NEWBORN CARE PRACTICE AND ITS ASSOCIATED FACTORS AMONG POSTNATAL MOTHERS IN PUBLIC HEALTH FACILITIES OF TEMBARO DISTRCT, SOUTH ETHIOPIA: CROSS-SECTONAL STUDY

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A THESIS SUBMITED TO JIMMA UNIVERSITY, FACULTY OF PUBLIC HEALTH, DEPARTMENT OF EPIDEMIOLOGY IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTERS IN GENERAL PUBLIC HEALTH

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Abstract

Background: Newborn care is strategic approach to improve the health of newborns through interventions before, during and after pregnancy, immediately after birth and postnatal period. Globally, even if 75% of births take places with the assistance of a trained birth attendant such as a doctor, nurse, or midwife newborn care practice is unsatisfactory in developing countries. **Objectives**: To assess newborn care practice and its associated factors among postnatal mothers in public health facility of Tembaro Woreda, South Ethiopia from June 07-July 07/2021. **Methods:** Facility based cross-sectional study design was conducted from June 07-July 07/2021. Data were collected from 418 randomly selected mothers by face-to-face interview. The collected data was coded cleaned and entered in to EpiData version 3.1 and was exported to statistical package for social sciences (SPSS) version 25 for further analysis. Descriptive statistics such as frequencies, proportions, means, and median was calculated and Odds ratio with 95% confidence interval was calculated to assess the strength of associations for most variables in the study and presented by tables and chart. Variables with p value less 0.25 in bivariable analysis were carried out to identify candidate factors associated with outcome variable for multivariable analysis. Multivariable logistic regression was used to identify associated factors & the strength of association was measured by Adjusted Odd Ratios with 95% CI at p-value of < 0.05.

Results: The finding showed 57.4% (95% CI 0.5266, 0.6214) newborn care practice was good. In the multivariable logistic regression analysis; mothers' educational status (AOR=0.025,95% CI:(0.005, 0.125)), (AOR=0.031, 95%CI:(0.009,0.106)), home visit by health extension workers (AOR=0.120,95% CI:(0.040,0.359)), number of live births (AOR=2.409,95%CI:(1.126,5.151)), and numbers of ANC visits (AOR=0.122,95% CI:(0.037,0.399)), were found to have statistically significant association with newborn care practice.

Conclusion: Empowering and capacity building of women are important for statically significant variables. Health programs focusing in newborn care practice and more research works should be conducted to promote good new born care practices in study area.

Key Words: Newborn care, Practice, Postnatal mothers, Tembaro, Ethiopia.

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Abbreviation and acronym

ANC	Antenatal care
AOR	Adjusted odd ratio
CI	Confidence Interval
COR	Crude odd ratio
EDHS	Ethiopia Demographic and Health Survey
ENC	Essential New born Care
HMIS	Health management information system
LBs	Life births
MEDHS	Mini Ethiopia Demographic and Health Survey
MDG	Millennium Development Goal
NM	Neonatal Mortality
NMR	Neonatal Mortality Rat
PNC	Postnatal Care
SBA	Skilled Birth Attendant
SDG	Sustainable Developmental Goal
SNNPR	south Nation, Nationalities and Peoples
SPSS	Statistical Package for Social Science
WHO	World Health Organization

CHAPTER: ONE

1. INTRODUCTION

1.1 BACK GROUND

Newborn care is strategic approach to improve the health of newborns through interventions before, during and after pregnancy, immediately after birth and during postnatal period (1). Cost effective prenatal and delivery intervention that improve maternal health and nutrition and save mother's live can save most newborns too, saving the life of newborn begins with the health of mothers (2). The interventions to be done during antenatal period includes, tetanus toxoid immunization, micro nutrients like Iron foliate and iodine, syphilis test & treatment, Malaria prophylaxis, Breastfeeding counseling and Birth preparedness (3). Interventions to be done during labor and delivery includes prevention of hypothermia, immediate initiation of breastfeeding & eye care and intervention to be done during postnatal period includes early & exclusive breastfeeding, keeping warm, delaying bath, safe cord care and immunization are the recommended care to be given for all newborns (4). Most deaths during the neonatal period occur at home and are often not registered, postnatal services are scarce and traditional practices, such as delayed initiation of breastfeeding, not timely bathing, and unsafe cord care contributed to high newborn mortality rates (5). The new born care philosophy are easy, requiring cheap modern technology-based equipment; resuscitation, radiant warmer to avoid hypothermia, early initiation of breast feeding, cleanliness, support for bonding and early treatment (6).

According to the World Health Organization (WHO) findings on trends in child and maternal mortality, despite falling under-five mortality, there has been very little change in the neonatal mortality rate (NMR). The NMR fell from 36 per 1000 live births in 1990 to 19 in 2015, and the number of neonatal deaths declined from 5.1 million to 2.7 million (7). Most of Sub-Saharan Africa countries report shows there was little or no progress towards the child survival target (8). Fifty-two percent of neonatal deaths are due to lack of proper care given to newborn, and these deaths can be also prevented through low-cost interventions like quality care at birth and newborn care practices (9). Above 90% of neonatal deaths occur in sub-Saharan Africa (27 deaths per 1000 live births (LBs) in 2017) and about half of these deaths occur at home (10).

Ethiopia report shows there were high neonatal and postnatal mortalities. The neonatal mortality rate (NMR) and postnatal mortality rate were 29 and 19 deaths per 1000 LBs respectively (11). The health coverage of postnatal care is very low in Ethiopia; 92% of mothers with a live birth in the past five years did not get a postnatal service. As recommended, women get postnatal care within three days was only 7%.(12).

The careful attention must be taken to two (2) most important gaps in the care provision. The primary attention of care is time. The time while pregnancy and during delivery newborn care giving contains a gap at delivery and during the first week of life, where the majority of neonatal and maternal deaths occur. The second gap is during postnatal period, levels of care mainly at family-community level (13).

The responsibilities of mothers are vital for newborn care practice. Providing good home care for newborn particularly cleanliness, warmth, and breastfeeding through family community package would have an expected reduction in the NMR of 10 to 40 percent. But when outreach services of postnatal care combined with a family package using community health promoters' decreases NMR by 30 percent as projected in Ethiopia ministry of health (14).

1.2 STATEMENTS OF THE PROBLEM

Globally, even if 75% of births take places with the assistance of a trained birth attendant such as a doctor, nurse, or midwife newborn care practice is unsatisfactory in middle and low in-come countries like (Nepal, India, Comoros) and Sub-Saharan Africa like (Lesotho, Mali (15). According to UN inter-agency, there are huge homework to achieve Sustainable development goal (SDG) by 2030. New-born care practice is one good option to reduce neonatal mortality and morbidity. Despite this recommendation, new-born care practice is inadequate in developing countries. The study conducted in various parts of Africa such as Uganda, Ghana and Cameroon reported that the prevalence of new-born care practice was low. For instance, applying substances on cord stump and early bathing is a norm in Uganda (16). Newborn care practices play a key role in preventing neonatal deaths specifically, improving newborn care practices in the early neonatal period is correlated with reduced neonatal and under five mortalities. However, there is low prevalence of newborn care practice in Nigeria and Sub-Saharan Africa (17). Currently newborn care is given little attention or neglected because we can give many reasons for these. One of the reasons is that neonatal death rate is not accurately known because

most of the deaths occur at home, and often not registered; additionally, negligence due to cultural adherence to that of newborn care, wrong assumption about newborn, neonatal care that is assumed costly and depends on modern technology and scarce postnatal service and traditional practices such as delayed breast feeding, not timely bathing and unsafe cord care which contributed to high neonatal mortality rates (18). Neonatal mortality accounts about two-thirds of all infant mortality and which also accounts for 45% of deaths of children aged less than five years (under-five mortality) worldwide. Ninety nine percent of these deaths occur in middle- and low-income countries with half of deliveries occurring at home. Even if neonatal period is a brief and short period of time, neonatal death during this time contributes for the larger number of under-five mortality rate (10). In developing countries, the risk of neonatal death is six times more than developed countries due to poor newborn care practice. Even though these deaths can be easily preventable and avoidable with simple, low cost and short period of time; the problem is still present due to lack of adequate maternal neonatal care practices (12). The global under five mortality rate of 42.5 per 1000 live births, from these deaths, 45% were newborns, with a neonatal mortality rate of 19 per 1000 live births, and even under five and infant mortalities have been reduced, neonatal mortality remains largely unchanged in developing countries (19). Neonatal mortality is becoming progressively a public health problem and newborn care practice and interventions have been applied to reduce under-five children deaths, but until not completely address the causes of the under-five children's deaths (20). From African countries, where there is poor newborn care practice and high newborn deaths occur, like Nigeria 36 deaths per 1000, Mali (32/1000) deaths, Ethiopia is the one with the higher newborn death rate 28 deaths per 1000. Although a skilled birth attendant for each birth is ideal and, even all women give birth in a heath facility, newborn care practice can be affected by traditional practices after discharge from facility and some components of maternal and newborn care can be practiced at home, so the family and community have an important role in newborn care practice (14). Ethiopia is one of Sub Saharan country with poor or unsatisfactory newborn care practices (19).

1.3 Significance of the study

Assessing practice of mothers on newborn care and its determinant factors is one of the key strategies that can improve newborn health and prevent the causes of neonatal morbidity and mortality.

Therefore, the finding from this study helps policy makers and health care planners by providing useful information about factors hindering good newborn care practice, and designing new program or improving the quality and effectiveness of the current intervention programs on newborn care practice.

CHAPTER: TWO

2 LITERATURE REVIEW

The World Health Organization recommends improving newborn care practices at birth in order to decrease neonatal morbidity and mortality. These include safe cord cutting, thermal care, delay bathing and initiating breastfeeding within the first hour after birth. These easy practices are significant for all newborns in order to save lives, but also needed to be integrated into a comprehensive newborn care package which includes immediate newborn care at birth, care-seeking behavior, and additional care for sick and premature babies, and resuscitation of newborns (22).

2.1 components of newborn care

Cord care: It is one of newborn care practices and clean blade, tie and keeping the cord and cord environment clean and dry are the interventions in clean cord practice. Cord care is very useful in reducing the neonatal tetanus and umbilical sepsis, even evidence did not support topical treatment of the cord, there are different cultures, beliefs and practice that affect the cleanliness of the cord, and in developing countries the problem is seen repeatedly, which may be due to low level of economy of countries. Many studies indicate the problem is more common in rural areas than urban area. There is different cultures and belief in different countries related with unclean cutting process and putting different materials on the umbilical cord (23). Until the cord falls off, the area should be kept dry and clean to promote separation and healing. The mother should know the danger signs of umbilical cord infection including pus discharge, reddening around umbilicus, and other signs of infection including fever, lethargy and difficulty of breathing (24). A study done in Pakistan in 2013 showed that half of the mothers 49% did not apply anything on the cord stump, and the proportion of mothers aware of, yet not practicing, was highest for hand washing with soap and water before handling a newborn 45%, and cord care 42%. Among the mothers who were aware of, yet not following safe practices, the TBA influence was reported as the leading cause by 26% for not keeping the cord clean (25).

Another study done in India in 2014 reported the cultural practices and beliefs related to umbilical cord care revealed that the highest percentage 55% of the mothers applied ashes or soot or powder or dry cow dung on the umbilical cord of the baby (26).

A cross sectional study conducted in Nepal reported that about 73% of mothers applied nothing, 18% of mothers applied oil, 2% of mothers applied disinfectants, 0.2% of mothers applied mud &turmeric and 0.3% of mothers applied cloth on the umbilical stump (27). Another study in Nepal in 2006 also showed the umbilical cord was cut with a new or boiled blade in 90.4% deliveries and in 7.1% deliveries a sickle/household knife or an old un boiled blade was used. The stump of umbilical cord was left undressed in 73.8% deliveries. But oil was applied in 53 22.1% deliveries. In all the instances mustard oil was used and applications like turmeric and antiseptics were also reported by the mothers (28).

Initiation of early breast feeding: As world health organization (WHO), breast feeding should be initiated within one hour of birth. Initiation of breast feeding within an hour is very beneficial for the mother and neonates and feeding should be as frequent as the baby demand without any other fluids and foods. Early initiation of feeding is very advantageous for neonate to prevent from infection and help the mother for uterine contraction which prevents post-partum hemorrhage. A recent study has shown that early initiation of breastfeeding could reduce neonatal mortality by 22%, which would contribute to the achievement of the Sustainable Developmental Goals (SDG) (15). A study done in India in 2013 showed that 74% mothers started breastfeeding within the first hour, 87% fed colostrum, and 58% mothers exclusively breastfed their newborn (29). Another study done in India in 2014 reported the cultural practices and beliefs related to feeding newborn revealed that the highest percentage 53% of the mothers gave home remedies for digestion and the lowest Percentage 10% of the mothers fed baby with milk mixed with "Kumkum kesar (26).

