to infection and providing adequate PPE is a major concern in LMICs (41).

On the supply side, many health facilities needed to re-allocate medical resources and personnel to emergency responses, potentially leading to a reduction in the availability and quality of non-COVID services (42,43).

The COVID-19 pandemic threatens to further reduce the availability of competent and motivated maternal and neonatal healthcare providers. As seen in other countries, the COVID-19 pandemic diverts health workers towards COVID-19 efforts (25).Critical healthcare worker shortages are intensified by healthcare worker absenteeism due sicknesses, underlying health conditions that put them at higher risk, and psychological stress from COVID-19 (26).

The COVID-19 pandemic could worsen the shortage by disrupting procurement and importation, and transportation of essential neonatal health commodities. The transportation of essential commodities through global supply chains becomes a challenge due to the travel bans and restrictions imposed across borders. Ethiopia already faced a chronic shortage of essential maternal and neonatal health drugs and commodities (27).

2.3. Impacts of the COVID-19 pandemic on neonatal and infant healthcare

A modeling study has predicted that the use of maternal and reproductive health and immunization coverage has been significantly decreased with an increase in additional mortality

and morbidity. In this study, a 10% decrease in the coverage of maternal and neonatal health care could result in 28,000 and 168,000 additional maternal and neonatal deaths, respectively (14).

With lockdowns in place as a part of the COVID-19 response, routine immunizations have been severely disrupted, and parents are increasingly reluctant to take their children to health centers. The WHO and UNICEF warned of an alarming decline in the number of children receiving life-saving vaccines around the world. This is due to disruptions in the delivery and uptake of immunization services caused by the COVID-19 pandemic (34).

Health services for children have decreased significantly due to the COVID-19 pandemic. COVID-19 outbreak adversely affects the condition of children, particularly in the lives of most vulnerable children. This includes disruption to their healthcare, nutrition, protection, vaccinations and preventive and curative services. The uptake of newborn, infant and child health services has decreased, approximately by 19 percent. Critical health services for under-five children have decreased significantly due to the COVID-19 pandemic. The service utilization for children under- 5 years of age in March 2020 was down to 25 per cent compared to March 2019 (44). Reduced access to care, poverty and fear of being infected with COVID at health care facilities, may lead to delays in seeking care for sick children, resulting in more severe illness at presentation and lower uptake of effective preventive interventions such as childhood vaccination (15).

Evidence from the Ebola virus outbreak in West Africa indicated the stillbirth and neonatal deaths were slightly more than maternal death (about 4000) which was directly caused by the Ebola virus in the country (45). The COVID-19 epidemic has already eroded the health systems by disrupting the routine health services and constraining access to food and essential nutrition services which could potentially contribute to plenty of additional deaths in children under 5years of age in which less than one-year infant death is very high (46).

It is clear that there were gaps in newborn and infant healthcare service utilization due to different barriers related to COVID-19 pandemic and its mitigation strategies, the health system and from the community related factors. Therefore, this exploratory study on the uptake of the newborn and infant healthcare services in the context of the COVID-19 pandemic, in rural areas of Jimma zone was believed to fill the gaps toward the service utilization.

2.4. Significance of the Study

This study explored and identifies barriers, facilitators and impacts that were influencing the newborn and infant healthcare service utilization in the context of the COVID-19 pandemic.

Therefore, these finding can help:

The health managers and administrative bodies of the study districts as well as Jimma zone health offices as input in:

- developing appropriate, effective strategies and interventions to improve the newborn and infant healthcare service utilization in the context of the COVID-19 pandemic
- to shape the uptake of healthcare services and reduce the burden of COVID-19 pandemic and other potential outbreaks in the future.
- used as a baseline in the future studies for researchers of public health-related backgrounds

In General, the explored finding might be important for service users, health care service providers, administrative bodies of study areas and other Jimma zone districts. Moreover, it can help local development associations and donors found in Jimma zone to design appropriate, effective and evidence-based interventions to improve newborn and infant healthcare service utilization. This might be the immediate implication of this study

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CHAPTER THREE: OBJECTIVES

3.1. General Objective

To Explore Newborn and Infant healthcare service utilization in the context of the COVID-19 Pandemic in rural areas of Jimma zone, 2021

3.2. Specific Objectives

1. To explore how the COVID-19 pandemic influenced the newborn and infant healthcare service utilization in rural Jimma Zone, 2021
2. To explore Barriers toward the newborn and infant healthcare service utilization in the context of the COVID-19 pandemic in rural Jimma zone, 2021
3. To explore facilitating factors and prospects toward the newborn and infant healthcare service utilization in the context of the COVID-19 pandemic in rural Jimma zone, 2021

CHAPTER FOUR: METHODS AND MATERIALS

4.1. Study Setting and Period

The study was conducted in three districts of Oromia Regional state in the rural districts of Jimma Zone. Jimma zone has 21 districts. Jimma Town serves as capital town for those districts, it is located 350 KMs from the capital city Addis Ababa in the south-west direction. The land area of Jimma Zone is extended from 7^0 13`N to $8^0$56`N and from 35^0 52`E to $37^0$73E. Jimma Zone has a total of 20 rural districts and one town administration with a total 46 urban and 512 rural "Ganda" [kebele]. Jimma zone have total population of 3,518,260 of which 88.7% live in rural areas, and it is characterized by a poor health infrastructure and a high Child mortality ratio. The prevalence of child healthcare utilizations is low when compared to the national average. Currently 8 hospitals, 122 health center and 566 Health Posts are structured as primary health care unit to serve the rural community. The primary health service coverage is 92% by Health posts and 80.3% by Health Centers. Different health professionals were assigned to all Districts providing service for their respective communities. The fully immunization coverage declined to 33.2% after the emergence of the pandemic. Treatment seeking for sick infants was among affected services in the zone (47).

From the districts found under Jimma Zone, three districts and two health centers per district were selected by considering the Maternal, newborn and child health (MNCH) service including the newborn and infant health care-seeking and service utilization status, the current local security related situation and resources available for the study. The study was conducted starting from June 28-July 28, 2021 G.C.

4.2. Study Approach

An exploratory qualitative approach was employed. This design allows the investigator to explore, obtain rich and depth of information from the participant's perspective of the phenomena under investigation (48).

4.3. Study Participant

Lactating mothers who have an under-one year (i.e. mothers who gave birth during the last one year preceding the data collection in the COVID-19 period), Pregnant women, religious leaders, Husbands, Traditional birth attendants (TBAs), Women Development Army (WDA) leaders, Health care Service providers: Health Extension workers (HEWs), Director of Primary health care unit (DPHCU), Maternal and child health (MCH) services Coordinator of PHCU, District level MCH Coordinator, and District level COVID-19 task force (or PHEM Coordinator) were the source population for the study settings.

Selected Participants from the source population based on purposes of the study. Participants of Focus Group Discussions (FGDs): For Female (Pregnant, Lactating mothers, and WDA leaders), For Male: (Husbands of selected women), For Key informant interviews (KIIs); Selected healthcare service-providers from District and PHCU-level, PHEM/COVID-19 task force personnel, religious leaders and Traditional birth attendants (TBAs) were included.

4.4. Eligibility

Health care service-providers and the community members who were living in the selected districts at least one year before the start of data collection, Lactating women having an under-one year as well as pregnant mothers. Where the selected participant was absent from KII or FGD, other members from that category was replaced and participated.

4.5. Sample and participant selection

Participants in the focus group discussions (FGDs): Lactating and pregnant women, Male partner (husbands), and Women Development Army (WDA) leaders were sampled. The FGDs were held separately with each group to maintain homogeneity in the groups. The WDAs are part of the women's association and are composed of 25–30 women over the age of 18; they include women in neighboring households who voluntarily organize "1-to-5 networks".

Health care service providers ranging from the health post to the district level health office (HWs from district health Office, HWs from Health center, and HEWs from Health post), TBAs and religious leaders under the study districts were sampled as KIIs.

These selections of study participants were done by using purposive sampling through employing the maximum variation sampling assumptions. The recruiting and selection of the study participants from the community was undertaken with the support of HEWs and HWs assigned for the field work. A total of 27 KIIs were sampled and conducted: District-level COVID-19 task force/ PHEM Coordinator (n=3), TBAs (n=4), religious leaders (n=4), PHCU MCH Coordinator (n=5), PHCU Directors (n=4), District MCH Coordinator (n=3), HEWs (n=4). Also 9 FGDs were carried out; 3 WDAs, 3 Male partner and 3 P and LW group. In FGD groups; 6-11 participants were involved and participated actively. The FGDs and KIIs were daily reviewed to make a decision on further sampling to maintain the saturations of ideas.

4.6. Data Collection Guide

Focus group discussion and interview guide was developed by the researcher after reviewing different literatures (14,17,26,35) and Documents of WHO Operational framework for Primary health care (49). The first guide was prepared in English language, and then translated to Afaan Oromo (local language of the study participants) by two Master Degree students of public health. It was pretested on population in other settings similar to the study participants before the data collection and reviewed for adjustments based on the feedback gained from the pretest. The guide prepared was covered key areas of explorations such as how COVID-19 affected the newborn infant care-seeking, service utilization: Barriers toward newborn infant healthcare utilization, Women's perception and Practices, facilitators and impacts toward the newborn and infant healthcare in the context of the COVID-19 pandemic. Several probes were used to get deep insight and clear image of their ideas.

4.7. Data Collection method

Data was collected by 4 MPH and 2 PhD male students. FGDs were held in the community development centers as well as the village's health post where privacy and low ambient noise for recording were optimal. These discussions were conducted in a circular seating pattern where participants engaged face to face that helped the moderators participated all the respondents. For

each FGD, a moderator and a note-taker were assigned. Key informants' in-depth interviews were conducted one-to-one in a quiet place [health facilities office in the study setting]. The time of the interview and discussion was scheduled based on mutual agreement with the participants. During the data collection, the COVID-19 prevention measures were maintained.

Document Review: The data collection method was also conducted through document review both from woreda-level and Jimma zone health institution and health organizations. Data before the emergence of the pandemic and after the pandemic was reviewed.

4.8. Trustworthiness

In order to ensure trustworthiness of the study finding, different quality control measures were implemented. Data collectors were from different public health fields of study and discussed together for two days on data collection techniques of FGDs and IDIs and the purpose of the study. The appropriateness and relevance of the data collection tool was ensured through experts (Advisors, colleagues, 2 Ph.D. students who were experienced in qualitative study).

To ensure credibility, the interviews and discussions were open-ended and respondents were encouraged to answer the questions in an uninhibited manner, while being guided to remain focused on the topic of interest. At the end of interviews and discussions as well as after transcription, the researcher checked the transcribed data with selected participants to ensure if it was similar with their response they gave, and also discussed some unclear ideas at the end of session by summarizing their response [Member checking]. Debriefing was conducted with supervisors and colleagues. Method triangulation [IDI and FGD] and data triangulation [data taken from different views (Service users, religious leaders and service providers' views) were combined. The researcher was discussed the importance of the research with zonal health office staff, district health office staffs, health center staffs and some of the study participants [i.e., friendly and smooth relationship was developed, these was conducted to create rapport.

A detailed description of the research methodology, the study participants' background, and the research context was provided to maintain the transferability; which is the extent to which the findings can be applied in other contexts or with other participants to enable someone interested in making a transfer, to reach a conclusion about whether transfer can be possible or not.

Description of the detailed methodology used during this study, and a detailed description of the data including interview materials, transcriptions, findings, and recommendations was kept. Any other material relevant to the study that was used was also made available and accessible for the purpose of ensuring dependability (i.e., the consistency of the findings).

All interviews were recorded, professionally transcribed in detail and the transcripts were checked against the recordings. An immediate daily data transcription was performed not to miss the respondent's full response, non-verbal communications, and emotional feelings.

4.9. Data Management and analysis

Raw data, transcripts and Audio-taped data were checked, stored and each transcribed data was assigned a unique file name and saved to secured-protected personal computers for security and confidentiality.

Thematic analysis was carried out, through which codes, sub-categories, categories, and themes were developed from the data. That is; the audio-recorded data from FGDs and KIIs were transcribed verbatim to the local language (Afaan Oromo) and then translated into English language for analysis. Repeated reading of the transcripts was performed to get important ideas in the transcripts and then coded line-by-line considering meanings of the sentences, by two coders using ATLAS.ti.7.1. Then, the given codes were checked for inter-coder consistency through identification of agreed up on codes, debating and discussing on different codes and then a codebook manual was developed. Finally, the researcher reviewed the coded transcripts and then, assigned the consistent code to all transcripts. The findings were organized in themes, subthemes and sub-categories with narrations; supported by quotes derived from the data.

4.10. Ethical consideration

The study was approved by the Institutional Review Board (IRB) of Jimma University (Ref.No: IHIRB/postg 42/5/2021). Permission to conduct the study was obtained from Jimma Zone Health Office (JZHO) after a letter of support written from the University was submitted to JZHO. Then, the support letter was sent to the respective study districts. Before the start of any data collection, participants were informed about their right to participate and refuse, as well as the purpose of the study and confidentiality. Following this, written consent to participate in the study was obtained from each FGD and KII participants.

4.11. Dissemination of the findings

The finding will be presented to Jimma University Department of Health, Behavior and Societies and will be submitted to the department and the feedback will be disseminated to the Jimma Zone health department, Manna, Shabe and Dedo health offices and other concerned bodies. It will also be presented in different seminars, meetings. Further attempt will be made to publish in standard scientific journals.

CHAPTER FIVE: RESULT

5.1 Descriptions of Study Participants

A total of 27 KIIs and 9 FGDs were conducted. The participants of FGD were 91; thirty males and sixty-one females. Females participated in the FGD of women development army leaders and lactating & pregnant groups. The participants represented a wide range of age (20–58 years) and the majority of them were Farmers by occupation (58.2%). Majority of the FGD participants were primary education (59.3%) and without formal education (36.2%). Most of the KIIs participants (70.4%) were College and above [13 at degree level and 6 at diploma level]. The majority of the participants in both FGD and KII were Oromo by ethnicity, Muslim by religion; and lies between (25-45 years) age intervals. (Table 1 & 2)

Table 1: Socio-demographic characteristics of the study participants of the rural districts of Jimma zone, 2021

Characteristics		FGD (N=91)	%	KII (N=27)	%
Sex	Male	30	32.9	15	55.6
	Female	61	67.1	12	44.4
Age	< 25	10	10.9	3	11.1
	25-45	59	64.9	18	66.7
	>45	22	24.2	6	22.2
Ethnicity	Oromo	87	95.6	26	96.3
	Others	4	4.4	1	3.7
Religion	Muslim	76	83.5	14	51.8
	Orthodox	9	9.9	6	22.2
	Protestant	6	6.6	7	26.0
Educational status	No formal education	33	36.2	4	14.8
	Primary	54	59.3	3	11.1
	Secondary	4	4.5	1	3.7
	TVET	-	-	6	22.2
	Degree	-	-	13	48.2
Occupation	Farmers	53	58.2		
	Housewives	17	18.7		
	merchants	21	23.1		

Table 2: Study participants of FGD and KII by categories and source

Different respondent catagories and source was shown in table 2 below.