The study done in Sub Saran countries indicates that almost half of the countries reporting that less than 50% of newborn initiated breastfeeding within an hour. The reasons for delayed initiation of breastfeeding were with the belief that, milk does not arrive until a few days after birth (Ethiopia, Tanzania, Ghana, Nigeria), the colostrum was dirty or harmful and should not be fed to the child (Uganda, Tanzania, Ghana, Ethiopia and Nigeria) (30). Recent study done in Uganda in 2016 indicates that out of 561 mothers more than half 321(57%) of the mothers breastfed their newborns within one hour of delivery. Majority of 532(94.7%) of mothers gave colostrum to their newborn (31). The cross-sectional study done in Governmental health centers of Addis Ababa in 2018 indicates that out of 512 postnatal mothers only 339 (66.2%) of mothers

reported that their newborns were breastfed within the first hour after delivery, 12 (2.3%) of mothers reported that they squeezed out the colostrum before breastfeeding the newborn; 89(17.4%) reported feeding their newborns food or liquid other than breast milk in the first two days (32).

Thermal care and Bathing

Thermal care: Immediately after birth of newborn, the newborn begins to lose heat through conduction, convection, radiation and evaporation which put newborns at risk of hypothermia. Low birth weights and premature babies are at higher risk and lose heat easily.

Wiping the newborn with a soft, dry cloth immediately after birth, covering whole body, putting the newborn on the mother's chest and initiating skin-to-skin contact, warm delivery room and warm transportation decrease risk of hypothermia (20).

According to the study done in Uganda in 2010 only 10% of newborn receives optimal thermal care immediately after birth (33). Another study done in Uganda in 2016 indicates that out of 561 postnatal mothers interviewed only about 17% of the newborns received optimal thermal care immediately after birth which shows 7% improvement (31).

The study in Nepal shows 45.8% new born were wrapped within 10 minutes and 97.1% newborns were wrapped within 30 minutes after birth. By one hour all the newborns were wrapped (34).

Similar study conducted in Ghana in 2017 indicates that out of the 418 respondents, 215 (51.4%) reported their babies were wrapped 5 min after delivery and 12(2.9%) were wrapped between 30 and 60 min after birth (21).

The cross-sectional study conducted in Mekelle city in 2016 indicates out of 456 mothers interviewed 305(66.9%) of participants kept their newborn baby warm by wrapping them with a dry cloth and covering the whole- body including head and legs (35).

Bathing: Bathing of a newborn baby should be delayed until the first 24 hours of birth. Early bathing of newborn causes hypothermia which threatens newborns life by delaying the newborn circulatory adjustment, acidosis, hyaline membrane disease, coagulation defects infection and

brain hemorrhage (7). According the study done in Nepal in 2020 out of 157 mothers' majority of the mothers 148 (94.3%) give bath after 24 hours of birth and only 9 (5.7%) of mothers give bath before 24 hours (34).According study conducted in Nigeria Ibadan in 2018 out of 206 postnatal mothers interviewed only 33.3% of the mothers bath their newborn after 24 hours and most of the mothers (66.7%) bath their newborn before 24 hours of birth (36).

According study done in Bangladesh in 2015 from out of 510 mothers 118(21.3%) bath their newborn within 6 hours, 135(26.5%) bath their newborn within 6-24 hours, 110(21.6%) bath their newborn within 2-3 days and the res 147(18.8%) bath after 3 days of birth (37).

The cross-sectional study conducted in Mekelle city in 2016 indicates out of 456 postnatal mothers interviewed 358 (78.5%) of mothers give bath after 24 hours after birth and rest 98(21.5%) bath their newborn before 24 hours of birth (35).

A cross sectional household survey conducted in four regions of Ethiopia namely: Oromia, Amhara, Tigray and Southern nation, nationalities and people (SNNP) in 2013 state that only 25.3% of birth did the mother report that bathing of new born was delayed at least 24 hours (38).

2.2 Determinants of Newborn care

Socio demographic characteristics and economic factor

Age: Prenatal death is higher in advanced aged women and advanced age women seem to have higher risk of pregnancy complications, such as gestational hypertension and diabetes, neonatal clavicle fracture and prenatal death, and undergo more frequently to cesarean section which will end up in neonatal morbidity and mortality (39).

Similarly, study conducted in Nepal in 2018 showed that early and advanced maternal ages are both related to increase neonatal morbidity and mortality and both early and advanced age have an impact on outcome of the pregnancy and determine the wellbeing of the neonate (34).

Mothers' occupation

The economic power of the women has a great impact on maternal, neonatal or community as a whole. When women became economically power full delay of health services due to lack of money can be minimized and also increase a decision- making power of women and avoid dependence of women on their husbands. Economic empowerment is a power to solve many problems related with maternal and neonatal health care. A study done in upper Himalayan region of Nepal in 2019 shows a family income of 10,000 or less / month was significantly

associated with having a home delivery, unhygienic cord car and application of kohl to the newborn's eyes (40).

Educational back ground

Educating the women is an important way to empower women and the empowered mothers are stronger and wiser for their own and children health. Educated girls are stronger and wiser than little/no educated girls and marry later and have fewer, healthier and better nourished children (41).

According to mini-Ethiopian demographic Health survey 2019 (MEDHS 2019) among women with no education, 62% obtained ANC services from a skilled provider and 32% received four or more ANC visits compared with 100% and 79%, respectively, of women with more than a secondary education (42).

Mothers' knowledge about newborn care practice, benefit and danger sign

The knowledge of the mothers has greater influence on care of the Newborn, the poor mothers' knowledge was associated with poor practices of newborn and good maternal knowledge was associated with newborn practices good neonatal feeding, timely bathing good cord care and good thermal care (40).

Health service utilization

2019 Mini-Ethiopia Demographic Health Survey (MEDHS 2019) says proper care during pregnancy, delivery and postnatal time is important for the health of both the mother and the baby. Skilled health care and proper health service utilization during pregnancy, childbirth, and the postpartum period are important interventions in reducing maternal and neonatal morbidity and mortality (42).

Skilled birth attendant (SBA)

According to MEDHS 2019 access to proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that may lead to death or serious illness for the mother, baby, or both. Among the total live births in the 5 years preceding the survey, 50% were delivered by a skilled provider and 48% were delivered in a health facility which shows improvement in skilled birth attendant. The percentage of live births delivered by a

skilled birth attendant increased from 6% in the 2005 EDHS, to 11% in the 2011 EDHS, to 28% in the 2016 EDHS, and up to 50% in the 2019 EMDHS (42).

Obstetric history variable

Parity: parity could be determinant factors for especially for those who did not use family planning method and in those countries with high fertility rate. A study done in Uganda in 2016 shows that multiparous mothers were less likely to have good newborn care practices when compared to primiparous (31).

ANC follow up: is an important factor for healthy pregnancy, its outcome and to promote utilization of skilled maternal care which reduce complication during delivery and for better newborn care practice. According to study conducted in 2020 on newborn care practices and associated actors among lactating mothers at Home in the Rural Districts of Gedeo Zone, Southern Ethiopia, mothers who had antenatal care follow-up were 5.7 times higher compared with mothers who did not have antenatal care follow-up to have good newborn care practice (20).

Source of information:

The media can play their roles in in promotion of newborn care practice and preventing neonatal mortality. The rates of neonatal mortality have been significantly reduced in the developed world mainly due to improvements in basic health care and technological advances in the medical field. However, the newborn care practice was poor and neonatal mortality remains a cause for major concern in developing countries especially in sub-Saharan Africa. The media has been used to promote public health thereby reaching a large audience. Radio is an effective tool to use to promote public health. Radio remains the most powerful, and yet the cheapest, mass medium for reaching large numbers of people in isolated areas. It is cheap to purchase and, therefore is the one mass medium with which rural and slum communities are familiar (43).

2.3. Conceptual Framework

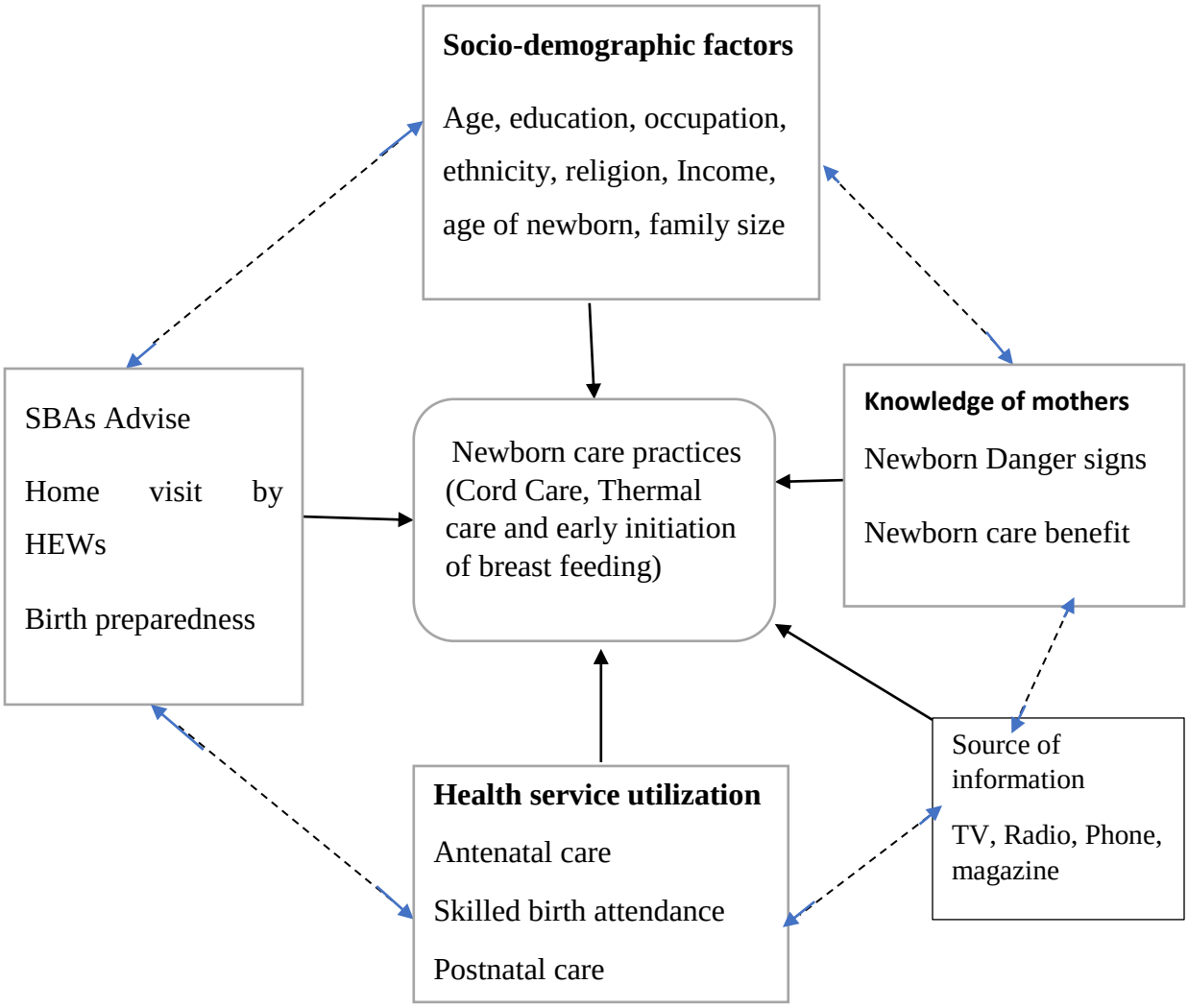


Figure 1: conceptual framework that illustrate the association between newborn care practice and its association factors, in Tembaro district, south Ethiopia (Source: Developed after reviewing previous literature (32,44)).

CHAPTER THREE

3. OBJECTIVES:

3.1 General objectives:

- To assess newborn care practice and its associated factors among postnatal mothers in public health facility of Tembaro district, South Ethiopia from June 07-July 07/2021.

3.2 Specific objectives

- To determine the magnitude of newborn care practice among postnatal mothers in public health facilities of Tembaro district, South Ethiopia in 2021.
- To identify the associated factors of newborn care practice among postnatal mothers in public health facilities of Tembaro district, South Ethiopia in 2021.