Respondent's source	Categories of respondents	FGD	KII
Community	Pregnant & Lactating women	3	--
	WHDAs	3	--
	Male partner	3	--
	Religious leaders	--	4
	TBAs	--	4
PHCU	PHCU director	--	4
	MCH Coordinator	--	5
	HEWs	--	4
District	PHEM Coordinator	--	3
	MCH Coordinator	--	3
Total		9 FGD (n=91)	(n=27)

5.2 Identified themes

Different themes around exploring the newborn and infant healthcare service utilization in the context of the Covid-19 pandemic were identified. These are: Barriers toward the newborn/infant healthcare with sub-themes of COVID-19 pandemic mitigation strategies, Community-level and Health facility-level barriers. The second theme is facilitating factors toward the newborn/infant healthcare service utilization. The third theme is Impacts of the COVID-19 pandemic on the newborn and infant healthcare service utilization. There is no demarcation between the themes and across sub-themes; the barriers were presented followed by facilitators and the impacts. For the sake of simplicity, the themes were presented in the table below (table 3).

Table 3: The identified themes, subthemes and sub-categories

Themes	Subthemes	Sub-categories
Barriers toward newborn and infant healthcare service utilization	1.COVID-19 related barriers	1. Worries and fear of the pandemic 2. Restrictions and lockdown 3. Diverted attention toward the virus
	2.Community-level barriers	1. Perceptions and unpleasant rumors 2. Socio-cultural beliefs/practices 3. Women workload &decision-making power 4. Distance and Topography
	3.Health facility-related barriers	1. Poor logistics 2. Poor client-provider interaction 3. Absenteeism and lack of punctuality 4. Changed health workers behavior 5. Location of health facilities
Facilitators toward the newborn and infant healthcare services utilization	1.Community-related facilitators	1. Involvement of significant others 2. Community-level institutions 3. social support
	2.Health facility-related facilitators	1. Presence of committed health workers 2. Collaboration and Coordination
	3.Access to Information source	1. Media 2. Local structures and HCWs
	Emergence of the COVID-19 vaccination	
Impacts of COVID-19 pandemic on the Newborn & infant healthcare service utilization	1. Miss an appointment 2. Delays in care-seeking 3. Exposed newborn & infants to complications and death 4. Mother starts care-seeking for their newborn from traditional healers	

5.2.1. Barriers toward the newborn and infant healthcare service utilization in the context of COVID-19 pandemic

5.2.1.1. COVID-19 pandemic related barriers

There are different sub-categories identified under this subtheme. These are: Worries and fear of infection, no face mask, no service rule, mother's reluctanat for referral of sick infants, Restriction and lockdown measures, diverted attention roward the pandemic prevention and control and facility closures.

No face mask, no service rule: Health care service providers were preventing any client without wearing a facemask not to enter the health facility. They implemented the rule declared by the government jointly with FMOH that stated; No one without wearing a facemask should not be served at the government offices including health facilities to halt the burden and spread of the virus. Due to worry of contracting the virus, some service providers were feared to provide services. Most of the FGD participants stated that, they were returning at the gate of the health facility by the gatekeepers without any service to their sick infant including immunization services.

> *"There is a major problem that if we have no facemask, we are not allowed to get service for ourselves and our infants at health center; that is not good because there are many women who cannot afford to buy facemask due to limited resources and lack of money to buy facemask." (**25 years old, P & LW FGD**)*

> *'During early phase of the Covid-19 pandemic, the service delivery was not stopped but some HWs returned women with their infants by saying there is no services available now, this was due to fear of the virus for the period of three to four months." (**KII, 26 years old, MCH Coordinator)***
>
> *"...when the pandemic happened in our country, there were health workers who fear and worried to contact with others [mothers and all clients] and the services are interrupted for time being, Mothers face difficulties of vaccinating infants and children" (**KII, religious leader)***

Mothers reluctant for referral of sick infant: It was mentioned that refusal of mothers and the father of the severely sick infant to take the referral papers to seek treatment from the next higher facility. They have resisted visiting where they have been referred to; due to fear of the pandemic, fear of being isolated and quarantined, afraid of the expenses at the town.

> *"Many women refused to take their sick infants to the next referred facility when we give them referral paper. They said we may face a challenge at the town during this Covid-19 and preferred not to take their infants to a referred health facility. They think no one may approach them after they visited the hospital for their sick referred infants." (**26 years, KII)***

Restriction and Lockdown*:* Study participant agreed that the transportation and market place restriction exposed them to financial decline, which have contributed to inability to buy facemask to get healthcare services, pay increased transportation cost, and unable to buy home-based necessary materials and food items. In some kebele, particularly for the community members at far distance and found at the margin of the study districts, there was a fixed date of transportation access (two days per week). When the lockdown and transport restriction was declared at the national level during the early stage of the pandemic, all transportation means including motorcycle was restricted.

After a few weeks of restriction, it was allowed with a possible reduction of passengers by 50% of its capacity or the seats it has, which exposed and obliged people to pay twice fold than previously known prices. Due to the lack of transportation access and unable to pay its cost, women prefer to stay home with their infants and children. This transportation problem and its cost increment due to the pandemic was a double burden for the communities in the study settings, especially for those found at margins hindering them from care-seeking and available service utilization at the health facilities. KII participant confirmed the case as follows:

> *"Lack of transportation during the pandemic, and an increment in the cost of transportation made people not to visit the health facility for seeking care and service utilizing." (**32 years, HEWs)***
>
> *"…. because, there are many women who cannot afford to buy facemask due to limited resources and lack of money for household expenses and other purpose due to market restriction." (**P & LW FGD, 25-year-old**)*

"Now, transportation cost is doubled. Due to this cost increment, I am obliged to pay twice compared to previous pre-COVID-19 period. Moreover, it is must to wear a facemask. Otherwise, they do not allow you to use the service. It is difficult for me to afford all those things where my income is decreased by the pandemic already." ***(FGD, Female)***

Diverted attention and focus toward the COVID-19 pandemic: During the early phase of the pandemic high attention was given to the COVID-19 pandemic prevention and control, the facilities were closed partially to give only emergency care, while others was totally changed to serve as isolation center and quarantine area. As a result, the interruption of the non-COVID-19 services was happened. Then, the community has faced a big challenge to return to the previous trend of seeking care as well as utilizing available services thinking that the problem still existed.

'The health facilities were closed for three weeks. After that people were not aware the re-opening of the health facilities and resuming of the service provision. For this reason, generally I want to say it [the COVID-19 pandemic] has great influences.'' ***(KII, MCH Coordinator).***

They [communities in the area of the changed facility] were not willing to seek care from other facilities. Leaving the facility and health workers they had known for years was difficult for them. As a result, they decide not to seek care from other health facilities in the woreda, rather keep themselves at home.

´In our district one health center was closed for other [non-COVID-19] services and was serving as the center for the COVID-19 pandemic. It was serving as the isolation/quarantine center. At that time, people who were using infant and child health services at that health center was being challenged. Vaccination and some other services were declined because of this. After a period of time, we advised them to seek care as well as utilize services at the town health post. Until this was arranged an infant and child health care service were declined." ***(29 years old, KII)***

5.2.1.2. Community-level barriers

Also, there are some subcategories under this identified subtheme: Perceptions and unpleasant rumors (Misinformation), socio-cultural beliefs, women workload and decision-making power, topography and distance

Perception and unpleasant rumors (misinformation)

Community members perceived that, since the health facility was serving many people/clients from different settings, they may acquire the virus from those clients. Some the members also think and believed that health workers in the facilities as they disseminate the virus to them. Due to this perception, they prefer not to visit the health facility, even if their infant or other family members got sick, thinking they will contract the virus from the health facility. Particularly, after they had exposed to different false rumors in the community that health workers were contracting and dying from the virus. Surprisingly, they have avoided sitting with the health workers including HEWs during public transportation utilization together.

> *"yaw" by thinking health post, health center and hospital as a source of COVID-19 virus, many people was resisted and feared to seek care and utilize services from the health facility.* ***(33 years, District level KII)***

> *"People mistrusted the health professionals and consider as a source of infection dissemination and whenever we were using transport no one wants to give transportation service for us. Travel from one town to another was restricted and whenever we went to Jimma and returned, people avoided us as they thought that the infection is widely disseminated in the town."* ***(27-year-old, KII, HEW)***

> *. ''...No, the health facility was not closed this much. The health facility was only closed for 1 month. But the people fear to go. Death of health care workers was being transmitted through the media that the people fear a lot.'' (****PHCU Director, KII)***

The community perceived that the COVID-19 pandemic was emerged only to attack those people who conduct ***sinful*** activities ***[warra ajaja Rabbii/Waaqaa dideef]***. When they heard of any patient with the virus, immediately they perceive as the patient was done what "Allah/God" has forbidden. This was also seen in the health center, when one of health professional

contracted the virus; the community perceives him as he conducts sinful activities, and avoid health facility visit due to fear of HWs. A KII participant from health workers stated:

> *They [People] think COVID-19 is only for those who conduct sinful**,** not for others. Especially, when one of our laboratory technicians was tested positive for Covid-19, they talk to each other, it is the health workers from other place come to this PHCU with covid-19, because they conducted sinful activities.*

Socio-cultural beliefs /practices*:* There was a habit of saying "***wait and see for a few days***" previously within the community for sick infants, with the hope of self-resolving of the illness. There are also individuals who were misleading and advising mothers to rely on "Allah/God" rather than seeking health from health facility believing that nothing can be happen without the will and wish of "Allah/God". Study participant also mentioned, there are husbands who support these beliefs. When the COVID-19 pandemic was occurred, these keeping of sick newborn infants at home were exacerbated due to fear of contracting the virus. They also perceived as mothers and newborn infants are more vulnerable than others which hinder them not to seek care at health facility. This was revealed by FGD of male and female participants as well as KII respondent

> *"There are individuals who mislead women not to seek care for their infants. Some of the women believe those individuals and prefer to have a hope on Allah/God rather than seeking care from the health facility. They didn't understand benefit of the health facility." (**40-year-old, FGD of WDA**)*
>
> *"There are also pressures from the husband. Some husband says ''he is the God who will help you and your infant; Nothing will be happen due to not seeking care and nothing will be prevented due to visiting of health facility''. (**25-year-old, KII)***

*"There are husbands who says we rely on Allah/ God, his [God's] willing make us healthy and improve our sick family members without going to health center." **(53 years, husband FGD)***

Women workload and Decision-making power: Women in rural society are exposed to more work burden than any others. Household activities and care for family members still perceived as her responsibility alone; most husbands were not involved in activities performed within the home, even some husbands do not look for his sick infants, thinking the mother is enough to look and care for them. It is perceived as male partner is a leader and dominates in all household issues. Additionally, women also participate in field works like farming, fetching water, social interaction and visiting the market place. Due to busy time and high workload, she doesn't get enough time to care and utilize services at health facility for her infants. This burden on women, the poor decision making and support from husband is greatly affected in this COVID-19 pandemic, increasing the burden on women. A 32-year WDA FGD participant explains the case as follows:

> *When HEWs appoint women to come on appointment day to vaccinate their infant, unfortunately some women go to market, some to farming, some were be busy due to daily activities to come on appointment day, limited women come with their baby on that day. Since some vaccine is not opened for less few of infant HEWs appoint for another day. This problem is mainly the challenges we faced from women not bringing their infants to vaccination site due to their workload.*

> *"The other reason for not to attend on appointment for infant immunization service is that they [Mothers] are busy for their daily activities and she said I will go tomorrow, the next day, etc. some male partners do not allow them to visit health facility, they should wait for her husband decision to visit health facility." (**KII, 26 years, Health extension worker)***

Topography and Distance*:* Even though the expansion of health facilities was improved in the last decade, communities' access to these facilities is being continuing challenges due to the topography of the rural geographic location, far distance, and lack of access to a quality road. Particularly for those who were located at the margin. Majority of the FGD and KII study participants raised the issue of distance from the health facility, Lack of transportations and high cost for motorbikes are the main barriers they face to seek care for the newborn as well as their infants at the health facilities.

*"The long distance from health facility and unavailability of comfortable road during rainy season are big barriers that prevent us from visiting health center to seek care and use available services." (**53-year-old, Male FGD)***

*"Barriers such as long distance, unavailability of transportation services and economical problem are still challenging factors preventing many people from health care seeking whether for their infants or others" (**KII, Religious leader)***

*"Transport problem, distance from health facility, and filling of the river during the rainy season are the most challenges for seeking and utilization of maternal and child health care services." (**25-year-old, KII)***

5.2.1.3. Health facility-related barriers

Here, under this subtheme there are various subcategories explored and indicated: Poor availability of Logistics, Distorted client-provider interaction, Absenteeism and lack of punctuality, disrespecting the client, location of the facilities,

Shortages of drugs and supplies: The restriction on transportation at national level during the early phase of the COID-19 pandemic, leads to the shortage of drugs and supplies. Majority of the Participant from discussion and interviews emotionally talked about the shortage of drugs and reagents; Mothers with her newborn/ infant who came to the health facilities after travelling a long distance on foot were given a second appointment. These mothers not come again to the health facility as they think the problem still exists. Inadequate drugs, not timely supply and shortage of immunization drugs as well as other reagents were among the major barriers that client face during health care-seeking for their sick infants or children and immunization schedule.