CHAPTER FOUR

4 METHODS AND MATERIALS

4.1 Study area and Period

This study was conducted in Tembaro district, Kembata-Tembaro zone, South Nations, Nationalities and Peoples (SNNP) Region, located in, 316km from Addis Ababa, 182km from Hawassa and 56km from Durame (Zonal town). Based on the projection from 2007 Population and housing census report, total population in 2020/2021 is estimated to be 247573, among these 121311(49%) are males and 126262(51%) are females, with households of 50525, females in reproductive age group (15-49) are 57684 and 8566 are postnatal women. It has four Health Centers and 24 Health Posts. There were 302 health workers and 65 health extension workers. The study was conducted from June 07-July 07/2021.

4.2 Study Design

- Health facility based cross-sectional study design was conducted.

4.3 Population

4.3.1 Source population

- All postnatal mothers of newborn age less than or equal to 42 days who came for postnatal service to public health facilities of Tembaro district.

4.3.2 Study population

- The study populations were all selected postnatal mothers who came for postnatal service in postnatal clinic of public health facilities of Tembaro district during data collection period.

4.3.3 Inclusion criteria

- Postnatal mothers with an alive newborn within 42 days after delivery were included.

4.3.4 Exclusion criteria

- Postnatal mothers with previously known mental illness and newborns with care giver/guardians were excluded from study.

4.4 Sample size and Sampling technique/Sampling procedure

4.4.1 Sample size

- The sample size was calculated using a single population proportion formula with the assumptions of 95% confidence interval 5% of marginal error and prevalence of 0.469 from a study done in Dessie referral hospital, Amara Region and adding 10% of non-response rate.

Sample size will be calculated as follows=

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

Where:

n=sample size

Z α/2=significance level at α= 0.05

P= established prevalence from previous studies of the topic of interest (newborn care practice) in Dessie referral hospital, Amhara Region (p=46.9%) (45).

d = margin of error of 0.05.

Therefore, based on using the above single population proportion formula the sample was calculated as: $n= \frac{(1.96)^2\ 0.469(1-0.469)}{(0.05)^2}$

n=383

With the assumptions of 95% confidence interval, 10% non-response rate=38; the total sample size was 421.

- Sample size determination for the second objectives using Epi inf7 was given below in the table.

Table 1: Sample size determination for newborn care practice and associated factors in public health facility of Tembaro district, southern Ethiopia from June 07 July 07/2021.

SN	Factors	Exposed(p1)	Unexposed(p2)	AOR	Power 80%, CI 95% margin of error 5%	10% NR	Final sample size	Reference
1	Mothers' educational status	33%	66%	2.80	80%,95%,5%	7	81	(19)
2	Mothers' knowledge about newborn care practice	14%	49%	2.42	80%,95%,5%	6	62	(35)
3	Mothers' occupation	46%	29%	1.40	80%,95% 5%	25	281	(32)

Finally, the required sample size for this study was determined by taking the maximum sample size from the objective sample size calculation results. Thus,383 becomes the maximum sample size. Considering 10% non-response rate, the total sample size was 421.

4.4.2 Sample technique and procedure

All governmental health centers in Tembaro district were included in the study in order to make the data representative. The health facilities sample was allocated proportionally considering monthly flow of postnatal mothers visiting selected postnatal clinic of public health facilities. The study participants were selected by using systematic random sampling from each health facilities. Sample size for the study was determined to be 421 in number, Since the given time for data collection was one month (from June 07-July 07/2021), The previous three months health facilities postnatal service data was reviewed from the district health office (HMIS) report to estimate the expected number of mothers that visit the clinic in one month of period and the average number was taken to calculate the number of respondents that was interviewed from each health facility. Therefore, the average number of mothers visited the four public health institutions namely, Mudula health center, Gaecha health center, Hodo health center and Dabub

Ambukuna health center in the previous three months back was 274,237,241 and 141 respectively.

The previous three months data reviewed from the Woreda health office and the average number taken to calculate second interval based on sample size. Therefore, total 893 postnatal mothers visit health facilities per a month, which was calculated as approximately every second mother was interviewed from each facility since the K value for every facility was 2 according proportional allocation. The first interviewer was taken and every 2nd mother was selected for interview.

To get the number of respondents from each facility used proportional allocation formula:

$$\frac{\text{The three months average postnatal care attendance for each facility}}{\text{Total sum of three months average postnatal attendance for the four health facilities}} * \textit{total} \text{ sample size}$$

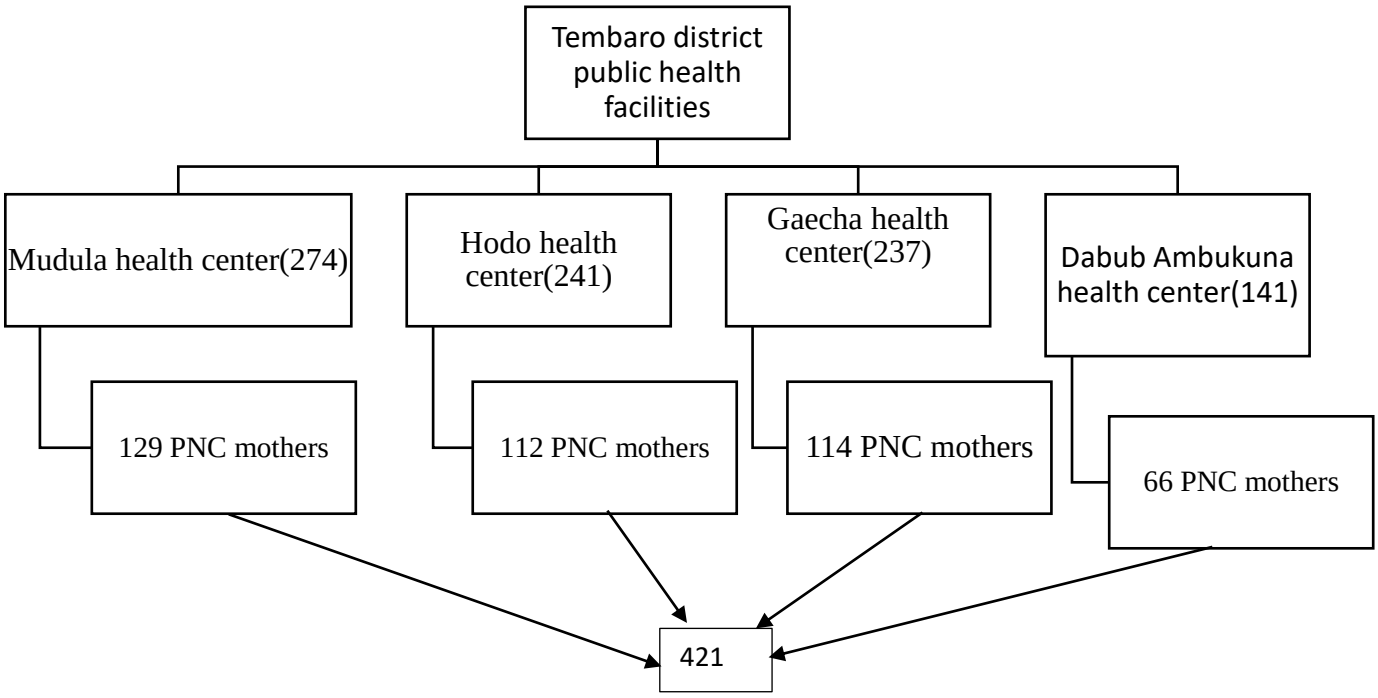


Figure 2: Schematic diagram of sampling procedure in newborn care practice and associated factors among postnatal mothers attending PNC clinic in public health facilities of Tembaro district, southern Ethiopia, 2021.

4.5 Data collection procedure and instrument

Data collecting tool was developed after reviewing previous tools (Source: (32,44) and data collectors and the supervisors were trained on procedures of data collection, techniques of data collection, and about the purpose of the study, and how to fill the questionnaire properly. Interviewer performed face to face data collection technique using pretested structured questionnaire developed according to the WHO guide line and EDHS for newborn care practice among postnatal mothers. The questionnaire addressed the women's socio-demographic factor, economic factors, Obstetric factor, health related factors, Health service-related factors; Client related factors (knowledge) and others. One diploma data collector was assigned to each health facility and one public health bachelor degree holder was assigned as supervisor by principal investigator.

4.6 Study variables:

4.6.1 Dependent variables:

- Newborn care practice (Initiation of breast feeding within one-hour, Safe cord care, Delaying of bathing for 24 hours and Thermal care).

4.6.2 Independent variables:

- Socio-demographic and economic factor variables: Age of the mother, marital status, occupation, maternal educational status, ethnicity, religion, monthly income, family size.
- Obstetric history variables: Number of gravida, Parity, number of ANC visits, abortion, still birth, and ANC follow up started time, place of birth.
- Client related factor variables: Knowledge of mothers about newborn care, knowledge of mothers about benefits of newborn care.

4.7 Operational definition

- **Newborn care practices**: A set of practices by mothers to newborn baby which includes initiation of breast feeding within one hour, delay bathing, safe cord care and thermal care. It was dichotomized based on the four newborn care practices mentioned above. Those mothers provide three or more practices were categorized as "good newborn care practices" otherwise they categorized as "poor newborn care practices".
- **Initiation of breast feeding:** Practices of mothers initiating breast feeding to newborn baby following delivery within one hour of life.
- **Safe cord cut and care:** Cutting the cord with new blade and keeping the cord clean and dry without application of any substance except medication if given.
- **Thermal care**: Drying and wrapping whole body of newborn baby.
- **Bathing of newborn**: Avoidance of newborn baby bathing before 24 h of delivery.

4.8 Data quality control

Quality of the data was assured with properly designed data collection instruments. Data collectors and the supervisors were trained on procedures, techniques and ways of collecting the data. In Tunto health center 5% pretest was done to check consistency of the questionnaire. The collected data was reviewed and checked for completeness by principal investigator on daily base and identified problem was corrected as soon as possible.

4.9 Data analysis procedure

Data obtained from facility-based survey, was checked for completeness and inconsistencies, then coded, cleaned and enterer to Epi data version 3.1 and exported to SPSS (Statistical Package for Social Science) version 25 for analysis. Descriptive statistics such as frequencies, proportions, means, and median was calculated and Odds ratio with 95% confidence interval was calculated to assess the strength of associations for most variables in the study and presented by tables and chart. Then bivariable analysis was carried out to identify candidate factors associated with outcome variable for multivariable analysis. The decision was made using Odds ratio (OR) and confidence interval (CI) at 95% confidence level. Finally, those predictor variables with $P < 0.25$ were enter into multivariable logistic regression analysis and the final model fit was cheeked by using variables with $P < 0.05$. Collinearity diagnostic was checked for VIF and it was <2 for statically significant variables. The predictive success of the logistic regression model was assessed by looking at the classification table, showing correct and incorrect classification of the dichotomous dependent variable. Model goodness-of-fit test such as Hosmer and Lemeshow was undertaken and since it was 0.23 models goodness-of-fit is normal for Hosmer and Lemeshow test.

4.10 Ethical consideration

Officially written approval letter was obtained from institute of health of Jimma University, prior to the data collection and permission to collect data was obtained first from, Tembaro district health office. Data collectors explain, the clear description about the study title, study procedure, study duration, benefits of the study were explained for the participants and the respondents was notified that they have the right to refuse or terminate at any point of the interview. Then informed written consent form was asked from the respondents before start interviewing and the responses of interviewee`s kept confidential.

CHAPTER FIVE

5. RESULT

5.1 Socio demographic and economic characteristics of the respondents.

A total of 418 post-partum women were participated in the study yielding a response rate of 99.2%. The women's age ranges from 16 to 38 years, with a mean age of 26.57 (SD ± 4.9) years. Most of the respondents, 215 (51.5%) were between 25-34 years old. Almost all of the respondents, 410 (98.1%) were married. Above two-third, 320 (76.6%) of the respondents have attended formal education. Regarding their religion, above half of the respondents 262 (62.7%) were protestant and 385(92.1%) of respondents were Tembaro regarding ethnicity and concerning their occupation, 267 (63.9%) were housewives. Regarding their residence place, 327(78.2%) of the study participants were rural dwellers (Table 2).

Table 2: Socio demographic and economic characteristics of women in postpartum period, in governmental health Facilities of Tembaro district southern Ethiopia, July 2021(n= 418)

Variables	Category	Frequency	Percent
Mothers Age			
	15-24	197	47.1
	25-34	215	51.5
	35-44	6	1.4
Religion			
	Protestant	262	62.7
	Orthodox	75	17.9
	Catholic	66	15.8
	Muslim	15	3.6
Ethnic Groups			
	Tembaro	385	92.1

Hadiya	15	3.6
Kambata	12	2.9
Others*	6	1.4
Marital Status		
In union	410	98.1
Not in union**	8	1.9
Educational Level		
Can't read and write	98	23.4
Primary Education	198	47.4
Secondary Education	44	10.5
Collage and above	78	18.7
Monthly income		
<500	98	23.5
500–1000	133	31.8
>=1000	187	44.7
Place of residence		
Urban	91	21.8
Rural	327	78.2

* Amhara, Donga, Dawuro, Wolayita, ** divorced, widowed, single.