*"At health post level there is no enough drugs which needed to treat mothers or child; however, all service given at health post level is free of charge. The problem was the availability of drugs. Even now days you never get from health center; mostly they prescribe to private pharmacy which is very expensive." (**30-year-old, P and LW FGD)***

*"We were not getting timely materials like that of mask and sanitizers needed for health professionals. Small numbers of materials were provided and it became finished. These were affecting the service in a great way" (**25 years, KII, Health worker)***

Distorted Client-Provider Interactions

Poor service provision: Participants from FGD and KII (religious leaders) mentioned that the existing challenges in the health facility before the emergence of the COVID-19 pandemic were exacerbated by the COVID-19 emergence. Health care service providers were not providing appropriate and adequate services for clients. The reason mentioned by KII participants (HWs, HEWs) was linked with the Pandemic; Health care service providers fear contracting of the virus from their clients, and then avoid contacting from them, not diagnosing appropriately. These circumstances of HWs forced the clients to think as HWs are not willing to serve them appropriately, which gradually hinder them from facility visit for their sick infants and other family members. A 25-year HW indicated:

"When we remember about the social life, the relationship between us and the society was interrupted. We feared of contracting the virus from the community and the community also feared us.

"There is a problem at the health center that the service given for infants has an interruption and not continuous. There was a time where mothers go to the health facility and return without getting appropriate and enough service." (48 years, Male Partner FGD)

Absenteeism and lack of punctuality: was stated both in focus group and interviews. Some service providers were intentionally absent from their work and some of them come on late time due to stress and worry of the virus. Clients who reached at the health facility after a long distance travel was forced to wait for long time to get services. FGD participant mentioned that the Behaviour of health workers was changed after the emergence COVID-19 pandemic.

".... When they [Mothers] reaches at H/C after 3 hour long-distance on foot by carrying her newborn infant, some service providers from our staff were not providing appropriate and

*timely service they need. Some [health workers] also went out for the lunch time, and returned after 2:00 PM, so that the mothers angrily went back to their home." (**26 years, KII, MCH Coordinator)***

"It is important to look themselves [Health care providers] the way they provide service for community. For example, one day my baby get illness and I took to health facility, they diagnose and prescribe medicine but no improvement was seen and I took my baby again because the problem worsens from the previous one. At that time, they said to me that "why you come again and again we never respond to you if you come after this" it was amazing if my baby got improvement what I'm doing from there." (30-year-old, P and LW FGD)

*"There are women who complain the absence of health workers from the health center that made them not to visit the health center. During the vaccination schedule, there were women who were returned without immunizing their infants due to absenteeism of the service providers." (**32-year-old, female FGD)***

*"Absenteeism and punctuality problem by health workers made our women to lose hope of getting service for newborn at health facility. Women living in this catchment area tell to each other not to visit the health center due to challenges they face from health workers." **(52 years, Male FGD)***

Disrespecting Clients: Laughing and joking at clients were also among factors that made the interaction between health workers and mothers poor. This was mentioned by FGD participants with high emotion and anger seen from their face. A 52-year male FGD discussant said:

*"Health worker also asks our women how many children they have, when she replied for example; she has 8 children, 2 of them died then the health workers laugh at them because they gave birth to 8 children. Even if they laugh at one woman only, many women hearing of these situation will not come to that facility**."***

"…. When three or four women visit health facility to get services for their infants as well as for themselves, the health workers sitting together and laugh at women saying that today our

*health center becomes hospital (**zare degmo tena tabiyachin hospital hone**), this made our women not to come for second time." (**46-year-old, male FGD**)*

*"… but now we didn't well those new workers coming here, they complain about shortage of medicines, by linking with health insurance, they say you come to hear by hanging your baby thinking that the drug is free because you have Community based health Insurance card. There is not showing of good face and disrespecting clients" (**45-year-old, KII**)*

Location of the health facilities

Study participants from discussion groups agreed that the place where the health facilities was established and built was not considered the community. Where the community live and where the facilities were built was very far away. The access to the community was insufficient due to its distance from them. Religious leader participant indicated as follows:

"Barriers such as long distance, unavailability of transportation services and economical problem are still challenging factors preventing many people from health care-seeking whether for their infants or others"

*"The long distance from health facility and unavailability of comfortable road during rainy season are big barriers that prevent us from visiting health center to seek care and use available services." (**Male, FGD**)*

"Transport problem, distance of health facility from the community, workload and filling of the river during the rainy season are the most challenges for care-seeking and utilization of maternal and child health care services." (25-year-old, KII)

5.2.2. Facilitating factors toward the uptake of newborn and infant healthcare in the context of the COVID-19 Pandemic

Under the theme facilitaors, there are different subthemes and subcategories identified: Community-related subthemes like involvement of significant others, presence of community-level institutions and social support, Health facility-related facilitators like presence of committed health workers, Coordination and collaboration, access to media.

5.2.2.1. Community-related facilitators

Involvement of Significant others [WDA, TBAs, religious leaders]

The involvement of significant others toward improving the service utilization and awareness creation on neonatal and infant health in the context of the COVID-19 pandemic was discussed in the group discussions and interviews. They were substantially contributing to the care-seeking as well as service utilization.

Trained WDA leaders*:* They were trained on different types of health-related topics that was intended to reduce and eliminate harmful traditional practices like Female genital cutting, girl abduction and tooth extraction, throat cutting that harm newborns and infants as well as other children. They were also participating in early identification of sick infants and immunization services.

Traditional birth attendants*:* were also contributing their best through creating awareness, helping HEWs to improve the service utilization as well as care-seeking at the health facilities through appropriate precautions of the COVID-19 pandemic. They are all envisioned to improve the health of the community as a whole, particularly those newborn infants and children.

*"The training includes about fistula, girl abduction, Female Genital Mutilation, harmful practice on newborn like tooth extraction, throat cutting, Collaborating with HEWs and HWs, care for newborn, and fetus in the womb during pregnancy. Personally, I had trained on 2002 E.C." (**37-year-old, WDA FGD)***

*"We are educating and transmitting message in our villages not to seek care from traditional healers, rather to seek care and utilize services by wearing facemasks for themselves as well as for infants." **(35 years, KII, TBA)***

Religious leaders: The involvement of religious leader toward creating awareness, educating, and delivering information on different events on the utilization of available service and improving care-seeking in the context of the pandemic was discussed and mentioned in this study. Within the three districts of the study area, there is a habit of helping each other especially when mothers from poor family face difficulties to seek-care for their infants and other family members. They [religious leaders] preach the followers on the advantages of supporting each other during difficulties and convince them to collect money and other necessary supports. KII participant from indicated his view as follows:

> *"There is no contradiction between our religion [Islamic teaching] and health service utilization. We are also teaching our followers to accept advice given by the health workers; we are also working with our kebele health extension workers toward newborn healthcare and mothers****." (KII, 36-year-old, religious leader)***

KII study participant from Mana district mentioned and shared us his experience in the context of the pandemic in his setting which is stated as follows:

"As a religious leader, when any of community members face problem to care seek for sick infants or other family members due to limited to resources, we inform our followers at Mosque to help to each other during such events, so that money for transportation and treatment expense is collected."

The study participant from KII mentioned that there are model families who were trained on health extension packages who were going to be certified and hoped to assist the health extension workers through serving the community they live in.

> *''... The training is given for model family. That means they have trained about all 16 packages of HEWs. As of the training provided for HEWs the training is being given for them [Model Family]. The training was given on new born care, and other MNCH services. The communities hear and try to imitate the Model family in a good manner.''* ***(49-year-old, KII)***

Presence of community-level Institutions and social support

It was mentioned that the local institutions like ***Idir*** established within the community was playing a crucial role toward healthcare service utilization. Especially during such pandemic, they were helping each other and special focus is being given for very poor families when they face difficulties to seek treatment for their sick infants and other family members. The support system was through ***Jiga/daboo*** [a collection of surrounding households within a village or gandaa; the lowest sub-structures *which is called **Jiga,** like **daboo** which is to mean helping each other by groups of people together"*of administrative]. A 45-year-old KII participant stated that:

> *"There is a local institution called **Idir**, which includes male and females which is established not only for death but also to support each other*

5.2.2.2. Health facility-related facilitators

Presence of Committed health care service providers

Among the health facility-related facilitators toward the improvement of neonatal healthcare seeking like early treatment of sick infant as well as service utilization like immunization in the context of the COVID-19 pandemic; the availability of committed health workers at different level of health institutions including health posts, health centers and district-level health workers were mentioned.

> *"This last year no adequate service is given at a health facility rather there was transferring of good workers who respected and gave appropriate care for us to other area like Gutema, kefyalewu and Hayu" (Male FGD participant, 52 years)*

> *"…our women feel happy when **Mule** [Health service provider in the MNCH room] give service, we as a male love her due to her respect and care she gave for our women. When she is absent no one visit that health facility until she returns to the facility." (48 years, male FGD)*

From the response given by the KII study participants, Additional to the position they are assigned for, there are [HWs + HEWs] who were moving home-to-home; facilitating women and other community members to utilize health services available like immunization and to seek care for their sick infants without any fear from visiting facilities through awareness creation and educating them, without requesting any additional advantages/incentives and including their

resting days. Moreover, additional to their efforts they have performing by moving from villages to villages, they were paying from their pocket when there is a need for coffee ceremony during conducting community-level meetings, events and conferences (i.e., creating awareness on maternal and newborn infant care-seeking, service utilization, convincing them the health facilities and HWs are not the source of the virus).

> *"Being nine months pregnant, I had been giving information and creating awareness on Covid-19. During that time, pregnant and lactating mothers were advised to stay at home, but I am moving home to home to create awareness regarding the pandemic and health facility utilization with proper precautions." (34 years, KII, Health extension worker)*

> *"To encourage them we were conducting conference and meetings at kebele and village differently from pre covid-19 time to initiate them, give them moral to seek care and utilize services at health facility. If there is no money from H/C, we pay from our pocket for coffee and other necessary materials during conducting the conference." (KII, 26 years-old)*

Pharmacy professionals and store-keeper were also delivering facemasks for women who were carrying infants and confused to get services due to lack of facemask and prevented from entering in to compound [health facility]. They were also creating awareness on the misinformation disseminated in the community regarding their perception of HWs as a source of the virus. As a result, there is a good progress of seeking care and service utilization at health facilities.

Collaboration and Coordination [Sectors, donors, facilities]

The district health office gave training and short-term orientation on COVID-19 pandemic issues for all sectors in the districts, after that training all trainee were creating awareness in their office as well as during their field visit for supervision. Also, different donors were working with zonal health office to halt the pandemic as well as improve the service utilization. Moreover, HWs from district and health center were jointly working with local structures differently from usual coordination in this pandemic context. The KII participant stated the issue as follows:

> *"As of the districts we have been working with all government sectors. We have oriented and provided the information for all sectors when the COVID-19 case enters our country.*

Depending on the information they had provided, all sectors started applying of prevention measures like that of availing water and soap for hand washing at their work place." (KII, 29 years)

"We are working on ensuring good reception and welcoming, giving supportive supervision, conducting pregnant and lactating women conference, preparing coffee ceremony with WDA and discussing on the ways to improve facility utilization. If these activities are successful and sustained, it might improve the care-seeking for infant illnesses and available service utilization. (KII, 33-year-old, Health Worker)

5.2.2.3. Access to Information source

Access to media

Among the source of information utilized by the Jimma zone communities were Radios. There are two stations in the Capital town of the Zone (i.e., Jimma town) namely: Jimma University Community radio 102.0 and FANA FM 98.1. Both of the stations are accessible and reach in all districts of Jimma zone. Experts from Jimma Zone health Office transmit health information using the two radio stations, especially during this COVID-19 pandemic. Both COVID-19 pandemic issues and other essential non-COVID-19 health issues [maternal, newborn and child health] were covered.

*"The Jimma zone health Office is using the FM radios. They [communities] are hearing the information from the FM. The rural community has habit of hearings to the radio than using Television (TV). From the radio they obtain the information about the infant and child healthcare including women health. Some times when the communities are gathered the HEWs are giving the short time training" (**49 years, KII)***

*"Radio and Health extension workers are the major information source for us [rural communities]." (**FGD male, 46-year- old**)*

Local structures: Local structures such as, 1-to -7 networks, Idir, town criers were also the source of health information mentioned by the study participants in addition to those significant others discussed in the community-related facilitators. The health information that was transmitted through these structures includes immunization program with its place, available newborn-care services, , and different health campaigns such as Measles vaccine campaign, Deworming, Vit.A supplementations.

5.2.2.4. Emergence of vaccination for COVID-19 virus

Majority of the study participants from focus groups and interviews reflected that, the occurrence of the vaccination for the COVID-19 virus gave them relief, reduced their fear as well as worry of the infection. Service providers are now improving their relationship with clients; also clients/mothers are thinking that they can be cured if they contracted the virus. The health workers believed, the emergence of the vaccination might improve the care-seeking behavior and utilization of accessible services at the health facilities.

"The virus got vaccine. But initially, we feared to treat the clients; we have a soul like other individuals. But now we and the communities perceive as the severity of the disease is declined. For example, it is not killing as its beginning time. Therefore, we feared during the initial phase and now we are not… because we can be cured if we are infected with the virus" (25-year-old, KII, Health worker)

".... but now, there is forgetting of the disease when interaction happens in different routine activities due to the emergence of the vaccination for the virus. They see at each other and leave wearing face mask. Unfortunately, whom we think knowledgeable also leave wearing of facemask. They hold it in their pocket instead of wearing." (34 years, KII)

5.2.3. Impacts of the COVID-19 pandemic toward the newborn and infant healthcare

Under this theme (i.e. impacts of the COVID-19 pandemic) there are different impacts eplored and stated: Miss an appointment, delays in care-seeking, mothers start traditional medicine, exposed infants, and children to health complication and death. The data from document review was mentioned after the identified impacts from KII and FGD participants were narrated.

5.2.3.1. Missing an Appointment

Study participants was mentioned that they are being absent from an appointment given by health care service providers due to frequent and repeated appointment for immunization services. Seeking treatment for their sick newborn infant was also reduced thinking that the unavailability of drugs still existed due to transportation restriction, increased cost of drugs at private pharmacies, mothers fear of contracting the COVID-19 virus for their newborn infants and for themselves.

The document review of six months before and after the emergence of the COVID-19 pandemic from the study districts also supports the response given by the KII and FGD participants. For example, number of newborns who received BCC vaccination before and after the emergence of the virus was 9,943 and 8,844 respectively, showing 1,099 newborn differences after the pandemic. Also, the number of infants' whoc received Penta 1 vaccination before and after the virus was 10,772 and 9,769 respectively, with 1,009 differences.

Number of insufficient babies available on the appointment day for immunization, forced the health care service providers not to open the vaccine vials, rather they give another appointment. All of the above listed factors were mentioned by all type of the study participants. The COVID-19 pandemic exacerbated the existing factors that gradually hinder mothers from the health facilities and the infants were missed from regular immunization services.