5.2 Obstetric factors and Health service utilization

About two-third, 281 (67.2%) of the respondents had less than three live births and 373(89.2%) of participants have attended antenatal care (ANC) for their current pregnancy of which 123(32.9%) had ANC visit at government hospital, 250(66.1%) at health centers. Majority 310(83.1%) of the respondents have started ANC visit at less than 4 months of gestational age (Table 3). Regarding to place of current delivery, about 224(53.6%) in health centers, 126(30.1%) at governmental hospital, 68(16.3%) at home (figure 3).

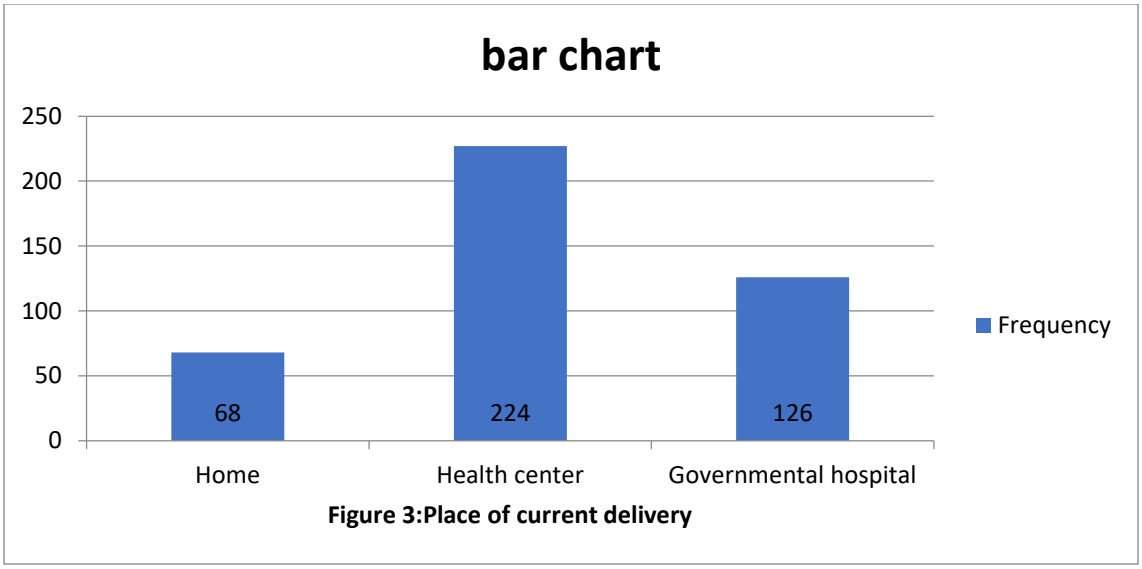


Figure 3: Places of current delivery in postpartum period, in health facilities of Tembaro district, south Ethiopia July 2021.

Table 3: Obstetrics factors and health service utilization of women in postpartum period, in governmental health facilities of Tembaro district South Ethiopia July 2021 (n=418*)*

Variables	Category	Frequency	Percent
Antenatal follow up	Yes	376	89.3
	No	45	10.7
Place of ANC visit			
	Governmental Hospital	123	32.9
	Health centers	250	66.1
Number of ANC visit (=376)	<=3 times	63	16.9
	>3 time	310	83.1
Place of current delivery	Home	68	16.3
	Health centers	224	53.6
	Governmental		

	Hospital	126	30.1

5.3. Home visit by HEWs and advice by skilled birth attendants

More than two-third, 294 (70.3%) of the respondents had visited by health extension worker in the last six weeks and of which 268(91.2%) of the respondents had been educated on newborn drying and wrapping and, 369(93.7%) of women have been advised on early initiation of breast feeding, by skilled birth attendants after birth (Table 4).

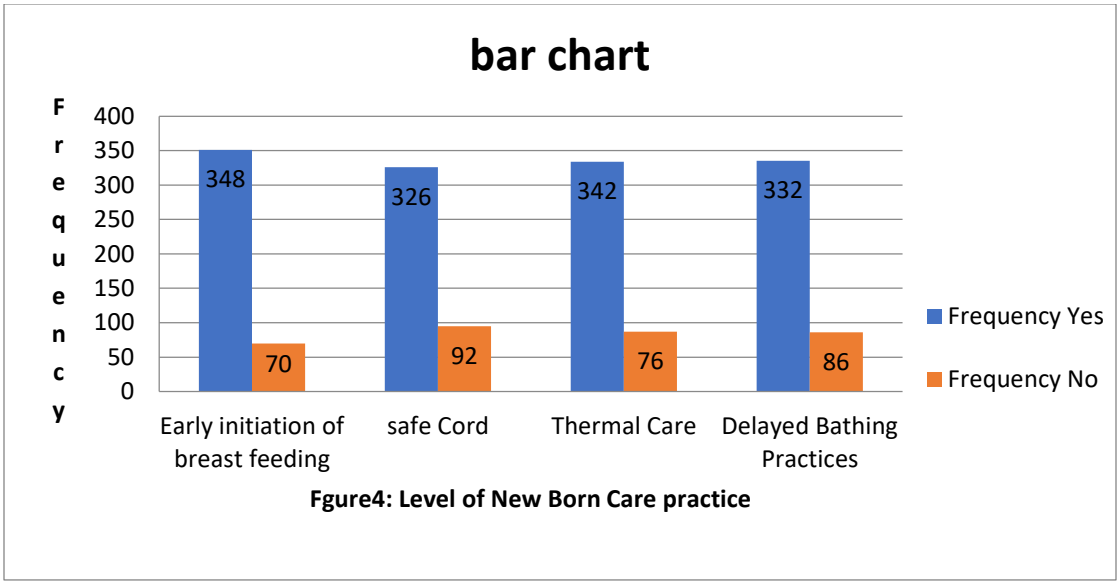
Table 4: Home visit by HEWs and advice given by skilled birth attendants of women in postpartum period, in governmental health facilities of Tembaro district, South Ethiopia, July 2021.

Variables	Category	Frequency	Percent
Home visit by healthy extension worker (n=418)	Yes	294	70.3
	No	124	29.7
Drying and Wrapping (n=294)	Yes	268	91.2
	No	26	8.8
Early initiation of breast feeding (n=294)	Yes	258	87.8
	No	36	12.2
Danger sign (n=294)	Yes	250	85
	No	44	15
Health education and advice By SBAs (n=418)	Yes	394	94.3
	No	24	5.7
Delay bathing (n=394)	Yes	351	89.1
	No	43	10.9
Cord care (n=394)	Yes	349	88.6

	No	45	11.4

5.4 Identified level of Newborn Care practices.

In this study, early initiation of breast feeding, safe cord, thermal care and delayed bathing practices were studied for 418 recently delivered women and 348(83.3%), 326(78%), 342(81.8%), 332(79.4%) of the respondents demonstrated the recommended practices, respectively (figure 4).



Fgure4: Level of New Born Care practice

Figure 4. Identified level of essential newborn care practices among mothers in postpartum period, in health facilities of Tembaro district, south Ethiopia July 2021.

5.5 Early initiation of breast feeding

60(14.4%) of the mothers were given additional feeding other than breast feeding with in their postnatal period and among them 30(7.2%) water and 30(7.2%) cow milk were the item of additional feeding. A few, 32(7.7%) of respondents had reported bottle feeding for their baby, of which 24(75%) of them reasoned out as their breast has no enough milk, 5(15.6%) were employees and have no time to breast feed and 3(9.4%) of them reported as they are too busy with home works.

Table 5: Practice of women in postpartum period on timely initiation of breast feeding, in governmental health facilities of Tembaro district, South Ethiopia, July 2021.

Variables	Category	Frequency	percent
Initiation of first breast milk (colostrum) (n= 418)	Yes	412	98.6
	No	6	1.4
Time the first breast milk(colostrum) started (n=418)	Within one hour after birth	348	83.3
	After one hour after birth	70	16.7
Which one is important for the first 6 month (n= 418)	Breast milk	407	97.4
	Additional foods	11	2.6
Additional fluid given for newborn (n=60)	Water	30	50
	Cow milk	30	50
Bottle feeding for current newborn (n= 418)	Yes	32	7.7
	No	386	92.3
Reason for bottle Feeding (n =32)	My breast has no enough milk	24	75
	I am employee	5	15.6
	I am too busy with homework	3	9.4

5.6 Safe cord care

Less than one-fourth, 92(22%) of the respondents were reported as had applied anything on the cord, among these 59(64.1%) and 33(35.9%) of women had applied butter and Vaseline respectively. Above three-fourth of the respondents 358(85.6%) have reported to go health center for cord infection and 90(21.5%) of women as have to give home medication, while 92(22%) of them reported as they have to wait until it heals by itself. About 265 (63.4%) of women took care of cord bleeding while 344(82.3%) of women kept the cord dry and clean to keep the cord safe and clean (Table 6).

Table 6: Practice of cord care of women in postpartum period, governmental health facilities of Tembaro district, South Ethiopia, July 2021.

Variables	Category	Frequency	Percent
Apply something on the cord (n= 418)	No	326	78
	Yes	92	22
What did you apply (n=92)	Vaseline	33	35.9
	Butter	59	64.1
What do you do if cord bleeds or Have foul smelling discharge?			
Go to health center (n= 418)	Yes	358	85.6
	No	60	14.4
Home medication (n= 418)	Yes	90	21.5
	No	328	78.5
Wait until heal by it self (n=418)	Yes	92	22
	No	326	78
What do you do to keep the cord clean and safe (n= 418)			
Take care of bleeding	Yes	265	63.4
	No	153	36.6

keeping it dry and clean (n=418)	Yes	344	82.3
	No	74	17.7
Take to health facility for treatment (n= 418)			
	Yes	153	36.6
	No	265	63.4

5.7 Thermal care and delay bathing

The thermal care and delay bathing of a newborn baby until after the first 24 hours of birth is very important to prevent the risk of hypothermia from newborn babies as they are immature for thermoregulation. With respect to adopting an optimum thermal care and good bathing practice, the result shows over all thermal practice were 342(81.8%) and regarding to delay of bathing 332(79.4%) of the respondents were bathed their newborn baby after24 hours after birth and 86 (20.6%) of them had given bath within 24 hour (Table 7)

Table 7: Practice of thermal care and bathing of women in postpartum period, in governmental health facilities of Tembaro district, South Ethiopia, 2021.

Variables	Category	Frequency	percent
When gave bath	within one hour	8	1.9
	within 24 hours	78	18.7
	after 24 hours	332	79.4
Think delay bathing Advantage	Yes	357	85.4
	No	61	14.6
If yes advantage (n=357)	Prevent hypothermia	284	79.3
	Preserve natural skin		

	immunity	37	10.3
	prevent infection	35	9.8
	I don't know	2	0.6
Receive thermal care	Yes	342	81.8
	No	76	18.2

5.8 Knowledge of respondents on newborn danger signs

Out of the total 418 respondents, more than three-fourth, 363 (86.8%) of them stated that they had the information about newborn danger signs. (Table 8).

Table 8 : shows that the only newborn danger sign for which there was high awareness among mothers was poor sucking, 275(75.8%) followed by fever, 265(73%).

Variable	**Category**		**frequency**	**percent**
Do you know newborn danger signs (n=421)		Yes	363	86.8
		No	55	13.2
Which danger signs do you know (n=363)	poor sucking	Yes	275	75.8
		No	88	24.2
	fever	Yes	265	73
		No	98	27
	hypothermia	Yes	172	47.4
		No	191	52.6
	fast breathing	Yes	167	46
		No	196	54
	unconscious	Yes	138	38
		No	225	62
	cord infection	Yes	190	52.3
		No	173	47.7

The proportion of new born care practices: Only 240(57.4%) 95% CI (0.5266, 0.6214) of the respondents practices the three and above composite practices namely; early breast-feeding initiation, safe cord care, thermal care and delay bathing which is lower than each individual practices that is, early initiation of breast feeding 348(83.3%), safe cord care, 326(78%), thermal care 342(81.8%), delayed bathing, 332(79.4%). (Figure5).

Figure 5: over all newborn care practice among mothers in postpartum period, in governmental health facilities of Tembaro district, South Ethiopia, July 2021.

5.9. Factors associated with newborn care practices

Both the simple and multiple logistic regression methods were used in the analysis of predictors of the dependent variables. The simple logistic regression analysis was carried out to examine the associations between each of the independent variables and outcome variables separately and the unadjusted odds ratios of the associations and the 95% confidence intervals of each independent variable with the outcome variable were obtained. Those variables with $p<0.25$ in the bivariate analysis were selected as candidate variables for multivariate logistic regression analysis.

The multivariable logistic regression analysis was used by taking all these factors into account simultaneously and only four of them remained to be significantly and independently associated with the outcome variables. Those four variables include; educational level, number of live births, number of ANC visit and health extension workers visits.

Mother's educational levels were found significant association with new born care practice. Mothers who can't read and write and primary education were 97.5% times (AOR=**0.025, 95%CI: (0.005, 0.125))**, 96.6% times (AOR=**0.031, 95%CI: (0.009, 0.106))** less likely to practice newborn care when compared with mothers who had complete collage and above respectively.

The other significant predictor for newborn care practice was health extension workers visit during and after pregnancy. Mothers who were not visited by health extension workers were 88% less likely to practice newborn care than those who were visited by health extension workers with (AOR=**0.120, 95%CI: (0.040, 0.359)).** Number of live births was found to have statistically significant association with practice of new born care. Those mothers who had two and less live births were 2.41 times more likely to practice new born care as compared with those women who had three and above live births (AOR=**2.41,95%CI: (1.127, 5.154)**). Number of ANC visit during pregnancy was found statistically significant association with practice of new born care. Mothers who were visited health institution less than four times were 87.8% times less likely to practice new born care than those who visited the health institution four and more times during the pregnancy with (AOR=**0.122,95%CI: (0.037, 0.399)).**

Table 8: Associations between selected factors and newborns care practices of women in postpartum period, in health facilities of Tembaro district, South Ethiopia, July 2021.

Variables	New born care practice		COR (95%CI)	AOR (95%CI)	P-value
	Good	Poor			
Education					
Can't read and write	15(6.3%)	83(46.6%)	0.015(0.006,0.041)	.025(0.005,0.125)	0.000*
Primary education	113(47.1%)	85(47.8%)	0.111(0.046,0.0268)	.031(0.009,0.106)	0.000*
Secondary education	40(16.7%)	4(2.2%)	0.833(0.222,3.128)	0.227(.049,1.055)	0.059
Collage and above	72(30%)	6(3.4%)	**1.00**	**1.00**	
HEWs home visit					
No	36(15%)	88(49.9%)	0.180(0.120,0.296)	0.120(0.040,0.359)	0.000*
Yes	204(85%)	90(50.6%)	**1.00**	**1.00**	
Number of live births					
1-2	191(79.6%)	90(50.6%)	3.810(2.480,5.850)	2.41(1.127,5.154)	0.023*
3 and above	49(20.4%)	88(49.4%)	**1.00**	**1.00**	
Numbers of ANC visit					
Less than 4	6(2.6%)	57(41.3%)	0.037(0.022,0.107)	0.122(0.037,0.399)	0.001*
4 and above	229(97.4%)	81(58.7%)	**1.00**	**1.00**	

*Significant at P<0.05, 1.00 reference category.

6. DISCUSSION

The finding of this study revealed that the prevalence of newborn care practices was 57.4% and the prevalence of each component of newborn care practices included early initiation of breast feeding (83.3%), safe cord care (78%), thermal care (81.8%) and delay bathing (79.4%).

The finding revealed that 57.4% of postnatal mothers' newborn care practice was good. This finding is higher than a study conducted in Damot pulasa Woreda (24%), (7), in rural districts of Gedeo zone (24.1%), (46) and Hosanna town administration (31%), (19). This might be due to the difference in good health-seeking behavior and knowledge about newborn care which increases newborn care practices. The finding of this study was lower as compared to previous studies in Northern part of Ethiopia Mekelle city (81.1%), (35), Gulomekada district Eastren Tigray (80.4%), (47), and the difference may be due to socioeconomic, access of awareness among the study participants, geographical variation, and health-seeking behavior across the different cultures or cultural beliefs.

The level of timely initiation of breast feeding observed in the study area was 83.3%. This is higher than findings of study done in India (74%), (26), in Sub-Saharan Africa (50%), (30), study conducted in rural district of Gedeo zone (57%), (46) and Damot pulas Woreda (45%) (7). This higher result may be due to awareness about the advantage of early initiation of breast feeding to ensure that the baby had received colostrum. However, this finding is lower than the study done in Uganda (94.7%), (31), the survey conducted in four regions of Ethiopia (87.6%), (38), Hosanna town administration (84%, (19) and Mekelle city, northern part of Ethiopia (97.4%), (35). This is may be due to an awareness difference on the advantage of exclusive and early initiation of breast feeding.

The present study found that 78% of the women practice safe cord care, by keeping it clean, dry and applying no things. This result is higher than study done in Pakistan (42%), (25), the study done in India (55%), (26), the study done in Nepal 73%, (27) and the survey conducted in four regions of Ethiopia (65.2%), (38). The current study finding reported that about 22% of the women have applied different traditional substances on the cord such as butter and Vaseline. This result is lower than study conducted in Pakistan (49%), (25), of the respondents applied traditional substances on the cord stump, India (45%), (26), Nepal, (27%), study conducted in Hosanna town administration (24%), (19) and Addis Ababa governmental hospitals (33%) (32). This is may be due to relatively an increased awareness about harmful effect of traditional

substance. However, this study finding is higher than the survey conducted in four regions of Ethiopia (21%) (38). This is may be due to low information coverage about its harmful effect or may be because of most people think that applying butter or Vaseline would lubricate the cord and prevent dryness.

Thermal care practice in study area was 81.8%. This finding is higher from study conducted in Uganda (17%) (33), Gahanna (51.4%), (21), Damot pulas Woreda (65%). This may be due awareness the mothers about thermal care which prevents hypothermia. The finding of study was found to lower than Nepal (97.1%), (27) and survey conducted in four region of Ethiopia and Dessie Referral hospital (80.8%) (45).

Bathing of the new born after 24 hours practiced by mothers in the study area was 79.4%. This finding is higher than study done in Nigeria Ibadan (66.7%) (36),Bangladesh (40.4%) (37), in rural district of Gedeo zone (69%), (46) and, survey conducted in four region of Ethiopia (74.7%), (38).The discrepancy is may be due to awareness about the importance of delayed bathing to prevent hypothermia. The finding of the study was found to be lower than the study done in Nepal (94.3%), (27). This is may be because of relatively lack of proper advice before, during and after birth about the importance of delayed bathing.

In this study, maternal educational status was significantly associated with newborn care practice among postnatal mothers. The finding of this study was similar with study done in Uganda (31), in rural district of Gedeo zone (46), Mekelle City (35) and Hosanna town administration (19). The findings consistency might be due to educating women being a community and political concern in developing and developed countries in comparable commitment. Women's education is a universal agenda to be implemented as a prospective countries program and is playing a great role to have good newborn care practice among postnatal mothers.

Health extension workers home visits during and after pregnancy was statistically significant association with good newborn practice. It is similar with study conducted in Dessie Referral hospital (45). Consistent finding was documented in a study done in Nepal (27) in which female Community Health Volunteers was one of predictors. This might be related to the fact that women visited by HEWs may have better understanding about the newborn care practices.

Number of live births was found to have statistically significant association with newborn care practice. The finding was similar with study done in Uganda in 2016 shows that multiparous mothers were less likely to have good newborn care practices when compared to primiparous (31). The findings consistency might be due to mothers with one-two child may give more attention for their newborn care practice.

The other significant predictor for newborn care practice was numbers of ANC visits during pregnancy. The study result corresponds with study conducted in Dessie Referral hospital, (45), Northern part of Ethiopia Mekelle city, (35). Finding similarity may be due to women who had four and above antenatal visits may be ongoing progress advice about newborn care practice during ANC visit periods.

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7. LIMITATION OF THE STUDY

The limitation of this study was respondents' bias that aims to respond to all the recommended newborn care practices.

8. CONCLUSION AND RECOMMENDATION

8.1 Conclusion

The study indicated that newborn care practices was low even though the majority of respondents practice early initiation of breast feeding, cord care, thermal care and delay bathing. Mother's education, health extension workers home visits, Number of live births and ANC follow up was found to be independent predictor of good newborn care practice.

8.2 Recommendations

Tembaro district health office: To strengthen the current intervention programs on newborn care and improve its quality and effectiveness through regular evaluation and monitoring of the program.

Health workers: To provide an ongoing education and counseling to mothers regarding essential newborn care during antenatal follow up and postnatal care visit in order to aware the mothers about harmful effect of malpractice to newborn baby.

Health extension workers: To ensure home visit to every mother during and after pregnancy in order to provide appropriate information regarding newborn breastfeeding method, newborn cord care until umbilical stump falls off, thermal care and to postpone baby bath until 24 hours of life, neonatal danger signs and so on.

REFERENCES

1. Cooper R. Maternal, newborn and child health in emergency settings. K4D Help Rep. 2018;

2. Yasmin S, Osrin D, Paul E, Costello A. Neonatal mortality of low-birth-weight infants in Bangladesh. Bull World Health Organ. 2001;79(7):608–14.

3. Chichiabellu TY, Mekonnen B, Astawesegn FH, Demissie BW, Anjulo AA. Essential newborn care practices and associated factors among home delivered mothers in Damot pulasa Woreda, southern Ethiopia 11 Medical and Health Sciences 1117 Public Health and Health Services. Reprod Health. 2018;15(1):1–11.

4. Africa S. Financing for maternal , newborn and child health. 2011;36–45.

5. Hug L, Alexander M, You D, Alkema L. National, regional, and global levels and trends in neonatal mortality between 1990 and 2017, with scenario-based projections to 2030: a systematic analysis. Lancet Glob Heal [Internet]. 2019;7(6):e710–20. Available from: http://dx.doi.org/10.1016/S2214-109X(19)30163-9

6. Tinker A, Parker R, Lord D, Grear K. Advancing newborn health: The Saving Newborn Lives initiative. Glob Public Health. 2010;5(1):28–47.

7. Chichiabellu TY, Mekonnen B, Astawesegn FH, Demissie BW, Anjulo AA. Essential newborn care practices and associated factors among home delivered mothers in Damot pulasa Woreda, southern Ethiopia 11 Medical and Health Sciences 1117 Public Health and Health Services. Reprod Health. 2018;15(1):1–12.

8. Victora CG, Requejo JH, Barros AJD, Berman P, Bhutta Z, Boerma T, et al. Countdown to 2015: A decade of tracking progress for maternal, newborn, and child survival. Lancet. 2016;387(10032):2049–59.

9. Chou D, Daelmans B, Jolivet RR, Kinney M, Say L. Ending preventable maternal and newborn mortality and stillbirths. BMJ. 2015;351(2014):19–22.

10. UNICEF. United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), ‘Levels & Trends in Child Mortality: Report 2018. Estim Dev by United Nations Inter-agency Gr Child Mortal Estim [Internet]. 2018;1–44. Available from:

https://data.unicef.org/wp-content/uploads/2018/09/UN-IGME-Child-Mortality-Report-2018.pdf

11. Central Statistical Agency Addis Ababa E. UNICEF Ethiopia. Ethiopia Demographic and Health Survey. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF.. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF. 2016. 249 p.

12. Kaewkiattikun K. Effects of immediate postpartum contraceptive counseling on long-acting reversible contraceptive use in adolescents. Vol. Volume 8, Adolescent Health, Medicine and Therapeutics. 2017. 115–123 p.

13. Spicer N. Global Health Global Health. JAMA - J Am Med Assoc. 2015;42(3):89–99.

14. FMOH. Health and health related indicator of Ethiopia. (2016/2017). 2017;21.

15. Arts M, Taqi I, Bégin F. Improving the Early Initiation of Breastfeeding: The WHO-UNICEF Breastfeeding Advocacy Initiative. Breastfeed Med. 2017;12(6):326–7.

16. Efa BW, Berhanie E, Desta KW, Hinkosa L, Fetensa G, Etafa W, et al. Essential new-born care practices and associated factors among post natal mothers in Nekemte City , Western Ethiopia. 2020;184:1–12. Available from: http://dx.doi.org/10.1371/journal.pone.0231354

17. Olorunsaiye CZ, Harris A, Yusuf KK. Characteristics of Early Newborn Care : A Descriptive Analysis of Recent Births in Nigeria. 2020;9(1):93–102.