> *"…if the babies are not available on an appointment for immunization, other mothers who were sitting there [Health facility] and waiting to get immunization for her infant was appointed for other days and she return without getting the service for her infant. Due to this many of them were not willing to appear the next appointment, since they walk long distance"* ***(52 years, Male partner FGD)***

The above idea is supported by the response from a 34-years HEW KII participant:

> *"Yes, their complaint and suggestions were true; for example, BCG vaccine should be opened for more than 15 children, if the number of infants needed for that [BCG] was available they were appointed for other days."*

5.2.3.2. Delay in care-seeking

Study participants mentioned that the COVID-19 pandemic consequence such as "*no facemask, no service*" rule, cost increment of transportation, worry of contracting the virus, perceiving health facilities and health workers as source of the virus forced them to avoid contact with health care service providers and not visit health facilities for their sick newborn infants. Even if their infants are sick, they preferred to stay at home. The sick infants were exposed to death due to delay from care-seeking.

The document review showed that the newborn treatment before the emergence of the virus was 67, this few numbers further reduced to 39 after the pandemic emerged due to the consequences of the COVID-19 pandemic such as fear of the virus, and drug cost increment, high attention to the prevention and control of pandemic.

> *"The pandemic has resulted in causing huge problem and effect on newborn and infant health. Due to fear of Covid-19, newborns and infants were losing immunization, sick infants not getting early treatment, and this resulted in severe disease. Our infants and children were affected much as a result of this pandemic." (38 years, FGD of WHDA)*

5.2.3.3. Exposed infants/Children to health complication and death

Among the consequences of the COVID-19 pandemic, some of the study KIIs participants stated that they had heard the death of infants and children due to refusal of health care-seeking by the family because of worry and fear of contracting COVID-19 at a health facility for themselves as well as their infants, thinking newborn infants are more vulnerable, high cost for transportation and drug expenses posed by the pandemic. They perceive as no one is approaching them and being quarantined when they visit the referral health facility. KIIs indicated that:

> *"There were also children who were dying in the home from illness without seeking care due to fear of visiting health facility." (KII, 29 years, MCH Coordinator)*

"Many women refused to take their sick infants to the next referred facility when we give them referral paper. They said we may face a challenge at the town during this Covid-19 and preferred not to take their infants to a referred health facility. They believe no one may approach to them after they visit the hospital for their sick referred infants. So that many of infants are exposed to death from treatable disease" (26 years, KII)

The data documented from the study districts also supported the ideas rised from the study participants in FGD as well as KIIs that indicates the screening for malnutrition and other treatment seeking declined. For example, due to fear of contracting the virus, increased cost of transportation the number of severe acute malnutrition screening was reduced from 510 before the pandemic to 408 after the pandemic.

5.2.3.4. Mothers started seeking traditional medicine

From the early beginning of the pandemic attention was only given to the COVID-19 pandemic issue. The provision of non-COVID-19 health services including the infant healthcare was interrupted. Moreover, due to fear from the virus, mothers ignored visiting health facilities and preferred to stay at home hoping the sickness will resolve by itself and the health of the infant might improve. Otherwise, the only option they think was turning to traditional healers and seeking care for their newborn infants. After some delayed time and the illness is not resolved, now they start to visit traditional healers to seek-care as well as medication for their sick infants

*"During the early time of the pandemic, only COVID-19 is in the mind of people. There was a time when people started to seek care from traditional healers for themselves and their infants while they got sick" (**29 years, KII**)*

*"…So, they are obliged and no option that they used to cut the umbilical cords of the newborn with unsafe blades and tie with unclean clothes. We merely say the baby become sick, rather than taking precautions like boiling the blade used to cut cords." (**35 years old, FGD of WHDA)***

CHAPTER SIX: DISCUSSION

A wide range of barriers and facilitators toward the newborn and infant healthcare services from the community and health facility side was explored. This study explored the effects of COVID-19 pandemic mitigation strategies imposed on the newborn and infant healthcare service utilization, the HWs decline treatment due to worry and fear of contracting the virus, they felt vulnerable and at risk of contracting the virus if they provide services for clients who do not wear facemask. This implies a need to fulfil the PPE equipment for service providers and service users by health institution managers. This finding was similar with findings of other studies (40,41,50).

The refusal of mothers and fathers of the severely sick infants to take the referral papers to seek treatment from the next higher facility was explored. They have resisted visiting where they have been referred to, which was linked to the consequences of the pandemic; fear of being isolated and quarantined, afraid of the expenses at the town. It is wise to suggest for health managers at district and PHCU level on regular awareness creation and community-based behavioral change communication to address such segment of the community members. This was similar with study conducted during the pandemic (35,51,52).

Barriers to vaccinating children vary globally. A report from UNICEF indicated that lockdown measures had significantly stalled immunization services in 68 low- and middle income and placed ≈ 80 million children aged less than 1-year infants at risk of Vaccine preventable diseases (35,53,54). Consistently, this study indicated restriction and lockdown as barriers imposed by the pandemic which exposed the community for financial decline to buy PPE, and the increased cost of transport after it is allowed. This implies the urgent need in designing effective interventions and availing the essential services at outreach site at nearby community particularly for those at margin location. Also, consistent with other studies (51,55,56). In contrast, other studies (57,58) revealed barriers like lack of knowledge, cultural insensitivity, lack of privacy at health facilities, no felt needs, lack of clarity around services were being operating as usual, not feeling necessary. This might be due to difference in the study period, socio-demographic characteristics.

This study indicated work burden on HWs, diverted attention toward the COVID-19 pandemic prevention and control, partially closed facilities to give only emergency care, while others

totally changed to serve as an isolation center which resulted in disruption of the non-COVID-19 services. This implies parallel service delivery along with Prevention and control of the pandemic need to be focused. This finding was similar to other study (14,50,55).

According to the Anderson healthcare service utilization model, media exposure [where it has crucial role in disseminating truth and clear information about the healthcare as enabling/disabling factors], the health beliefs, social structure and decision power on household resources are [predisposing factors] for service utilization (59). This study identified service utilization was influenced due to perception, misinformation and false rumors in the community toward HWs and facilities. This might be due to inappropriate dissemination of information that made the community to be panic. This underscore implies the necessity of filtering the information to be disseminated to prevent excessive fear. This is similar with studies conducted (36). Moreover, the belief of relying on "Allah/God", saying "wait and see for a few days" and expecting the self-resolving of illness was identified as barriers which was exacerbated due to the pandemic. On the other hand, it is inconsistent with qualitative study conducted in Debre Libanos (38). The difference might be due to socio-demographic characteristics; the current was mainly Muslims and the other was Christian Orthodox.

The WHO has listed male involvement as a key health promotion intervention for maternal and newborn health (60). However**,** this study explored poor husband support, heavy work burden on women, poor decision making and financial dependency on husband as a barriers for the uptake of service utilization and care-seeking for their newborn infant health. This was highly affected in this COVID-19 pandemic, magnifying the burden on women. This need designing a health promotion programs like community conversation, women engagement and empowerment to address the barriers and create a favorable condition for mothers to uptake the newborn and infant service utilization. This finding is supported by different studies (61,62).

This study identified communities' access to health facilities is being continuing barriers due to the topography of the rural setting, long distance, and lack of a quality road. Particularly for those who were located at the margin areas. These pre-existing barriers were worsened by the COVID-19 virus consequences like increment in transportation cost, fear to be exposed to near to urban population due to virus. Similarly, these findings are in line with the findings of different studies (38,61,62).

This study explored the shortage of drugs, immunization and other supplies as health facility-related barrier. Mothers given an appointment for their infants gradually hindered them from care-seeking and service utilization due to COVID-19 virus effects on drugs and other supplies. This underscore implies availing the logistics to overcome these effects by health managers at district and zonal level. This finding was similar with other studies (40,41,63).

Morever, the pre-existing factors in the health facility before the COVID-19 pandemic was exacerbated by its emergence. HWs were not providing and diagnosing appropriately due to the pandemic effects and the unknown status of the client. This might be due to the worry and fear from the virus. This was in line with study conducted in Nigeria during the pandemic(50). However, other study revealed women's experiences of intimidation in healthcare facilities, cultural insensitivity and long waiting time was a reason for poor relationship (58). Socio-demography might be a reason for the difference.

Absenteeism and lack of punctuality by HWs was mentioned as a barrier in this study. Some service providers were intentionally absent from their work, and some of them come late due to stress and loss of hope. This might be among the effects of the virus imposed on HWs. This was consistent with studies conducted before and during the COVID-19 pandemic(26,50,64). This implies the pre-existing barriers were more exacerbated by the pandemic. Therefore, adequate PPE supply and financial incentives for health workers to motivate them might be focus area for health institution management.

Disrespecting, laughing and joking at clients were barriers explored that affects client-provider interaction and resulted in decline of facility visits. HWs behavior was changed after the pandemic. Moreover, this study also identified good and compassionate HWs as facilitating factors toward newborn infant healthcare services. There was a disparity among HWs toward clients. Client who received respect, compassion, and care from HWs utilize the newborn health service more and vice versa. This might be due to HWs negligence and forgetting their responsibility to keep clients' dignity and respect. Similarly, this finding is supported by other study findings which indicated that health service utilization was determined by service providers approach (65,66). Therefore, this underscore implies a need to deliver compassionate, respect and care service mentioned in guidelines.

In this study, one of the impacts of the pandemic was missing an appointment for service utilization like immunization and care-seeking for ill infants was explored as an impact of the pandemic. Mothers who were immunizing and seeking care for their newborn and infants before the COVID-19 pandemic, resisted to visit health facility due to the effects of the virus, which means: The pandemic impose worries and fear on mothers and thinks neonates are vulnerable to the virus; HWs do not allow mothers who do not wear facemask to enter the facility. This effect resulted in dropout from vaccination and other treatments. This implies a need to give special attention to halt these effects of the pandemic through appropriate health promotion interventions such as social mobilization, Community conversation, regular awareness creation, and adequate supply of PPE. This finding was congruent with studies (15,33,50).

This study indicated that the consequences of the pandemic such as "no facemask, no service" rule, cost increment of transportation, worry of contracting the virus, perceiving health facilities and health workers as source of the virus forced them to avoid contact with health care service providers and not visiting health facilities for their sick newborn. Gradually, the sick infants were exposed to disability, abnormal growth due to delay from care-seeking. This is in agreement with similar studies (15,32).

Among the impacts imposed by the COVID-19 pandemic, the death of infants and children due to the refusal to referral was explored and mentioned; fear of the virus, increased cost for transportation, rised drug expenses due to the pandemic, perceiving as no one is approaching them and being quarantined when they visit the referral health facility was stated as a reason for reluctant against referral. This implies the effects of the pandemic were highly influencing the neonatal healthcare service utilization. It should be the focus area for the health managers including hospital administration to create favorable condition for referral system, particularly for rural community. This finding was in agreement with other studies (15).

The provision of non-COVID-19 essential health services including the infant healthcare was interrupted due to diverted attention toward the pandemic. Moreover, mothers ignored visiting health facilities and preferred to stay at home fearing from the virus. Some cannot afford to buy facemask to visit the health facility due to no facemask, no service rule. The only option was turning to traditional healers for newborn care-seeking. This implies the effects the COVID-19 pandemic imposed on neonates and infants to miss health facility utilization. Therefore, it is wise

to suggest effective community-based interventions to be priority area for district and PHCU level health managers. In contrast, other studies (38) revealed the high belief on traditional healing, more accessible and trusted by the community than HWs who were not from community as a reason. This might be due to difference in the study period.

In this study, different facilitating factors toward the newborn and infant care-seeking as well as service utilization in the context of the pandemic was explored; the Presence of committed health workers, Involvement of significant others [Religious leaders, TBAs and WDA], Access to media [radios], collaboration and coordination of district health office with various sectors/ NGOs, local institutions like Idir were mentioned by the study participants. They provide information, participate in identifications of sick newborns/infants, facilitate immunization program, conduct home-to-home visit. This implies that strengthening and coordinating those facilitating agents might leads to overcoming of those barriers. This finding was in agreement with other studies (63). In contrary, it was inconsistent with other studies (38) where there is no functional WDA was present, the religious leaders were discouraged the community. This might be due to difference in study period and socio-demographic characteristics.

Strength and Limitation of the study

The use of mixed data collection techniques [FGDs, KIIs and Document review] and exploring of barriers and facilitators at different level [i.e., at community and health facility/service providers level] was the strength of this study. All KIIs and FGDs were conducted in the native language of the respondents [Afan Oromo] to avoid communication barriers that could have negatively affected the results of the study.The sample size and the involvement of diversity study participants, which include service users (Pregnant and lactating women, WDAs, Male partners, TBAs, Religious leaders), healthcare service providers at health post, at health center and district level was also strength. TBAs and Religious were included based on their expected knowledge and rich experience about the community's day-to-day life and provide us deep information with their role regarding study phenomena.

The potential limitation of this study is that there might be social desirability bias. To reduce the social desirability, the professional background of the data collectors was not disclosed to the study participants during the data collection process.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION

7.1. CONCLUSION

A wide range of facilitators of and barriers toward the newborn and infant healthcare was explored with impact on infants due to the effects of the pandemic that calls a need to develop strategies and interventions which fit the context of local setting, to address the explored barriers and reduce the impacts of the pandemic.

The newborn and infant care-seeking and service utilization was influenced due to worries and fear of contracting the virus by HWs and mothers/clients, consequences from restriction and lockdown, compromising the other essential newborn infant healthcare services. Health facility-related barriers such as poor logistics availability, inappropriate and insufficient service provision, health workers behaviors [disrespect, uncompassionate care], were exacerbated by the effects of the pandemic. Perceptionn and unpleasant rumors, socio-cultural beliefs, poor husband support, women workload and decision-making power, distance and topography were explored as community-related barriers.

On the other hand, the care-seeking and service utilization was facilitated through the involvement of significant others [religious leaders, Traditional birth attendants, and Women development armies], committed health workers, access to media [radios], the emergence of vaccination for the COVID-19 virus.

This study explored and indicated the impacts on the newborn and infant health due to the consequences of the pandemic; missing an appointment, delayed care-seeking, infants exposed to health complication and death, mothers start traditional medicines.