18. UNICEF. Strategy for Health. Strateg Heal 2016-2030. 2016;1–56.

19. Sakelo AN, Assefa N, Oljira L, Assefa ZM. Newborn Care Practice and Associated Factors among Mothers of One- Research Article Newborn Care Practice and Associated Factors among Mothers of One-Month-Old Infants in Southwest Ethiopia. 2020;(October).

20. Alemu A, Eshete A. Newborn Care Practices and Associated Factors Among Lactating Mothers at Home in the Rural Districts of Gedeo Zone, Southern Ethiopia . Pediatr Heal Med Ther. 2020;Volume 11:47–54.

21. Saaka M, Ali F, Vuu F. Prevalence and determinants of essential newborn care practices in the Lawra District of Ghana. 2018;1–12.

22. Gebremeskel SG, Gebru TT, Kassahun SS, Gebrehiwot BG. Magnitude of Prelacteal Feeding and Its Associated Factors among Mothers Having Children Less than One Year of Age : A Community-Based Cross-Sectional Study in Rural Eastern Zone , Tigray , Ethiopia. 2020;2020:8–10.

23. Pitcher G. Hitting the targets. New Electron. 2007;40(22):33–4.

24. Kayemba CN. Seeking Referral Care for Newborns in Eastern Uganda : Community Health Workers ' Role , Caretakers ' Compliance and Provision of Care. 2014. 82 p.

25. Memon J, Holakouie-Naieni K, Majdzadeh R, Yekaninejad MS, Garmaroudi G, Raza O, et al. Knowledge, attitude, and practice among mothers about newborn care in Sindh, Pakistan. BMC Pregnancy Childbirth. 2019;19(1):1–9.

26. R. S. Cultural Practices and Beliefs on Newborn Care Among Mothers in a Selected Hospital of Mangalore Taluk. J Heal Allied Sci NU. 2014;04(02):021–6.

27. Sreeramareddy CT, Joshi HS, Sreekumaran B V., Giri S, Chuni N. Home delivery and newborn care practices among urban women in western Nepal: A questionnaire survey. BMC Pregnancy Childbirth. 2006;6:1–10.

28. Chhetri BT, Bhandari SS, Karna BK, Chaudhary R, Yadav U. Newborn Care Practices at Home among Mothers of Neonates Admitted with Sepsis. J Nepal Health Res Counc. 2019;17(2):178–84.

29. Sinha LN at., Kaur P, Gupta R, Dalpath S, Goyal V, Murhekar M. Newborn care practices and home-based postnatal newborn care programme - Mewat, Haryana, India, 2013. West Pacific Surveill response J WPSAR. 2014;5(3):22–9.

30. Bee M, Shiroor A, Hill Z. Neonatal care practices in sub-Saharan Africa: A systematic review of quantitative and qualitative data. J Heal Popul Nutr. 2018;37(1):1–13.

31. Komakech H, Lubogo D, Nabiwemba E, Orach CG. Essential newborn care practices and determinants amongst mothers of infants aged 0 - 6 months in refugee settlements, Adjumani district, west Nile, Uganda. PLoS One [Internet]. 2020;15(4):1–13. Available from: http://dx.doi.org/10.1371/journal.pone.0231970

32. Berhan D, Gulema H. Level of Knowledge and Associated Factors of Postnatal Mothers' towards Essential Newborn Care Practices at Governmental Health Centers in Addis Ababa, Ethiopia. Adv Public Heal. 2018;2018:1–10.

33. Peter W, Stefan P, Goran T, Pariyo George W. Poor newborn care practices - a population based survey in eastern Uganda. BMC Pregnancy Childbirth. 2010;10(2):9.

34. Acharya SR, Poudel S. Factors Associated with Maternal and Neonatal Health Care Practices : A Study from Nepal. 2020;10(February):186–92.

35. T.A. B, A.B. B, G.F. A. Knowledge and practice of Essential Newborn Care among postnatal mothers in Mekelle City, North Ethiopia: A population-based survey. PLoS One. 2018;13(8):1–12.

36. Adigun AS, Olabisi AP, Ogbeye GB, Kehinde A. New Born Care Practices and Knowledge of Risk Factors Associated with Neonatal Mortality among Post Natal Mothers in Ibadan. Int J Caring Sci [Internet]. 2018;11(2):1050–8. Available from: http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=131851643&site=ehost-live&scope=site

37. Islam N, Islam MT, Yoshimura Y, Nisha MK, Yasmin N. Newborn care practices in rural Bangladesh. Res Reports Neonatol. 2015;65.

38. Callaghan-koru JA, Seifu A, Tholandi M, Graft-johnson J De, Daniel E, Rawlins B, et al. Newborn care practices at home and in health facilities in 4 regions of Ethiopia. 2013;

39. Waiswa P, Akuze J, Peterson S, Kerber K, Tetui M, Forsberg BC, et al. Differences in essential newborn care at birth between private and public health facilities in eastern Uganda. Glob Health Action. 2015;8(1).

40. Singh DR, Harvey CM, Bohara P, Nath D, Singh S, Szabo S, et al. Factors associated with newborn care knowledge and practices in the upper Himalayas. PLoS One. 2019;14(9):1–18.

41. Gul S, Khalil R, Yousafzai MT. Newborn Care Knowledge and Practices among Mothers Attending Pediatric Outpatient Clinic of a Hospital in Karachi , Pakistan. Int J Health Sci (Qassim). 2014;8(2):167–75.

42. Ethiopian Public Health Institute (EPHI) [Ethiopia] and ICF. Ethiopia Mini Demographic and Health Survey 2019: Key Indicators. J Chem Inf Model. 2019;53(9):1689–99.

43. D AEP. An Assessment of the Role of Radio in Preventing Infant Mortality in North Central Nigeria. 2017;65(2011):27–36.

44. Daba W, Lemma AM, Sciences H. COLLEGE OF HEALTH SCIENCE SCHOOL OF PUBLIC HEALTH Assessment of Magnitude and Determinants of Neonatal Care Practice among Mothers in Selected Health Centers of Addis Ababa , Administration , Ethiopia School of Graduate Studies. 2015;

45. Semanew Y, Etaye M, Tizazu A, Abebaw D, Gebremedhin T. Newborn care practices and its determinants among postnatal mothers in Dessie Referral Hospital, Northeast Ethiopia. BMC Res Notes [Internet]. 2019;12(1):1–6. Available from: https://doi.org/10.1186/s13104-019-4133-3

46. Alemu A, Eshete A. Newborn Care Practices and Associated Factors Among Lactating Mothers at Home in the Rural Districts of Gedeo Zone, Southern Ethiopia . Pediatr Heal Med Ther. 2020;Volume 11(February):47–54.

47. Misgna HG, Gebru HB, Birhanu MM. Knowledge , practice and associated factors of essential newborn care at home among mothers in Gulomekada District , Eastern. BMC Pregnancy Childbirth [Internet]. 2016;1–8. Available from: http://dx.doi.org/10.1186/s12884-016-0931-y

Annexes

Annex 1-English version of structured questionnaire

Information sheet

Jimma University institute of public health and Medical Science, department of Epidemiology

Information page

Good morning/after noon, my name is _____I am conducting a study on the newborn care practice and its associated factors among postnatal mothers as part of the requirement to graduate with masters' degree in Jimma University.

This study aims to assess newborn care practice and associated factor among postnatal mothers, attending postnatal care clinic in Tembaro Woreda. The findings of this study can be important for the Tembaro Woreda health office to plan and implement activities that can improve newborn care practice. It can also provide important baseline information for further studies. The risk of conducting this study is very minimal but taking few minutes from postnatal mothers' time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the local health planners concerning newborn care practice. I would like to ask you some questions related to this study. There will be no injections, drawing of blood or anybody fluid involved. All information you will give will be confidential and will be used to make a general report. No names will be included in the report and there will be no way to identify you as one of the people who gave information.

Your inclusion in the study is voluntary and you are free to withdraw from the study if you are not willing to participate. If you have got any question that you do not want to answer you have the right to do so. If you have any questions about the survey, feel free to ask me. If you need to get the investigator you can contact through the following address: -

Name –Gebriel Osore

Email – gebrielosore@gmail.com

Phone- 251-911904163

Consent form of postnatal mothers

I have heard the information that has been read for me. I have understood the objective, advantage and disadvantage of the study. In addition to this, the information that I give will be confidential and will not be given to other person without my permission, my inclusion in the study is voluntary and I am free to withdraw from the study if I am not willing to participate. Therefore, I can make sure my agreement to involve in the study through my signature.

Signature of interviewee/finger stamp----------

Name of interviewer----------

Signature of interviewer----------

Date----------

Questionnaire English version

Part I: Socio demographic and economic characteristics

No	Question	Response	Remark
101	How old are you	----------years old	
102	What is your religion?	1. Orthodox 2. Muslim 3. Catholic 4.Protestant 5.Others(specify)----------	
103	To which ethnic group do you belong?	1.Tembaro 2. Hadiya 3. Kembata 4. Amhara 5. Doniga 6.Others(specify)----------	
104	What is your marital status?	1. Married 2.Single 3.Divorced 4.Widowed	
105	What is your educational level?	1. Can't read and write 2. Primary 3.Secondary 4. Collage and above	

106	What is your occupation?	1.Housewife 2.Government employee 3.Business woman 4.Student 5.Other (specify)	
107	How much is your monthly income? in ETB	----------	
108	Place of residence	1.Urban 2.Rural	
109	Do have: A. Radio B. TV C. Phone D. Do you read magazines, news or books?	1. Yes 2. No 1. Yes 2. No 1. Yes 2. No 1. Yes 2. No	
110	From which source did you get information about newborn care?	A. Radio B. TV C. Phone D Magazines, news or books	

Part II: Health care service utilization and obstetric information

No	Question	Response	Go to
201	Did you have a home visit by health Extension worker in the last 6 weeks?	1 Yes 2 No	If 2, skip to 203
202	What the HEW did advise you on care before and after delivery about the following points?	Yes No	

	1. Hand washing with soap and water before handling the neonate.	1 2	
	2. Keeping the neonate immediately dry and wrapping during delivery.	1 2	
	3. Breastfeeding immediately after birth within an hour?	1 2	
	4.Danger sign of the neonate that need immediate health care	1 2	
	5.Immunization	1 2	
	6.How to care for low birth weight	1 2	
203	Do you have history of neonatal death?	Yes No	
204	How many children do you have (alive)?	----------	
205	How many years / gaps between your pregnancy	----------in month	
206	What was your age at first Delivery?	---------- in year	
207	Have you been on ANC follow up when you were pregnant for your current baby?	1 Yes 2 No	If no go to 211
208	If eyes, how many times?	----------	
209	Where did you receive antenatal visit while you were pregnant for this baby?	1. Government Hospital 2. Health center 3. Private Hospital 4. Others(specify)----------	
210	At what gestational age was your first visit?	----------months	
211	During your antenatal visit or delivery at health institution, did the health Professional informed about the following points at least once?		
	Counseling topics	1 Yes	2 No

	1.Breast feeding immediately after birth within an hour	1	2	
	2.Thermal care of newborn, particularly avoiding chilling	1	2	
	3.Delay bathing of newborn for 24 hours	1	2	
	4.Keeping the cord clean and avoid injuries	1	2	
	5.Immunization	1	2	
	6.How to care for low birth Weight	1	2	
212	Where was your place of current delivery	1. Home 2.Health center 3.Government Hospital 4.Private Hospital 5.Other (specify----------		If not 1 Skip to 214
213	If it was home, why?	1. No nearby health facility 2.No transportation 3. Precipitated labor 4. Lack of money 5. No partner for help 6. I don't want to go health facility 7. Other specify----------		
214	At which day did you return back to health institution for Postnatal check-up?	----------in days		
215	Is/are there anybody who gives advice on newborn care practice in family?	1 Yes 2 No		
216	If yes, who?	1 Mother in-low		

		2 Father in-law 3 Other(specify)----------	
217	If yes, what they advise to do for newborn?	----------	

Part III: Assessing the practice on initiation of breast feeding

No	Question	Response	Go to
301	Do you breast feed your child now?	1 Yes 2 No	
302	If yes to Q 301, are you currently feed breast exclusively?	1 Yes 2 Yes	
303	Did you give the first breast milk (colostrum) for your baby?	1 Yes 2 No 3 I don't know	If 2/3 skip to 305
304	When did you give the first breast milk (colostrum) for your baby?	1. Within an hour after birth 2. Within24 hours 3. After 24 hours 4. I don't know	
305	What type of food do you think more important for the baby in the first six month?	1.Breastmilk 2.Additional foods 3.I don't know	
306	Did you give additional food for your current baby?	1. Yes 2.No 3.I don't Know	If 2/3 skip to 307
307	What additional food did you give for your current baby after birth?	1Water 2. Honey 3.Cow milk 4.Butter 5.Others(specify)----------	
308	Did you use bottle feeding for your	1.Yes	

	baby?	2.No	
309	If yes to Q 307, Why did you use bottle feeding?	1.I am employee 2.My breast has no enough milk 3.I am too busy with homework 4.My family advise 5.Other specify----------	