7.2. RECOMMENDATION

At FMOH and ORHB level

- Need to provide guidelines: That give clear guidance and direction to health institutions and the communities for balancing between the control of the pandemic and ensuring provision of essential neonatal and infant health services
- Collaborating and coordination with different concerning bodies to address the existing barriers like road, transportation, electricity, water for facilities and communities

At Zonal level

- Developing health promotion interventions and strategies assisted by the health promotion experts to deal with the pandemic effectively whilst providing appropriate, sufficient and respectful routine newborn and infant health services at health facilities.
- Provision of in-service training on Compassionate and respectful care for HWs, availed immunization drugs, adequate PPE and other medical equipment, reagents.
- Regular supportive supervision supported by written feedback and action plan

At District Health Office and PHCU level

- Strengthening the linkages and coordination of the structures from district to Kebele that includes significant/influential person such as religious leaders, Women development army, local associations [daboo, Idir] and local partners
- Planning for effective alternative strategies of service provision during any of potential outbreaks
- Refreshment training for HWs and HEWS on respect, compassion, and friendly service delivery.
- Continuous supportive supervision supported by written feedback and action plan
- Certifying, recognition and incentives for health care service providers for better motivation and achievements.

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Annexes

Annex 1: Participants' Information sheet and Consent forms [English version]

Name of researcher: Muaz Imam Phone: 09-17-56-26-11

Title of study: Factors influencing the Newborn and Infant Care-Seeking and Service Utilization in the Context of the COVID-19 Pandemic in Rural Districts of Jimma Zone: An Exploratory Qualitative Study

Name of the study area: Jimma Zone

Lead institution: Jimma University, Ethiopia

Purpose of the study: This study investigates the newborn and infant care seeking and service utilization in the context of the COVID-19 pandemic (barriers, facilitators, perceptions and concerns you have about your infants regarding care-seeking and service utilization). This study will take approximately 1:00-2:00 hrs.

Data Collection Process: The data collectors will interview participants using semi structured questionnaire after obtaining written/oral informed consent from the participants and there will be FGD and interviews to be audio tape recording. Only research team members will have access to full data of study participants. The data from participants will used for research purpose only.

Participant's Right: The participants have a right to choose not to participate or withdraw at any time during the study without penalty and to stop the interview/discussion at any time, or to skip any question that he/she does not want to answer.

Risks, Incentives and Benefits: There will be no risks to participants rather than being tired or shortage of times, which can be solved by discussing with the researcher and data collectors to convenient time. There is no personal incentive provided for participants rather than acknowledgement but, the study is beneficial and will help design strategies for participants' and other community members in improving and sustaining the quality service delivery for newborn and infants as well as Maternal service utilization in the context of Covid 19 pandemic.

Confidentiality and Anonymity: The study result will not include participants name and address. The responses from participant will be used only for academic purposes, including writing articles and reports and transferring knowledge through workshops and conferences.

Your confidentiality will be protected; your verbal responses, tape-recorded and transcribed data for further analysis will not be linked to your personality in any way. After the transcription is completed, the audio recorded will be destroyed. To ensure Anonymity**,** any characteristics or words that have potential to identify you, will be removed from the text when the researchers report or write about the study. No one will be able to identify you when the results are reported and your name will not appear anywhere in the written report. The identity of participants in any publications will be through the use of generic terms describing occupational standing e.g., Lactating mother, Health Worker, Health Extension Worker, religious leader and Female Health Development Army Member.

Upon completion of the study, you will be given full explanation of the research.
If you have any questions on this study, you may contact the following individuals

1. Dr. Zawdie Birhanu: 09-17-02-58-52
2. Muaz Imam 09-17-56-26-11
3. Mr. Hordofa Gutema 09-11-79-17-75

If you have any questions regarding the ethical conduct of this study, you may contact:
Dr. Million Tesfaye,
Head of the Institutional Review Board for the Health Sciences College at Jimma University
Telephone: +251-917-063744 e-mail: mtesfaye1@gmail.com

Jimma University

Participant Informed Consent Form

(For Interview and or Focus Group Discussion)

2. Informed consent form

Name or Researcher: Muaz Imam

Research Title: Factors Influencing the Newborn and Infant Care-Seeking and Service Utilization in the Context of the COVID-19 Pandemic in Rural Districts of Jimma Zone: An Exploratory Qualitative Study.

I acknowledge that I am at least eighteen years old, and that I understand my rights as a research participant from information sheet provided to me. I acknowledge that my participation is fully voluntary and I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

I agree to take part in this study. I would like to confirm my agreement by signing.

Participant's name _____ Signature_____ date_____

Data collector's name: _____ Signature: _____date_____

Thank you for your participation and cooperation!

Annex 2: Interview and FGD Guides [English version]

Health Workers [PHCU Director, COVID-19 task force PHEM focal person, MCH expert, HEWs]: In-depth interview guide

General background information of interviewee:

Key Informant

District/Town: _____ Identifier number: _____Sex: _____ Age: _____

Ethnicity: _____ Religion: _____ Level of Education: _____

marital status: _____ Occupation/Responsibility: _____

Date of interview: _____ interviewer: _____

Start time: _____ End time: _____

1. First, I'd like to ask you to tell me about the neonatal and infant health services available at your catchment health facility during this COVID-19 pandemic

1.1. What are the neonatal and infant health services that are being accessed by clients during COVID-19 pandemic? [Prompt: What neonatal health services affected during the time of COVID-19 pandemic? [Prompt: which one is more affected? What do you think about the underlying reasons for those affected services]?

1.2. Is there emergency referral for newborn and infant during this COVID-19 Pandemic period? [Prompt: If no why?]

2. The next question will ask about the perception and practices of mothers towards the newborn and infant health care seeking as well as service utilization during the COVID-19 pandemic.

2.1. Do women in this catchment area perceive COVID-19 can affect the health of new born and infants? [Prompt: How? Why? Provide examples?].

2.2. What are common practices performed in the community for newborn infant? [Prompt: Any cultural taboos? Initiation of Breast feeding? Washing baby? Michi?]

2.3. What community practices should be promoted or continued to improve the health of newborn infants in this community?

3. The next six questions will ask about barriers to newborn and infant Health care-seeking and service utilization in the context of the COVID-19 pandemics

3.1. What are major health problems of neonates and infants during this pandemic?

3.2. What types of barriers mothers/caregivers faced toward newborn care-seeking as well available service utilization at health facility? [Prompt: fear of COVID-19? facility closed? service cost? Not know benefits? decision making power? Workload? Distance? Lack of respectful care? Fear of Health workers? Poor facility readiness? Others?]

4: The following questions will ask about challenges and worries encountered by response team? Probe: (For COVID-19 task force)

- What are technical challenges in response to the COVID-19 pandemic [Prompt: Extent to which evidence-based decision have been done, how to do, evidence, information's]
- What are coordination and collaboration during the COVID-19 pandemic response? [Prompt: between and within districts) and multisectoral approaches by sectors? Who involved?]
- What challenges were happened related to:
    - Supplies, equipment's, human resources, institutional capacity
    - Financial barriers (adequacy, utilization, management etc.)
    - Community-resistance /engagement and
    - socio-culture dimensions i.e., Community side awareness/perceptions/etc.
    - Response team/professional commitment

5. The next questions will ask about the experience, perception and preventive practice of health workers on COVID -19 prevention and control

- Please would you mention the clinical symptoms of COVID-19 virus?
- Can you mention the way of its transmission?
- How worried are you about contracting the Coronavirus? [Prompt: How worried are you that your family members or friend might be infected?]
- What you and your families' practices to prevent the spread of the COVID-19 virus?
- How COVID-19 affects you, your family and your community life? [Prompt: How? Why? Economically, socially?]

6. The next questions will ask about the negative health outcomes during the COVID-19 pandemic?

- Would you mention if you have seen or hear any complications happened to newborn infants due to process of effects posed by the pandemic? If yes, please explain the events? Its process]
- Are there any alternative means to deliver health services during this Pandemic? [Prompt: If no, why?]

The following questions will ask about information sources regarding newborn /infant healthcare services?

- Where did women/community hear information about infant hand child health [Prompt: what type of information source/or media is access or available?
- Do women in your catchment area or any member of their family have the experience of reading mobile message? Did they use mobile message to seek health service?

Do you have anything else you'd like to say about infant health seeking and service utilization during the time of COVID-19 pandemic?

Background information of interviewer

Name_____

Sex_____ Age_____ Education level _____

Date of Interview _____Signature_____

Annex 2.2. Religious leaders and TBAs: In-depth interview guide

General background information of interviewee:

Key Informant

District/Town: _____ Ganda:_____ PHCU:_____ Id.No:_____

Age:_____ Ethnicity:_____ Religion:_____ Level of Education:_____

marital status:_____ Occupation/Responsibility:_____

Date of interview:_____ interviewer: _____

Start time: _____ End time:_____

COVID-19 related questions

1. How is COVID-19 pandemic perceived in your community? [prompt: what they talk, their fear, beliefs toward the pandemic…]
2. What is being done in this community to prevent the spread of the virus? [prompt: at Mosque, church, market, community-level gatherings/events]
3. What are major health problems of neonates and infants during this pandemic?
4. Have you worried contracting the virus? [probe: for your family, for your relatives]
5. Does the Pandemic pose any effect? [probe: On community's health, economy, social life, your health, your daily activities…]

What types of barriers mothers/caregivers faced toward newborn care-seeking as well available service utilization at health facility?

- [Prompt: fear of COVID-19? facility closed? service cost?
- Not know benefits? decision making power? Workload?
- Perceive of infants as more vulnerable?
- Topography? Distance? Lack of respectful care? Fear of Health workers? Poor facility readiness? Others?]
- Religious? Any Perceptions? Carelessness for neonates than adult?

Beliefs and practices toward newborn infant in the context of the pandemic:

1. First, I'd like to ask you about the beliefs and practices surrounding newborn and infant health in your community.
    1.1. Could you please describe for me the common practices on the newborn and infants? [probe: Tooth extraction, washing immediately, cutting cord with unclean materials, etc.]
    1.2. Would you tell me about the care-seeking and service utilization habit of your community?
    1.3. Who seek care for newborns if they get sick? Who makes decision? Who pay treatment and drug expense?
    1.4. What are the factors in your community that might hinder mothers/caregivers/family members not to seek care for their newborn infant? [Distance, HW problem, financial, problem, drug availability, traditional healers' availability, road, not trust health facility]
    1.5. What has your community made for poor families who cannot afford to seek treatment for sick infants? [any local support system]

2. What are facilitators toward care-seeking and service utilization toward the newborn and infant health?
    - Nearby health facility? Respectful and compassionate health care workers/
    - Availability and access to information?
    - Drugs and supply
    - Local social support system, the helping habit of the community?
    - HW and community relationship
    - Mutual decision making
    - Media

3. Roles in promoting health service utilization and care-seeking:

Next, I would like to ask you to tell me a little more about how people in your *Ganda*, including yourself, work to promote better health of newborn babies or as a whole for your community

- How do religious leaders presently promote newborn and child health? [Prompt: Share us your experience, what others are doing toward promoting health care utilization?]

- Are there any serious complications you are aware of in your community?
- If yes, why do you think these occur? How could they be better prevented?
- What are the communities' roles including you to help prevent these complications?

4. The following questions will ask about information sources regarding newborn /infant healthcare services?

- Where did women/community hear information about infant hand child health [Prompt: what type of information source/or media is access or available?
- Do women in your catchment area or any member of their family have the experience of reading mobile message? Did they use mobile message to seek health service?

Finally, you can add or suggest any idea you want regarding our discussion topic.

Background information of interviewer

a. Name_____
b. Sex_____
c. Age_____
d. Education level _____
e. Date of Interview _____Signature _____

Women: Focus group discussion guide

Background information of participants

District _____PHCU _____Ganda_____

Facilitators: _____ Note taker: _____

Date:_____ Start time: _____Ending time_____

SN	ID of participants	Age	Educational Status	Religion	Ethnicity	Occupation/Role
1						
2						
3						
4						
5						
6						
7						
8			.			
9						
10						

Today we are going to have a discussion about issues related newborn and infant health care seeking during the COVID-19 pandemic.

1. How is COVID-19 pandemic perceived in your community? [prompt: what is being talked, their fear, beliefs toward the pandemic presence/absence…]
2. What is being done in this community to prevent the spread of the virus? [prompt: at market, community-level gatherings/events, social interaction]
3. Have you worried contracting the virus? [probe: for your family, for your relatives]

4. Does the Pandemic pose any effect? [probe: On community's health, economy, social life, your health, your daily activities…]
5. What practices you and your families are putting in place to prevent the spread of the COVID-19? [Prompt: Hand washing, use of sanitizers, wearing masks, not going where many people gather?]

Now, I'd like to ask you to tell me about the neonatal and infant health services available at your catchment health facility during the COVID-19 pandemic

- Have you or visited Health facility during COVID-19 pandemic for neonatal/ infant health service? [care-seeking for sick newborn, infants; service utilization like immunization, deworming, Vit.A supplementation, etc.…]

Beliefs and practices toward the newborn and infant health in your community during this pandemic

- Could you please describe for me the common practices on the newborn and infants? [probe: Tooth extraction, washing immediately, cutting cord with unclean materials, etc.]
- Would you tell me about the care-seeking and service utilization habit of your community? [probe: and your experience]
- Who seek care for newborns if they get sick? Who makes decision? Who pay treatment and drug expense?

What are the factors(barriers) in your community that might hinder mothers/caregivers/family members not to seek care for their newborn infant?

- [Fear of the COVID-19? Location of the facilities? Health workers? Lack of PPE for women/caregivers? Facility closed? Distance, HW problem, have no knowledge? Thinking newborn disease is not serious? financial problem, drug availability, traditional healers' availability, not trust health facility, male dependency,]
- What has your community made for poor families who cannot afford to seek treatment for sick infants? [any local support system]
- What community practices should be promoted or continued to improve health of neonates in this community?
- Are there any serious complications you are aware of in your community?

- If yes, why do you think these occur? How could they be better prevented?
- What are yours and the communities' roles to help prevent these complications?

What are facilitators toward care-seeking and service utilization toward the newborn and infant health?

- Nearby health facility? Respectful and compassionate health care workers/
- Availability and access to information?
- Drugs and supply
- Local social support system, the helping habit of the community?
- HW and community relationship
- Mutual decision making
- Media

The following three questions will ask about information sources regarding newborn /infant healthcare services?

- Where did women/community hear information about infant hand child health [Prompt: what type of information source/or media is access or available?
- Do women in your catchment area or any member of their family have the experience of reading mobile message? Did they use mobile message to seek health service?

Finally, you can add or suggest any idea you want regarding our discussion topic

Male Partner: Focus group discussion guide

Background information of participants

District _____ PHCU _____Ganda_____

Facilitators: _____ Note taker: _____

Date:_____ Start time: _____Ending time_____

SN	ID of participants	Age	Educational Status	Religion	Occupation	Ethnicity
1						
2						
3						
4						
5						
6						
7						
8			.			
9						
10						

Today we are going to have a discussion about issues related newborn and infant health care seeking during the COVID-19 pandemic.

1. How is COVID-19 pandemic perceived in your community? [prompt: what is being talked, their fear, beliefs toward the pandemic presence/absence…]
2. What is being done in this community to prevent the spread of the virus? [prompt: at market, community-level gatherings/events, social interaction]
3. Have you worried contracting the virus? [probe: for your family, for your relatives]

4. What practices you and your families are putting in place to prevent the spread of the COVID-19? [Prompt: Hand washing, use of sanitizers, wearing masks, not going where many people gather?]

Now, I'd like to ask you to tell me about the neonatal and infant health services available at your catchment health facility during the COVID-19 pandemic

- Have you or visited Health facility during COVID-19 pandemic for neonatal/ infant health service? [care-seeking for sick newborn, infants; service utilization like immunization, deworming, Vit.A supplementation, etc.…]

Beliefs and practices toward the newborn and infant health in your community during this pandemic

- Could you please explain for me the common practices on the newborn and infants? [probe: Tooth extraction, washing immediately, cutting cord with unclean materials, etc.]
- Would you tell me about the care-seeking and service utilization habit of your community? [probe: and your experience]
- Who seek care for newborns if they get sick? Who makes decision? Who pay treatment and drug expense?
- Did husband of your community or other area participate in household activities? [care for children, service seeking at health facility, helping their wife…]

What are the factors(barriers) in your community that might hinder mothers/caregivers/family members not to seek care for their newborn infant? [Prompt]:

- fear of COVID-19? facility closed? service cost?
- Not know benefits? decision making power? Workload?
- Perceive of infants as more vulnerable? Location of the facilities?
- Topography? Distance? Lack of respectful care? Fear of Health workers? Poor facility readiness? Others? Lack of PPE for women/caregivers?
- Religious? Any Perceptions? Carelessness for neonates than adult?
- have no knowledge? Thinking newborn disease is not serious? financial problem, drug availability, traditional healers' availability, not trust health facility?

- What has your community made for poor families who cannot afford to seek treatment for sick infants? [any local support system]
- What community practices should be promoted or continued to improve health of neonates in this community?
- Are there any serious complications you are aware of in your community?
- If yes, why do you think these occur? How could they be better prevented?
- What are yours and the communities' roles to help prevent these complications?

What are facilitators toward care-seeking and service utilization toward the newborn and infant health?

- Nearby health facility? Respectful and compassionate health care workers/
- Availability and access to information?
- Drugs and supply
- Local social support system, the helping habit of the community?
- HW and community relationship
- Mutual decision making
- Media

The following questions will ask about information sources regarding newborn /infant healthcare services?

- Where did women/community hear information about infant hand child health [Prompt: what type of information source/or media is access or available?
- Do women in your catchment area or any member of their family have the experience of reading mobile message? Did they use mobile message to seek health service?

Finally, you can add or suggest any idea you want regarding our discussion topic

Annex 3: Participant information sheet & Informed Consent [Afan Oromo version]

1. Guca walii galtee Hirmaattotaa

Maqaa Qorataa: Muaz Imam Lakkoofsa bilbilaa: 09-17-56-26-11

Mata duree Qorannochaa: Tajaajilaa fi itti fayyadama fayyaa daa'ima reefuu dhalatuu fi waggaa tokkoo gadii jiranii aanota baadiyyaa Godina jimmaa yeroo weerara dhibee COVID-19 keessatti jiru. Qorannoo gadi fageenyaan taasifamu

Naannoo qorannoon itti gaggeeffamu: Godina Jimmaa

Dhaabbata hordofu: Yniversitii Jimmaa

Kaayyoo Qorannochaa: qorannoon kun kan inni kaayyefate Tajaajilaa fi itti fayyadama fayyaa daa'ima reefuu dhalatuu fi waggaa tokkoo gadii jiranii aanota baadiyyaa Godina jimmaa yeroo weerara dhibee COVID-19 keessatti jiru gadi fageenyaan sakatta'uudha (Itti fayyadama tajaajilaa irratti Danqaalee isin mudatan, Sodaa fi yaaddoo daa'ima keessaniif qabdanu fi kkf adda baasuudha). Qorannochi hanga saatii tokkoo hanga lamaa fudhachuu danda'a.

Adeemsa ragaa funaanuu: Ogeessonni ragaa funaananu erga fedhii keessan isin gaafatee booda, bifa af-gaaffiitiin gaaffilee isin gaafatu. Mariin garee fi af-gaaffiin taasifamu ni waraabamu. Ragaan funaanamu kunis qorannoo fi barnoota qofaaf oola.

Mirga hirmaattotaa: Hirmaattonni kamiyyuu mirga diduu fi fedhiin hirmaachuu qabu. Yeroo barbaadanittis adabbii tokko malee marii isaanii addaan kutuu ni danda'u, dabalataanis gaaffii deebisuu hin barbaannes irra darbuu ni danda'u.

Miidhaa fi Faayidaa: Qorannoon kun miidhaa tokkollee hirmaattota irraan hin geessisu, garuu yeroo isaanii irraa xiqqoo fudhachuu fi miirri dadhabbii dhagahamuun ni mala. Kun immoo qorataa duraa fi kanneen ragaa funaanan waliin maryachuun yeroo miijataa kaa'achuun kan furmaata argatudha. Galateeffannaa irraan kan hafe Faayidaan dhuunfaadhaan hirmaattotaaf kennamu hin jiraatu. Faayidaan qorannaa kanaa tarsiimoo fi tooftaalee fayyaa haadholii fi daa'immanii yeroo weerara dhibee COVID-19 kana ittiin dabalu kaa'uuf fayyada. Isinis maatii keessan waliin fayyadamoo taatu jechuudha,

Iccitii fi Eeenyummaan walqabatee: Bu'aan qorannoo kanaa maqaa fi teesssoo hirmaattotaa hin hammatu. Deebiin isin kennitanus dhimma barnootaatiif qofa kan ooludha. Iccitiin keessan ni

eegama. Sagaleen waraabamee fi sagaleen gara jechaatti jijjiirames gama kamiinuu eenyummaa keessaniin wal hin qabatu. Sagaleen waraabame Erga gara jechaatti deebifamee barreeffamee booda ni haqama, ni dhabamsiifama. Akka eenyummaan keessan hin baramneef jechoonnii fi wantoonni isin ibsuu danda'u jedhaman yeroo gabaasaa fi bu'aan barreeffamu keessaa ni haqama. Bu'aan qorannochaa Yeroo maxxanfamu maqaan keessan eessattuu hin hammatamu. Yeroo dhihaatus maqaa walii galee kan akka Ogeessa fayyaa, Hojjettoota Ekisteenshinii Fyyaa, Haadha hoosiftuu, Dubartii ulfaa, Abbaa Amantii fi kkk jedhamanii dhihaatu.

Xumura qorannoo kanaa irratti ibsi ballaa fi bu'aa qorannichaa ni hubattu.
Qorannoo kanaan walqabatee gaaffii kamiyyuu namoota armaan gadii quunnamuun ibsa gahaa argachuu ni dandeessu.

1. Dr. Zawdie Birhanu: 09-17-02-58-52
2. Mu'aaz Imaam 09-17-56-26-11
3. Mr. Hordofa Gutema 09-11-79-17-75

Gaaffii dhimma Amalaa fi eeyyama qoarannochaatiin walqabatee Dr. Miliyoon Tesfaayee (Jimmaa Yuuniversitiitti Itti gaafatamaa Boordii dhaabilee koolleejjii Saayinsii Fayyaa) quunnamuu dandeessu
Lakkoofsa bilbilaaa: +251-917-063744 e-mail: mtesfaye1@gmail.com

Yuniversitii Jimmaatti

Guca walii galtee hirmaattotaa

2. Guca walii galtee

Maqaa Qorataa: Muaz Imam

Mata duree Qorannochaa: Tajaajilaa fi itti fayyadama fayyaa daa'ima reefuu dhalatuu fi waggaa tokkoo gadii jiranii aanota baadiyyaa Godina jimmaa yeroo weerara dhibee COVID-19 keessatti jiru. Qorannoo gadi fageenyaa taasifamu.

Ani nama waggaa 18 olii ta'uu kootii mirkaneessaa, guca walii galtee hirmaattotaa naaf kenname irraa maalummaa qorannoo kanaa kan ibsu, mirga, faayidaa fi wantoota biroo hirmaattotaan walqabatu sirriitti dubbisee hubadheera. Anis fedhii kootiin itti amanee hirmaachuu kootiifi yeroon barbaade kamittuu sababa tokko utuun hin dhiheessinii fi fayyaan kootiifi mirgikoo osoo hin sarbamin addaan kutuu kanan danda'u ta'uu nan mirkaneessa.

Qorannoo kana irratti hirmaachuuf walii galuu koo mallattoo kootiinin mirkaneesa.

Maqaa Hirmaattotaa _____ Mallattoo_____ Guyyaa_____

Maqaa Nama ragaa funaanee: _____ Mallattoo: _____Guyyaa_____

Hirmaannaa keessaniif galatoomaa!

Annex 4. Interview and FGD Guides [Afan Oromo version]

Qajeelfama Marii

Annex 2.1. Hojjettoota Fayyaa [Itti Gaafatamaa Buufata Fayyaa, Ogeessa Balaa Tasaa Hawaasaa, Qindeessaa Fayyaa Maatii, Hojjettoota Ekisteenshinii Fayyaa]

Haala waliigalaa Jireenya Hawaasummaa Af-gaafannoon Taasifameef:

Aanaa: _____ Lakkoofsa Koodii:_____ Saala:_____ umurii:_____
Saba:_____ Amantii hordofu:_____ Sadarkaa Barnootaa:_____
Haala gaa'ilaa:_____ Gosa hojii/ Itti gaafatamumaa:_____
Guyyaa Gaafatame:_____ kan Gaafannoo taasise: _____
Saatii Itti jalqabame: _____ Saatii Itti xumurame:_____

1. Jalqaba mee yeroo weerarri dhibee COVID-19 erga jalqabee kaasee tajaajilawwan fayyaa daa'ima reefuu dhalattuu fi daa'immanii dhaabbata fayyaa naannoo keessanitti argaman keessatti kennamunn isin gaafadha

- Erga weerarri dhibee COVID-19 jalqabee kaasee tajaajiloonni fayyaa daa'ima reefuu dhalattuu fi daa'immanii fayyadamaman maal fa'i?? [yeroo weerara dhibee COVID-19 kanatti tajaajiloonni fayyaa daa'immanii dhiibbaan irra qaqqabe maal fa'a? [isa kamtu baay'ee miidhame/hir'ate? Sababni ijoon maali jettee yaadda?].
- Yeroo weeraraa kana keessatti tajaajiala dhukkubsataa walitti dabarsuu kennitaniittuu? [Miti yoo ta'e, maaliif?]

2. Gaaffiin itti aanu, Erga weerarri dhibee COVID-19 jalqabee kaasee haala hubannoo fi barmaata dubartootaa tajaajilawwan fayyaa daa'ima reefuu dhalattuu fi daa'immanii irrattin qaban ilaallata
    - dhibeen COVID-19 fayyaa daa'iama dhalattuu fi waggaa tokkoo gadii miidheera jedhanii ni yaaduu? [akkamitti? Maaliif? Mee fakkeenyaan naaf ibsaa?].
    - Barmaamtilee miidhaa qaqqabsiisan kan raawwataman maal fa'i? [aadaadhaan wantoota dhorgaman? Harmi yoom jalqabsiifama? Dhalattee yeroo hangamiitti qaamni daa'iaa dhiqama? Michii?]
    - Wantoonni fayyaa daa'immanii kichuu fooyyessan kan sadarkaa hawaasaatti raawwatamanii jajjabeeffamuu qaban maal fa'i?
3. Gaaffiwwan jahan itti aananu Erga weerarri dhibee COVID-19 jalqabee kaasee wantoota itti fayyadama tajaajila fayyaa haadholii fi daa'immanii irratti danqaa ta'an ilaallata

- Yeroo weeraraa dhibee COVID-19 kanatti, irra caalaan rakkoo fayyaa daa'ima kichuu fi wagga gadii walqabatan maal fa'i?
- Dubartoonni Dhaabbata fayyaa dhufanii daa'ima isaaniitiif fayyadamuu keessatti, danqaan jara mudatu maali jettee yaadda? [Dhukkubicha daa'imaaf sodaachuu? Golgaa funyaaniif fuulaa dhabuu? Dhaabbanni fayyaa cufamuu? Gatiin yaalaa olka'uu? Ogeessa kunuunsa sirrii hin kenninee fi maamila hin kabajne?]
- Danqaan guddaan biraa dubartoota/hawaasa akka dhaabbata fayyaa daa;imaaf hin fayyadamne taasisu maali sitti fakkaata?[ofiin murteeffachuu dadhabuu hawwanii? Fageenya? Ogeessa kunuunsa sirrii hin kenninee fi maamila hin kabajne? Qophiin dhaabbileen qaban laafaa ta'uu, Dhukkuba Koronaa sodaachuu?]

4: Gaaffiiwwan itti aananii jiran, danqaa fi gufuuwwan ogeessota balaa tasaa hawaasaa mudatan ilaallata

- Ittisa dhibee COVID-19 kanaan walqabatee rakkoon teeknikaa mudatan maal fa'a? What are technical challenges in response to COVID-19 pandemic [Murtii fi karoorri ragaa qabatamaa irratti hundaa'e jiraachuu, itti fayyadama ragaatiin walqabatee, Gaggeessitoonni sadarkaa gadii akkamiin akka fayyadaman]
- Qindoominni weerara kana ittisuuf jiru maal fakkaata? [gidduu aanolee fi gandoota aanolee keessatti) fi Qindoomina seektaroota garaa garaa? Kan hin hirmaanne maaliif?]
  - Rakkooleen dhiheessii fi meeshaalee yaalaatiin walqabatan maal?
  - Rakkooleen Humna namaa fi dhaabbilee fayyaan walqabatan maal fa'i?
  - Rakkoo Faayinaansii (gahaa ta'uu, qoqqooddii irratti, itti fayydamaan walqabatee...)?
  - Rakkooleen Rincicummaa gama hawaasaatiin mullatan maal maali? (Ilaalcha, hubannoo, beekumsa...)?
  - Rakkoolee gama bulchiinsaa fi hoggansaatiin jiran maal fa'i?
  - Rakkoowwan gama ogeessotaan mullatanhoo (ajajamuu diduu, maamila kabajuu dhabuu?