Part IV: Assessing the practice of cord care

No	Question	Response	Go to
401	What did you use to cut the cord of your baby?	1.Scisor 2.New blade 3.Old blade 4.Other specify----------	
402	Did you apply anything on the cord of your baby?	1.Yes 2.No 3.I Don't Know	If 2/3 go to 404
403	If yes Q401, what did you apply?	1.Butter 2.Vaseline 3.Ointment/oil 4 Others(specify)----------	
404	What do you do if the baby cord bleeds or have unpleasant discharge? 1.Go to health center 2.Home medication 3.Wait until heal by itself 4.Others(specify)----------	Yes No 1 2 1 2 1 2 ----------4	
405	What do you do to keep the cord clean and safe? I take care of bleeding I keep it dry and clean	Yes No 1 2 1 2	

	I take to health facility for Treatment Nothing Others(specify)----------	1 2 1 2 ----------5	

Part V: Assessing the practice of thermal care

No	Question	Response	Go to
501	Was the baby placed in skin to skin contact in the first 24 hours after delivery?	1.Not at all 2.A little (up to 2 hours total) 3. Moderate amount (between 2 to 5 hours total) 4.More than 5 hour 5.Always	
502	Was the baby wiped with dry, soft close immediately after birth?	1 Yes 2 No	
503	Was the baby whole body covered including legs and head?	1 Yes 2 No	

Part VI: Assessing the practice of newborn bathing

No	Question	Response	Go to
601	When did you give bath for the baby after birth?	1.Within 1 hour 2.Within 24 hours 3.After 24 hours 4.Don't know	
602	Do you think delay bathing is advantageous for the baby?	1 Yes 2 No	
603	If yes, what is the advantage of delay bathing?	1 Prevent hypothermia 2.Preserves natural skin immunity 3.To prevent infection	

		4 I don't know 5.Other(specify)----------	

Part VII: Assessing knowledge of mothers on newborn care and newborn danger signs

No	Question	Response	Go to
701	Do you know about care of the mother to her newborn baby?	1 Yes 2 No	
702	What substance should be applied to the cord immediately after cut up to 7 days except ordered medication?	1.Nothing applied 2.Butter applied 3.Vaseline 4.Don't Know 5.Other (specify)----------	
703	How long after birth should the newborn be washed / bathed for the first time?	1.Within one hour 2. 2- 24 hours 3.After 24 hours 4.Don't know	
704	How long after birth the newborn should be breast fed?	1. 1hour after birth 2. 24 hours after birth 3. 48 hours after birth 4. Within one hour after delivery	
705	What should a mother feed her new born baby first?	1.Sugar water 2.Fresh butter 3.Breast milk / colostrum 4.water 5. Milk (other than breast milk) 6.Don't know 7.Other (Specify)----------	
706	Do you know about newborn danger sign?	1 Yes 2 No	
707	If yes, could you mention all the	1.Poor sucking or not able feed	

	danger sign you know (Multiple answers are possible)	breast 2.Fast breathing 3.Hypothermia 4. Fever 5.unconscious 6.Cord bleeding and infection	

Thank You!!

Annex II Amharic version of questionnaire

መራጃ መስጫ ቅጽ

አንደት አደረሽ/ዋልሽ? ስሜ_____ይባላል፡፡
በዚህ ጤና ተቛም የድህረ ወሊድ ክትትል በሚያደርጉ እናቶች አድስ የተወላዱ ህፃነት መግኘት የሚገበቻዉን እንክብካኔ በተገቢ ሁኔታ መውሰዳቸውን እና እንዳይወስዱ እንቅፋት የሚሆኑ ተዛማጅ ችግሮችን ለማጥናት ለሁለተኛ ዲግሪ ፣ በጅማ ዩኒቨርሲቲ መመረቅያ ጥናት እየሰራው ነው፡፡
ይህ ጥናት መገምገም የፈለገው በጠምባሮ ወረዳ የድህረ ወሊድ ክትትል በሚያደርጉ እናቶች አድስ የተወላዱ ህናት መግኘት የሚገበቻዉን እንክብካቤ በተገቢ ሁኔታ መውሰዳቸውን እና በተገቢው ሁኔታ እንዳይወስዱ እንቅፋት የሚሆኑ ተዛማጅ ችግሮችን ነው፡፡ ከጥናቱ የሚገኘው ውጤት በወረዳዉ ውስጥ ለሚገኙ ጤና ተቋማትና ጤና ባለሞያዎች፣ ሌሎች ለሚመለከታቸዉ ባለድርሻ አካላትና ድርጅቶች ለችግሩ ትኩረት እንዲሰጡና መፍትሄ እንዲያፈላልጉ የበኩሉን ይወጣል ተብሎ ይታሰባል፡፡ከዚህ ጥናት የሚገኘው ውጤት በወረዳዉ ወደፊት ለሚጠኑ ተመሳሳይ ጥናቶች እንደመነሻ ግብዓት ሆኖ ያገለግላል:: ይህ ጥናት ከጊዜዎ ላይ ጥቅት ደቂቃወችን ከመውሰድ ውጭ በእርስዎም ሆነ በልጅዎ ላይ ጉዳት አያመጣም፡፡ በዚህ ጥናት በመሳተፍዎ በቀጥታ የሚያገኙት ክፍያ የለም ፡፡ ነገር ግን የዚህ ጥናት ውጤት ለወረዳዉ ጤና ጽ/ቤትና አቅድ አውጭ የመንግስት አካላት ጠቃሚ መረጃ ሊሰጥ ይችላል፡፡ ጥናቱን በተመለከተ የተወሰኑ ጥያቄዎችን ልጠይቆት እወዳለው፡፡ ምንም አይነት ደም መቅዳት ና መርፌ መውጋት አይካተትበትም፡፡ እርሶ የሚሰጡን መረጃ ለጠቅላላ ውሳኔ ብቻ የምንጠቀመው ሲሆን ምስጢራዊነቱ የተጠበቀ ነው፡፡ ስምዎት ስለማይጠቀስ የሰጡን መረጃ የእርሶ የሁን የለላ ሰው በምንም አይነት አይታወቅም፡፡ እርሶ በጥናቱ ውስጥ ባጋጣሚ ስለሆነ የተጠቃለሉት ፍቃደኛ ካልሆኑ ያለመሳተፍ መብት አሎት፡፡ መመለስ የማይፈልጉት ጥያቄ ካገኙ አለመመለስ ይችላሉ፡፡ ስለ ጥናቱ ጥይቄ ካሎት ነጻ ሆነው ጠይቂኝ ጥናቱን የሚያጠናውን ሰው ከፈለጉ ከዚህ በታች ባሉት አድራሻዎች ማግኘት ይችላሉ፡-

ስም — ገብርኤል ኦሶሬ
የኢሜል አድራሻ — gebrielosore@gmail.com
የሞባይል ስልክ ቁጥር- 0911904163

Consent form in Amharic language

የድህረ ወሊድ እናቶች ስምምነት

እኔ የዚህ ጥናት ተሳታፊ እንድሆን የታጨውት ግለሰብ ከዚህ በፊት የተነበበልኝን መረጃ በትክክል አዳምጫለው፡፡ የጥናቱንዓላማ፣ጥቅምእና ጉዳቱን በሚገባ ተረድቻለው፡፡ ከዚህ በተጨማሪ እኔ የምሰጠው መረጃ ከኔ ፍቃድ ውጪ ለማንም እንደማይሰጥ አረጋግጫለው፡፡ በመሆኑም በጥናት ውስጥ ለመሳተፍ ፍቃደኛ መሆኔን በፊርማዬ አረጋግጣለው፡፡

የተሳታፊው ፊርማ/የጣት አሻራ ----------

የጠያቂው ስም ----------

የጠያቂው ፊርማ ----------

ቀን ----------

Questionnaires in Amharic Language

ክፍል 1 አጣቀላይ ግላዊ፤መህበራዊ እና ኢኮኖሚያዊ ሁኔታ

ተ/ቁ	ጥያቄ	መልስ	ዝለል
101	እድሜዎት ስንት ነው?	----------በአመት ይገለጽ	
102	የሚከተሉት ሀይማኖት ምንድነው?	1 ኦርቶዶክስ 2 ሙስሊም 3 ካቶሊክ 4 ፕሮቴስታንት 5 ለላ ካለ ይጠቀስ----------	
103	ብሄርዎ ምንድ ነው?	1 ጠምበሮ 2 ሃድያ 3 ከምበታ 4 አማራ 5 ዶንጋ 6 ለላ ካለ ይጠቀስ ----------	
104	ጋብቻ ሁኔታ?	1 አግብቻለሁ 2 አላገባሁም 3 ተፋትቻለሁ 4 ባል ሞቶብኛል 5 ተለያይተናል	
105	የትምህርት ደረጃዎ ምን ያህል ነው?	1.ማንበብ እና መፃፍ የማይችል 2. 1ኛ-8ኛክፍል 3. 9ኛ-12ኛ	

		4. ዲፕሎማ እና ከዚያ በላይ	
106	መደበኛ ስራዎት ምንድ ነው?	1. የቤት እመቤት 2. የመንግስት ሰራተኛ 3. ንግድ 4. ተማሪ 5. ለላ ካለ ይጠቀስ----------	
107	የወር ገቢዎት ምን ያህል ነው?	----------	

108	የመኖሪያ ቦታዎ የት ነው?	1. ከተማ 2. ገጠር	
109	1 ሬድዮ አለዎት 2 TV አለዎት 3 ስልክ አለዎት 4 መፅሔት, ገዜጣ ወይም መጽሐፍ ያነበቡ?	1አዎን 2. የለኝም 1.አዎን 2. የለኝም 1.አዎን 2. የለኝም 1.አዎን 2. አለነብብም	
110	ስለ ጨቅለ ህጻን መረጀ ከየተኛዉ አግኙ?	1 ከ ሬድዮ 2 ከ TV 3 ከስልክ 4 ከመፅሔት, ገዜጣ ወይም መጽሐፍ	

ክፍሌ 2. የእናቶችን የወልድ ሁኔታዎች/የስነተዋልዶ ጤና አገሌግልት/አጠቃቀምን በተመለከተ

ተ/ቁ	ጥያቄ	መልስ	ዝለል
201	ቤት ለቤት ህክምና የሚሰጡ የጤና ኤክስተሽን ባለሙያዎች ባለፉት 6	1.አዎን 2. አይደለም	መልሱ 2 ከሆነ ወደ

	ሰምንት ውስጥ ወደ ቤትዎ መጥተው ነበር?		ጥየቁ 203 ይህዱ
202	ከመውለድዎ በፊትም ሆነ በኃላ ማድረግ ስለሚገባዎት ነገር በቤት ለቤት በየትኛው ርዕስ ለይ ትምህርት ተሰጥቶዎት ነበር?	1 አዎን 2 አይደለም	
	1. ህፃን እንደተወለደ በንፁህ እጅ/በሳሙ እነ በውኃ ታጥበን/ህፃኑን መያዝ እንዲለብን	1 2	
	2. ህፃኑን እንደተወለደ ወዱያው ማደራረቅ እና በደንብ ማልበስ እንደሚገባ	2	
	3. ህፃኑን እንደተወለደ ወዱያውኑ ጡት ማጥባት እንሚገባ	1 2	
	4. ህጻኑ ላይ የሚታዩ የአደጋ ምልክቶችን በተመለከተ	1 2	
	5. ክትባትና አስፈሊጊነቱን በተመለከተ	2	
	6. ክብደቱ በጣም አናስተኛ ለሆነ ህጻን የሚደረግ ጥንቃቄን በተመለከተ	1 2	
203	ከዚህ በፍት በተወለዱ በ28 ቀን ዉስጥ የሞቱ ህጻነት አሉ?	1 አዎን 2 የለም	
204	በህይወት ያሉ ስንት ልጆች አልዎት?	----------	
205	በልጆችዎ መካከል በትንሹ የስንት አመት መራራቅ/የእድሜ ልዮነት አለ?	----------በወራት ይጠቀስ	

206	የመጀመርያ ልጅዎትን ሲወልዱ እድሜዎት ስንት ነበር?	----------በአመት ይገለጽ	
207	በአሁኑ እርግዝናዎት ወቅት የቅድመ ወልድ ክትትል ነበሮዎት?	1 አዎን 2 አይደለም	መልሱ 2 ከሆነ ወደ 211 ይሂዱ
208	የቅድመ ወልድ ክትትል አድርገዉ ከሆነ ስንት ጊዜ?	----------	
209	በአሁኑ እርግዝናዎት ጊዜ ቅድመ ወልድ ክትትል ያደረጉት የት ነበር?	1. መንግስት ሆስፒታል 2. ጤና ጣቢያ 3. የግሌ ጤና ድርጅት 4. ለላ ከለ ይጠቀስ----------	
210	ቅድመ ወልድ ምርምራ ስትጀምሪ እርግዝናሽ ስንት ወሩ ነበር?	----------በወር ይገለጽ	
211	ከመውለድዎ በፊትም ሆነ በኃላ በጤና ባለሙያ ከሚከተለት የተኞቹ ርዕስ ላይ ትምህርት ተሰጥቶዎት ነበር?		