5. Gaaffileen kanaa gaditti jiran Ogeessota fayyaa Tajaajila COVID-19 irratti kennaniif ta'a. innis dhibee COVID-19'n walqabatee Beekumsa, hubannoo fi haala ittisaa irratti yaada qabdan ibsitu

- Mee mallattoollee ijoo dhukkuba kanaa ibsuu dandeessa?
- Karaa ittiin daddarbuhoo?

- Dhukkuba kanaan nan qabama jettee ni yaaddoftaa? [ogeessota biroo irraa caalaatti nan qabama jettee yaaddaa? Dhukkubsataa dhibee COVID-19'n qabame akkamitti simatta? Maatiin kee fi hiryoonnikee sababa ati kutaa yaalaa kana irratti hojjettuuf ni saaxilamu jettee ni yaaddoftaa?]
- Atii fi maatiin kee akka dhukubni kun hin daddarbineefi hin qabamneef maloota ittisaa akkamii hojiirra oolchitu? [Harka dhiqannaa? Sanitizerii fayyadamuu? Golgaa funyaanii fi afaanii fayyadamuu? Fageenya ofii eeggachuu? Bakka namoonni walitti qabaman deemuu dhiisuu?]
- Dhibeen COVID-19 kun haala kamiin jirru fi jireenya kee, kan maatii fi hawaasa ati keessa jiraattuu miidhuu danda'a? (Maaliif? Dhiibbaa diinagdee? Dhiibbaa hawaasummaa? Dhiibbaa Fayyaa irratti?]

6. Gaaffileen itti aananu yeroo weeraraa dhibee COVID-19 kanatti dhiibbaa fayyaa irratti mudatan ilaallata

- Sababa danqaa dhibee COVID-19 qaqqabsiiseen daa'imni dhiibbaan fayyaa irra qaqqabe si mudateeraa? Eeyyee ta'e, mee ballinaan naaf himi. Akkamitti akka mudatanis ibsi.
- Karaan dabalataa biroo tajaajila fayyaa daa'immanii ittiin argatan jiraa? [hinjiru yoo ta'e maaliif?]

Gaaffileen itti aananu madda odeeffannoo ilaalchisee ta'a

- Dubartoonni waa'ee hordoffii ulfaa fi tajaajila daa'immanii maal irraa dhaga'u?[Maddi odeeffannoo jaraa maali? Hangam dhaggeeffatu?]
- Dubartoonni naannoo kanaa yookiin maatiinkee muuxannoo moobayila fayyadamanii ergaa barreeffamaa dubbisuu qabuu ? tajaajila fayyaa argachuuf moobaayilaan ni fayyadamuu?

Yeroo weerara dhibee COVID-19 kanatti tajaajila fayyaa daa'imman kichuu fi wagga tokkoo gadii fayyadamuun walqabatee wanti jechuu barbaaddan yoo jiraate dubbachuu dandeessu?

<u>Odeeffannoo nama gaaffii gaafatee</u>

Maqaa_____

Saala_____ Umurii_____ Sadarkaa Barnootaa _____Guyyaa gaafannoon taasifame _____Mallattoo_____

Af-gaafannoon gadi fageenyaan taasifamu: Kan Abbootii Amantii fi Deessiftoota Aadaa

Haala waliigalaa Jireenya Hawaasummaa Af-gaafannoon Taasifameef:

Aanaa: _____ Lakkoofsa Koodii:_____ Saala:_____ umurii:_____
Saba:_____ Amantii hordofu:_____ Sadarkaa Barnootaa:_____
Haala gaa'ilaa:_____ Gosa hojii/ Itti gaafatamumaa:_____

Guyyaa Gaafatame:_____ kan Gaafannoo taasise: _____

Saatii Itti jalqabame: _____ Saatii Itti xumurame:_____

Gaaffilee dhukkuba Koronaan wal qabatan:

1. Dhukkubni koronaa kun hawaasa keessatti akkamitti ilaalam? [prompt: namoonni maal dubbatu, soda qabanu, jiraachuuf dhiisuun walqabatee ilaalcha jaraa…]
2. Ittisa dhukkubichaa irratti hawaasni isin keessa jiraattan maal hojjetaa ture? Isinoo gaheen keessan maal fakkaata? [prompt: bakka Masjidaatti, bataskaanatti, lafa gabaatti, walgahii sadarkaa gandaatti]
3. Rakkoon fayyaa ijoon daa'imman dhalattuu fi wagga tokkoo gadii maaltu jira?
4. Koronaadhaan nan qabama jettanii ni yaaddoftuu? [probe: maatii keessaniif, fira dhihoof]
5. Dhiibbaan qaqqabe jiraa? [probe: Hawaasa irratti, diinagdee, jiruuf jireenya keessan keessatti maal uumeera…]

Kanatti aansee, Danqaawwan tajaajila fayyaa akka buufata fayyaatti hin fayyadamne taasisan isin gaafadha. Mee danqaalee ni mudatu jettanii yaaddanuufi kan mudatee jiru naaf himaa.

- [Prompt: Sodaa dhukkuba koronaa? Manni yaalaa cufamuu? Gatiin tajaajilaa fi dabaluu?
- Faayidaa buufat fayyaa wallaaluu? Dubartoonni ofiin murteeffachuu dadhabuu? Hojiin itti baay'achuu? Abbootiin manaa deeggaruu dhabuu?, Rakkoo Daandii/
- Daa'imman daraan saaxilamoodha jedhanii sodaachuun geessuu dhiisuu?
- Fageenys? Taa'umsa lafaa? Hojjettoota fayyaa sodaachuu? Dhaabbileen fayyaa meeshaa gahaa dhabuu fi qohpii laafaa ta'uu ? kan biroo?]
- Amantiin walqabsiisanii hafuu? Dargaggootaaf male daa;ima kichuuf iddoo dhabuu?

Gochaa fi Amantii tajaajila daa'ima dhalattuu fi wagga tokkoo gadii jiraniif buufata fayyaatti yeroo koronaa kana fayyadamuun walqabatee:

- Mee gochoota daa'imman kichuu irratti erga dhalatnii taasifaman naaf himaatii [Ilka buqqisuu, akkuma dhalatteen dhaqna dhiquu, huuba qoonqoomuruu, handhuura waan qulqullina hinqabneen muruu…]
- Mee dabalataan aadaan hawaasni isin keessa jiraattan daa'ima yaalchisuu fi tajaajilawwan bilisaan kennaman kan akka talaallii fudhachuu irrtti maak akka fakkaatan naaf qoodaa
- Daa'ima kichuu dhukkubsateef eenyu tajaajila geessa/ eenyu murtee dabarsa?kaffaltiihoo eenyu raawwata?
- Harka qalleeyyiiwwan da'imni jalaa dhukkubsateef maaltu taasifama? Aadaan walgaarsaa jiraaa?

Amma immoo wantoota akka dubartoonni/ guddiftoonni daa;ima kichuf yaala barbaadanii fi tajaajilawwan dhaabbata fayyaatti kennaman fayyadaman taasisanii fi kakaasan naaf himaa

- Dhaabbileen fayyaa dhihoo jiraachuu, Ogeessa garaa laafaa fi kunuunsu jiraachuu
- Madda oduu gahaa argatan qabaachuu
- Qorichaa fi meeshaalneen yaalaa gahaan jiraachuu
- Aadaan walgaarsaa jiraachuu fi harka qalleeyyii daa'ima yaalchissuu dadhabe deeggaruu
- Walitti dhufeenyi ogeessa fayyaa fi hawaasaa gaarii ta;uu
- Waliin murteeffachh, Mariin jiraachuu, iftoominni gidduu hawaasaa, ogeessaa fi maatii jiraachuu
- Miidiyaan jiraachuu fi qabaachuu

Gaaffiin itti aanan ammo madda odeeffanoo waa;ee fayyaa daa;immanii fi waliigalaa eessaa akka argatanudha. Mee hammuma beektan naaf dubbadhaa

- Dubartoonni/hawaasni waa'ii fayyaa daa'imaa fi maatii isaa eessaa argata?
- Hawaasni isin keessa jiraattan dandeettii fi muuxannoo mobaayila irraa ergaa dubbisuu qabaaa?

Galatoomaa, an xumureera waan ta;eef waan itti dabaltan yoo jiraate carree isiniif kenneera

Qajeelfama Marii: Kan Dubartootaa

Haala waliigalaa hirmaattotaa Marii

Aanaa _____Buufata _____Ganda_____

Haala Mijeessaa fi Mariisisaa: _____

Yaadannoo kan qabatu: _____Guyyaa Marii:_____

Saatii ittti eegale: _____saatii itti xumurame_____

T/L	Koodii hirmaattotaa	umurii	Sadarkaa barnootaa	Amantii	Gahee hawaasa keessatti qaban	Gosa hojii	Haala hordoffii dahumsa duraa
1							
2							
3							
4							
5							
6							
7							
8			.				
9							
10							

Akkuma beellama keenyaatiin guyyaa harraa waa'ii daa'imman kichuu fi wagga tokkoo gadii irratti marii taasifna, keessattuu erga weerarri koronaa dhufee walqabatee:

Gaaffilee dhukkuba Koronaan wal qabatan:

1. Dhukkubni koronaa kun hawaasa keessatti akkamitti ilaalam? [prompt: namoonni maal dubbatu, soda qabanu, jiraachuuf dhiisuun walqabatee ilaalcha jaraa…]

2. Ittisa dhukkubichaa irratti hawaasni isin keessa jiraattan maal hojjetaa ture? Isinoo gaheen keessan maal fakkaata? [prompt: bakka Masjidaatti, bataskaanatti, lafa gabaatti, walgahii sadarkaa gandaatti]
3. Rakkoon fayyaa ijoon daa'imman dhalattuu fi wagga tokkoo gadii maaltu jira?
4. Koronaadhaan nan qabama jettanii ni yaaddoftuu? [probe: maatii keessaniif, fira dhihoof]
5. Dhiibbaan qaqqabe jiraa? [probe: Hawaasa irratti, diinagdee, jiruuf jireenya keessan keessatti maal uumeera…]

Kanatti aansee, Danqaawwan tajaajila fayyaa akka buufata fayyaatti hin fayyadamne taasisan isin gaafadha. Mee danqaalee ni mudatu jettanii yaaddanuufi kan mudatee jiru naaf himaa.

- [Prompt: Sodaa dhukkuba koronaa? Manni yaalaa cufamuu? Gatiin tajaajilaa fi dabaluu?
- Faayidaa buufat fayyaa wallaaluu? Dubartoonni ofiin murteeffachuu dadhabuu? Hojiin itti baay'achuu? Abbootiin manaa deeggaruu dhabuu?, Rakkoo Daandii/
- Daa'imman daraan saaxilamoodha jedhanii sodaachuun geessuu dhiisuu?
- Fageenys? Taa'umsa lafaa? Hojjettoota fayyaa sodaachuu? Dhaabbileen fayyaa meeshaa gahaa dhabuu fi qohpii laafaa ta'uu ? kan biroo?]
- Amantiin walqabsiisanii hafuu? Dargaggootaaf male daa;ima kichuuf iddoo dhabuu?

Gochaa fi Amantii tajaajila daa'ima dhalattuu fi wagga tokkoo gadii jiraniif buufata fayyaatti yeroo koronaa kana fayyadamuun walqabatee:

- Mee gochoota daa'imman kichuu irratti erga dhalatnii taasifaman naaf himaatii [Ilka buqqisuu, akkuma dhalatteen dhaqna dhiquu, huuba qoonqoomuruu, handhuura waan qulqullina hinqabneen muruu…]
- Mee dabalataan aadaan hawaasni isin keessa jiraattan daa'ima yaalchisuu fi tajaajilawwan bilisaan kennaman kan akka talaallii fudhachuu irrtti maak akka fakkaatan naaf qoodaa
- Daa'ima kichuu dhukkubsateef eenyu tajaajila geessa/ eenyu murtee dabarsa?kaffaltiihoo eenyu raawwata?
- Harka qalleeyyiiwwan da'imni jalaa dhukkubsateef maaltu taasifama? Aadaan walgaarsaa jiraaa?

Amma immoo wantoota akka dubartoonni/ guddiftoonni daa;ima kichuf yaala barbaadanii fi tajaajilawwan dhaabbata fayyaatti kennaman fayyadaman taasisanii fi kakaasan naaf himaa

- Dhaabbileen fayyaa dhihoo jiraachuu, Ogeessa garaa laafaa fi kunuunsu jiraachuu
- Madda oduu gahaa argatan qabaachuu
- Qorichaa fi meeshaalneen yaalaa gahaan jiraachuu
- Aadaan walgaarsaa jiraachuu fi harka qalleeyyii daa'ima yaalchissuu dadhabe deeggaruu
- Walitti dhufeenyi ogeessa fayyaa fi hawaasaa gaarii ta;uu
- Waliin murteeffachh, Mariin jiraachuu, iftoominni gidduu hawaasaa, ogeessaa fi maatii jiraachuu
- Miidiyaan jiraachuu fi qabaachuu

Gaaffiin itti aanan ammo madda odeeffanoo waa;ee fayyaa daa;immanii fi waliigalaa eessaa akka argatanudha. Mee hammuma beektan naaf dubbadhaa

- Dubartoonni/hawaasni waa'ii fayyaa daa'imaa fi maatii isaa eessaa argata?
- Hawaasni isin keessa jiraattan dandeettii fi muuxannoo mobaayila irraa ergaa dubbisuu qabaaa?

Galatoomaa, an xumureera waan ta;eef waan itti dabaltan yoo jiraate carree isiniif kenneera

Qajeelfama Marii Garee: Kan dhiiraa/ Abbaa Manaa

Haala walii gala hirmaattotaa Marii

Aanaa_____ Buufata _____Ganda_____

Haala Mijeessaa _____Barreessaa yaadannoo: _____

Guyyaa:_____ Saatii jalqabame: _____Saatii itti xumurame_____

SN	Koodii hirmaattotaa	Umurii	Sadarkaa barnootaa	Amantii	Hojii	Gahee hawaasa keessatti qaban
1						
2						
3						
4						
5						
6						
7						
8			.			
9						
10						

Akkuma beellama keenyaatiin guyyaa harraa waa'ii daa'imman kichuu fi wagga tokkoo gadii irratti marii taasifna, keessattuu erga weerarri koronaa dhufee walqabatee:

Gaaffilee dhukkuba Koronaan wal qabatan:

1. Dhukkubni koronaa kun hawaasa keessatti akkamitti ilaalam? [prompt: namoonni maal dubbatu, soda qabanu, jiraachuuf dhiisuun walqabatee ilaalcha jaraa…]
2. Ittisa dhukkubichaa irratti hawaasni isin keessa jiraattan maal hojjetaa ture? Isinoo gaheen keessan maal fakkaata? [prompt: bakka Masjidaatti, bataskaanatti, lafa gabaatti, walgahii sadarkaa gandaatti]
3. Rakkoon fayyaa ijoon daa'imman dhalattuu fi wagga tokkoo gadii maaltu jira?

4. Koronaadhaan nan qabama jettanii ni yaaddoftuu? [probe: maatii keessaniif, fira dhihoof]
5. Dhiibbaan qaqqabe jiraa? [probe: Hawaasa irratti, diinagdee, jiruuf jireenya keessan keessatti maal uumeera…]

Kanatti aansee, Danqaawwan tajaajila fayyaa akka buufata fayyaatti hin fayyadamne taasisan isin gaafadha. Mee danqaalee ni mudatu jettanii yaaddanuufi kan mudatee jiru naaf himaa.

- [Prompt: Sodaa dhukkuba koronaa? Manni yaalaa cufamuu? Gatiin tajaajilaa fi dabaluu?
- Faayidaa buufat fayyaa wallaaluu? Dubartoonni ofiin murteeffachuu dadhabuu? Hojiin itti baay'achuu? Abbootiin manaa deeggaruu dhabuu? Rakkoo Daandii/
- Daa'imman daraan saaxilamoodha jedhanii sodaachuun geessuu dhiisuu?
- Fageenys? Taa'umsa lafaa? Hojjettoota fayyaa sodaachuu? Dhaabbileen fayyaa meeshaa gahaa dhabuu fi qohpii laafaa ta'uu? kan biroo?]
- Amantiin walqabsiisanii hafuu? Dargaggootaaf male daa'iima kichuuf iddoo dhabuu?

Gochaa fi Amantii tajaajila daa'ima dhalattuu fi wagga tokkoo gadii jiraniif buufata fayyaatti yeroo koronaa kana fayyadamuun walqabatee:

- Mee gochoota daa'imman kichuu irratti erga dhalatnii taasifaman naaf himaatii [Ilka buqqisuu, akkuma dhalatteen dhaqna dhiquu, huuba qoonqoomuruu, handhuura waan qulqullina hinqabneen muruu…]
- Mee dabalataan aadaan hawaasni isin keessa jiraattan daa'ima yaalchisuu fi tajaajilawwan bilisaan kennaman kan akka talaallii fudhachuu irrtti maak akka fakkaatan naaf qoodaa
- Daa'ima kichuu dhukkubsateef eenyu tajaajila geessa/ eenyu murtee dabarsa?kaffaltiihoo eenyu raawwata?
- Harka qalleeyyiiwwan da'imni jalaa dhukkubsateef maaltu taasifama? Aadaan walgaarsaa jiraaa?

Amma immoo wantoota akka dubartoonni/ guddiftoonni daa;ima kichuf yaala barbaadanii fi tajaajilawwan dhaabbata fayyaatti kennaman fayyadaman taasisanii fi kakaasan naaf himaa

- Dhaabbileen fayyaa dhihoo jiraachuu, Ogeessa garaa laafaa fi kunuunsu jiraachuu
- Madda oduu gahaa argatan qabaachuu
- Qorichaa fi meeshaalneen yaalaa gahaan jiraachuu

- Aadaan walgaarsaa jiraachuu fi harka qalleeyyii daa’ima yaalchissuu dadhabe deeggaruu
- Walitti dhufeenyi ogeessa fayyaa fi hawaasaa gaarii ta;uu
- Waliin murteeffachh, Mariin jiraachuu, iftoominni gidduu hawaasaa, ogeessaa fi maatii jiraachuu
- Miidiyaan jiraachuu fi qabaachuu

Gaaffiin itti aanan ammo madda odeeffanoo waa;ee fayyaa daa;immanii fi waliigalaa eessaa akka argatanudha. Mee hammuma beektan naaf dubbadhaa

- Dubartoonni/hawaasni waa’ii fayyaa daa’imaa fi maatii isaa eessaa argata?
- Hawaasni isin keessa jiraattan dandeettii fi muuxannoo mobaayila irraa ergaa dubbisuu qabaaa?

Galatoomaa, an xumureera waan ta’eef waan itti dabaltan yoo jiraate carree isiniif kenneera

Annex 5: Codebook manual

Exploring the Newborn and infant care-seeking and service utilization in the context of the COVID-19 pandemic in rural districts of Jimma zone

Code	Code definition	Code description/ Examples
Service availability	This code was applied when the participant mentioned the newborn and infant service available at health facilities like newborn care, Immunization, Vit. A , treatment for sick newborn, etc.	*"…EPI, growth monitoring, childhood illness treatment…"*
Service accessibility	This code was applied when the participant told us about utilization of the newborn and infant service available at health facilities (Immunizing, seeking treatment)	*"they utilize immunization services for their infants 3 times, and measles vaccine"*
Harmful practices	This was a code used for participant responses on HTP like immediate washing of newborn, throat cutting, applying herbs on umbilical cord, etc.	*"If they give birth at home, they wash the baby immediately after birth without any hesitation"*
Healthy practices	Code used for responses like colostrum feeding, early initiation of breast milk, , Exclusive Breast feeding, late washing of newborns, etc.	*"The community didn't give anything than breast milk until six month. They encourage mother to feed well on balanced diet which in turn helps newborn to have adequate breast milk. At the 6th month they start to give supplementary food with breast milk"*
No facemask, no service rule	This code was applied when participant expressed they were not allowed to visit health facilities for care-seeking and service utilization due to not wearing masks	*"We wear our facemask and didn't allow for clients to enter the facility without facemask"*
Refusal of referral by community	This was a code used when study participant mentioned mothers, fathers or caregivers were reluctant to referral for their sick infants	*"They believe no one may approach to them after they visit hospital for their sick referred infants. So that many of infants are exposed to death from treatable disease"*
Unwilling health workers	A code applied when participant explained they have faced HWs who had hide themselves or returned them without service provision due to fear of the virus	*"The service is not stopped but HWs return back the clients by saying there is no services due to fear of the virus for three up to four months"*
Reluctant to visit health facilities	This was a code applied when mothers/ caregivers/family members expressed they were not using HF due to worry of COVID-19	*"Even, we feared to go for treatment of other disease when someone got sick from the family. We ourselves feared the corona disease."*

Financial constraints	This was used as a code when the respondent mentioned the effects of the virus exacerbated their limited access to financial resource	*"we face economic problem due to the virus, even we were unable to buy facemask during mandatory use"*
Transportation difficulties	This code was assigned to the respondents answers such as lack of transportation, fixed date for transport, limited access, rainy season …	*"Because of some factors like because of illness, weather condition especially due to rainy season, and due to lack of transportation they [infant] may miss follow up"*
Social cohesion influence	The code used when the participant explained they were not greeting and visiting relatives, no morning events, not eating together as usual, no celebrity for holidays, etc.	*"The societal social cohesion had been broken through and people miss trust one another and afraid to be together"*
Full/ partial Facility closure	This was assigned for respondents' reply such as facility was closed, changed to isolation center, service unavailable, etc.	*"during the beginning of the pandemic we had been told that the Health center was changed to Covid-19 center only to serve suspected case of Covid-19 and as isolation center"*
High work load on HWs	This was a code assigned when the study participant described HWs were busy for COVID-19, mass campaign, assigned to isolation center, tired and loss hope	*"Since the COVID entrance the attention of the communities are toward the prevention of this disease. Our health care workers also gave attention only on prevention of COVID-19"*
Unfiltered information	This was coded for the participant response about rumors, misinformation within the community that are wrong	*"The other thing is there is an inappropriate information in the community as many health professional were died by COVID 19 which resulted severe threat"*
Male partner domination	This was applied for the study participant responses like husbands are household leader, and final decision-maker on resource, facility visit, etc.	*"There may be a pressure from the husband side not to let his wife to visit health facility"*
Women responsibilities	This code was assigned when the study participant discussed answers like cooking, farming, caring for family, washing, cleaning, etc.	*"most women were busy due to her workload inside and outside home such as cooking, cleaning"*
Lack of quality road	A code used when the participant discussed about the lack of road between the villages, between nearby districts, lack of bridges, river fill, etc.	*"There are also other challenges; For example problem of road, river and so on"*
geographical location	This code was assigned to participants response when they mentioned their distance from HF, HF location, etc.	*"Even if the immunization prevent infants from more than 9 disease, women considers the long distance she covered to come"*

Lack of drugs , and supplies	This code was applied when the study participant described reasons for not visiting HF such as lack of drugs, lack of reagents, lack of immunizations, lack of PPE, etc.	*"They also report shortage of medication and vaccinations during this period. Thus, mothers were reporting the very significant impact of the infection."*
Poor service provision	A code assigned to participant responses after they have discussed and expressed reflection such as inadequate, not timely, inappropriate and waiting for long-time before receiving care at facilities	*"...when they reaches at H/C after 3 hr. long-distance the HWs were not caring, respecting them to give appropriate service they need. HWs also went out for lunch time, and returned back at 2:00 PM, so that the women angrily went back to their home"*
Disrespecting mothers/clients	This was a code assigned to the participant reflection on approach of HWs (insulting, joking, laughing at mothers/clients)	*"There was HW who insulted our women. We complain him and talk with his head"*
Absenteeism and lack of punctuality	This was coded after participants reaction on issues like HWs absent from work place, coming late, closed facility during work time, etc.	*"They do not want services at HP because most of time HP is closed. They visit HP to seek care for their infant but, the HP is closed and HEWs are absent"*
Community health assistant	This was used as a code when the study participant described and discussed participation of religious leaders, TBAs, WDAs, community elders, etc. in the health promotion activities	*"Religious leaders are obligated to their community, due to they advise and educate their community"*
Social-based institutions	This code was given when the participants explained the involvement of social institutions (e.g. Idir, religious institution, Jiga, dabo, etc.)	*"there is a local institution called **Idir**, which includes male and females which is established not only for death but also to support each other which is called Jiga**,** like daboo which is to mean helping each other by groups of people together"*
Helping habit	This code was applied when the study participant mentioned any support habit within the community (e.g. helping poor families, collecting money and other necessary items for poor, etc.)	*"Nowadays culture is the culture of helping each other. There is also culture of saving."*
Health workers commitment	This was assigned as a code when the participant discussed who were working beyond their responsibility, paying from their pocket, work without asking additional incentives, from HWs or not etc.	*"....even if there is budget to conduct meeting at community level we pay from our pocket to improve facility utilization..."*
Joint	This code was assigned for responses of	*"As of the districts we were worked*

healthcare activities	participants such as working with donors, with other sectors, local development associations, etc.	*with all of the sectors. We provided the information for all sectors when the COVID enter the country"*
Access to media	This was used as a code when the participant mentioned radio/TV as their source health information	*"At this time many of people are using the radio"*
Information from health workers	This was applied as a code when the participant discussed and explained HWs from zone, district, health center, and HEWs as their source of health information	*"HEWs and Health center deliver information and give advice at the facility during their visit."*
Information from networks	This was applied as a code when the study participant expressed village leaders, 1-to -7 networks, town criers, etc. as their health information source	*"During this time they were receiving information from gares and villages to get service at health facility"*
Healthcare service drop out	This was code assigned when the study participant mentioned they were dropped from care-seeking and service utilization due to fear from the pandemic, workload, busy time, fear of virus, I'll go next time (tomorrow) etc.	*"There were also people who feared and stayed at home. There were several children who defaulted out of vaccination."*
Repeated and frequent appointment	This was a code given when the participant explained they were stopped facility visit due to lack of drugs, immunizations, no provider, etc.	*"They said to our women sit in the patient waiting area until we finish the report. When she asks the health worker she knows there, also he said the time is reporting period, it is better if you come other days."*
Belief and expecting self-resolving of illness	This was a code used when the study participant mentioned reason for not early seeking treatment (e.g. habit of saying wait and see, rely on God, newborn illness are not serious , fear of the virus)	*"Some women believe that relying on God is enough so that no need to visit health facility"*
Women/client perception	This code was applied when the participant explained health facility and health workers as source of the virus and think as they may acquire from them	*"People miss trusted health professionals and consider as a source of infection dissemination and whenever we were using transport no one wants to give transportation service for us"*
Traditional medicine	This was a code assigned when participant replied why they start seeking care from traditional healers	*"COVID-19 is in the mind of the people. There were a time when the people started to seek traditional healers while they sick"*

Annex 6: Approval sheet

Name of student: **Muaz Imam** Signature _____Date _____

APPROVAL SHEET

As thesis research advisor, I hereby certify that I have read and evaluated this thesis prepared under my guidance by Muaz Imam entitled “Newborn and infant healthcare Service Utilization in the context of the COVID-19 pandemic in rural areas of Jimma Zone: A Qualitative Study”. I recommended that the research thesis be submitted for implementation and further action as fulfilling the thesis requirement.

Name of major Advisors:

1. Dr. Zawdie Birhanu (PhD) Signature _____ Date _____
2. Mr. Hordofa Gutema (MPH, PhD fellow) Signature _____ Date _____

Annex 6: Approval sheet

Name of student: **Muaz Imam** Signature _____Date _____

APPROVAL SHEET

As thesis research examiner, I hereby certify that I have read and evaluated this thesis prepared by Muaz Imam entitled “Newborn and infant healthcare Service Utilization in the context of the COVID-19 pandemic in rural areas of Jimma Zone: A Qualitative Study”. I recommended that the research thesis be submitted for implementation and further action as fulfilling the thesis requirement.

Name of Examiner:

1. Mr. Fira A. Mecha (MPH, PhD Candidate) Signature _____ Date _____