	የምክር አገሌግልት ርዕስ	1 አዎን	2 አይደለም
	1. የጨቅላ ሕጻኑ እንደተወለደ ወድያዉኑ ጡት ማጥባትን በተመሇከተ	1	2
	2. የጨቅላ ህፃኑን ሙቀት ሁሌጌዚ መጠበቅ እንዳለብዎት	1	2
	3.ህጻኑን ከ24 ሰዓት በኃለ መጠብ እንደለሌብዎት	1	2
	4. የጨቅላ ህጻኑን እትብት እንክብካቤ በተመለከተ	1	2
	5. ክትባትና አስፈሊጊነቱን በተመለከተ	1	2
	6. ክብደቱ በጣም አናስተኛ ሲሆን	1	2

	ለህጻኑ የሚደረግ ጥንቃቄን በተመለከተ		
212	የአሁኑ ልጆምን የወለዱት የት ነው?	1. በቤት ውስጥ 2. ጤና ጣቢያ 3. የመንግስት ሆስፒታል 4. የግሌ ሆሰፒታል 5. ለላ ከለ ይገለጽ----------	መልሱ 1 ከልሆነ ወደ 214 ይሂዱ
213	ቤት ውስጥ የወለዱበት ምክንያት ምንድ ነው?	1. በቅርብ የጤና አገልግሎት መስጫ ስለሌለ 2. የትራንስፖርት እጥረት 3. የሚረዳኝ ሰው ስለሌለ 4. ምጡ ስለተፋጠነ 5. የገንዘብ ችግር 6. የጤና አገልግልት መስጫ መሄድ ስላልፈለኩ 7 ሌላ ከለ ይጠቀስ----------	
214	ህጻኑ ከተወለደ በኃላ በስንተኛዉ ቀን ነበር ለድህረወልድ ክትትል የመጡት	----------በቀን ይገለጽ	
215	እቤት ዉስጥ ስለጨቅለ ህጻነት እንክብከቤ የምክር አገልግሎት የምሰጥ ሰዉ አለ?	1 አዎን 2 የለም	
216	ከለ ማን ነዉ?	1 አያት(እነት) 2 አያት(አበት) 3 ሌላ ከለ ይጠቀስ----------	
217	ምን ብለዉ ይመክራሉ?	----------	

ክፍል 3: የእናቶች የጡት ወተት አጠባብ ትግበራን በተመለከተ

ተ/ቁ	ጥያቄ	መልስ	ዝለል
301	በአሁኑ ወቅት ጨቅለ ህጻኑን የጡት ወተት ታጠቢያለሽ?	1 አዎን 2 አይደለም	
302	መልሱ አዉ ከሆነ ጨቅለ ህጻኑን የጡት ወተት ብቻ ታጠቢያለሽ?	1 አዎን 2 አይደለም	
303	ልጅዎን የመጀመርያውን የጡት ወተት (እንገር) አጥብተውታል?	1 አዎን 2 አይደለም 3 አለዉቅም	መልሱ 2/3 ከሆነ ወደ 305 ይሂዱ
304	የመጀመርያውን ጡት ወተት ለልጅዎ የሰጡት መቼ ነው?	1. በአንድ ሰዓት ውስጥ 2. በ24 ሰዓት ውስጥ 3. ከ24 ሰዓት በኃላ 4. አለስታውስም	
305	ለህፃኑ በተወለደ በመጀምርያዎቹ ስድስት ወራት ዉሰጥ የትኛውን ምግብ መመገብ የበለጠ ጠቀሚ ነው ብለው ያስባሉ?	1. የእናት ጡት 2. ተጨማሪ ምግብ 3. አለዉቅም	
306	የአሁኑ ልጅዎ ከተወለደ ከእናት ጡት ውጪ ለላ ተጨማሪ ምግብ ሰጥተው ያዉቃሉ?	1. አዎን 2. አይደለም 3.አለዉቅም	መልሱ 2/3 ከሆነ ወደ 307 ይሂዱ
307	ለአሁኑ ልጅዎ ከእናት ጡት ውጪ ምን ተጨማሪ ምግብ ሰጥተውታል?	1. ዉሃ 2. ማር 3.የላም ወተት 4.ቅቤ 5.ለላ ከለ ይጠቀስ----------	
308	ልጅዎን ለመመገብ ጡጦ ይጠቀማሉ?	1.አዎን 2.አይደለም	
309	መልሱ አዎን ከሆነ ከእናት ጡት ዉጪ ጡጦ ለምን ሰጡት?	1. ሰራተኛ ስለሆንኩ 2. የጡት ወተት በቂ ስለልሆነ	

		3. ቤት ውስጥ ስራ ስለሚበዛብኝ 4. በቤተሰብ ምክር ምክንያት 5. ለላ ከለ ይጠቀስ----------	

ክፍል 4: ለህጻኑ የሚሰጠውን የእትብት እንክብካቤ የሚመለከቱ ጥያቄዎች

ተ/ቁ	ጥያቄ	መልስ	ዝለል
401	የልጅዎን እትብት የቆራጡት በምንድ ነዉ?	1.በመቀስ 2.በአድስ ምላጭ 3.በአሮጌ ምላጭ 4. ለላ ከለ ይጠቀስ----------	
402	የአሁኑ ልጅዎ እትብት ላይ የቀቡት ነገር አለ?	1.አዎን 2.የለም 3.አለዉቅም	መልሱ2/3 ከሆነ ወደ 404 ይሂዱ
403	በትብቱ ላይ የቀቡት ወይም ያደረጉት ነገር ምንድነዉ?	1.ቅቤ 2. ቫዝልን 3. ጠብታ/ዘይት 4 ለላ ከለ ይጠቀስ----------	
404	የልጅዎ እትብት ቢደማ ወይም መጥፎ ጠረን ቢያመጣ ምን ያደረጋሉ? 1. የጤና አገልግሎት እንድያገኝ አደርጋለሁ 2. እቤት ዉስጥ እንከባከበዋለሁ 3. እራሱ እስኪድን እጠብቃለሁ 4.ለላ ከለ ይጠቀስ	1አዎን 2 አይደለም 1 2 1 2 1 2 ----------4	

405	እትብት ጤናማ እንዱሆን ምን አይነት እንክብካቤ ያደርጋሉ? 1 ደም መፍሰስ እንዲይኖር እጠነቀቃሁ 2 በደረቁ እና በንጽህና እጠብቃሇሁ 3 የጤና አገልግልት እንዱያገኝ አደርጋለሁ 4 ምንም አላደርግም/አለዉቅም 5 ሰላ ከለ ይጠቅስ	1 አዎን 2 አይደለም 1 2 1 2 1 2 1 2 ----------5	

ክፍል 5: ለህፃኑ የሚደረግለት የሰዉነት ሙቀት የመጠበቅያ ጥያቄዎች

ተ/ቁ	ጥያቄ	መልስ	ዝለል
501	ህፃኑ እንደተወለደ ሙቀት ከእናቱ ሰዉነት ወይም ቆዲ እንድያገኝ ለረጅም ጊዜ በእናቱ እቅፍ ዉስጥ እንዱቆይ ማድረግ ሞክረሽ ነበር?	1 አልሞከርኩም 2 ትንሽ ትንሽ (ለሁለት ሰዓት) ያህል 3 የተወሰነ (ከ2-5 ሰዓት) ያህል 4 ብዙ (ከ5 ጊዜ በሊይ) ያህል 5 ሁሌ ጊዜ	
502	ህጻኑ እንደተወለደ በደራቅነ በለስለስ ልብስ ሰዉነቱ ደርቆል?	1 አዎን 2 አይደለም	
503	ህጻኑ እንደተወለደ ሙሉ ሰዉነቱ(እግሩንነ ራሱን) ጫምሮ ተሸፍኖል?	1 አዎን 2 አይደለም	

ክፍል 6: ለህፃኑ የሚደረግለትን የመጀመሪያ የሰዉነት እጥበትን የተመለከቱ ጥያቄዎች

ተ/ቁ	ጥያቄ	መልስ	ዝለል
601	ህፃን ልጅዎ በተወለደ በስንት ጊዜ ውስጥ አጠቡት? /Baby bathing/	1 አንድ ሰዓት ውስጥ 2 በ24 ሰዓት ውስጥ 3 ከ24 ሰዓት በኋላ 4 አለዉቅም	
602	ህፃኑ ከተወለደ ጊዜ ጀምሮለ ለተወሰነ ጊዜ ሳይታጠብ መቆየቱ ጠቀሜታ አለው ብለው ያስባሉ?	1 አዎን 2 አይደለም	
603	መልሱ አዎን ከሆነ ከተወለደ በኃላ ህፃኑ ሳይታጠብ ለተወሰነ ጊዜ መቆየቱ ጥቅሙ ምንድነው?	1 ቅዝቃዜን ለመከልከል 2 የህፃኑን የተፈጥሮ መከለከያ ለመጠነከር 3 ህፃኑን ከበሽታ ለመከለከል 4 አለዉቅም 5 ለላ ከለ ይጠቀስ----------	

ክፍል 7፡ የእናቶችን የህጻነት እንክብከቤ ትግበራና ፈጣኝ የህክምና እርዲታ በሚያስፈልጋቸው የአደገኛ ምልክቶች የእዉቀት መለኪያ ጥያቀዎች

ተ/ቁ	ጥያቄ	መልስ	ዝለል
701	እናት ለልጆች ምን ዓይነት እንክብከቤ መድራግ እንደለበት ያዉቃሉ?	1 አዎን 2 አይደለም	
702	ህጻኑ በተወደለደ በ7 ቀን ዉስጥ በእትብቱ ምን መቀበት አለበት(በህክምነ ከተዘዘ መድሀኒት ዉጪ)?	1.ምንምአይቀበም 2.ቅቤ 3.ቫዝልን 4.አለዉቅም 5.ሌላ ከለ ይጠቀስ----------	
703	ህጻኑ ከተወለደ በኃለ በስንት ሰዓት መተጠብ አለበት?	1.በአንድ ሰዓት ዉስጥ 2. 2- 24 ሰዓት	

		3.ከ 24 ሰዓት በኃላ 4.አለዉቅም	
704	ህጻኑ ከተወለደ በኃለ በስንት ሰዓት ጡት መጥበት አለበት?	1. ከአንድ ሰዓት በኃለ 2. ከ 24 ሰዓት በኃለ 3.ከ 48 ሰዓት በኃለ 4. በአንድ ሰዓት ዉስጥ	
705	ለጫቅለ ህጻን እነቱ ምን መመገብ አለበት	1.የስኮር ዉሃ 2.አድስ ቅቤ 3.የእነት ወተት/እንገር 4.ዉሃ 5. ወተት(ከእነት ጡት ዉጪ) 6. አለዉቅም 7.ለላ ከለ ይጠቀስ----------	
706	ህፃኑ በተወለደ በአንድ ወር ውስጥ ፈጣን የህክምና እርዲታ የሚያስፈለጋቸውን አደገኛ ምሌክቶች ተዉቅይለሽ?	1 አዎን 2 አይደለም	
707	ከወቅሽ የትኞቹ ናቸው? (ከአንድ በለይ መመለስ ይቻላል)	1. መጥባት አመቻል 2.ቶሎ ቶሎ መተንፈስ 3.የሰውነት መቀት መቀነስ 4.የሰውነት መቀት መጨመር 5.በጣም መድከም ወይም የንቃት መጠን መቀነስ 6. የእትብት ሊይ ደም መፈሰስ እነ ቁሱለት	

አመሰግናለሁ!!

Annex 3: Declaration

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

Name: Gebriel Osore (BSc)

Signature: _____

Name of the institution: Jimma University

Date of submission: _____

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

Name and signature of the first advisor

Name and signature of the second advisor

Name and signature of the internal examiner
